



**REQUEST FOR TENDER
FOR THE PROVISION OF CONSTRUCTION SERVICES FOR
ATCO LOOP DECOMMISSIONING**

BID CALL: May 2, 2023

BIDS DUE: May 24, 2023 at 15:00h EST

2023-RFT-054

TABLE OF CONTENTS

DOCUMENTS	NO. OF PAGES
TABLE OF CONTENTS	1 Pages
PART I – PROCUREMENT & CONTRACT REQUIREMENTS	
SECTION A Tender Call	2 Pages
SECTION B Tender Conditions	18 Pages
SECTION C Form of Tender	4 Pages
Appendix A – Consent of Surety	1 Pages
Appendix B – Cost Submission Form	2 Pages
Appendix C – List of Subcontractors	1 Pages
Appendix D – List of Equipment	1 Pages
Appendix E – Product Suppliers	1 Pages
Appendix F – Labour & Equipment Rates	2 Pages
SECTION D Articles of Agreement	4 Pages
PART II – SERVICE AGREEMENT	6 Pages
PART III – GENERAL CONDITIONS	50 Pages
PART IV – SUPPLEMENTARY CONDITIONS	2 Pages
PART V – TECHNICAL SPECIFICATIONS	91 Pages
PART VI – DRAWINGS	7 Pages
PART VII – OTHER REFERENCE DOCUMENTS	
COVID 19 Protocols and Restrictions Documents	
COVID-19 – Standardized Protocols for All Canadian Construction Sites	11 Pages
Travel Restriction Order #9	11 Pages
Order Respecting Social Distancing and Gatherings #9	13 Pages
Protocol – Critical Employees and Isolation	3 Pages
Type A Water License – No. 3AMIQA1626	23 Pages
City of Iqaluit – Municipal Design Guidelines – January 2005	81 Pages

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 objective of this project is to decommission the existing sanitary sewer, drainage and selected water mains within the ATCO Loop including but not limited to:

- Decommissioning of the existing utilidor within the ATCO Loop;
- Installation of new service connections (7 buildings); and
- Road reinstatement in the Project Area.

Construction is scheduled to begin in the summer of 2023.

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. 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
Att: Sumon Ghosh
Director of Engineering and Capital Planning

**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 by the time and date identified in Part 1, Section B, Clause 27.4 of this Request for Tender.
- 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:

Richard Sithole
Senior Project Manager
E: richard.sithole@colliersprojectleaders.com

and

Abdalla Ambar
Assistant Project Manager
E: abdalla.ambar@colliersprojectleaders.com

- 2.2 The deadline for submitting inquiries is identified in Part 1, Section B, Clause 27.4 of this Request for Tender.
- 2.3 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.
- 2.4 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

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

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 A public opening of bids will be completed for this competition.
- 19.2 The public opening of bids will occur immediately following the closing time stipulated in section 27.4.
- 19.3 Due to current COVID-19 restrictions, the public opening it will be conducted virtually via zoom/ conference call. Bidders are to use the following instructions to participate in the virtual public opening:

- Virtual Public Opening Time and Date identified in Part 1, Section B, Clause 27.4 of this Request for Tender
- Join Zoom Meeting:

<https://colliersprojectleaders.zoom.us/j/92617460342?pwd=ZFIkT1BWemJvVHc4RWQwTkZWtmIWUT09>

Meeting ID: 926 1746 0342

Passcode: 585151

- One tap mobile:
 - +17806660144,,92617460342#,,, *585151# Canada
 - +12042727920,,92617460342#,,, *585151# Canada
- Dial by your location:
 - +1 780 666 0144 Canada
 - +1 204 272 7920 Canada

+1 438 809 7799 Canada

+1 587 328 1099 Canada

+1 647 374 4685 Canada

+1 647 558 0588 Canada

+1 778 907 2071 Canada

Meeting ID: 926 1746 0342

Passcode: 585151

- Find your local number:
<https://colliersprojectleaders.zoom.us/j/axNO8u9cG>

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 Provisional items shall mean items for which only very approximate quantities have been included in the tender documents. No work for which "Provisional" items are allowed shall be commenced without written instructions from the City.
- 22.2 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 the amount of at least FIVE MILLION DOLLARS (\$5,000,000).

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

	Address
City of Iqaluit	901 Nunavut Drive, P.O. Box 460, Iqaluit, NU, X0A 0H0
Colliers Project Leaders	2720 Iris Street, Ottawa, ON, K2C 1E6

EXP Services Inc.

2650 Queensview Dr Suite 100,
Ottawa, ON K2B 8H6

27. SUCCESSFUL TENDERER – TIME FOR COMPLETION

- 27.1 The successful Tenderer shall Substantially Perform the work by the date identified in Part 1, Section B, Clause 27.4 of this RFT, and this shall be the first date for the calculation of Liquidated Damages per Section 28.
- 27.2 The successful Tenderer shall Complete the Work by the date identified in Part 1, Section B, Clause 27.4 of this RFT, and this shall be the second date used for the calculation of Liquidated Damages as per Section 28.
- 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	May 2, 2023
Deadline for Submitting Inquiries	May 16, 2023 at 15:00h EST
Deadline for Inquiry Response	May 19, 2023
Closing Date for RFT	May 24, 2023 at 15:00h EST
Public Opening	May 24, 2023 at 16:00h EST
Approvals	May 25 – June 13, 2023
Contract Award Date	June 16, 2023
Project Kick-Off	June 21, 2023
Substantial Performance	October 27, 2023
Completion	November 24, 2023
Warranty Start Date	October 27, 2023
Warranty End Date	October 27, 2024

28. SUCCESSFUL TENDERER – LIQUIDATED DAMAGES

28.1 Liquidated damages shall be in the amount of:

TWO THOUSAND AND TWENTY FIVE DOLLARS (\$2,025) per calendar day beyond the Substantial and Completion Dates, as determined in Section 27.

29. 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.

30. 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.

31. COVID-19 MITIGATION MEASURES (CMM)

31.1 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.

31.2 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.

31.3 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).

31.4 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.

31.5 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.

31.6 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 and 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: ATCO Loop Decommissioning
Project Number: 2023-RFT-054**

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 favourable 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 the date identified in Part 1, Section B, Clause 27.4 of this Request for Tender, 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 _____ 2023.

Name of Firm: _____

Address: _____



CONSTRUCTION SERVICES
PART I – PROCUREMENT AND CONTRACT REQUIREMENTS



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



CONSTRUCTION SERVICES
PART I – PROCUREMENT AND CONTRACT REQUIREMENTS



APPENDIX A – CONSENT OF SURETY

Herewith is the Consent of Surety of the Tender submitted.

By: _____

To: The City of Iqaluit

Dated: _____ 2023 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

CONSTRUCTION SERVICES

PART I – PROCUREMENT AND CONTRACT REQUIREMENTS

Item	Description	Payment Clause	Unit	Quantity	Unit Price	Amount
1	Mobilization & demobilization including permits, property owner engagement & site setup	1.5.3	L.S.	1		\$ -
2	Traffic control, project signage and safety setup	1.5.4	L.S.	1		\$ -
3	Utility pole support including coordination with QEC for excavation work	1.5.5	L.S.	1		\$ -
4	Survey of Existing Asphalt Roadway	1.5.6	L.S.	1		\$ -
5	Project removals/decommissioning including removal/decommissioning of existing utility mains, service lines, water bleeds, etc. on the ATCO loop	1.5.7	L.S.	1		\$ -
6	Reinstate existing landscaping features (boulders, bollards, etc.)	1.5.8	L.S.	1		\$ -
SERVICE CONNECTIONS						
7	Supply and install new water and sewer service laterals for future connection including water carrier pipe, and sanitary sewer lateral from main to property line. Type II - 150mm dia. water carrier pipe and 150mm sanitary sewer lateral	1.5.9				
a)	Lot 180 and Lot 182		each	1		\$ -
b)	Lot 186 and Lot 188		each	1		\$ -
c)	Lot 245		each	1		\$ -
8	Supply and install new water and sewer service laterals to existing buildings including water carrier pipe, and sanitary sewer lateral	1.5.10				
a)	Lot 184 - Type II - 100mm dia. water carrier pipe c.w. 25mm supply and 25mm return and 100mm sanitary sewer lateral		each	1		\$ -
b)	Lot 223 - Type II - 100mm dia. water carrier pipe c.w. 25mm supply and 25mm return and 100mm sanitary sewer lateral		each	1		\$ -
c)	Lot 247 - Type II - 150mm dia. water carrier pipe c.w. 38mm supply and 25mm return and 100mm sanitary sewer lateral		each	1		\$ -
9	Lot 243 - Supply and install new 150mm sewer service laterals from main to existing building	1.5.11	each	1		\$ -
10	Internal plumbing modifications within each private building	1.5.9 & 1.5.10	each	3		\$ -
ROAD WORKS						
11	Driveway reinstatement - supply and install all necessary granular reinstatement as required (100mm Granular A, 300mm Granular B)	1.5.12	L.S.	1		\$ -
PROVISIONAL ITEMS						
12	Sub excavation of unsuitable material including backfilling with Granular 'B'	1.5.13	m ³	40		\$ -
13	Supply, deliver, place, and compact Granular A	1.5.14	m ³	40		\$ -
14	Supply, deliver, place and compact Granular B	1.5.15	m ³	40		\$ -
15	Rock Excavation and Disposal Off-Site	1.5.16	m ³	10		\$ -
16	Off-site disposal of soil that is deemed contaminated	1.5.17	m ³	30		\$ -
17	Asphalt Road Reinstatement - 74mm Hot Mix Asphalt	1.5.18	m ²	150		\$ -
18	Cash Allowance-Road Reinstatement with Rigid Concrete Pavement	1.5.19	L.S.	1	\$ 150,000.00	\$ 150,000.00
SUBTOTAL						\$ -
GST 5%						\$ -
TOTAL						\$ -

END OF SECTION

APPENDIX C – LIST OF SUBCONTRACTORS

Re: Bid for 2023-RFT-054 / *ATCO Loop Decommissioning*

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

2023-RFT-054 / ATCO Loop Decommissioning
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
Civil:	<hr/>
Process Mechanical/Piping:	<hr/>
3 rd Party Quality Control:	<hr/>
	<hr/>
	<hr/>
	<hr/>
	<hr/>
	<hr/>

Add rows if required.

END OF SECTION

APPENDIX D – LIST OF EQUIPMENT

Re: Bid for 2023-RFT-054 / *ATCO Loop Decommissioning*

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

2023-RFT-054 / *ATCO Loop Decommissioning*

EQUIPMENT	SIZE	MAKE	MODEL

Add rows if required.

END OF SECTION

APPENDIX E – PRODUCT SUPPLIERS

Re: Bid for 2023-RFT-054 / *ATCO Loop Decommissioning*

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

2023-RFT-054 / ATCO Loop Decommissioning

PRODUCT	PRODUCT SUPPLIER
Piping:	
Pedestrian Bollards:	
(Other)	

Add rows if required.

END OF SECTION

APPENDIX F – LABOUR AND EQUIPMENT RATES

Re: Bid for 2023-RFT-054 / *ATCO Loop Decommissioning*

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

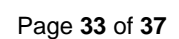
2023-RFT-054 / *ATCO Loop Decommissioning*

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
Superintendent c/w Truck:	
Supervisor / Foreman c/w Truck:	
Skilled Labourer:	
General Labourer:	
Operator:	
Surveyor:	
Other:	

Add rows if required.

EQUIPMENT	Hourly RATE
Operated Loader CAT 930 Equivalent	
Operated Excavator - CAT 330 Equivalent	
Excavator c/w Hoe Ram - CAT 330 Equivalent	
Operated Excavator - CAT 345 Equivalent	



SECTION D – ARTICLES OF AGREEMENT

THIS AGREEMENT MADE IN DUPLICATE THIS _____ DAY OF _____ 2023

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 the date identified in Part 1, Section B, Clause 27.4 of this Request for Tender, in a careful and workmanlike manner, diligently perform and complete the following Work:

The Contractor shall supply all materials, labour and equipment for construction of the work indicated within these Contract Documents for the ATCO Loop Decommissioning including but not limited to:

- .1 Decommissioning of the existing utilidor within the ATCO loop;
- .2 Installation of new service connections (7 lots); and
- .3 Road reinstatement in the Project Area

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.



CONSTRUCTION SERVICES
PART I – PROCUREMENT AND CONTRACT REQUIREMENTS



A.4 ADDRESSES

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

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



CONSTRUCTION SERVICES
PART I – PROCUREMENT AND CONTRACT REQUIREMENTS



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 **construction services to decommission the existing sanitary sewer, drainage and selected watermain within the ATCO Loop including but not limited to:**

- **Decommissioning of the existing utilidor within the ATCO Loop;**
- **Installation of new service connections (7 lots); and**
- **Road reinstatement and drainage improvements in the project area**

Construction is scheduled to begin in the summer of 2023 and to be completed before November 2023.

AND WHEREAS the Contractor has agreed to provide such services to the CITY OF IQALUIT in its bid dated as identified in Part 1, Section B, Clause 27.4 of this Request for Tender;

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 the date identified in Part 1, Section B, Clause 27.4 of this Request for Tender. 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 as identified in Part 1, Section B, Clause 27.4 of this Request for Tender.

2. TERM

2.1. This Contract shall commence and terminate on the the dates identified in Part 1, Section B, Clause 27.4 of this Request for Tender, 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:

Rod Mugford
Acting 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.

CONSTRUCTION SERVICES
PART II – SERVICE AGREEMENT

- 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 enure 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.

CONSTRUCTION SERVICES
PART II – SERVICE AGREEMENT

- 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. Invoices from Nunavut Contractors (as defined by the CITY OF IQALUIT NNI Policy) will be paid twenty (20) calendar days after receipt of the invoice, or twenty (20) calendar days after receipt 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 five million dollars (\$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 *



CONSTRUCTION SERVICES
PART II – SERVICE AGREEMENT



- Contractor's Protective Liability
- 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

TABLE OF CONTENTS

1. GENERAL PROVISIONS.....	4
1.1 Definitions.....	4
1.2 Documents and Interpretation.....	6
1.3 Notices.....	9
1.4 Rights and Renders.....	9
1.5 Assignment.....	10
1.6 Applicable Law.....	10
1.7 Successors and Assigns.....	10
2. CITY'S OBLIGATIONS	10
2.1 Payment.....	10
2.2 Site Availability.....	10
2.3 Consultant, Owner's Agent, and/ or Engineer as City Representative	11
2.4 Reference Points	11
2.5 Materials Supplied by the City.....	11
2.6 Control of the Work	11
2.7 Limitation of Liability.....	11
3. CONTRACTOR'S OBLIGATIONS	11
3.1 General Obligations	11
3.2 Independent Contractor	12
3.3 Review of Contract Documents.....	12
3.4 Site Conditions.....	12
3.5 Temporary Structures	13
3.6 Schedule.....	13
3.7 Superintendent.....	14
3.8 Subcontractors.....	14
3.9 Other Contractors	14
3.10 Use of the Site	15
3.11 Survey.....	15
3.12 Protection of the Work, Property and the Public	16
3.13 Permits.....	16
3.14 Applicable Laws	17
3.15 Material and Plant Supplied by City	17
3.16 Equipment, Plant and Material Supplied by Contractor.....	17
3.17 Workers' Compensation Act.....	18
3.18 Occupational Health and Safety.....	19
3.19 Cutting and Patching.....	19
3.20 Defective Work.....	19
3.21 Testing and Inspection.....	20
3.22 Site Cleanliness	21
3.23 Claims Against and Obligations of the Contractor.....	22

3.24	Patent Rights	22
3.25	Royalties	22
3.26	Records to be Kept by Contractor	23
3.27	Public Ceremonies and Signs	23
3.28	Non-Compliance by Contractor	23
4.	ADMINISTRATION BY CITY REPRESENTATIVE	23
4.1	City Representative's Duties and Authority	23
4.2	Observing the Work	24
4.3	City Representative's Decision	25
5.	PAYMENT AND COMPLETION.....	25
5.1	Progress Payments.....	25
5.2	Contract Holdbacks.....	26
5.3	Substantial Performance	26
5.4	Final Completion	27
5.5	Final Progress Payment.....	28
5.6	Holdback Release.....	28
5.7	Delay in Making Payment	29
5.8	Right of Set-off	29
6.	TIME AND DELAYS.....	30
6.1	Time of the Essence	30
6.2	Delays	30
7.	ASSESSMENTS AND DAMAGES FOR LATE COMPLETION.....	30
7.1	Late Completion	30
8.	CHANGE ORDERS	31
8.1	Changes in the Work	31
8.2	Valuation of Changes.....	31
8.3	Contingency Allowance.....	33
9.	DISPUTE RESOLUTION	33
9.1	City Representative's Decision	33
9.2	Appointment of Referee	35
9.3	Appointment of Arbitrator	35
9.4	Adherence to Provisions	36
10.	WITHDRAWAL, SUSPENSION AND TERMINATION	37
10.1	Withdrawal of the Work	37
10.2	Suspension of the Work.....	37
10.3	Termination by City	38
10.4	Contract Cancellation.....	39
10.5	Termination by Contractor.....	40

11.	BONDS AND WARRANTY	40
11.1	Obligations to Provide Contract Security	40
11.2	Prescription of Acceptable Contract Security	41
11.3	Return of Security Deposit	41
11.4	Warranty	42
12.	INDEMNIFICATION AND INSURANCE	43
12.1	Indemnification by Contractor	43
12.2	Indemnification by City	43
12.3	Policies of Insurance	43
12.4	Insurance General	46
13.	LOCAL AND INUIT INVOLVEMENT	46
13.1	Requirements for Inuit, Local and Nunavut Content	46
13.2	Requirement for Community Meetings	46
13.3	Monitoring the Level of Inuit, Local and Nunavut Labour	48
13.4	Requirement for Using Hotels or Bed and Breakfast	49
14.	TRANSPORTATION OF MATERIALS	49
14.1	Marine Transport Resources	49

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 labour, 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 labour, 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.
- a) 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, labour, 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) 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.
- c) 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.
- d) 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.
- e) 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.

- f) 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 endeavour 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 labour 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 labour 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 Licence 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 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. self-isolation, 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 in 2.1 and 2.2.

2. Long Term Water Project Specific Conditions

As part of the City's funding obligations under the Long-Term Water project (through Infrastructure Canada's Disaster Mitigation and Adaptation Funding (*DMAF*)), the following conditions will apply to this contract engagement:

- .1 The Contractor will keep proper and accurate financial accounts and records, including but not limited to its Contracts, invoices, statements, receipts, and vouchers, in respect of the Project for at least six (6) years after the Agreement End Date (Completion Date identified in Part 1, Section B, Clause 27.4 of this RFT) and that the City of Iqaluit has the contractual right to audit them.
- .2 All applicable labour, environmental, and human rights legislation is respected.
- .3 Canada, the Auditor General of Canada, and their designated representatives, to the extent permitted by the law, will at all times be permitted to inspect the terms and conditions of the Contract and any records and accounts respecting the Project and will have reasonable and timely access to the Project sites and to any documentation relevant for the purpose of audit.

- .4 Contractor to include scope to source, supply and install project signage per the funding agreement requirement below:

Unless otherwise agreed upon by Canada, the Recipient will produce and install a sign to recognize contributors' funding at each Project site in accordance with current federal signage guidelines. The sign's design, content, and installation guidelines are provided by Canada (<http://www.infrastructure.gc.ca/pub/signage-panneaux/intro-eng.html>).

Where the Recipient decides to install a permanent plaque or other suitable marker with respect to the Project, it must recognize the federal contribution and be approved by Canada.

The Recipient will ensure that signs are installed at the Project site(s) at least one (1) month prior to the start of construction, be visible for the duration of the Project, and remain in place until one (1) month after construction is completed and the infrastructure is fully operational or opened for public use.

The Recipient will ensure that signs are installed in a prominent and visible location that takes into consideration pedestrian and traffic safety and visibility.

The Contractor will require City and Funding Agency consultation and sign off ahead of production/installation.

- .5 As part of the City's project funding obligations and to encourage planned initiatives to recruit, hire and train members of federal Target Groups, the successful Proponent will be required to report annually (OR for the duration of the contract whichever comes first) on Community Employment Benefits (CEB) for three (3) federal Target Groups identified below. The successful proponent will also be required to report total cumulative hours worked by all workers engaged on the project (including subcontractors and administrative employees) through to project completion. The three (3) Target Groups are:

Target Group	Definition	CEB Annual or Contract Reporting Requirement
Indigenous Peoples	Self Identified	Total Hours Worked for Individual Target Group
Women	Self Identified	Total Hours Worked for Individual Target Group
Persons with disabilities	Self Identified	Total Hours Worked for Individual Target Group

END OF SECTION

Section V – Technical Specifications

DIVISION 01 – GENERAL REQUIREMENTS

00 01 07	Seals Page
01 11 00	Summary of Work
01 12 50	Special Provisions
01 14 00	Work Restrictions
01 29 00	Payment Procedures
01 31 19	Project Meetings
01 32 16	Construction Progress Schedule
01 33 00	Submittal Procedures
01 35 00	Special Project Procedures
01 35 20	Health and Safety Requirements
01 41 00	Regulatory Requirements
01 45 00	Quality Control
01 51 00	Temporary Utilities
01 52 00	Construction Facilities
01 77 00	Closeout Procedures

DIVISION 02 – EXISTING CONDITIONS

02 21 19	Selective Demolition
----------	----------------------

DIVISION 31 – EARTHWORK

31 23 33.01	Excavating, Trenching and Backfilling
-------------	---------------------------------------

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 11 10	Aggregates General
32 25 00	Roadways

DIVISION 33 –UTILITIES

33 36 50	Service Connections
----------	---------------------

END OF SECTION



END OF SECTION

Part 1 General

1.1 CONTRACT DOCUMENTS

- .1 The Contract Documents are complementary and what is called for on one shall be as binding as if called for by all. The intention of the Contract Documents is to include all labour and material, equipment, superintendence and transportation necessary for the proper performance of the work. Materials or work described in words which so applied have a well-known technical or trade meaning, shall be held to refer to such recognized standards.

Should there be any conflicts in the drawings with the Contract Documents, the Contractor shall notify the Engineer. The Engineer's decision on questions arising under the Contract Documents or the interpretation of the Specifications and Drawings shall govern.

- .2 Contract documents are diagrammatic only. They are intended to establish scope, materials and quality; they are not detailed installation drawings. Minor details and incidental accessories required for the proper installation which are not shown or specified are to be included in the work.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- .1 The Contractor shall supply all materials, labour and equipment for construction of the work indicated within these Contract Documents. The following description is intended to provide a general overview and is not to be considered a "scope of work".
- .2 The general work description for the ATCO Loop decommissioning includes;
 - .1 Decommissioning of the existing utilidor within the ATCO loop
 - .2 Installation of new service connections (7 lots)
 - .3 Road reinstatement in the project area

1.3 FURNISHED ITEMS

- .3 Contractor Responsibilities:
 - .1 Designate submittals and delivery date for each product in progress schedule.
 - .2 Review shop drawings, product data, and other submittals. Submit to Consultant notification of any observed discrepancies or problems anticipated due to non-conformance with Contract Documents.
 - .3 Receive and unload products at site.
 - .4 Inspect deliveries jointly with Owner, record shortages, and damaged or defective items.
 - .5 Handle products at site, including uncrating and storage.
 - .6 Protect products from damage, and from exposure to elements.
 - .7 Assemble, install, connect, adjust, and finish products.
 - .8 Provide installation inspections required by public authorities.

- .9 Repair or replace items damaged by Contractor or Subcontractor on site (under his control). Deliver supplier's bill of materials to owner

1.4 QUALITY ASSURANCE

- .1 Only tradespeople properly licensed in Nunavut for work requiring special skills shall be employed on such work, and under no circumstances shall any tradesperson carry out work for which they have insufficient ability or training.
- .2 All materials, fabrication and equipment shall be of reputable manufacturer, and where a product by a manufacturer is noted in the Plans or Specifications, it is to indicate a standard of acceptance for the particular application or approved equal.

1.5 MINIMUM STANDARDS

- .1 In the absence of other standards being required by the Contract Documents, all work shall conform to or exceed the minimum standard of the Canadian Government Specification Board, the Canadian Standards Association, or the National Building Code of Canada (latest edition with all current addenda), whichever is applicable.

1.6 DETAIL DRAWINGS AND INSTRUCTIONS

- .1 The Engineer shall furnish, as necessary for the performance of the work, additional instructions by means of drawings or other media, which shall be consistent with the Contract Documents and the Contractor shall perform the work in accordance with such instructions.
- .2 If either the Contractor or the Engineer so requests, they shall jointly prepare a schedule, fixing the dates at which the various detail drawings will be required, and the Engineer shall furnish them in accordance with this schedule.

1.7 JOB CONFERENCES AND MEETINGS

- .1 Job conferences will be jointly arranged weekly between the Contractor, the Engineer and Owner during the progress of the job and when called upon to do so, the job conference shall be attended by an authorized representative of the trade concerned and as described in Section 01 31 19 – Project Meetings.. The Contractor shall furnish accommodation for all the job conferences. Notes shall be typed up afterwards by the Engineer and then circulated to all parties concerned.
- .2 The Engineer shall prepare the agenda for the progress meetings and shall be responsible for minuting and circulating the minutes of the meetings to all parties concerned. The agenda for the progress meetings shall include, as a minimum, the following:
 - .1 Review and acceptance of minutes from previous meeting.
 - .2 Review of work progress.
 - .3 Review of planned work prior to next progress meeting.
 - .4 Construction issues, such as submittals, health and safety, coordination, field observations, problems, conflicts which may result in changes to the contract price or construction schedule.

- .5 Review of the construction schedule versus actual progress schedules and progress monthly progress claims.
- .6 Review of contemplated changes notices / contract change orders / field orders and field instructions.
- .7 Review of outstanding items from previous meeting.
- .8 Date and location of next progress meeting.
- .9 Other business.

1.8 INSPECTOR AND INSPECTION

- .1 All work covered under this Contract shall be done to the satisfaction of the Engineer or their Inspector.
- .2 The Engineer's Inspector is to ensure that the provisions of the Contract are adhered to. The Inspector shall ensure that the quality of workmanship and materials are to the standards specified in the Contract. The Engineer or his Inspector may stop the work entirely if there is not a sufficient quantity of approved materials on site, or for any reason they deem will adversely affect the quality of work.
- .3 All materials and equipment, and their processes of preparation or manufacture, shall be subject to inspection, and testing at all times. If an inspection or a test is failed, the Engineer may reject the affected material or equipment.
- .4 The Engineer shall give the Contractor reasonable notice of any inspection or testing they wish to carry out, except for any inspection or testing specifically stated in the Contract which requires the presence of the Engineer. The Contractor shall be responsible to provide the Engineer at least seven (7) days notice, in writing, to the commencement of the manufacturing or preparation of any materials or equipment which the Contract requires inspection or testing. The Contractor shall make all the necessary provisions and provide any assistance required, so that the Engineer can carry out the specified inspection or testing.
- .5 If, for any reason, any inspection or testing has not been carried out, the Contractor shall notify the Engineer and any affected material or equipment shall not be delivered to the site of work until authorized by the Engineer, in writing, to do so.
- .6 In any event, no materials or equipment required by the Contract or by the Engineer to be inspected or tested by or in the presence of the Engineer shall be incorporated into the work until the required inspection or testing has been carried out to the satisfaction of the Engineer.
- .7 The Contractor shall provide, and shall ensure that all Subcontractors and those carrying out the process of preparation or manufacture shall provide, every reasonable facility and cooperation to assist the Engineer or Inspector or others designated by the Contract or by the Engineer in carrying out inspection and testing.
- .8 The Contractor shall not backfill or otherwise cover up any work without either having it inspected and passed by the Inspector, or first notifying the Inspector in a manner approved or as directed by the Engineer, that the work is ready to be covered up and allowing the inspector reasonable notice and opportunity for carrying out an inspection.

Failure to do so will require the Contractor to re-excavate the site to allow for inspection, and re-backfill the site at the Contractor's expense.

- .9 Any works covered up, other than in accordance to the foregoing, shall be uncovered or opened up as ordered by the Engineer or the Inspector. All subsequent work, either through the inspection and testing or the opening and reinstatement shall be carried out by the Contractor at his expense.
- .10 No approval by an Inspector or by the Engineer or failure of an Inspector or the Engineer to carry out an inspection shall relieve the Contractor of his obligations under the Contract or shall be interpreted as being an acceptance of defective or improper work or material.
- .11 If, in addition to the inspection provided for above, the Contractor is required by the Contract, by law, by local bylaw or by the Engineer to have any part of the work inspected by others, the Contractor shall give the Engineer and the others concerned reasonable notice of the time and date proposed for the additional inspection.

1.9 COMPACTION TESTING/ INSPECTION REQUIREMENTS

- .1 Contractor shall be responsible to hire a third party Laboratory/Inspection/Testing Agency for all compaction testing of all soils / granular / asphalt material including supplying all necessary nuclear moisture/density gauges and ancillary equipment required to conduct field density and field moisture measurements for QC compaction testing of earth and granular materials as detailed in Section 01 45 00 – Quality Control
 - .1 All tests are the responsibility of the Contractor and costs shall be included within this tender price.

1.10 LAYING OUT WORK

- .1 The Engineer, prior to commencement of the work only, will provide sufficient control points to allow layout by the Contractor. The Engineer shall also set a job benchmark. The Engineer shall advise the Contractor by means of a sketch plan, as to the location of the stakes, benchmarks, and their elevations. The Contractor shall, before commencing the work, satisfy himself as to the meaning and accuracy of the stakes provided by the Engineer.
- .2 The Contractor is required to perform all verifications in the field to confirm existing site conditions prior to executing the Work.
- .3 Unless otherwise specified, all work to be performed under this Contract is to be laid out by the Contractor. The Contractor shall employ competent personnel to accurately set out all lines and establish all levels. The Contractor shall provide and set in place all necessary batter boards, sight rails, stakes and marks and shall establish bench marks to the satisfaction of the Engineer. The Contractor shall also provide the Engineer with competent assistance required for checking such lines and levels. The Contractor shall be responsible for the accuracy of lines, grades, and levels.
- .4 The Contractor shall carefully preserve benchmarks, reference points, and stakes, and in case of willful or careless destruction, The Contractor shall be charged with the resulting

expense of re-establishment and shall be responsible for any mistake that may be caused by their unnecessary loss or disturbance.

- .5 The Contractor shall provide and maintain all necessary watchmen, barriers, fences, warning lights and signs and take all necessary precautions for the protection and safety of workmen and the public. All excavations or obstructions shall be clearly marked between sunset and sunrise with warning flares or lights. Should any of the Contractor's work cause interference with any existing public road, the Contractor shall provide and maintain the necessary detour roads and shall post such signs, warnings and protection as may be required for public convenience and safety.

- .6 For the following works,

- .1 Any road closure (through a Public Works road closure permit)
- .2 Any excavation work in the City right-of-way (Utility permit)
- .3 Any connecting or disconnecting water and/or sewer services (Water & Sewer services Connection/Disconnection permit)

The Contractor shall notify the following stakeholders and obtain the appropriate permits as detailed in Section 01 14 00 – Work Restrictions, 01 35 00 – Special Project Procedures and 01 41 00 – Regulatory Requirements for the associated works:

Municipal Office
Police Department
Fire Department
Public Works Department
Utilities Companies

The Contractor shall engage and notify adjacent and affected property owners ahead of the works, including letter drop boxes.

- .7 When the work involves work in streets, the Contractor shall erect at the commencement of the work and shall maintain during the entire period of such work, portable or other signs, and flagmen when working on major roads, as requested by the Engineer. The Contractor shall provide such number of signs as may be required by the Engineer.
- .8 The Contractor shall continuously maintain adequate protection of all work from damage and shall protect the Owner's property from injury or loss arising in connection with this Contract.
- .9 The Contractor shall make good any damage, injury or loss to his work and to the property of the Owner, except as per provisions in General Conditions in the Contract Documents or caused by agents or employees of the Owner. The Contractor shall adequately protect private and public property, as provided by law and the Contract Documents.

1.11 CUTTING AND PATCHING

- .1 Coordinate all work with other trades.
- .2 Coordinate locations and installation of sleeves, inserts and supports with other trades.
- .3 Provide sleeves and openings required for mechanical work.

- .4 Submit and proposed methods to Engineer and obtain permission prior to any cutting or drilling.

1.12 PROTECTION

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

1.13 CONTEMPLATED CHANGE NOTICE (CCN)

- .1 A Contemplated Change Notice does not constitute a direction to perform the change of works described within. It is solely a notice of a proposed change. Upon receipt of a contemplated change notice, the Contractor shall submit to the Engineer, within the timeframe reference within the document a cost adjustment to the contract associated with the proposed change, as well as any impact that the proposed change will have on the construction schedule. The cost adjustment and scheduled adjustments shall be itemized as required within the Contemplated Change Notice.

1.14 CONTRACT CHANGE ORDER (CCO)

- .1 Acceptance of a Contract Change Order by the Owner and the Contractor will constitute a change in the terms, cost and/or schedule of the contract as set forth in the Contract Change Order. The Contract Change Order will be based on a Contemplated Change Order submitted by the Contractor. Contract Change Orders, signed by the Owner and Contractor shall authorize the Contractor to proceed with the change in the scope of work as described with the Contract Change Order.

1.15 FIELD INSTRUCTIONS

- .1 Field instructions may be issued during the course of construction as a mechanism to provide clarification to specific items within the Contract or to give additional instructions to the Contractor. Issuance of a field instruction shall not result in any changes to the contract price or the contract schedule.

1.16 FIELD ORDER

- .1 Field order may be issued by the Engineer during the course of construction to authorize a change or authorize additional work in an emergency situation where following the process of issuance of a Contemplated Change Notice and Contract Change Notice may result in a delay which could result in damage or injury to life or property or would have an adverse effect on the total cost of the Contract. The field order shall either set a firm cost adjustment for the work or shall include a method for determining the cost of the work (i.e., unit price or cost of labour or material) set forth in the field order.

1.17 RESPONSIBILITY REGARDING EXISTING UTILITIES AND STRUCTURES

- .1 The Contractor shall pay for all necessary alterations of any utilities that intersect the line of the proposed work. Excavation in the vicinity of existing structures and utilities shall be carefully performed, and any utilities which cross an excavation must be properly supported or shored to prevent settlement. Where trenching is to be done under existing utilities, such utilities shall be shored before excavation commences and shoring shall be left in place.

- .2 The existence, location and elevation of underground utilities are not guaranteed, and notwithstanding any other provision in the Contract, the Contractor shall be responsible for determining the location and elevation of all sewer, water mains, services or lines, electric light, power or telephone conduits, or other such structures or utilities, and shall pay for any service supplied by the Waterworks, Sewer, Electric Light Company or Department, or by any other company or department for the location of utilities and the Contractor shall be responsible for notifying the appropriate company, department, person or persons, of his intention to carry out operations in the vicinity of any such main, line, conduit or other such structure or utility, at least one (1) week in advance of any such operations being there carried out.
- .3 The Contractor shall deposit with the Engineer a letter, or letters, from the appropriate authority of the utility or utilities involved stating that the Contractor has made satisfactory arrangements with the utility organization for the location, protection and inspection of the utility involved. The Contractor shall be responsible for any costs incurred in the process.
- .4 Where utilities are to be moved, the Contractor shall make his own arrangements with the Utility Company or department concerned for the alterations necessary and will notify the Engineer of all such requirements.
- .5 The Contractor shall be responsible for the protection of all survey monuments, posts, and markers. All disturbed monumentation shall be reinstated by the Contractor at his cost by a duly licensed Land Surveyor.

1.18 AIR AND WATER POLLUTION

- .1 The attention of the Contractor is called to the Ordinances of Nunavut relating to the pollution of water and air. The Contractor shall carry out his operations in conformity with the applicable sections of the Territorial Ordinances and regulations that are adopted thereto.

1.19 SUBMITTALS

- .1 General:
 - .1 In accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Provide shop drawings and product data for all materials stipulated in the specifications or drawings.
 - .3 Submit four (4) prints of submittals for each requirement requested in specification Sections and as the Engineer may reasonably request.
 - .4 Submit to Engineer submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in work.
 - .5 Work affected by the submittal shall not proceed until review is complete.
 - .6 Review submittals prior to submission to the Engineer. Submittals not stamped, signed, dated, and identified by the Contractor will be returned without being examined and shall be considered rejected.
 - .7 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Engineer review.
- .2 Shop Drawings and Product Data:

- .1 The term "Shop Drawings" means drawings, technical documents, plans, diagrams, illustrations, schedules, performance charts, brochures, and other data which are to be provided by the Contractor to illustrate details of a portion of work.
 - .2 Adjustments made on shop drawings by the Engineer are not intended to change the Contract Price. If adjustments affect the value of work, state in writing to the Engineer prior to proceeding with the work.
 - .3 Make changes in shop drawings as the Engineer may require, consistent with Contract Drawings. When resubmitting, notify the Engineer in writing of any revisions other than those requested.
 - .4 Submit four (4) prints of shop drawings for each requirement requested in specification Sections and as the Engineer may reasonably request.
 - .5 Submit four (4) copies of product data sheets or brochures for requirements requested in specification Sections and as the Engineer may reasonably request where shop drawings will not be prepared due to standardized manufacture of product.
- .3 As-built drawings:
- .1 Prior to start of 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 SYSTEMS AS INSTALLED" (Signature of Contractor) (Date).
 - .3 Submit to Engineer for approval and make corrections as directed.
 - .4 Submit completed reproducible and electronic as-built drawings.

1.20 SAMPLES

- .1 The Contractor shall furnish for the Engineer's approval all samples required by the Contract or as requested by the Engineer. The work shall be in accordance with the approved samples.

1.21 "OR EQUAL" MATERIALS

- .1 Any place in the Drawings or Specifications where "or equal" is specified, the "or equal" shall be submitted to, and be approved by the Engineer in writing. Detailed plans and specifications of the alternate materials shall be submitted to the office of the Engineer, and unless written permission is given for their use, they will not be considered for this Contract.
- .2 In the submission of alternatives or equals to items of material mentioned in the Specifications, the Contractor shall in his Tender make consideration for any changes required in the works to accommodate such alternatives or equals. A claim by the Contractor for an addition to the contract sum because of changes in work necessitated by the use of alternatives or equals will not be considered.

1.22 ALTERNATIVE MATERIALS

- .1 The contract price shall be based on the materials specified within the contract documents.

- .2 Approval of alternate materials submitted by the Contractor or his Subcontractor as equal to that specified does not relieve the Contractor of any responsibility.
- .3 Revisions required to allow the use of accepted alternates shall be at the Contractor's expense. No increase in the contract price will be considered to accommodate the use of materials or products other than those specified.

1.23 RECORD DRAWINGS

- .1 A set of drawings and specifications recording the changes and deviations are to be maintained on site and updated daily.
- .2 A set of final record drawings is to be submitted to the Engineer within two (2) weeks of completion and acceptance of the work. Failure to maintain and submit the record drawing, requiring the work to be carried out by other will be at the contractor's expense.
- .3 A copy of the drawings and specifications for the purpose of maintain the record drawings, will be provided by the Engineer.

1.24 SUBSTANTIAL COMPLETION INSPECTION

- .1 The Engineer is to be advised a minimum of five (5) day in advance of the desired date for the Substantial Completion Inspection.
- .2 It is the Contractor's responsibility to ensure all systems are operational prior to the inspection, and that the work is substantially complete. The Contractor shall be responsible for any expenses resulting for the work not being functional or substantially complete resulting in the requirement for a subsequent Substantial Completion Inspection, including the Engineer's and Owner's time and expenses.
- .3 All deficiencies noted in the Substantial Completion Inspection shall be addressed in a timely manner, normally within two (2) weeks unless otherwise specified within the Certificate of Substantial Completion.

1.25 SANITARY REGULATIONS

- .1 The Contractor shall prohibit and prevent the committing of nuisance on the site of the work or on adjoining property and shall discharge any employee who commits a nuisance.
- .2 The Contractor is to provide a toilet on site.

1.26 WORK RESTRICTIONS

- .1 Refer to Section 01 14 00 – Work Restrictions

1.27 ABBREVIATION REFERENCES

- .1 Reference to technical society, organization or body is made in the Specifications in accordance with the following abbreviations:

ACI American Concrete Institute

AISC	American Institute of Steel Construction
ARCA	Alberta Roofing Contractors Association
ASA	American Standards Association
ASTM	American Society for Testing Materials
AWI	Architectural Woodwork Institute
AWSC	American Welding Society Code
BCLMA	British Columbia Lumber Manufacturer's Association
CBURA	Calgary Built-Up Roofers Association
CCA	Canadian Construction Association
CISC	Canadian Institute of Steel Construction
CITC	Canadian Institute of Timber Construction
CGSB	Canadian Government Specifications Bureau
CLA	Canadian Lumberman's Association
CRCA	Canadian Roofing Contractor's Association
CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Association
CWB	Canadian Welding Bureau
CUA	Canadian Underwriters Association
API	American Petroleum Association
AWWA	American Water Works Association
ASME	American Society of Mechanical Engineers
MTTAC	Marble, Tile and Terrazzo Association
NBC	National Building Code (Canada) 1980
NRC	National Research Council (Canadian)
RAIC	Royal Architectural Institute of Canada
UL	Underwriter's Laboratories, Inc. (Canada)
CEC	Canadian Electrical Code

END OF SECTION

Part 1 General

1.1 SCHEDULE OF WORK

- .1 The Contractor within five (5) business days of the notice of award of this contract shall submit to the Engineer a proposed final schedule in the form of a bar chart for his approval as detailed in Section 01 32 16 – Construction Progress Schedule. The schedule shall include proposed dates for commencement and completion of each of the tasks required under this contract. The tasks will include, but will not be limited to, all manufacturing, submission of shop drawings, preparation, shipping, and the installation of the items in this contract. The schedule will also include the anticipated dates for all testing, commissioning, and inspections as required elsewhere in this contract. The Contractor will also provide all necessary and appropriate information and any other information deemed pertinent by the Engineer regarding sequence and co-ordination which will be required to ensure successful completion of the project including but not limited to:
 - .1 Contractor Site-Specific Health and Safety Plan.
 - .2 Contractor trade certificates and training records.
 - .3 Construction schedule.
 - .4 Traffic Control Plan
 - .5 Erosion and Sediment Control Plan
 - .6 Spill Contingency Plan
 - .7 Quality Assurance and Quality Control Plan.
- .2 If the contractor fails to adhere to the approved progress schedule, he must promptly adopt such other or additional means and methods of construction that will make up for the time lost and will assure completion in accordance with such schedule.
- .3 If at any time the Engineer determines the work, tools, plant or equipment to be insufficient, inefficient or inappropriate, the contractor shall take whatever action required to right the situation. The failure of the Engineer to instruct the contractor to make such changes does not relieve the contractor of his obligation to ensure the quality of work and rate of progress to complete the work as required.

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM D698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft;) (600kN-m/m;).

1.3 MATERIALS LIST

- .1 Within three (3) days of the notice of award of this contract, the contractor shall provide a complete list of suppliers for the materials required for this contract. The list will include the supplier's name, a contact person, phone number, and address where applicable.
- .2 The contractor will provide verification for the Engineer that all equipment specified by make and model number has been supplied as specified. No equipment shall be installed

prior to written approval given by the Engineer. No material will be paid for without having received the Engineer's approval.

1.4 ORAL ARRANGEMENTS

- .1 In all cases of misunderstandings or disputes, oral arrangements will not be considered. The contractor must produce written authority in support of their contentions and shall not advance any claim against the City of Iqaluit or its representatives in the absence of such written authority.

1.5 PAYMENT

- .1 General:
 - .1 The whole of the work shall be on a "Unit Price Basis" as defined in the Tender Form.
 - .2 Payment shall not be made for work requiring an inspection certificate until the certificate has been issued by the Engineer.
 - .3 All costs necessary to complete work as specified and shown on the drawings shall be allowed for in the unit prices tendered. **Where an item of work is not shown in the Schedule of Prices, the cost of the item of work shall be included with the most appropriate item of work listed in the Tender Form.**
 - .4 The work descriptions given in the following clauses do not necessarily describe the work in complete detail. Work not specifically included shall be allowed for as required above.
 - .5 For the purposes of this contract supply and delivery will be paid once materials have been delivered to the contractor's storage area in Iqaluit outside of the shipping compound. In addition, an itemized list will be presented to the Engineer and the materials inspected prior to any payment being made in the form of a manifest.
- .2 Supply and Delivery:
 - .1 The unit price tendered shall include all labour, equipment and materials for the fabrication and/or procurement of the materials specified, and the delivery of the materials to Iqaluit including appropriate storage as required.
 - .2 Payment will be based on the units and estimated quantities as listed in the Form of Tender
- .3 Mobilization and Demobilization
 - .1 50% of the unit price tendered will be paid for mobilization upon confirmation by the Engineer that the contractor has delivered the necessary plant, equipment, labour, material, and permits to complete the work as outlined in the contract documents.
 - .2 30% of the unit price tendered will be retained for demobilization, which will be paid upon successful commissioning of the new installation and cleanup of the site.
 - .3 10% of the unit price tendered for this item will be paid upon completion of the erection of the project sign as described in these documents.

- .4 10% of the unit price for this item will be paid once site cleanup and restoration has been accepted.
 - .5 Stakeholder engagement is included in the unit price tendered. The Contractor shall engage and notify adjacent and affected property owners ahead of the works, including letter drop boxes.
- .4 Traffic Control and Traffic Control Plan
- .1 The unit price tendered shall include all labour, equipment and materials necessary to implement the traffic control requirements as specified in Section 01 14 00 – Work Restrictions and 01 35 00 – Special Project Procedures. The lump sum price shall be inclusive of plan/drawing preparation and approvals, permitting requirements, installing traffic controls and signage, providing flag personnel, installing temporary protections, maintenance, implementing approved road closures, submission and approvals of a detailed work and traffic control plan.
- .5 Existing Utility Support
- .1 The unit price tendered shall include all labour, equipment, materials and coordination activities to provide protection and support to existing utility poles, Utilidor piping, Utilidor lateral Services, Petroleum Pipelines, Communication infrastructure such as Ground level Boxes/Pedestals for the entirety of the excavation and construction activities. The lump sum price shall be inclusive of all services necessary as per the agency requirements, or by any other company or department for the location of the utility. The Contractor shall be responsible for all additional costs associated with labour, equipment and/or materials provided by the City or other departments. The Contractor shall be responsible for notifying and coordinating with the appropriate agencies as per Section 01 11 00 – Summary of Work, 01 14 00 – Work Restrictions and 01 35 00 – Special Project Procedures.
- .6 Survey of Existing Asphalt Roadway
- .1 The unit price tendered shall include all labour, equipment and materials to survey and confirm locations and elevations on both sides of the existing asphalt roadway along Queen Elizabeth Way and Umiaq Crescent adjacent to the site. Edge of Asphalt shots shall be no greater than 5m apart. The survey shall be completed and submitted to the Engineer four (4) weeks prior to the start of the construction works.
 - .2 Payment shall be by lump sum basis for the complete survey of the existing road for the project area.
- .7 Project Removals/Decommissioning including Existing ATCO Loop Utilidor
- .1 The unit price tendered shall include all labour, equipment and materials to properly decommission or remove, transport and dispose of existing items offsite as identified in the contract documents. This includes all identified existing utilidor, water and sewer, service laterals, water bleeds and associated equipment as detailed in Section 02 21 19 – Selective Demolition.
 - .2 Payment shall be by lump sum basis for the complete removals of all items identified in the contract documents

- .8 Reinstall Existing Landscaping Features
 - .1 The unit price tendered shall include all labour, equipment and materials to temporarily relocate, store and reinstall existing landscaping features on site and identified in the contract documents including boulders, signage, roadside bollards and road signs as required. Contractor to ensure that items are safely stored for the duration of the construction works.
 - .2 Payment shall be by lump sum basis for the complete reinstatement of all identified landscaping features in the contract documents
- .9 Service Connections for Future Connections Lot 180&182, Lot 186&188 and Lot 245 (Water Carrier Pipe and Sanitary Sewer Lateral)
 - .1 The unit price tendered shall include all equipment, labour and materials required for the supply, delivery and installation of pre-insulated HDPE carrier pipe (water) and pre-insulated HDPE pipe sanitary service lateral as specified within the item description of the Form of Tender and identified on the contract drawings. This is inclusive of all works required for completing the fusion joints, connections at the mains, supply, delivery and installation of insulation kits for fused connections and joints, bedding, backfill, styrofoam board trench insulation, warning tapes, testing and the offsite disposal of excess soil generated by pipe and bedding displacement specified in Section 33 36 50 – Service Connections.
 - .2 Contractor is responsible for completing the sewer connection at the main. Pipe shall be terminated and capped at the property line.
 - .3 Measurement for payment shall be based on each service connection to the new sewer main.
- .10 Service Connections for Existing Buildings Lot 184, Lot 223 and Lot 247 (Water Carrier Pipe including supply and return lines and Sanitary Sewer Lateral)
 - .1 The unit price tendered shall include all equipment, labour and materials required for the supply, delivery and installation of pre-insulated HDPE pipe, including water service lateral (supply and return) and pre-insulated HDPE pipe sanitary service lateral as specified on the contract drawings and within the item description of the Form of Tender and identified on the contract drawings. This is inclusive of all works required for completing the fusion joints, connections at the mains, supply, delivery and installation of insulation kits for fused connections and joints, bedding, backfill, compaction, compaction testing, styrofoam board trench insulation, warning tapes, testing and the offsite disposal of excess soil generated by pipe and bedding displacement specified in Section 33 36 50 – Service Connections.
 - .2 Contractor is responsible for providing a licensed plumber to complete tie-ins to existing buildings including all required sign-offs/approvals and coordinating all required permissions to access and work within private premises to complete the work.
 - .3 Measurement for payment shall be based on each reconnected service connection.
- .11 Service Connections for Lot 243 Buildings (Sanitary Sewer Lateral)

- .1 The unit price tendered shall include all equipment, labour and materials required for the supply, delivery and installation of pre-insulated HDPE pipe sanitary service lateral as specified on the contract drawings and within the item description of the Form of Tender and identified on the contact drawings. This is inclusive of all works required for completing the fusion joints, connections at the mains, supply, delivery and installation of insulation kits for fused connections and joints, bedding, backfill, compaction, compaction testing, styrofoam board trench insulation, warning tapes, testing and the offsite disposal of excess soil generated by pipe and bedding displacement specified in Section 33 36 50 – Service Connections.
- .12 Road/Driveway Reinstatement
 - .1 The unit price tendered shall include all equipment, labour and materials required to complete the re-instatement of all surfaces including pathways, roadways (impacted by excavation activities) and/or driveway surfaces to their original condition. The unit price tendered is inclusive of all saw cutting, supply, excavation, offsite disposal, supply of granular, placement, compaction (and testing), shaping and finishing activities to complete this work. The contractor shall assume a road reinstatement structure of Granular A 200mm base and Granular B 400mm sub base compacted to 98% SPMDD.
 - .2 Payment shall be by lump sum basis for the complete road and driveway/entrance reinstatement of the areas identified in the Contract Drawings.
- .13 Sub excavation of Unsuitable Material
 - .1 The unit price tendered shall include all labour, equipment and materials required to excavate and dispose the material offsite including backfilling with Granular “B” as requested by the Engineer. The measurement of payment shall be by the cubic metre of excavation as determined by the Engineer through sections taken in the field.
 - .2 Payment should be made only for the quantities ordered by the Engineer and not include quantities necessary due to the Contractor’s failure to keep the trench free of water, melting snow, ice and/or ice rich soil.
- .14 Granular “A” Material for Backfill
 - .1 The unit price tendered shall include all equipment, labour and material necessary for the supply, delivery, placement and compaction (and testing) of Granular “A” material as per Section 32 11 10 – Aggregates: General for use as general backfill material for trenches, or road embankment as directed by the Engineer.
 - .2 The measurement of payment shall be by the cubic metre of material placed as determined by the Engineer through sections taken in the field.
- .15 Granular “B” Material for Backfill
 - .1 The unit price tendered shall include all equipment, labour and material necessary for the supply, delivery, placement and compaction (and testing) of Granular “B” material as per Section 32 11 10 – Aggregates: General for use as general backfill material for trenches, or road embankment as directed by the Engineer.

- .2 The measurement of payment shall be by the cubic metre of material placed as determined by the Engineer through sections taken in the field.
- .16 Rock Excavation and Disposal Off-Site
 - .1 The unit price tendered shall include all equipment, labour, and materials necessary for the excavation, transportation, and disposal off-site of the excavated rock material. This is inclusive of all requirements for breaking, loading, hauling and disposal offsite.
 - .2 Payment shall be based on the measured cubic metre of rock material excavated. Where there is a conflict between the minimum width of trench in rock and the minimum width of insulation for trenching, the width of trench insulation shall be cut to match the minimum trench width in rock. For rock removed within a utility trench, the volume measured shall be based on the minimum trench width.
- .17 Removal and Disposal of Contaminated Soils
 - .1 The unit price tendered shall include all additional costs required to test, load and dispose of contaminated soils to an offsite facility certified to handle contaminated soils as requested by the Engineer and as detailed in Section 01 35 00 – Special Project Procedures.
 - .2 Payment shall be made only for the quantities ordered by the Engineer
- .18 Asphalt Road Reinstatement Installation of 74mm Hot-Mix Asphalt Layer (37mm Base course and 37mm Surface Courses)
 - .1 The unit price tendered shall include all equipment, labour and materials required for the installation of PGAC 52-40 Hot Mix Asphalt layers as directed by the Engineer as per the manufacturer's recommendations and as per Contract documents.
 - .2 Measurement for payment shall be based on m² installed measured in the field with the Engineer.
- .19 Cash Allowance – Asphalt Road Reinstatement Installation Rigid Concrete Pavement
 - .1 Rigid concrete pavement will be considered an acceptable material for road reinstatement in the event that the contractor is unable to source hot mix asphalt during construction. Further details will be provided if this method is required.
 - .2 The road reinstatement plan is to be coordinated with City of Iqaluit officials once the contract is awarded and prior to the start of construction.
 - .3 Cash allowance shall be for material supply and installation, based upon approved hourly rates and material cost.

1.6 Products

1.7 NOT USED

- .1 Not Used

Part 2 Execution

2.1 NOT USED

.1 Not Used

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 11 00 – Summary of Work
- .2 Section 01 12 50 – Special Provisions
- .3 Section 01 35 00 – Special Project Procedures
- .4 Section 01 35 20 – Health and Safety Requirements
- .5 Section 01 41 00 – Regulatory Requirements
- .6 Section 01 51 00 – Temporary Utilities

1.2 CONTRACTORS USE OF PREMISES

- .1 Normal working hours shall be Monday to Sunday, 7:00am to 7:00pm. No work shall be permitted outside of these hours within the Contractor first obtaining written approval from the City Representative and Owner, five (5) working days in advance of the planned work.
- .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.
- .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.
- .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.
- .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.
- .6 Do not impede normal operation of existing facilities and structures.
- .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.

1.3 ENTRY OF OWNER'S STAFF INTO CONTRACTOR'S WORKING LIMITS

- .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.

- .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.
- .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.
- .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.

1.4 CONSTRUCTION COORDINATION WITH CITY OPERATIONS STAFF

- .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.
- .2 Coordinate activities on the site and in the existing buildings/ facilities/ structures with the City Representative.
- .3 Perform work continuously during critical shutdowns, connections and changeover, and as required to prevent interruption of City operations.
- .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.
- .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.
- .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.
- .7 Coordinate activities on the site and in the existing buildings/ facilities with the City Representative.
- .8 Perform work continuously during critical shutdown, connection and changeover, and as required to prevent interruption of the facility operation or City services.
- .1 All temporary equipment, tools, materials, labour, 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.
- .2 The City reserves the right to cancel any scheduled shutdown if system or weather conditions dictate, at no additional cost to the City.
 - .3 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.
- .9 Operations provided by City staff:
- .1 Access to City facilities and structures.
 - .2 Opening and closing of existing valves and gates in existing buildings, structures, or systems.
 - .3 Isolation of existing process piping.
- .10 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.
- .11 Contractor shall supply and maintain all appropriate and necessary equipment for confined space entry operations in accordance with applicable regulations.
- .12 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.

1.5 COORDINATION OF TRADES AND SUBCONTRACTORS

- .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 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.
- .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.

1.6 COOPERATION WITH OTHER CONTRACTORS

- .1 Other contracts may be awarded to construct adjacent work to which this contract work connects.

- .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 Where any equipment is supplied by the Owner, coordinate unloading, transfer, installation, testing and placing into operation.
- .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.
- .5 Cooperate and make suitable working arrangements with other Contractor(s).
- .6 Notify the City Representative in advance and obtain approval in writing from the City Representative for all arrangements made with other Contractor(s).

1.7 UTILITY NOTIFICATION AND COORDINATION

- .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.
- .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.

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

- .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.
- .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.
- .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.

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

1.9 PARTIAL OR FULL CLOSURE OF A MUNICIPAL ROADWAY

- .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.
- .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 including drawing. Refer to Section 01 35 00 – Special Project Procedures regarding traffic control plan requirements.
- .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.
- .4 No work can proceed until approval has been provided in writing by the City Representative.
- .5 The Contractor must account for the time to review and approve permit applications within their construction schedule.
- .6 Pay relevant permit fees and charges.

1.10 TRAFFIC – OPERATIONAL REQUIREMENTS

- .1 Work that requires full-road closures to be staged.
- .2 Work at that requires full-road closures will only be allowed over the weekend and must be clearly scheduled in the detailed work plan.
- .3 No road closures will be allowed during periods of all sea-lift arrivals and unloading activities. Contractor to ensure full-lane traffic operations for the entire construction area during these periods.
- .4 Contractor to submit a detailed work plan including traffic control plan and required permits to the City and Engineer as detailed in Section 01 35 00 – Special Project Procedures and obtain approval prior to starting the work.

1.11 WATER AND SEWER CONNECTIONS/ DISCONNECTIONS

- .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.
 - .1 Notify Fire Department of any planned or accidental interruptions of the water supply to fire hydrants.
 - .2 Limit any water service interruptions to a maximum of four (4) hours.
 - .1 Should interruptions be anticipated for greater than 4 hours and less than 24hrs, the contractor shall obtain written approval from the City and Engineer.
 - .3 Determine timing of any interruptions of service with Engineer.
- .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. Refer to Section 01 35 00 - Special Project Procedures regarding traffic control plan requirements.
 - .4 By-pass plan. Refer to Section 01 51 00 – Temporary Utilities regarding by-pass plan requirements.
- .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.
- .4 No work can proceed until approval has been provided in writing by the City Representative.
- .5 The Contractor must account for the time to review and approve permit applications within their construction schedule.
- .6 Pay relevant permit fees and charges.

1.12 EXISTING SEWER AND WATER SYSTEM - INTERRUPTIONS

- .1 Contractor to notify the Fire Department, and the City's Department of Public Works of any planned or accidental interruptions of the sewer or water supply
- .2 For extended interruptions to the water supply (i.e. greater than 24 hrs), additional temporary service arrangements are required to be provided by the Contractor as described in Section 01 51 00 – Temporary Utilities. Temporary water & sewer service arrangements will need to be provided to each affected user.

1.13 WORKING IN EXISTING BUILDINGS

- .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.
- .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.
- .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.

1.14 NIGHT WORK

- .1 Night work will only be allowed if written permission is given beforehand by the Engineer. When any work is carried out at night, the Contractor shall supply at their own cost a sufficient number of electric or other approved lights to enable the work to be done in an efficient and satisfactory manner. Permission of the Engineer does not relieve the Contractor of the responsibility for obtaining necessary permission from local governing agencies.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 11 00 – Summary of Work
- .2 Section 01 12 50 – Special Provisions

1.2 TERMS OF PAYMENT

- .1 Make applications for payment on account as provided in Agreement as Work progresses.
- .2 Applications for payment will be made monthly.
- .3 The date for Contractors submission of monthly application for payment shall be on the last business day of the month.
- .4 The Contractor shall be reimbursed on a monthly basis in accordance with the instructions provided in the Bid Form.
- .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.
- .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 labour 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.
- .7 The City shall reimburse Contractors for mark-ups from sub-contractors and/ or suppliers for parts, materials, and labour 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.
- .8 No payment will be made for the cost of work incurred to remedy errors or omissions for which the Contractor is responsible.
- .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.

- .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.
- .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.

1.3 SCHEDULE OF VALUES

- .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 Include statement based on schedule of values with each application for payment. Schedule of values to follow Terms of Reference sections outline.
- .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.

1.4 APPLICATION FOR PAYMENT

- .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.
- .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 .1, .2, .3, and .4
- .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.
- .4 Include an updated cash flow expenditure forecast with the application for payment.
- .5 Submit application for payment to the City Representative on the last business day of each month.

- .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.
- .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.
- .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.
- .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.
- .10 The City shall not release monies for Payment Certificates until the Contractor has provided all of the supporting documentation, as specified herein.
- .11 Deviations from the above specified requirements or incomplete submissions shall require resubmission of the application for payment.

1.5 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

- .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

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 11 00 – Summary of Work

1.2 GENERAL

- .1 The City Representative will schedule the project meetings throughout progress of the Work.
- .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.
- .3 Representatives of Contractor, Subcontractor and suppliers attending meetings shall be qualified and authorized to act on behalf of the party each represents.

1.3 PRECONSTRUCTION MEETING

- .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. Within fifteen (15) days of notification of award of the contract, the engineer shall request a pre-construction meeting. Upon setting a time and location for the pre-construction meeting the Engineer shall provide all parties seven (7) days notice and shall be responsible for preparing and distributing a pre-construction meeting agenda.
- .2 Preconstruction meeting will be held via teleconference. Teleconference instructions will be provided by the City Representative.
- .3 Preconstruction meeting agenda may include the following, as a minimum:
 - .1 Introductions.
 - .2 Project Initiation.
 - .1 Service Contract Review.
 - .2 Securities/ Bonds.
 - .3 Insurance.
 - .4 WSCC Certificate of Clearance.
 - .3 Safety.
 - .1 Site Safety Requirements.
 - .2 WSCC “New Operations & High Hazard Work” Notice.
 - .3 Joint Health and Safety Committee or Occupational Health and Safety Representative.
 - .4 Site Audits, Inspections and Incident Reporting.
 - .5 Training, Qualifications and Trade Certificates.

- .4 Project Execution Requirements
 - .1 Summary of Work.
 - .2 Working Hours, Working Days
 - .3 Construction Sequencing/ Coordination.
 - .4 Contractor's Use of Premises.
 - .5 Authorities Having Jurisdiction (GN/ Federal permits and inspections).
 - .6 Special Project Procedures (Work Permits, Traffic Control, etc.).
 - .1 Benchmarks.
 - .2 Layout (horizontal and vertical control).
 - .3 Temporary storage restoration.
 - .4 Water supply.
 - .5 Backfill if material needed.
 - .6 Service locations and record sheets.
 - .7 Dewatering.
 - .8 Disposal of surplus excavated material.
 - .7 Materials suppliers.
 - .8 A list of subcontractors.
 - .9 Material testing requirements, including identification of any laboratory agencies.
 - .10 Work site diary.
 - .11 Project Meetings.
 - .12 Submittals and Shop Drawings.
 - .13 Payment Procedures.
 - .14 Change Orders.
 - .15 Quality Control.
 - .16 Closeout Requirements.
- .5 Project Schedule.
 - .1 Schedule Submission.
 - .2 Key Milestone Dates.
 - .3 Substantial Completion Submission Requirements.
 - .4 Warranty (if applicable).
- .6 Communication Structure
 - .1 Stakeholder Representation.
 - .2 Communication Flow.
 - .3 Communication of Changes in Scope, Schedule or Cost.
 - .4 Site Communication Memos – RFI's, SI's, CCN's.
- .7 Document Control
- .8 Other Business and Questions.
- .4 Attendees will include:
 - .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.

1.4 PROGRESS MEETINGS

- .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.
- .2 Progress meetings will be held via teleconference. Teleconference instructions will be provided by the City Representative.
- .3 Project progress review meeting agenda may include the following, as a minimum:
 - .1 Introductions.
 - .1 Confirm Acceptance of Previous Meeting Minutes.
 - .2 Safety.
 - .1 Safety Share.
 - .2 Site Safety Audits, Inspections and Incident Reporting.
 - .3 Submittals and Shop Drawings.
 - .1 Status of Technical Submittal Submissions/ Reviews.
 - .2 Status of Shop Drawing Submissions/ Reviews.
 - .4 Site Communications.
 - .1 Request for Information (RFI) – Status Update/ Outstanding Items.
 - .2 Site Instructions (SI) – Status Update/ Outstanding Items.
 - .3 Contemplated Change Notices (CCN) – Status Update/ Outstanding Items.
 - .5 Financial.
 - .1 Progress Claims – Status Update/ Outstanding Items.
 - .2 Change Orders – Status Update/ Outstanding Items.
 - .3 Service Contract Financial Review.
 - .6 Work Progress.
 - .1 Work Completed (Since Last Meeting).
 - .2 Work Planned (Three-Week Look-ahead/ Schedule) Review.
 - .3 Issues/ Concerns/ Risks and Mitigation Measures.
 - .4 City/ Engineer Coordination Requirements.
 - .7 Quality Control.
 - .1 Contractor Activities.
 - .2 Status of Permitting and Inspections.
 - .8 Other Business and Questions.
- .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.

1.5 OTHER MEETINGS

- .1 In accordance with Contract Documents and as may be required by the Owner and/or City Representative.
- .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.
- .3 Meetings will be held via teleconference. Teleconference instructions will be provided by the City Representative.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 11 00 – Summary of Work
- .2 Section 01 12 50 – Special Provisions

1.2 CONTRACTOR'S RESPONSIBILITIES

- .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
- .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.
- .3 Use extra forces and equipment, or revise method of operation when progress of work is not sufficient to meet Project Schedule.
- .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 Construction schedule shall be updated monthly with the payment schedule for the duration of the Contract.
- .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.
- .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.
- .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.
- .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
 - .1 Each activity shall be identified with codes including as a minimum:
 - .1 The party responsible for performing the work.
 - .2 Where work is to be subcontracted, the subcontractor to be responsible for performing the work.

1.3 CONSTRUCTION SEQUENCING

- .1 Contractor is instructed to perform this work without disrupting current operating facilities, structures, and/or City services when applicable.
- .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 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.

- .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 shutdown is at the Contractor's costs.

1.4 MONTHLY CONSTRUCTION SCHEDULE UPDATE

- .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.
- .2 Include with the update an electronic back-up of the native schedule file.
- .3 Payment will not be made without an approved construction progress schedule, and monthly construction progress schedule update.
- .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).
- .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.
- .6 Change Orders will be addressed in accordance with the General Conditions and incorporated into the Contract construction progress schedule as individual schedule activities.
- .7 Payment will not be made without current approved monthly construction progress schedule update.
- .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.
- .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.

1.5 THREE-WEEK LOOK -AHEAD

- .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.
- .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.
- .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.
- .4 Portray all activities clearly and legibly on the schedule and include logical activity numbers.
- .5 Submit the schedule at the bi-weekly construction progress meeting.

1.6 MONTHLY EXPENDITURE / CASH FLOW FORECAST

- .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.
- .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.

1.7 REVIEW, UPDATE AND REVISIONS

- .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
- .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.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 This section defines the submittals to the Owner, or their designate, necessary before, during and after construction, which include as a minimum:
 - .1 Certificates and transcripts.
 - .2 Site-Specific Health and Safety Plan.
 - .3 Construction Progress Schedule.
 - .4 Shop Drawings for permanent and temporary works.
 - .5 Product data and samples.
 - .6 QA/QC tests and reports.
 - .7 Asphalt and Concrete mix design.
 - .8 Erosion and Sediment Control Plan.
 - .9 Selective Demolition Plan and Schedule.
 - .10 Guaranties and Warranties.
 - .11 Traffic Control Plan.
 - .12 Temporary works plans as applicable (i.e. By-Pass Plan, Servicing Plan, Water Management Plan, Shoring/ Bracing Plan, Critical Lift Plan, etc.).

1.2 ADMINISTRATIVE

- .1 Submit to the Engineer submittals listed for review. Submit with reasonable promptness and in an orderly sequence so as to not 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 Work affected by submittal shall not proceed until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to the Engineer. 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.
- .6 Notify the Engineer, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are coordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Engineer's review of submittals.

- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Engineer review.
- .10 Keep one reviewed copy of each submission on site.

1.3 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .3 Allow 10 days for the Engineer's review of each submission.
- .4 Adjustments made on shop drawings by Engineer are not intended to change the Contract Price. If adjustments affect value of Work, state such in writing to the Engineer prior to proceeding with Work.
- .5 Make changes in shop drawings as the Engineer may require, consistent with the Contract Documents. When resubmitting, notify the Engineer in writing of any revisions other than those requested.
- .6 Accompany submissions with transmittal letter, in duplicate, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .7 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by the Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with the Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.

- .3 Setting or erection details.
- .4 Capacities.
- .5 Performance characteristics.
- .6 Standards.
- .7 Operating weight.
- .8 Relationship to adjacent work.
- .8 After the Engineer's review, distribute copies.
 - .1 Shop drawing review will be classified as:
 - .1 Reviewed and Accepted
 - .2 Reviewed as Modified (by the Engineer)
 - .3 Revise and Resubmit
- .9 Submit seven prints of shop drawings for each requirement requested in the specification Sections and as consultant may reasonably request.
- .10 Submit seven hard copies of product data sheets or brochures for requirements requested in the specification Sections and as requested by the Engineer where shop drawings will not be prepared due to standardized manufacture of product.
- .11 Delete information not applicable to the project.
- .12 Supplement standard information to provide details applicable to the project.
- .13 If upon review by Engineer, no errors or omissions are discovered or if only minor corrections are made, copies will be returned, and fabrication and installation of Work may proceed. If shop drawings are rejected, a noted copy will be returned and resubmission of the corrected shop drawings, through the same procedure indicated above, must be performed before fabrication, and then installation of Work may proceed.
 - .1 No adjustment of Contract Times or Price will be allowed due to delays in progress of Work caused by rejection and subsequent resubmittals.
 - .2 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.
- .14 The review of shop drawings by the Engineer is for the sole purpose of ascertaining conformance with the general concept. This review shall not mean that the Engineer approves detail design inherent in shop drawings, the responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings, or of responsibility for meeting all requirements of construction and Contract Documents. Without restricting generality of foregoing, the Contractor is responsible for dimensions, to be confirmed and correlated at job site, for information that pertains solely to fabrication processes, or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

1.4 SAMPLES

- .1 The Contractor shall furnish for the Engineer's approval all samples required by the contract or as requested by the Engineer. The work shall be in accordance with the approved samples. Store materials in accordance with manufacturer's recommendations.
- .2 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .3 Deliver samples prepaid to Engineer's business address.
- .4 Notify the Engineer in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .5 Where colour, pattern or texture is criterion, submit full range of samples.
- .6 Adjustments made on samples by the Engineer are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to the Engineer prior to proceeding with Work.
- .7 Make changes in samples which the Engineer may require, consistent with the Contract Documents.
- .8 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.5 PROGRESS PHOTOGRAPHS

- .1 Submit progress photographs.

1.6 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of the Contract, submit Workers' Compensation Board status.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 11 00 – Summary of Work
- .2 Section 01 14 00 – Work Restrictions
- .3 Section 01 12 50 – Special Provisions
- .4 Section 01 35 00 – Special Project Procedures
- .5 Section 01 35 20 – Health and Safety Requirements
- .6 Section 01 41 00 – Regulatory Requirements

1.2 UTILITIES

- .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.

1.3 LIMITS OF CONSTRUCTION

- .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 The Contractor shall coordinate the use of premises for staging, construction, storage and access area under the direction of the City Representative.

1.4 WORK PERMITS

- .1 When working in existing City facilities, buildings, and structures, the Contractor is to abide by the Owner's Location Work Permit as per Section 01 41 00 – Regulatory Requirements. 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.
- .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.

1.5 TEMPORARY SERVICING AND BYPASS PLAN (WATER AND SEWER)

- .1 The Contractor shall develop a separate Temporary Servicing and Utility Bypass Plan for both water and sanitary flows to demonstrate how the Contractor plans to efficiently and safely divert flows while construction is being completed as detailed in Section 01 51 00 – Temporary Utilities.

1.6 TRAFFIC CONTROL PLAN

- .1 The Contractor shall develop a site-specific Traffic Control Plan (TCP) including a drawing 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.
- .1 Note that partial or full-road closures will require a completed City of Iqaluit Road Closure Permit Application as detailed in Section 01 14 00 – Work Restrictions and 01 41 00 – Regulatory Requirements

1.7 TRAFFIC CONTROL PROCEDURES

- .1 Contractor shall follow all standards traffic control procedures in accordance with the requirements of the Safety Act and Occupational Health and Safety Regulations.
- .2 Comply with requirements relevant City of Iqaluit By-Laws with respect to road obstructions and occupancy.
- .3 When working on travelled ways:
 - .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 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.
- .5 Keep travelled ways graded, free of pot-holes and of sufficient width for required number of lanes of traffic.
- .6 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.
- .7 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.
- .8 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.

- .9 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.
- .10 Supply and erect signs, delineators, barricades (concrete jersey barriers) and miscellaneous warning devices as required by the City of Iqaluit.
- .11 Place signs and other devices in locations approved by City Representative.
- .12 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.
- .13 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.
- .14 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 workers 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.
- .15 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.
- .16 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.
- .17 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.

1.8 WORK IN HAZARDOUS AREAS

- .1 The contractor's attention is drawn to the proximity of the existing Gas Station to the work site. It is anticipated that the presence of contaminants will be encountered whilst excavating in the vicinity of AV 208.
- .2 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.
- .3 Smoking is not permitted in the hazardous areas and other areas designated by the City. The Contractor shall post "No Smoking" signs as required.
- .4 Use non-sparking tools in areas where an explosive atmosphere may exist.
- .5 Perform work in hazardous locations in accordance with the requirements of the Safety Act and Occupational Health and Safety Regulations.
- .6 It is the Contractor's responsibility (as Prime Contractor) to establish the classification of the work areas for the purpose of this contract.
- .7 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.
- .8 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.
- .9 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.

- .10 Logbook:
 - .1 Maintain a logbook with:
 - .1 Date.
 - .2 Name of meter operator.
 - .3 Explosive gas and oxygen deficiency readings every ½ hour.
 - .2 Construction activity type:
 - .1 Location of construction activity.
 - .2 Submit logbook to the City Representative when construction is complete.
- .11 Firefighting Equipment:
 - .1 Provide and maintain suitable firefighting equipment when working in the designated hazardous locations. Train personnel in the use of firefighting equipment.

1.9 WORK IN CONFINED SPACES

- .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
- .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.
- .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.
- .4 The Contractor shall maintain all appropriate documentation required under the Regulation and provide daily copies to the City Representative.
- .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 and breathing apparatus/respiratory protection.

- .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.

1.10 STORAGE AND PROTECTION OF MATERIALS AND EQUIPMENT

- .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.
- .2 Maintain equipment in good condition, as per manufacturer's instructions.
- .3 Provide manufacturer's written instructions for the storing of equipment during the construction period, well in advance of equipment delivery.
- .4 Store specialty items to ensure protection from damage to materials or finish.
- .5 Store materials subject to water absorption off the ground. Protect materials from other damage due to environmental conditions using waterproof covers.
- .6 As work proceeds and upon completion, promptly clean up and remove from site surplus materials resulting from foregoing work.

1.11 DISPOSAL OF MATERIAL OFF-SITE

- .1 Material designated to be removed from the site must be promptly removed.
- .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.
- .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 have been detailed in Section 01 12 50 – Special Provisions.
- .4 Removal all waste material appropriate for 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.

1.12 SPILL CONTINGENCY PLAN

- .1 Contractor to develop, submit and execute the Spill Contingency Plan. The Spill Contingency Plan shall be submitted to the Engineer for approval prior to starting the construction works. The Plan shall address spill contingency planning requirements for all relevant aspects of the construction works, activities, and undertakings as per the Water License Agreement. The Plan shall identify procedures to follow in the event of a spill or the release of any hazardous material, mitigation measures to reduce the possibility of

spills of contaminants, identification of emergency contact lists and monitoring and reporting procedures.

1.13 ENVIRONMENTAL CONSIDERATIONS DURING CONSTRUCTION

- .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.
- .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.
- .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.
- .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.
- .5 Drainage
 - .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
 - .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
 - .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.
- .6 Work Adjacent to Waterways
 - .1 Do not operate construction equipment in waterways.
 - .2 Do not use waterway beds for borrow material.
 - .3 Do not dump excavated fill, waste material or debris in waterways.
 - .4 Design and construct temporary crossing to minimize erosion to waterways.

- .5 Do not use waterway beds for borrow material or for storage or other construction material
- .6 Waterways to be kept free of excavated fill, waste material and debris.
- .7 Design and construct temporary crossings to minimize erosion to waterways

1.14 PROTECTION OF EXISTING STRUCTURES AND PROPERTY

- .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.

1.15 EROSION AND SEDIMENT CONTROL

- .1 Prepare and implement a separate detailed erosion and sediment control plan for the duration of the work.
 - .1 Contractor to provide and submit the Erosion and Sediment Control Plan (ESC) to the Engineer for approval prior to starting the construction works. The ESC shall identify the type and location of erosion and sediment controls provided to prevent and mitigate erosion and/or the release of sediment into waterways during construction. Ensure that the plan includes monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plans, Federal, Provincial, and Municipal laws and regulations, EPA 832/R-92-005, Chapter 3 requirements, USEPA General Construction Permit
 - .2 Correct all erosion control deficiencies noted by the City Representative. Maintain appropriate measures in place until the construction is fully completed.
 - .3 Cooperate with the City Representative and the Owner for periodic inspections (during and after construction).

1.16 DAMAGE BY VEHICLES AND OTHER EQUIPMENT

- .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.

1.17 PROPERTY OWNER'S LETTER OF RELEASE

- .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.
- .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.

1.18 UTILITY OWNER'S LETTER OF RELEASE

- .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.

1.19 INCLEMENT WEATHER

- .1 Make adequate protection and take all necessary precautions at times of inclement weather.
- .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.

1.20 SNOW PLOWING

- .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.
- .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.
- .3 Snow is to be disposed of at the designated snow disposal area, as directed by the City Representative.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS):
 - .1 Material Safety Data Sheets (MSDS).
- .3 Nunavut Safety Act, R.S.N.W.T. 1988, c-S-1 most recently amended and in force June 19, 2016.
- .4 Nunavut Occupational Health and Safety Regulations, R-003-2016, most recently amended and in force June 19, 2016.

1.2 GENERAL REQUIREMENTS

- .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 Perform site specific safety hazardous assessment related to project.
- .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.
- .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.
- .5 Meet or exceed the latest revision of all Local, Federal, Territorial laws, regulations, standards, and industry best practices relating to health and safety.
- .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.
- .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.
- .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.

- .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:
 - .1 Nunavut's Safety Act and applicable regulations.
 - .2 Nunavut's Workers' Compensation Act and applicable regulations.
 - .3 Nunavut's Environmental Protection Act and application regulations.
 - .4 Canadian Electrical Code.
 - .5 Contract Documents.
- .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:
 - .1 Nunavut's Safety Act and applicable regulations.
 - .2 Nunavut's Workers' Compensation Act and applicable regulations.
 - .3 Nunavut's Environmental Protection Act and application regulations.
 - .4 Canadian Electrical Code.
 - .5 Contract Documents.
- .11 In event of a conflict between any provisions of the above authorities, the most stringent provision shall govern.
- .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.
- .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.
- .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.
- .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.
- .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:
 - .1 All personnel and employees on the Site are required to comply with safety policies, procedures and instructions of the Contractor.
 - .2 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.
- .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.

- .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.
- .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.
- .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.
- .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.
- .22 Ensure adequate coordination and communication between all parties on site in regard to safety.
- .23 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.
- .24 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.
- .25 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.
- .26 The Contractor shall appoint a competent person, as defined by the Safety Act, as a supervisor.
- .27 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.
- .28 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.
- .29 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.

- .30 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.
- .31 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.
- .32 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.
- .33 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.
- .34 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.
- .35 City Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.
- .36 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.

1.3 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00 – Submittal Procedures
- .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 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.
- .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:
 - .1 Introduction, roles and responsibilities for:
 - .1 Site Supervisor
 - .2 Project Manager
 - .3 Site Safety Coordinator
 - .4 Site Workers
 - .5 Occupational Health and Safety Representative

- .6 Joint Health and Safety Committee
- .2 Contractor Project/ Contract Organizational Chart
- .3 Training and certification of workers.
- .4 Orientation for new works or visitors to site.
- .5 Project hazard assessment and safety procedures.
- .6 Safety meetings format and schedule.
- .7 Site safety audits, inspections, and incident reporting.
- .8 Workplace hazardous materials information.
- .9 Tagging and lock out procedures.
- .10 Confined space entry procedure.
- .11 Work on or near live apparatus.
- .12 Hot works procedures.
- .13 Posting of information.
- .14 Housekeeping.
- .2 A Hazardous Identification Plan, includes primary environmental hazards, personal conduct and hygiene, potential hazards which include:
 - .1 Survey work in traffic.
 - .2 Physical.
 - .3 Working at heights.
 - .4 Fire and explosion.
 - .5 Confined space entry.
 - .6 Cranes, hoists, and rigging.
 - .7 Crane suspended personnel platforms.
 - .8 Biological.
 - .9 Stress and fatigue.
 - .10 Noise.
 - .11 Cold Weather.
 - .12 Wildlife
 - .13 Personal security.
 - .14 Adverse weather conditions.
 - .15 Other site activities.
- .3 A Personal Protective Equipment Inventory, which includes:
 - .1 Requirements for all site personnel.
 - .2 Selection, maintenance and continual assessment.
- .4 An Emergency Preparedness and Response Plan, which addresses:
 - .1 First aid.
 - .2 Fire protection.
 - .3 Critical injury.
 - .4 Accident or incident.
- .5 A COVID-19 Mitigation Plan, which addresses:
 - .1 Isolation and quarantine.
 - .2 Social distancing.

- .3 Hand washing and hygiene.
- .4 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.

1.4 CHEMICALS

- .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.
- .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.
- .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 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.
- .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.
- .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.
- .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.

1.5 DESIGNATED SUBSTANCES / HAZARDOUS WASTES

- .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.
- .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.
- .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.

- .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 The Contractor shall retain copies of all hazardous waste manifests on file.
- .6 The Contractor shall inspect the project daily to monitor compliance with designated substances and hazardous waste regulations.
- .7 The Contractor shall provide access to the responsible individual for review of all inspection reports.

1.6 FALL PROTECTION

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

1.7 CONFINED SPACE ENTRY

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

1.8 LADDERS

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

1.9 WELDING / CUTTING

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

1.10 SCAFFOLDING

- .1 The Contractor shall comply with the requirements of Sections 260 to 327 of R.R.N.W.T. 1990, c.S-1.
- .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).

- .3 The Contractor shall be responsible for supply and maintaining all equipment needed to perform this role.

1.11 MOBILE EQUIPMENT

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

1.12 CONSTRUCTION TOWERS AND HOISTS

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

1.13 EXCAVATING AND TRENCHING

- .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.
- .2 The Contractor shall arrange the locating of buried services prior to commencing an excavation.
- .3 The Contractor shall comply with the requirements of Sections 396 to 432 of R.R.N.W.T. 1990, c.S-1.

1.14 UNFORESEEN HAZARDS

- .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.

1.15 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by City Representative.
- .2 Provide City Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .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.

1.16 BLASTING

- .1 Blasting or other use of explosives is not permitted without prior receipt of written instruction by Engineer.

1.17 POWDER ACTUATED DEVICES

- .1 Use powder actuated devices only after receipt of written permission from Engineer.

1.18 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

Part 2 Products

Not used

Part 3 Execution

Not used

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 11 00 – Summary of Work
- .2 Section 01 14 00 – Work Restrictions
- .3 Section 01 12 50 – Special Provisions
- .4 Section 01 35 00 – Special Project Procedures
- .5 Section 01 35 20 – Health and Safety Requirements

1.2 SUBMITTALS

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

1.3 APPLICABLE CODES

- .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:
 - .1 By-Law No. 200 Water & Sewer Services.
 - .2 By-Law No. 137 Highway Obstructions.
 - .3 By-Law No. 138 Highway Occupancy.
 - .4 By-Law No. 319 Highway Traffic.
- .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.

1.4 PERMITS, APPROVALS, AND LICENCES

- .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.
- .2 Arrange for regular inspections and a final inspection with:
 - .1 The territorial electrical safety inspector.
 - .2 The territorial building inspector.
- .3 Arrange for all other regular inspections and final inspections.
- .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

Part 1 General

1.1 CONTRACTOR'S RESPONSIBILITY

- .1 The Contractor is to implement their own field quality control system that will include as required, but is not limited to, the following activities as applicable:
 - .1 Shop drawings, technical submittals, product data and sample reviews.
 - .2 Compaction of pipe bedding, trench backfill and road granular.
 - .3 Aggregate fabrication, calibration and testing.
 - .4 Welding of structural steel and pipe joints.
 - .5 Pressure testing of pipes.
 - .6 Torque of high-strength bolts.
 - .7 Load tests of structural items.
 - .8 Subgrade examination for load bearing capability if required.
 - .9 Instrumentation calibration and testing.
 - .10 Performance testing of equipment.
- .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.
- .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.
- .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.

1.2 SUBMITTALS

- .1 Submittals to be submitted in accordance with Section 01 33 00 – Submittal Procedures
- .2 The Contractor shall submit a Quality Assurance & Quality Control Plan within twenty (20) business days after the Award of the Contract.
- .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.
- .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.).
 - .1 Submittal schedule.
 - .2 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.
- .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.

1.3 INSPECTION

- .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.
- .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 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.
- .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.

1.4 INDEPENDENT INSPECTION AGENCIES

- .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.
- .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 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.
- .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.

1.5 PROCEDURES

- .1 Notify appropriate agency and City Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .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.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.6 REJECTED WORK

- .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.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .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.

1.7 COMPACTION TESTING REQUIREMENTS

- .1 Contractor shall be responsible to hire a third party Laboratory/Inspection/Testing Agency for all compaction testing of all soils / granular material including supplying all necessary nuclear moisture/density gauges and ancillary equipment required to conduct field density and field moisture measurements for QC compaction testing of earth and granular materials
 - .1 Field density and moisture determinations shall be made following procedure A of ASTM D6938
 - .2 All tests are the responsibility of the Contractor and costs shall be included within this tender price.
 - .3 Testing results must be provided to the Engineer within 24 hours of completion
- .2 Frequency of compaction tests shall be completed according to the following table:

CONSTRUCTION CATEGORY	COMPACTION TEST FREQUENCY
Pipe bedding and backfill and cover	1 test per 50m of pipe for each lift installed
Roadway and Pavement reinstatements	For every 25m ² of granular road structure installed: <ul style="list-style-type: none">• 2 tests for each lift of Granular B• 2 tests for each lift of Granular A

- .3 Where the compaction does not conform to the acceptance criteria, the Contractor shall immediately notify the CA and complete additional compaction as is necessary to meet the acceptance criteria.
- .4 Reports from the 3rd party testing shall be prepared and provided to the Engineer.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 12 50 – Special Provisions
- .2 Section 01 14 00 – Work Restrictions
- .3 Section 01 35 00 – Special Project Procedures
- .4 Section 33 11 16 – Water Mains
- .5 Section 33 36 50 – Service Connections

1.2 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.3 INSTALLATION AND REMOVAL

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

1.4 DEWATERING

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

1.5 TEMPORARY WATER AND SEWER SUPPLY

- .1 The Contractor will provide a continuous supply of potable water and continuous sanitary services to all affected residents during the construction works as required including temporary water/sewer connections, piping, and monitoring equipment. See Work Restrictions 01 14 00 for allowable service interruption durations without temporary water piping.
- .2 The Contractor shall not rely on City services being available to support operations. If they are available, and absolutely necessary, the contractor shall be responsible for all additional costs associated with labour, equipment and/or materials provided by the City or other departments.
- .3 Connections to the existing system are to be included in the unit price

1.6 MEASUREMENT FOR PAYMENT

- .1 Payment for providing temporary water supply and sanitary sewer connections (by-pass) and associated equipment shall be as stated in Section 01 12 50 – Special Provisions

Part 2 Products

2.1 Not Used

Part 3 Execution

3.1 Not Used

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 This section defines the submittals to the Owner, or their designate, necessary before, during and after construction, which include as a minimum:
 - .1 Certificates and transcripts.
 - .2 Site-Specific Health and Safety Plan.
 - .3 Construction Progress Schedule.
 - .4 Shop Drawings for permanent and temporary works.
 - .5 Product data and samples.
 - .6 QA/QC tests and reports.
 - .7 Asphalt and Concrete mix design.
 - .8 Erosion and Sediment Control Plan.
 - .9 Selective Demolition Plan and Schedule.
 - .10 Guaranties and Warranties.
 - .11 Traffic Control Plan.
 - .12 Temporary works plans as applicable (i.e. By-Pass Plan, Servicing Plan, Water Management Plan, Shoring/ Bracing Plan, Critical Lift Plan, etc.).

1.2 MOBILIZATION

- .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 equipment as 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 (as required)
 - .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.
- .2 Use area designated for Contractor's temporary facilities as shown in the Contract Documents.

1.3 HOISTING

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

1.4 STAGING AREA

- .1 The staging area (Contractor's laydown area) will be identified on the contract drawings or provided by the City Representative at the pre-construction meeting.
- .2 Locate construction trailers, laydown areas, and temporary buildings under the direction of the City Representative.

1.5 STORAGE

- .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.
- .2 Contractor shall obtain permission from the City Representative before storing any materials in any new facility or work areas under construction.
- .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.

1.6 WORK AREA

- .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.
- .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.
- .3 Confine operations within easements for construction, storage and access.
- .4 Install, secure and maintain fencing along working and storage areas, access routes and both sides of easements.
- .5 Do not enter upon or occupy any land with labour, tools or materials other than the easements for construction except after written consent has been received from property owner.
- .6 Do not encumber site with materials or equipment.
- .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.

1.7 EQUIPMENT, TOOL AND MATERIALS STORAGE

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

1.8 SANITARY FACILITIES

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

1.9 CLEAN UP

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

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Administrative procedures preceding preliminary and final inspections of Work and closeout submittal requirements.

1.2 INSPECTION AND DECLARATION

- .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.
 - .1 Notify City Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
 - .2 Request City Representative's Inspection.
- .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.
- .3 Completion: submit written certificate that following have been performed:
 - .1 Work has been completed and inspected for compliance with Contract Documents.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Equipment and systems have been tested, adjusted and are fully operational.
 - .4 Certificates required by other Regulatory Agencies have been submitted.
 - .5 Operation of systems have been demonstrated to Owner's personnel.
 - .6 Work is complete and ready for final inspection.
- .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.
- .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.
- .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.
- .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

- .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.

1.3 CLOSEOUT SUBMITTAL SUBMISSION

- .1 Make submittals in accordance with Section 01 33 00 – Submittal Procedures and 01 11 00 – Summary of Work
- .2 Prepare inspections and data using personnel experience in maintenance and operation of described products.
- .3 Copy will be returned after final inspection, with City Representative's comments.
- .4 Revise content of documents as required prior to final submittal.
- .5 Provide evidence as to type, source and quality of products provided as part of the Work.
- .6 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .7 Pay costs of transportation.

1.4 AS BUILTS AND SAMPLES

- .1 In addition to requirements in General Conditions, maintain at the site on record copy of:
 - .1 Contract Drawings.
 - .2 Terms of Reference.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test reports.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by City Representative

1.5 AS BUILTS AND SAMPLES

- .1 In addition to requirements in General Conditions, maintain at the site on record copy of:
 - .1 Contract Drawings.
 - .2 Terms of Reference.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test reports.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by City Representative.

1.6 RECORDING ACTUAL SITE CONDITIONS

- .1 Record information on set of blue line opaque drawings.
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: legibly mark each item to record actual construction.

1.7 MAINTENANCE MATERIALS

- .1 Provide maintenance and extra materials, in quantities specified in individual terms of reference sections.
- .2 Provide items of same manufacturer and quality as items in Work.
- .3 Deliver to site; place and store in location designated by City Representative.
- .4 Receive and catalogue all items. Submit inventory listing to City Representative. Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.

1.8 STORAGE, HANDLING AND PROTECTION

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

1.9 PRE-WARRANTY CONFERENCE

- .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.
- .2 City Representative will establish communication procedures for:
 - .1 Notification of construction warranty defects.
 - .2 Determine priorities for type of defect.
 - .3 Determine reasonable time for response.
- .3 Provide name, telephone number and address of licensed and bonded company that is authorized to initiate and pursue construction warranty work action.
- .4 Ensure contact is located within local service area and warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.10 WARRANTIES AND BONDS

- .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten (10) working days after completion of the applicable item of work.
- .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.
- .5 Verify that documents are in proper form, contain full information, and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time specified for submittal.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 CSA S350, Code of Practice for Safety in Demolition of Structures

1.2 EXISTING CONDITIONS

- .1 Structures to be demolished to be based on their condition on date of tender acceptance

1.3 PROTECTION

- .1 Prevent movement, settlement or damage of adjacent structures, services, parts of existing building to remain. Provide bracing, shoring and underpinning as required. Repair any damage caused by demolition
- .2 Take precautions to support affected structures and, if safety of structure being demolished or adjacent structures or services appears to be endangered, cease operations and notify the engineer.
- .3 Prevent debris from blocking surface drainage systems, and any equipment that must remain in operation.

1.4 EXECUTION

- .1 Decommission and abandon existing underground utilidor as indicated on drawings
- .2 Other underground services must be protected or relocated as required.
- .3 Do not disrupt active utilities designated to remain undisturbed.

1.5 SAFETY CODE

- .1 Unless otherwise specified, carry out demolition work in accordance with Health and Safety Requirements.
- .2 Blasting operations are not permitted during demolition.

1.6 DEMOLITION

- .1 At end of each day's work, leave work site in safe and tidy condition with adequate protective barriers and warning signage
- .2 Remove and dispose of demolished materials promptly and in accordance with local regulations
- .3 Repair all surfaces after demolition
- .4 Reinstate all landscape features as identified in the Contract Drawings.

Part 2 Products

Not Used

Part 3 Execution

Not Used

END OF SECTION

Part 1 General

1.1 GENERAL

- .1 This specification to be read in conjunction with all other sections and the drawings of the contract document.

1.2 RELATED REQUIREMENTS

- .1 Section 31 23 33.01 Excavating, Trenching, and Backfilling
- .2 Section 32 25 00 Roadways
- .3 Section 33 11 16 Water Mains
- .4 Section 33 36 50 Service Connections

1.3 SOURCE APPROVAL

- .1 Source of materials to be incorporated into work or stockpiled requires approval. Contractor shall provide a gradation report completed within the calendar year representing the source material.
- .2 Inform Engineer of proposed source of aggregates and provide access for sampling at least 2 weeks prior to commencing production.
- .3 Locate an alternative source or demonstrate that material from source in question can be processed to meet specified requirements; materials from the proposed source do not meet or cannot reasonably be processed to meet specified requirements in the opinion of the Engineer.
- .4 Should a change of material source be proposed during work, advise Engineer immediately to allow sampling and testing.
- .5 Acceptance of a material at source does not preclude future rejection if it is subsequently found to lack uniformity, or if it fails to conform to requirements specified, or if its field performance is found to be unsatisfactory.

1.4 PRODUCTION SAMPLING

- .1 Aggregate will be subject to continual sampling by Engineer during production.
- .2 Provide Engineer with ready access to source and processed material for purpose of sampling and testing.
- .3 Bear the cost of sampling and testing of aggregates which fail to meet specified requirements.

1.5 MEASUREMENT AND PAYMENT

- .1 Granular material used for works covered in other sections will be measured and payments made under clauses specified in corresponding sections.
- .2 Stockpiled material will be measured by the cubic meter, by the Engineer through cross sections.

1.6 REFERENCES

- .1 ASTM International
 - .1 ASTM C117-04, Standard Test Methods for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
 - .2 ASTM C131-06, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - .3 ASTM C136-06, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .4 ASTM D698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft²;) (600kN-m/m²;).
 - .5 ASTM D1557-09, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000ft-lbf/ft²;) (2,700kN-m/m²;).
 - .6 ASTM D1883-07e2, Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.
 - .7 ASTM D4318-10, Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series.
 - .2 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.

Part 2 Products

2.1 MATERIALS

- .1 Aggregate quality
 - .1 Sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material or other deleterious substances.
- .2 Flat and elongated particles are those whose greatest dimension exceeds five times their least dimension.
- .3 Fine aggregates satisfying requirements of applicable section shall be one, or a blend of following:
 - .1 Natural sand.
 - .2 Manufactured sand.
 - .3 Screenings produced in crushing of quarried rock, boulders, gravel, or slag.

- .4 Coarse aggregates satisfying requirements of applicable section shall be one of or blend of following:
- .1 Crushed rock or slag.
 - .2 Gravel composed of naturally formed particles of stone.

2.2 GRANULAR "A"

- .1 Crushed stone or gravel consisting of hard, durable, angular particles free from clay lumps, cementation, organic material, frozen material, and other deleterious materials.
- .2 Gradations to be within limits specified when tested to ASTM C136-06 and ASTM C117-04 and to have a smooth curve without sharp breaks when plotted on semi-log grading chart.

ASTM Sieve Designation % Passing

200 mm	-
75 mm	-
50 mm	-
38.1 mm	100
25 mm	100
19 mm	85-100
13.2 mm	65-90
9.5 mm	50-73
4.75 mm	35-55
1.18 mm	15-40
0.300 mm	5-22
0.075 mm	2-8

- .3 Other properties as follows:
 - .1 Minimum Percent Crushed 60
 - .2 Plasticity Index
ASTM D4318-10 Maximum 0
 - .3 Los Angeles Abrasion
ASTM C131-06
Gradation "A"
Maximum % loss by weight: 60

2.3 GRANULAR "B"

- .1 Crushed pit run or screen stone, gravel or sand consisting of durable angular particles free from clay lumps, cementation, organic material, frozen material and other deleterious materials.
- .2 Gradations to be within limits specified when tested to ASTM C136-06 and ASTM C117-04 and to have a smooth curve without sharp breaks when plotted on semi-log grading chart.

ASTM Sieve Designation % Passing

200 mm	-
100 mm	100
75 mm	95-100
50 mm	-
38.1 mm	-

25 mm	50-100
19 mm	-
13.2 mm	-
9.5 mm	-
4.75 mm	20-55
1.18 mm	10-40
0.300 mm	5-22
0.075 mm	0-10

.3 Other properties as follows:

- .1 Plasticity Index
ASTM D4318-10
Maximum 0
- .2 Los Angeles Abrasion
ASTM C131-06
Gradation "A"
Maximum % loss by weight 50

2.4 GRANULAR "C"

- .1 Crushed stone or gravel consisting of hard, durable, angular particles free from clay lumps, cementation, organic material, frozen material, and other deleterious materials.
- .2 Gradations to be within limits specified when tested to ASTM C136-06 and ASTM C117-04 and to have a smooth curve without sharp breaks when plotted on semi-log grading chart.

ASTM Sieve Designation % Passing

150 mm	100
75 mm	-
50 mm	-
38.1 mm	-
25 mm	50-100
19 mm	-
12.5 mm	-
9.5 mm	20-100
4.75 mm	20-55
1.18 mm	10-100
0.300 mm	5-95
0.075 mm	0-10

.3 Other properties as follows:

- .1 Plasticity Index
ASTM D4318-10
Maximum 0
- .2 Los Angeles Abrasion
ASTM C131-06
Gradation "A"
Maximum % loss by weight 50

2.5 MODIFIED GRANULAR "C"

- .1 Crushed stone or gravel consisting of hard, durable, angular particles free from clay lumps, cementation, organic material, frozen material, and other deleterious materials.
- .2 Gradations to be within limits specified when tested to ASTM C136-06 and ASTM C117-04 and to have a smooth curve without sharp breaks when plotted on semi-log grading chart.

ASTM Sieve Designation % Passing

200 mm	-
75 mm	-
50 mm	-
38.1 mm	-
25 mm	-
19 mm	-
12.5 mm	-
9.5 mm	100
4.75 mm	55-100
1.18 mm	30-100
0.300 mm	10-50
0.075 mm	0-10

2.6 RIP-RAP

- .1 Hard, with specified gravity no less than 2.65 durable quarry stone, free from seams, cracks or other structural defects, to meet following size distribution for use intended:
- .2 Random Rip-rap:
 - .1 Not more than 10% of total volume of stones with individual volume less than 0.015 m³.
 - .2 Not less than 50% of total volume of stones with individual volume of 0.085 m³ or more.
 - .3 Remaining percentage or total volume to have uniform distribution of stones between 0.015 and 0.085 m³ size.
- .3 Hand Placed Rip-rap:
 - .1 Minimum size of individual stones 0.01 m³.
 - .2 Not less than 75% of total volume of stones with individual volume of 0.025 m³ or more.
 - .3 Supply rock spalls or cobbles to fill open joints.

2.7 SAND

- .1 Sand will refer to any sand that meets the requirements for modified Granular "C".

Part 3 Execution

3.1 PROCESSING

- .1 Process aggregate uniformly using methods that prevent contamination, segregation, and degradation.

- .2 Blend aggregates, if required, to obtain gradation requirements, as specified. Use approved methods and equipment.
- .3 Blending to increase percentage of crushed particles or decrease percentage of flat and elongated particles is permitted.
- .4 Wash aggregates, if required to meet specifications. Use only equipment approved by Engineer.

3.2 HANDLING

- .1 Handle and transport aggregates to avoid segregation, contamination, and degradation.

3.3 STOCKPILING

- .1 Stockpile aggregates on site in locations as indicated or as designated. Do not stockpile on completed pavement surfaces where damage to pavement may result.
- .2 Stockpiling sites shall be level, well drained, and of adequate bearing capacity and stability to support stockpiled materials and handling equipment.
- .3 Except where stockpiled on acceptably stabilized areas, provide compacted sand base not less than 300 mm in depth to prevent contamination of the aggregate. Stockpile aggregates on ground but do not incorporate bottom 300 mm of pile into work.
- .4 Separate different aggregates by substantial dividers or stockpile far enough apart to prevent intermixing.
- .5 Do not use intermixed or contaminated materials. Remove and dispose of rejected materials as directed by Engineer within 24 h of rejection.
- .6 Uniformly spot-dump aggregates delivered to stockpile in trucks and build up stockpile as specified.
- .7 Coning of piles or spilling of material over edges of pile will not be permitted.
- .8 During winter operations, prevent ice and snow from becoming mixed into stockpile or in material being removed from stockpile.

3.4 AGGREGATE STOCKPILE CLEANUP

- .1 Leave aggregate stockpile site in tidy, well drained condition, free of standing surface water.
- .2 Leave any unused aggregates in neat compact stockpiles.
- .3 On completion of the project, remove excess aggregates from site.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 12 50 – Special Provisions
- .2 Section 01 33 00 – Submittal Procedures
- .3 Section 32 11 10 – Aggregates General

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM D698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft²;) (600kN-m/m²;).

1.3 WORK INCLUDED

- .1 The work under this section shall include the supply and placing of all equipment, labour and materials necessary to:
 - .1 Construct roadways, driveways and pedestrian walkways including excavation to subgrade, subgrade preparation, supply, placement and compaction of granular type “A”, “B”, “C”, Modified C” and supply and placement of asphalt as required.

1.4 MEASUREMENT AND PAYMENT

- .1 Road reconstruction shall be paid as stated in Special Provisions – 01 12 50
- .2 Driveway and pedestrian walkway construction shall be paid as stated in Special Provisions – 01 12 50

1.5 DEFINITIONS

- .1 .Surface Course
 - .1 The surface course shall be the top layer of material which will be exposed to vehicle traffic.
- .2 Base Course:
 - .1 The base course shall be the layer of material directly below the top course.
- .3 Subbase
 - .1 The subbase shall be the layer of material below the base course.
- .4 Subgrade
 - .1 The subgrade shall be the material which the road structure is founded on. This may be the existing ground, the prepared base of an excavation, or the top of an embankment of engineered fill.

Part 2 Products

2.1 MATERIALS

- .1 Granular “A”
 - .1 Granular “A” shall conform to the requirements listed in Section 32 11 10: Aggregates - General.
- .2 Granular “B”
 - .1 Granular “B” shall conform to the requirements listed in Section 32 11 10: Aggregates - General.
- .3 Granular “C”
 - .1 Granular “C” shall conform to the requirements listed in Section 32 11 10: Aggregates - General.
- .4 Modified Granular “C”
 - .1 Modified Granular “C” shall conform to the requirements listed in Section 32 11 10: Aggregates - General.

2.2 SAND

- .1 Sand shall meet the requirements for modified Granular “C”

Part 3 Execution

3.1 STRIPPING ORGANIC MATERIAL

- .1 Unless specifically directed, there shall be no stripping of the organic layer of material for road construction.
- .2 Stripping of the organic material shall only occur in areas requiring excavation to prepare the subgrade at the design elevation.

3.2 EXCAVATION AND SUBGRADE PREPARATION

- .1 This work shall include all excavation necessary to prepare the subgrade in areas requiring new construction or reconstruction and shall include all hauling, spreading and levelling of excavated material.
- .2 The excavated material shall be hauled to the location as directed of the Engineer. It shall be spread, graded and compacted as directed by the Engineer.
- .3 The Contractor shall not excavate below the subgrade level unless directed by the Engineer.
- .4 The bottom of the excavation shall provide a flat, uniform, dry surface for the construction of the subbase.
- .5 Upon completion of the excavation to the subgrade elevation, the bottom of the excavation shall be inspected and approved by the Engineer prior to the placement of any material for the construction of the subbase.

- .6 If the bottom of the excavation is unsuitable for the placement of granular material, the Contractor shall notify the Engineer.

3.3 SUBGRADE FILLING

- .1 In all areas requiring subgrade fill, the Contractor shall be responsible to supply, haul, place and compact suitable material to the elevations as indicated on the drawings. No organic or other unsuitable materials will be acceptable. The material shall be placed to provide a width sufficient to allow for the driving surface specified, shoulders, side slope specified, base course and subbase. Material used to fill to subbase shall have a maximum 2 horizontal to 1 vertical (2:1) side slope unless otherwise specified.

3.4 CONSTRUCTION OF ROADWAY GRANULAR COURSES

- .1 The granular courses and surface materials shall be kept free from clay and other types of deleterious materials. The Contractor shall ensure that their operations do not disturb underlying work.
- .2 Road Embankment: The granular courses shall be placed without segregation in uniform layers such that the thickness of the compacted layer is not greater than specified on the construction drawings without written approval from the Engineer.
- .3 Each layer shall be bladed to a smooth surface conforming to the required cross-section.
- .4 Prior to closing down operations for each working day the granular material shall be bladed and compacted and, if necessary, covered with sufficient base material to carry traffic.
- .5 In no case shall a layer of granular material be laid and compacted on frozen layer of granulars, as the top layer will not bind to the base. The Contractor shall be responsible for making good any section of road which the Engineer considers to be below standard because granular material was laid on a frozen granular surface. All costs associated with this work will be borne by the Contractor.
- .6 The granular courses shall be maintained to the tolerances in grade and cross-section and to the specified density until the project is accepted.
- .7 The Engineer may direct that soft or otherwise defective areas be cut out and backfilled with granular material. This work is to include the excavation, removal and disposal on-site of contaminated material, and the supply, placing and compacting of granular "A" material.
- .8 Should, in the Engineer's opinion, the failure of granular course been caused by the Contractor's negligence, the full reinstatement shall be carried out and the Engineer's word shall be final and binding upon this matter.

3.5 SURFACE TOLERANCE

- .1 The surface of the uppermost layer of granular material shall be bladed, shaped and compacted to produce the required surface contour.

- .2 The finished granular courses shall not deviate more than 30 mm from the specified grade and cross-section and the surface shall not deviate more than 15 mm at any place on a 3 metre template.
- .3 The finished granular courses shall not deviate more than the amount specified below from the specified grade and cross-section, shall not be consistently high or low, and the surface shall not deviate more than 15 mm at any place on a 3 metre template.
 - .1 Surface Course +15mm to -15mm
 - .2 Base Course +15mm to -25mm
 - .3 Subbase Material +25mm to -40mm
 - .4 Subgrade +25mm to -50mm

3.6 COMPACTION

- .1 The maximum rate of placing material shall be as specified or as instructed by the Engineer. The maximum rate will be determined by the adequacy of the compaction obtained.
- .2 Each layer of material shall be compacted to 95% Standard Proctor Dry Density (per ASTM D698 07e1) unless otherwise specified before the next layer is placed.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 14 00 – Work Restrictions
- .2 Section 31 23 33.01 - Excavating, Trenching, and Backfilling
- .3 Section 32 11 10 - Aggregates – General

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM D698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft³) (600kN-m/m³).

1.3 WORK INCLUDED

- .1 The work covered by this section shall include the supply and installation of all water and sewer service piping necessary to match and restore service to each dwelling. This includes connection to existing service lateral pipes, as well as any necessary plumbing works within each dwelling to tie in new water and sanitary services.
 - .1 Contractor to install new water supply, return piping and sanitary piping from mains to dwelling, including connections to existing plumbing within building as indicated on drawings. Should existing water service be equipped with electric heat trace, contractor to reinstate appropriately.
- .2 The Contractor shall provide all labour, equipment, and materials to complete the works covered by this section.

Part 2 Products

2.1 MATERIALS

- .1 Polyethylene Pipe
 - .1 All water services shall be DR 11 high density polyethylene (HDPE) pipe with 50 mm urethane insulation encased in a 1.14 mm polyethylene black jacket conforming to CGSB 41-GP-25M77.
 - .2 Where specified on the drawing for the water service to be metal jacketed, the above described pipe will be wrapped in 26 gauge galvanized steel jacket outside the polyethylene jacket.
 - .3 All polyethylene pipe, fittings, stubends, etc., shall be of the same manufacturer's series, wall thickness and the same grade of polyethylene. All gaskets will have the same internal diameter as the series pipe and all bolts and back up rings will be compatible to allow tightening without washers. Standard of acceptance shall be KWH Sclair pipe, Urecon UIP, or approved equal.
 - .4 No joints shall be allowed in piping covered with shop applied insulation.

- .5 All jacketed pipe shall have a permanent factory applied marking indicating manufacturer, size, series, and project identification at not greater than one metre intervals along its length, i.e. "Urecon 200 mm Series 160".
- .2 Urethane Insulation
 - .1 Insulation for pipe lines, fittings, etc., shall be rigid closed cell polyurethane insulation to the thickness shown on the drawings. No joints shall be allowed in piping covered with shop applied insulation. Properties of all urethane insulation shall be:

Density (kg per cubic metres core)	
ASTM D-1622	35
Compressive Strengths kPa @ 25°C 10%	
Deflection measured axially.	
ASTM D-1621-64	240
Thermal Conductivity W/m°C @ 25°C	
ASTM D-2326-64T	0.0187
Operating temperature range °C	
Cyrogenic to +	93
Closed cell content -	
% ASTM D-2856	90 min
Water absorption gm/100 cc	
ASTM D-2842	12
Dimensional Stability, % ASTM	
D-2126 Procedure B & E	3
- .3 Warning Tape
 - .1 The warning tape of water pipe shall be 150 mm wide by 0.15 mm polyethylene tape. It shall be blue in colour for water services and have a factory applied marking at one metre intervals, i.e. "Caution Buried Sewer Line", or "Caution Buried Water Line". The standard of acceptance shall be Decto Tape by Allan Systems.
- .4 Field Joint Sleeves
 - .1 Wrap sleeves for field fusion joints and for flanged connections to vaults shall be 2.7 mm thick. Canusa Wrap LPW or equal. Each wrap will conform to the manufacturer's recommended width and length for each size of pipe.
- .5 Heat Shrink Tape
 - .1 Heat shrink tape shall be 150 mm wide with the standard of acceptance being Raychem Thermoclad.
- .6 Half Shells

- .1 Half shells shall be made of urethane insulation with the properties as described in Clause 2.1.2, and shall have a thickness equivalent to the urethane insulation on the pipe.
- .7 Field Applied Urethane
 - .1 Field applied urethane shall be "Portafoam" manufactured by Insta-Foam Products Inc., or equivalent.
- .8 Pipe Bedding
 - .1 Pipe bedding shall be Modified Granular C conforming in Section 32 11 10: Aggregates - General.
- .9 Valves, Couplings, & Fittings
 - .1 Valves, couplings, and fittings shall be compression type designated for use with polyethylene piping and properly sized for the pipe used. All connections will include stainless steel inserts 75 mm long and tight fitting within the service pipe. Longitudinally split inserts will not be accepted.
- .10 Water Service Saddle
 - .1 Water service saddles shall be bronze Robar No. 2706 with double stainless steel straps (or approved equal).

Part 3 Execution

3.1 SITE RESTRICTIONS

- .1 When planning the work, the Contractor shall make due allowance for the presence of the existing structures, access, utilities and the operation of others on the site.
- .2 Supports, adequate protection and maintenance of all existing underground and surface utility structures, drains, sewers, ducts, conduits, power poles and other obstructions encountered during the progress of the work, shall be provided by the Contractor at his own expense.
- .3 Refer to Section 01 14 00 – Work Restrictions and Section 01 51 00 – Temporary Utilities for details regarding any planned or accidental interruptions of the sewer or water supply.

3.2 SERVICE CONNECTIONS

- .1 Excavation, bedding, backfilling, urethane insulation, piping insulation system, and styrofoam used in the installation of service connection shall conform to the same requirements as for main line installation.
- .2 The corresponding sections of the specification are to be read in conjunction with this section.

3.3 WATER SERVICE

- .1 The water service duct shall match existing diameter DR11 with 50 mm urethane insulation encased in 1.14mm polyethylene black jacket.

- .2 Pipe connections in the water service duct shall be butt fused as described in Clause 3.12.2. No joints or the service pipe will be permitted within the duct.
- .3 The Water Service Information Sheet, or equivalent, provided by the local municipal authority must be filled in and submitted for each service.

3.4 INSPECTION

- .1 All material is subject to inspection and testing for soundness and suitability at the discretion of the Engineer.
- .2 All works shall be undertaken in strict adherence to the manufacturer's instructions, which are considered as being part of these Specifications. As each section of the work is completed, it shall be tested in the manner specified, and in the presence of, and as approved by, the Engineer.
- .3 All material found, during the progress of the work, to have cracks, flaws, or other defects, or to be of doubtful quality will be rejected by the Engineer. All rejected materials shall be promptly removed from the site of the work by the Contractor and all costs associated with the removal and replacement of rejected material shall be borne by the Contractor.

3.5 HANDLING OF MATERIAL

- .1 The material shall be delivered and distributed at the site by the Contractor. All pipe and accessories shall be loaded and unloaded by lifting manually or with hoists so as to avoid shock or damage. Under no circumstances shall such materials be dropped. Insulated pipe shall not be skidded on the ground or against pipe already on the ground.
- .2 In distributing the polyethylene pipe at the site of the work, each piece shall be unloaded opposite or near the place where it is to be installed.
- .3 Pipe shall be handled so the exterior and interior surfaces, prefabricated joints, insulation etc., will not be damaged. If, however, any part of any surface, coating or lining is damaged, the repair shall be made by the Contractor at his own expense, in a manner satisfactory to the Engineer.

3.6 ALIGNMENT AND GRADE

- .1 All pipe sections shall be laid and maintained to the required lines and grades, with fittings vales, hydrants, access vaults, etc., at the proper locations, with joints centred.
- .2 No deviation from authorized lines and grades shall be made without the written approval of the Engineer. If, in the opinion of the Engineer, the Contractor's method of setting grades is inaccurate or insufficient, the Engineer may direct that more suitable equipment and methods be used to insure that proper grades are established.

3.7 WATER IN EXCAVATION

- .1 Work shall be carried out in a dry trench. In no case shall water be allowed to run over the invert, reach the joints, or run through the pipe sections during construction.

- .2 All water pumped or drained from the work shall be disposed of in a suitable manner satisfactory to the Engineer, without damage to the construction work of other property, structures, or persons.

3.8 PIPE BEDDING

- .1 Insulated piping shall be bedded in Modified Granular "C" with a minimum of 0.15 m below the insulation, 0.15 m on both sides and 0.30 m above the insulation of the piping. Mechanical tamping of the pipe bedding shall be carried out in 0.15 m loose layers.
- .2 The pipe bedding shall be compacted to 95% Standard Proctor Dry Density as per ASTM D698-07e1. Compaction in a wet trench will not be acceptable.
- .3 Bedding shall be deemed unsatisfactory if, in the opinion of the Engineer, compaction cannot be obtained because of the presence of water.
- .4 No extra payment shall be made for the replacement of bedding that has become unsatisfactory due to water from any source.

3.9 WARNING TAPE

- .1 A continuous run of "warning" tape shall be laid on the pipe bedding 0.3 m directly above the water service.

3.10 FIELD APPLIED URETHANE

- .1 Field spraying of urethane will be carried out by experienced operators only using "Insta-Foam Froth-Pak" kits or approved equal. Exposed urethane shall be coated with 1 mm of Flint Kote-Superior Asphalt Mastic No. 110-14 and heat shrink sleeves. Where geometry does not permit the use of heat shrink sleeves, two layers of Raychem Thermoclad 150 mm wide tape with 50% overlap shall be used.

3.11 PIPE LAYING

- .1 The water service shall be laid to the alignment and grades shown on the drawings.
- .2 It is prohibited to drag pipe over the ground which would damage the black jacket or insulation. If the pipe or fused sections of the pipe are to be moved, they must be supported on rollers or completely suspended.
- .3 Slings used to lower the insulated pipe into the trench shall support the pipe without causing damage to the jacketing insulation.

3.12 PIPE JOINTS

- .1 The insulation shall be cut back 190 mm, as shown on the drawing to allow for the field joining of the pipe. Care shall be taken, when cutting away insulation from the pipe, not to cut the pipe beneath the insulation. Cut pipe shall be rejected from the work. Field cut insulation shall be treated with mastic.
- .2 Thermal butt-fusion of polyethylene pipe shall be carried out as recommended by the supplier, but only by a certified butt-fusion technician.

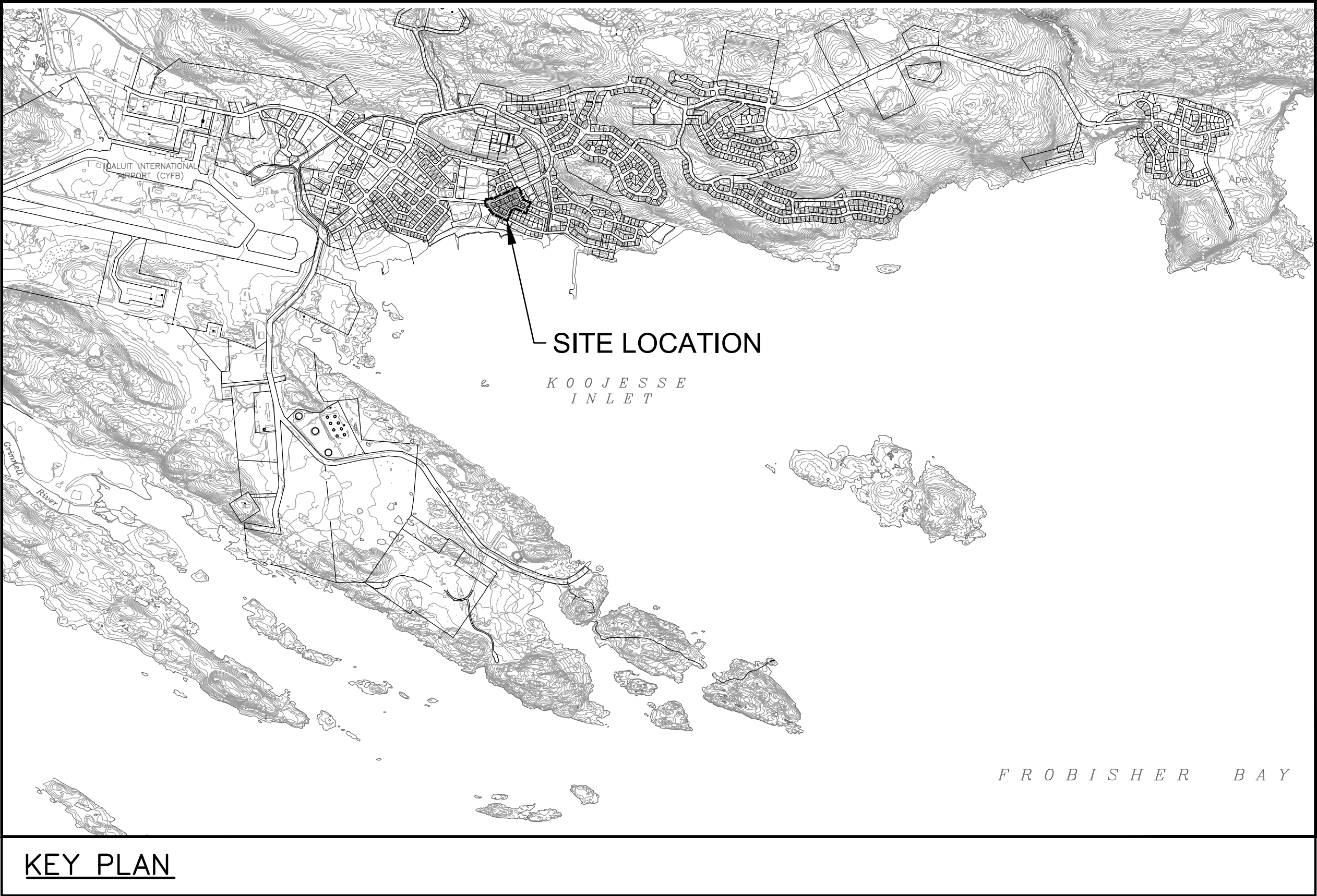
- .3 When joining the sections of pipe, it is the fusion equipment, which must be moved from joint to joint.
- .4 Where the drawings call for the use of heat shrink tape or where the geometry of bends and fittings prevents the installation of heat shrink sleeves over the insulation then two wrappings of heat shrink tape in 150 mm widths shall be applied. The first complete wrapping shall be applied and shrunk down before the second wrapping is applied. The tape shall overlap 50% as it is wrapped around the pipe of fitting. These methods shall be used to repair all damage to insulation jacketing.

END OF SECTION

Section VI – DRAWINGS

CITY OF IQALUIT

Sheet List Table	
Sheet Number	Sheet Title
--	COVER SHEET
C-000	EXISTING CONDITIONS -- GROUND TOPO
C-001	EXISTING CONDITIONS AND EXISTING SERVICING
C-100	SITE SERVICING PLAN
DE-01	SERVICING DETAILS_1
DE-02	SERVICING DETAILS_2
DE-03	ROAD REPAIR DETAILS



ATCO LOOP DECOMMISSIONING

ATCO LOOP

PROJECT No. FRN-21015261-A0

MAY 2023

Iqaluit



ISSUED FOR TENDER - MAY 2, 2023

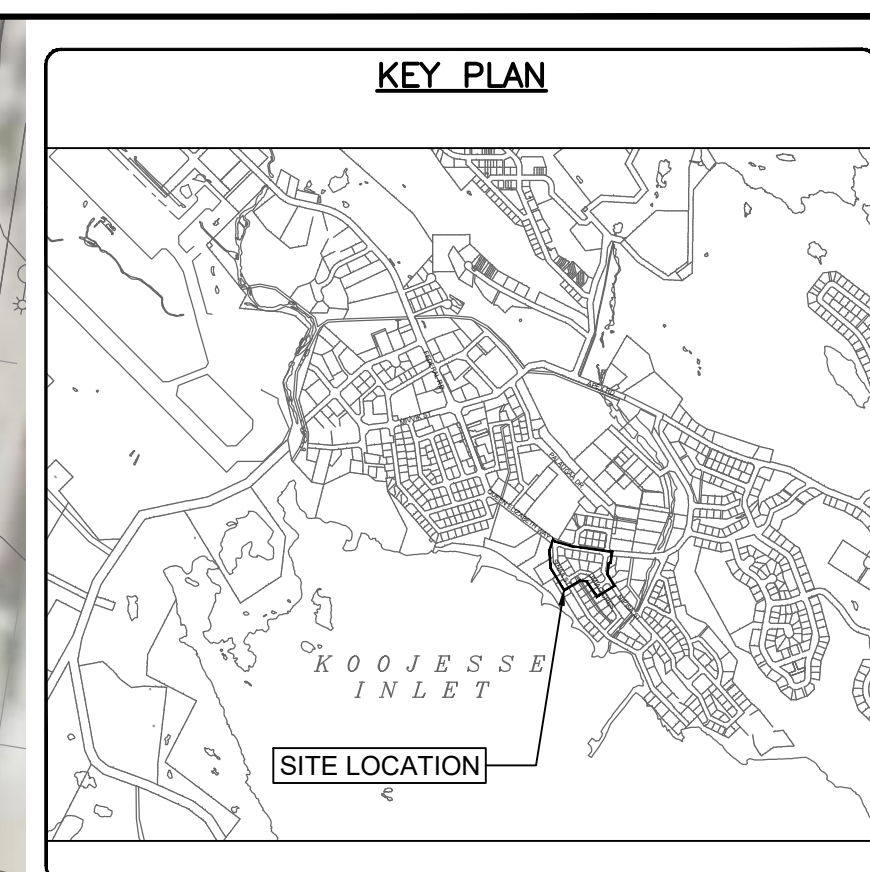
exp Services Inc.

T: +1.613.688.1899 | F: +1.613.225.7330
2650 Queensview Drive, Unit 100
Ottawa, ON K2B 8H6
Canada

www.exp.com



• BUILDINGS • EARTH & ENVIRONMENT • ENERGY •
• INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •



CAUTION
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

[illegible]DESIGNED
BY

REVIEWED BY

	CLÉN
--	------

CITY OF IQALUIT
P.O.BOX 460
IQALUIT, NU, X0A 0H0
FAX. (867) 979-5600



exp Services Inc.
 T +1 613 688 1899 / F +1 613 225 7330
 2650 Queensview Drive, Unit 100
 Ottawa, ON K2B 8K6
 Canada
www.exp.com

• BUILDINGS • EARTH & ENVIRONMENT • ENERGY •
 • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

BASEPLAN	---
DESIGN	C.K.
CHECKED	M.L.
CAD	A.F.
PROJECT MANAGER	I.P.C.
APPROVED	M.L.

PROJECT
ATCO LOOP DECOMMISSIONING
ATCO LOOP
IQALUIT, NU

EXISTING CONDITIONS -
GROUND TOPO

PROJECT No.	EDN 0101E061
-------------	--------------

SURVEY

— 222 —

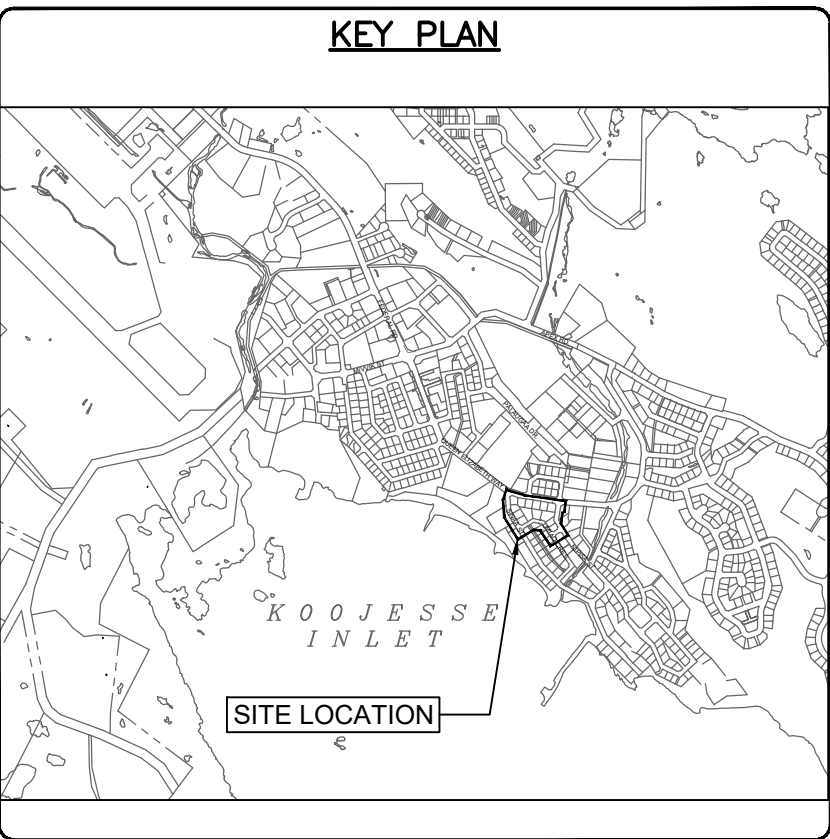
DATE MAY 2023

DRAWING No.

C-000

1. *Journal of the American Medical Association*, 2000; 284: 1039-1044.

CAUTION
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.



SITE SERVICING PLAN C-100

REVIEWED BY

BASEPLAN	---
DESIGN	C.K.
CHECKED	M.L.
CAD	A.F.
PROJECT MANAGER	I.P.C.
APPROVED	M.L.

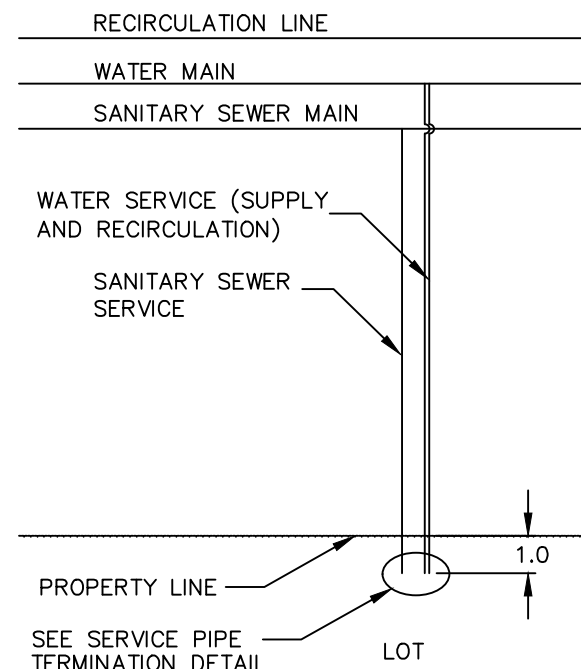
PROJECT No.	FRN-21015261-
SURVEY	---
DATE	MAY 2023
DRAWING No.	C-100

GENERAL NOTES:

- CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL PERMITS REQUIRED ARE OBTAINED AND APPROVED PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR MUST NOTIFY CITY OF IQUALUIT PUBLIC WORKS & ENGINEERING DEPARTMENT AT LEAST 3-WEEKS PRIOR TO START OF CONSTRUCTION ACTIVITIES WHICH MAY IMPACT THE ROADS, AND WATER/SEWER INSTALLATIONS. CONTRACTOR SHALL OBTAIN A UTILITY PERMIT AND ROAD CLOSURE PERMIT THROUGH THE CITY'S PUBLIC WORKS & ENGINEERING DEPARTMENT PRIOR TO THE START OF CONSTRUCTION.
- WATER SERVICE LINE CONNECTION TO THE CITY MAIN MUST BE INSPECTED BY CITY OF IQUALUIT, AND ENGINEER OF RECORD PRIOR TO BACKFILL. INSPECTION THROUGH THE CITY IS INITIATED THROUGH THE PW & ENG WATER AND SEWER CONNECTION/DISCONNECTION PERMIT. ALSO, GIVEN THE GN'S MANDATE AS PER THE NUNAVUT BUILDING CODE, THE GN BUILDING OFFICIAL MUST INSPECT THE INSTALLATION OF THE WATER SERVICE LINE.
- SEWER SERVICE LINE CONNECTION TO THE CITY MAIN MUST BE INSPECTED BY CITY OF IQUALUIT, AND ENGINEER OF RECORD PRIOR TO BACKFILL. INSPECTION THROUGH THE CITY IS INITIATED THROUGH THE PW & ENG WATER AND SEWER CONNECTION/DISCONNECTION PERMIT. ALSO, GIVEN THE GN'S MANDATE AS PER THE NUNAVUT BUILDING CODE, THE GN BUILDING OFFICIAL MUST INSPECT THE INSTALLATION OF THE SEWER SERVICE LINE.
- ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE STATED. ALL DRAWINGS SHOULD NOT BE SCALED BY THE CONTRACTOR. ANY MISSING OR QUESTIONABLE DIMENSIONS ARE TO BE CONFIRMED WITH THE CONSULTANT IN WRITING.
- ALL WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH WSCC HEALTH AND SAFETY ACT AND IS TO FOLLOW BEST TRADES PRACTICES.
- THE LOCATION OF ALL UTILITIES IS APPROXIMATE ONLY. THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE AS WELL AS REPAIR OF DAMAGE THAT MAY OCCUR.
- CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT FOR CONSTRUCTION.
- CONTRACTOR TO COMPLY AND COORDINATE WITH CITY OF IQUALUIT FOR TRAFFIC CONTROL.
- DO NOT CONSTRUCT USING DRAWINGS THAT ARE NOT MARKED "ISSUED FOR CONSTRUCTION".
- CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF IQUALUIT STANDARD SPECIFICATIONS AND DRAWING SUPPLEMENTS WHERE APPLICABLE.
- ANY DISCREPANCIES, INTERPRETATIONS, CHANGES AND ADDITIONS TO THESE DRAWINGS MUST BE BROUGHT TO THE ATTENTION OF THE CONTRACT ADMINISTRATOR, WHEN NOTED AND BEFORE PROCEEDING WITH CONSTRUCTION WORKS.
- ALL DISTURBED AREAS TO BE REINSTATED TO EQUAL OR BETTER CONDITION. ALL NEW WORK SHALL TIE INTO EXISTING.
- THE CONTRACTOR SHALL COMPLETE ALL RESTORATION WITHIN CITY ROW'S TO A CONDITION AT LEAST EQUAL TO ORIGINAL AND TO THE SATISFACTION OF THE MUNICIPAL AUTHORITIES.
- THE CONTRACTOR SHALL APPRAISE HIS/HER SELF OF ALL SURFACE AND SUBSURFACE CONDITIONS TO BE ENCOUNTERED AND SHALL CARRY OUT THEIR OWN TEST PITS AS REQUIRED TO MAKE THEIR OWN INDEPENDENT ASSESSMENT OF GROUND CONDITIONS. THE CONTRACTOR SHALL NOT MAKE ANY CLAIM FOR ANY EXTRA COST DUE TO ANY SUCH GROUND CONDITIONS VARYING FROM THOSE ANTICIPATED BY THE CONTRACTOR.
- ALL EDGES OF DISTURBED PAVEMENT SHALL BE SAW CUT TO FORM A NEAT AND STRAIGHT LINE PRIOR TO PLACING NEW PAVEMENT. CONTRACTOR TO OBTAIN WRITTEN CONFIRMATION FROM CITY OF ROAD REINSTATEMENT PLAN PRIOR TO CUTTING ASPHALT.

SERVICES

- THE CONTRACTOR IS REQUIRED TO SCHEDULE AND CO-ORDINATE ALL WORKS WITH UTILITY COMPANIES, MUNICIPAL AUTHORITIES AND OTHER CONTRACTORS ON SITE.
- CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING SERVICES PRIOR TO ANY CONSTRUCTION.
- BOTH WATER AND SEWER SERVICE CONNECTION TO THE CITY UTILIDOR MUST BE INSPECTED BY GN BUILDING OFFICIAL, CITY OF IQUALUIT AND ENGINEER OF RECORD PRIOR TO BACKFILL. INSPECTION THROUGH THE CITY IS INITIATED THROUGH THE PUBLIC WORKS & ENGINEERING WATER & SEWER CONNECTION/DISCONNECTION PERMIT. THE GOVERNMENT OF NUNAVUT BUILDING OFFICIAL SHALL INSPECT THE INSTALLATION OF THE WATER AND SEWER SERVICE LINE AS PER THE NUNAVUT BUILDING CODE.



PLAN

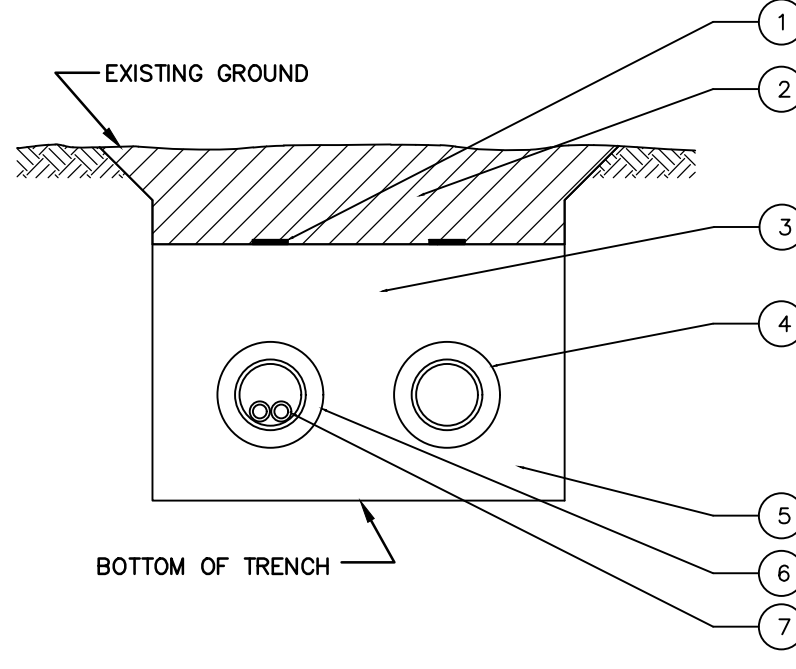
NOTES:

- MINIMUM SLOPE OF SANITARY SERVICE TO BE 2%
- CAP ENDS OF SERVICE USING A BLIND FLANGED CONNECTION FOR FUTURE TIE-IN BY LOT OWNER.
- MARK END OF SERVICE WITH 100mm x 100mm WOODEN STAKE. FROM PIPE INVERT TO A MINIMUM OF 500mm ABOVE THE GROUND. EXPOSED STAKE TO BE PAINTED RED AND MARKED TO INDICATE EITHER WATER OR SEWER.



TITLE: TYPICAL RESIDENTIAL SERVICE CONNECTION
SCALE: NTS
DATE: MAR. 2004

DWG NO.: S-2



KEY TO NUMBERED PARTS:

- WARNING TAPE.
- SELECT NATIVE BACKFILL MATERIAL, OR ENGINEERED BACKFILL WHERE DIRECTED BY ENGINEER.
- SAND BACKFILL, COMPACTED TO 90% STANDARD PROCTOR, MINIMUM 300mm COVER OVER SERVICE PIPES.
- SANITARY - DR11 HDPE PIPE c/w 50mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
- SAND BEDDING COMPACTED TO 90% STANDARD PROCTOR, 150mm (230mm IN ROCK) DEEP.
- CARRIER PIPE - DR11 HDPE PIPE c/w 50mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
- SUPPLY C/W RECIRCULATION WATER SERVICE. COILED DR11 HDPE PIPE INSIDE CARRIER PIPE.

NOTES:

- PIPES TO BE SPACED AT 230mm, OR GREATER, FROM TRENCH WALL AND OTHER PIPES TO ALLOW COMPACTION.
- TEST PITS TO BE DUG EVERY 15m TO A DEPTH OF 500mm BELOW PIPE INVERT TO CHECK FOR PRESENCE OF SILT. SUBEXCAVATE TO A DEPTH OF 450mm BELOW PIPE INVERT AND BACKFILLED WITH GRANULAR B COMPACTED TO 90% STANDARD PROCTOR.
- SERVICE PIPES TO HAVE A MINIMUM OF 600mm OF COVER TO TOP OF INSULATION.

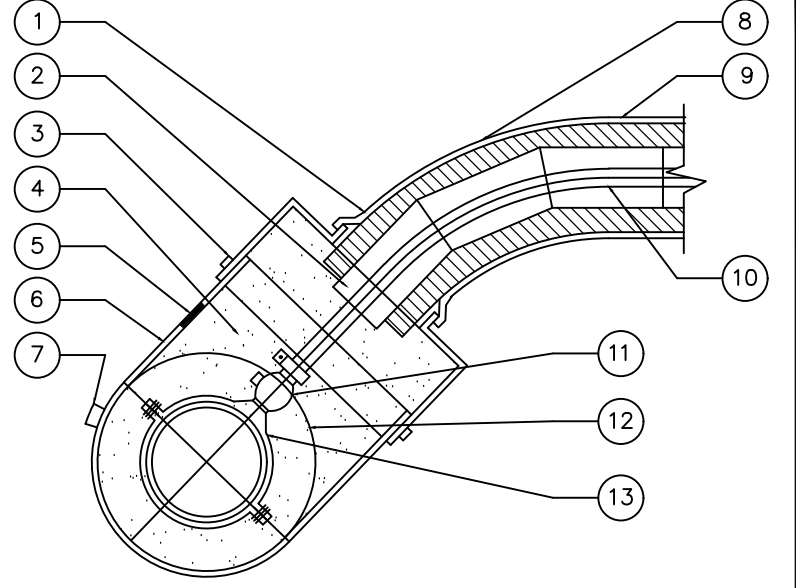


TITLE: SERVICING TRENCH DETAIL
SCALE: NTS
DATE:

DWG NO.: S-3

KEY TO NUMBERED PARTS:

- HEAT SHRINK SLEEVE, MIN. 100mm LAP ON BLACK JACKET.
- POLYURETHANE FOAM PLUG
- GALV. SHEET METAL SCREWS
- FIELD POURED POLYURETHANE INSULATION FOAM (207 kPa COMPRESSIVE STRENGTH).
- HOLES FOR FOAM INJECTION - TO BE MASTIC COATED AFTER FOAM INJECTION.
- INSULATION FORM (SEE DETAIL S-14), SIZED TO FIT WATER MAIN O.D. AND SERVICE LATERAL O.D., 25mm LAP REQUIRED ON EACH SIDE.
- STAINLESS STEEL GEAR CLAMPS
- FACTORY FABRICATED DR17 HDPE 45 DEGREE BEND c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS.
- DR17 HDPE PIPE c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS.
- DR11 CTS HDPE (MIN. DIA 25mm - MAX. DIA 50mm) SUPPLY & RETURN WATER SERVICE PIPE CONTINUOUS LENGTH FROM COIL STOCK.
- BRONZE BALL CORPORATION STOP (SIZED TO FIT) - MIPT INLET x CTS DR11 HDPE - JOINT OUTLET c/w STAINLESS STEEL INSERTS STIFFENERS. 2 REQUIRED PER SERVICE.
- WATER MAIN - DR11 HDPE PIPE c/w 50mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ROBAR 2706 TAPPING SADDLE, DOUBLE STRAP.



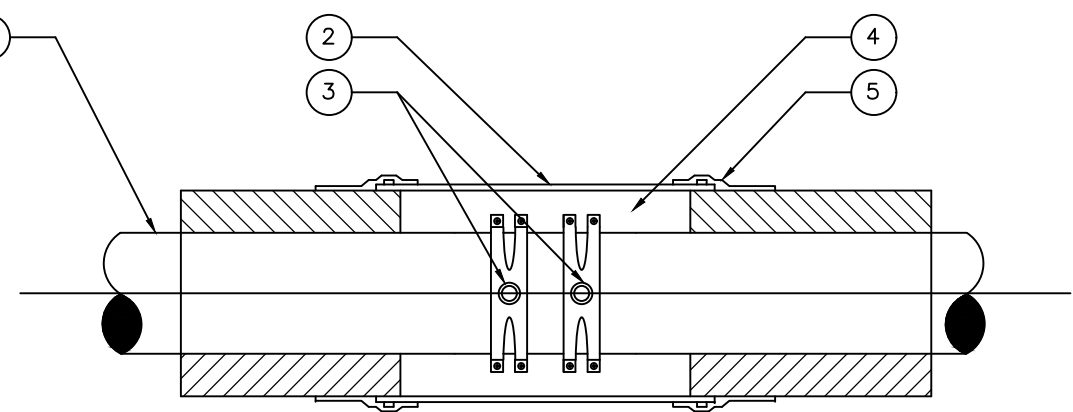
NOTES:

- ALL EXPOSED SURFACES OF POLYURETHANE TO BE FIELD COATED WITH MASTIC.
- METAL SURFACES IN CONTACT WITH FIELD POURED POLYURETHANE INSULATION SHALL BE COATED WITH OIL SEPARATING AGENT.



TITLE: WATER SERVICE CONNECTION AT MAIN
SCALE: NTS
DATE:

DWG NO.: S-4



KEY TO NUMBERED PARTS:

- WATER MAIN - DR11 HDPE PIPE c/w 50mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
- INSULATION FORM (SEE DETAIL S-14), SIZED TO FIT WATER MAIN O.D. AND SERVICE LATERAL O.D., 25mm LAP REQUIRED ON EACH SIDE.
- ROBAR 2706 TAPPING SADDLE, DOUBLE STRAP.
- FIELD POURED POLYURETHANE INSULATION FOAM (207 kPa COMPRESSIVE STRENGTH).
- HEAT SHRINK SLEEVE, MIN. 100mm LAP ON BLACK JACKET.

NOTES:

- ALL EXPOSED SURFACES OF POLYURETHANE TO BE FIELD COATED WITH MASTIC.
- METAL SURFACES IN CONTACT WITH FIELD POURED POLYURETHANE INSULATION SHALL BE COATED WITH OIL SEPARATING AGENT.

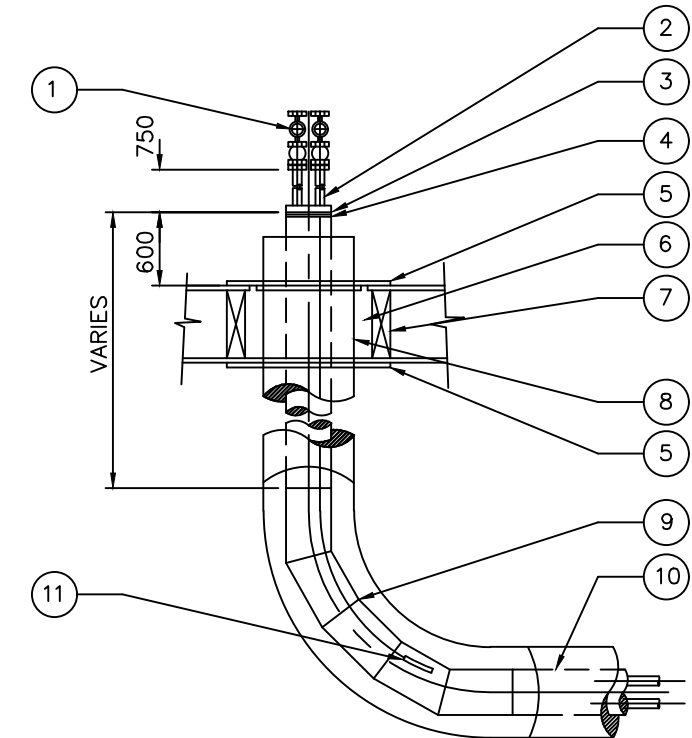


TITLE: WATER SERVICE CONNECTION AT MAIN
SCALE: NTS
DATE: MAR. 2004

DWG NO.: S-5

KEY TO NUMBERED PARTS :

- 25mm BALL VALVES, COMPRESSION WITH SEAMLESS STAINLESS STEEL INSERT - MULLER H-15219 OR EQUAL.
- FIELD INSTALLED 25mm OR 38mm CTS HDPE DR11 SUPPLY & RETURN WATER SERVICE PIPE - CONTINUOUS LENGTH FROM COIL STOCK.
- SECURITY CAP.
- STAINLESS STEEL GEAR CLAMP HOLDING SECURITY CLAMP IN PLACE.
- 20mm PLYWOOD GLUED AND SREWED TO JOIST/STUDS AND HEADERS. CAULK WITH SILICON ALL AROUND.
- POLYURETHANE INSULATION FROM PORTABLE FOAM PACK TO FILL VOID.
- FLOOR JOIST.
- FIBREGLASS REINFORCED PLASTIC THIMBLE.
- LONG RADIUS 90 DEGREE BEND - HDPE DR11 C/W FACTORY APPLIED 50mm POLYURETHANE INSULATION AND FRP JACKET.
- 100mm OR 150mm CARRIER PIPE - HDPE DR11 C/W FACTORY APPLIED 50mm POLYURETHANE INSULATION AND FRP JACKET.
- THERMOSTAT BULB.



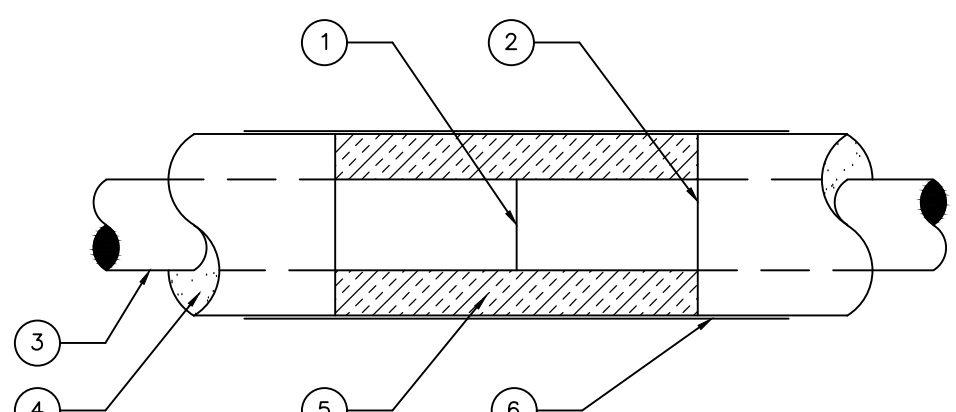
NOTES:

- ALL EXPOSED SURFACES OF POLYURETHANE TO BE FIELD COATED WITH MASTIC.
- THE INSIDE SURFACE OF METAL TO BE IN CONTACT THE FIELD POURED POLYURETHANE INSULATION SHALL BE COATED WITH OIL SEPARATING AGENT.

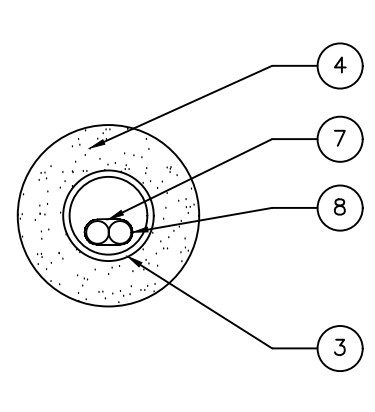


TITLE: WATER SERVICE RISER AT HOUSE
SCALE: NTS
DATE: MAR. 2004

DWG NO.: S-6



PLAN



CROSS SECTION

KEY TO NUMBERED PART:

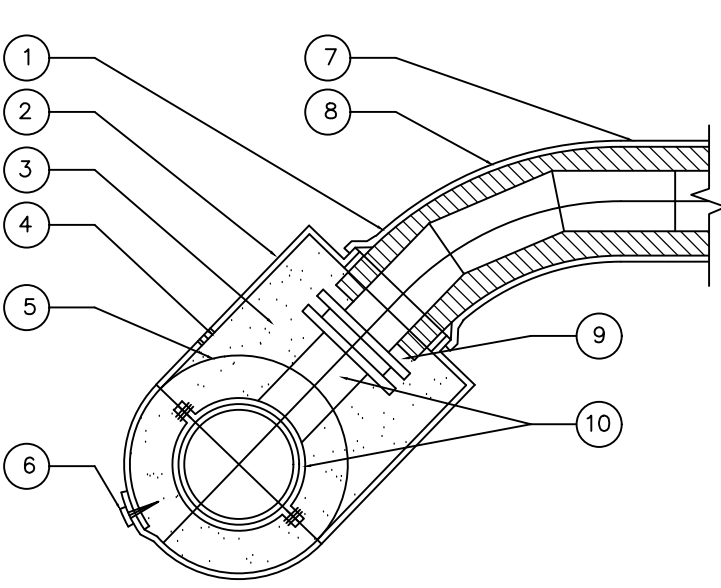
- FIELD BUTT FUSION JOINT MADE BY A QUALIFIED AND LICENSED TECHNICIAN.
- FIELD COAT ALL EXPOSED POLYURETHANE WITH MASTIC.
- HDPE SERIES DR 17 SANITARY SEWER SERVICE
- 50mm NOMINAL THICKNESS SHOP CAST POLYURETHANE INSULATION c/w BLACK JACKET.
- POLYURETHANE HALF SHELLS CUT TO FIT AND COATED WITH MASTIC.
- MASTIC LINED HEAT SHRINK TAPE - 100mm OVERLAP ON SHELLS AND PIPE JACKET.

- TWO FULL TURNS OF POLYESTER PACKAGING TAPE APPLIED EVERY 2m MIN.
- FIELD INSTALLED 25mm, 38mm OR 50mm CTS HDPE DR 11 SUPPLY AND RETURN WATER SERVICE PIPE (SEE S-1 FOR PIPE SIZING) - CONTINUOUS LENGTH FROM COILED STOCK.



TITLE: JOINT DETAIL WATER SERVICE
SCALE: NTS
DATE: MAR. 2004

DWG NO.: S-7



NOTES:

- ALL EXPOSED SURFACES OF POLYURETHANE TO BE FIELD COATED WITH MASTIC.
- METAL SURFACES IN CONTACT WITH FIELD POURED POLYURETHANE INSULATION SHALL BE COATED WITH OIL SEPARATING AGENT.

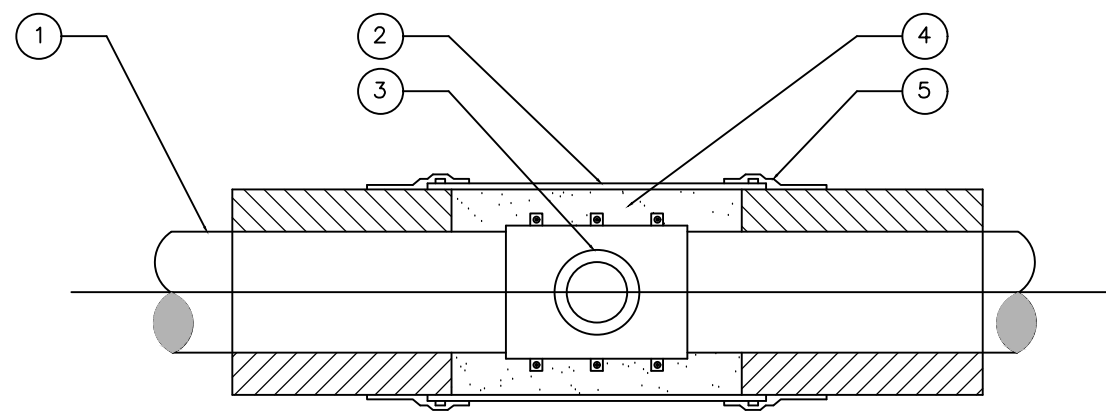
KEY TO NUMBERED PARTS:

- HEAT SHRINK SLEEVE, MIN. 100mm LAP ON BLACK JACKET.
- INSULATION FORM (SEE DETAIL S-14), SIZED TO FIT WATER MAIN O.D. AND SERVICE LATERAL O.D., 25mm LAP REQUIRED ON EACH SIDE.
- FIELD POURED POLYURETHANE INSULATION FOAM (207 kPa COMPRESSIVE STRENGTH).
- HOLES FOR FOAM INJECTION - TO BE MASTIC COATED AFTER FOAM INJECTION.
- SANITARY SEWER - DR11 HDPE PIPE c/w 50mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
- GALV. SHEEL METAL SCREWS
- DR17 HDPE PIPE c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS.
- FACTORY FABRICATED DR17 HDPE 45 DEGREE BEND c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS.
- FLANGE STUB END, c/w BACKUP RING, BUTT FUSED TO END OF SERVICE LATERAL.
- ROBAR No. 6626 OUTLET SLEEVE SADDLE - SIZED TO FIT MAIN AND SERVICE LATERAL.



TITLE: SANITARY SERVICE CONNECTION AT MAIN
SCALE: NTS
DATE:

DWG NO.: S-8



KEY TO NUMBERED PARTS:

- SANITARY SEWER - DR11 HDPE PIPE c/w 50mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
- INSULATION FORM (SEE DETAIL S-14), SIZED TO FIT SANITARY SEWER O.D. AND SERVICE LATERAL O.D., 25mm LAP REQUIRED ON EACH SIDE.
- ROBAR No. 6626 OUTLET SLEEVE SADDLE - SIZED TO FIT MAIN AND SERVICE LATERAL.
- FIELD POURED POLYURETHANE INSULATION FOAM (207 kPa COMPRESSIVE STRENGTH).
- HEAT SHRINK SLEEVE, MIN. 100mm LAP ON BLACK JACKET.

NOTES:

- ALL EXPOSED SURFACES OF POLYURETHANE TO BE FIELD COATED WITH MASTIC.
- METAL SURFACES IN CONTACT WITH FIELD POURED POLYURETHANE INSULATION SHALL BE COATED WITH OIL SEPARATING AGENT.



TITLE: SANITARY SERVICE CONNECTION AT MAIN
SCALE: NTS
DATE:

DWG NO.: S-9

CAUTION

THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

REV	REVISION DESCRIPTION	DATE	BY	APPD
3	ISSUED FOR TENDER	02/05/23	CK	ML
2	ISSUED FOR 90% SUBMISSION	17/06/22	CK	ML
1	ISSUED FOR 50% SUBMISSION	06/01/22	CK	ML

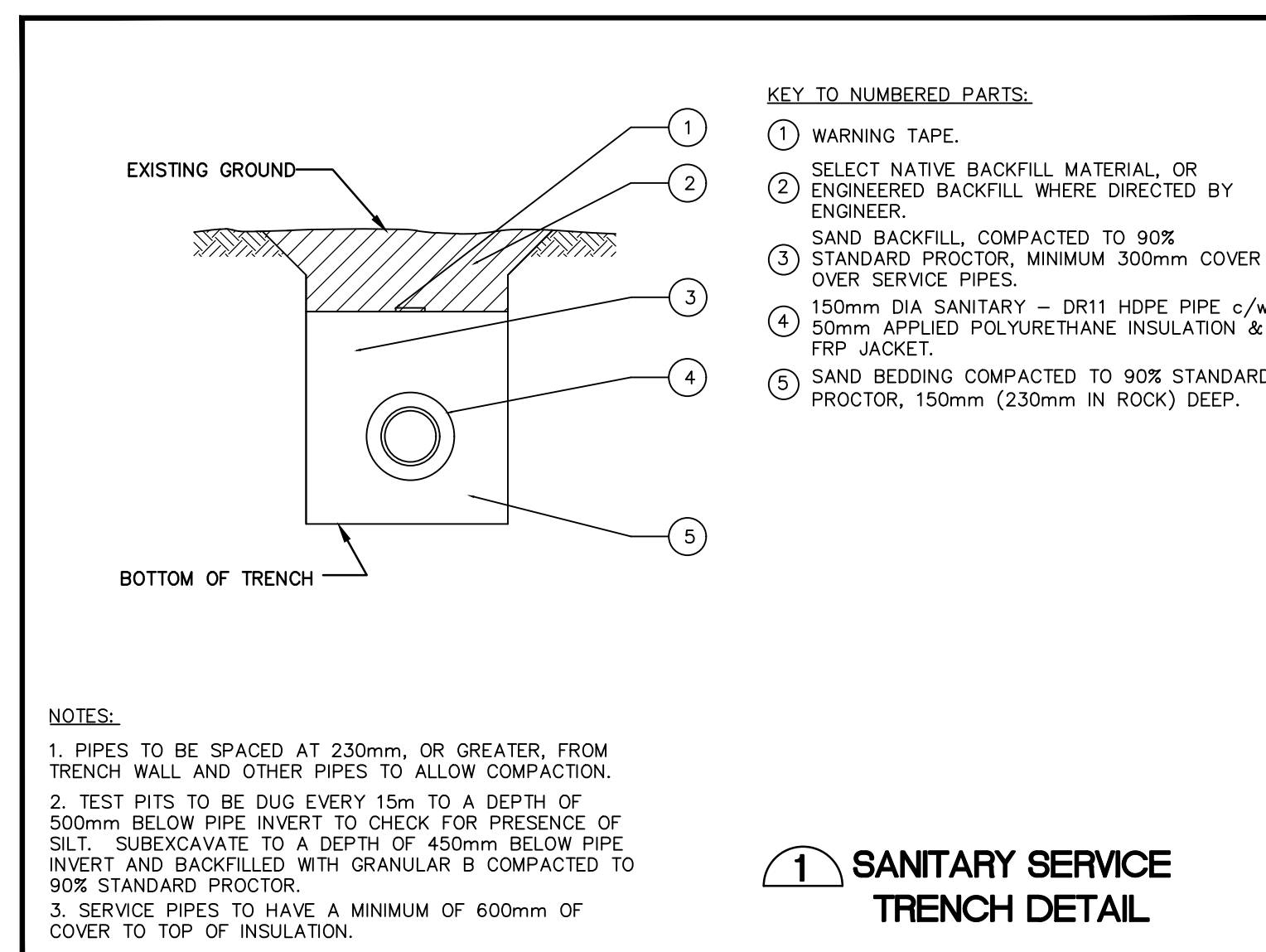
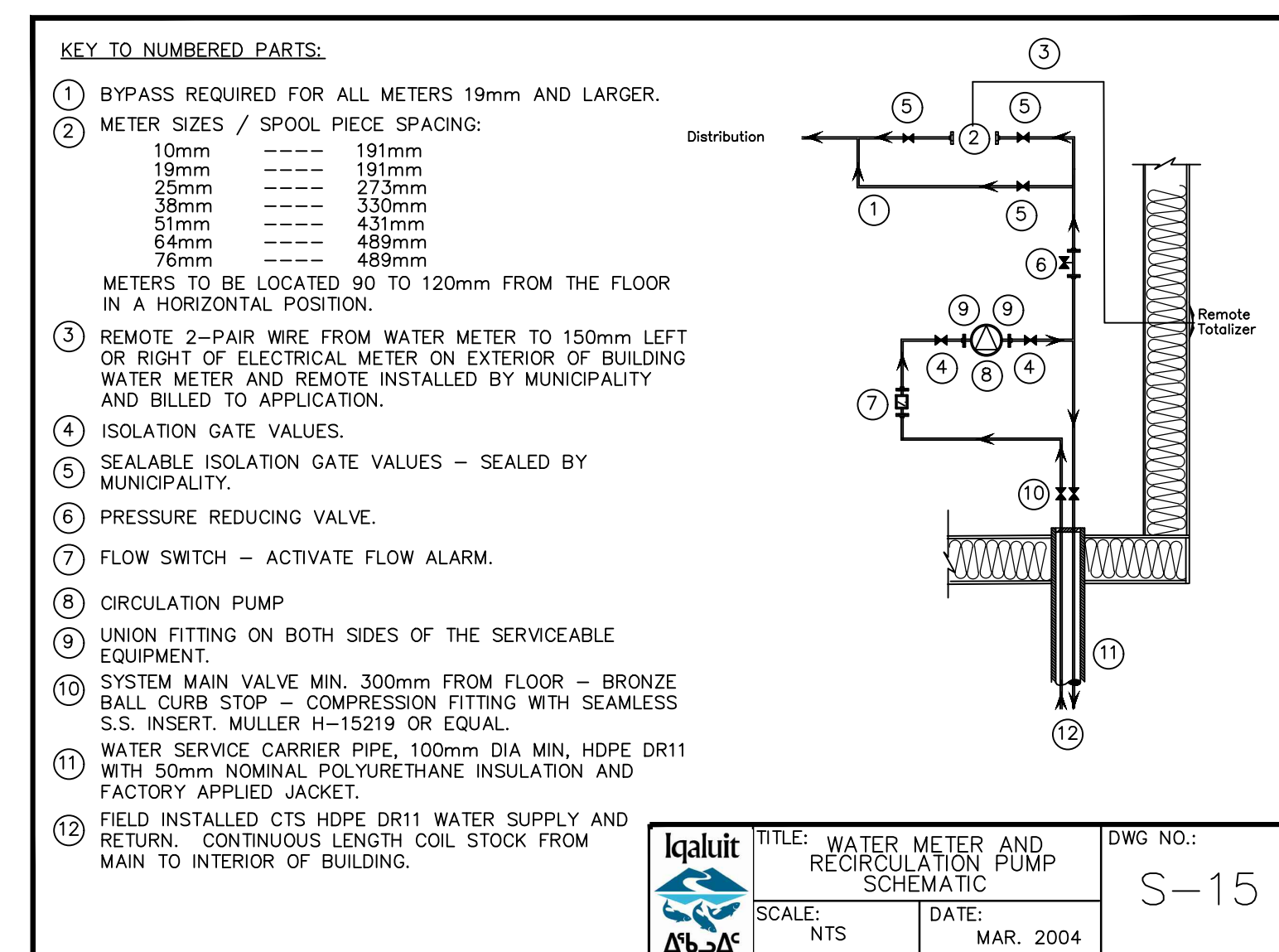
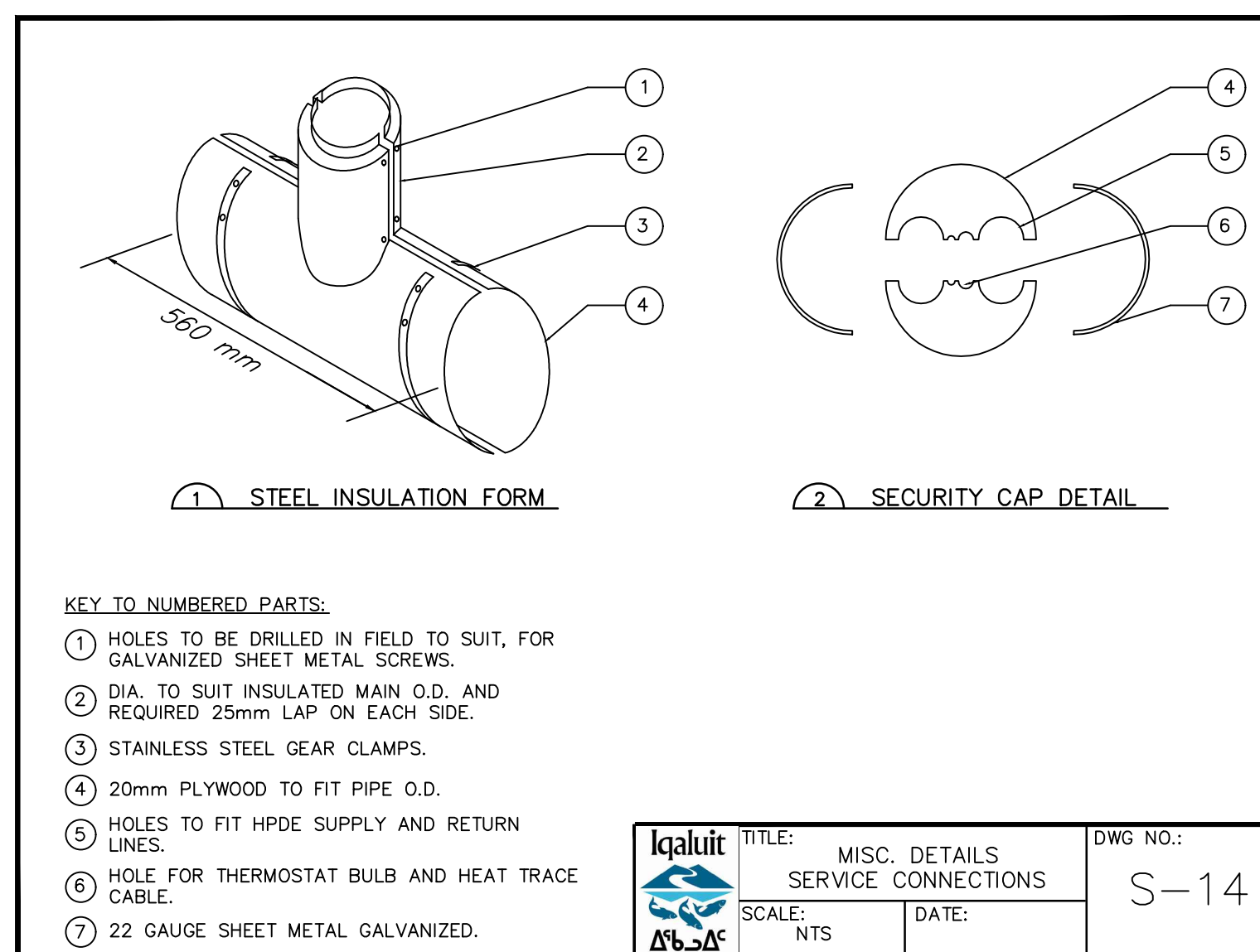
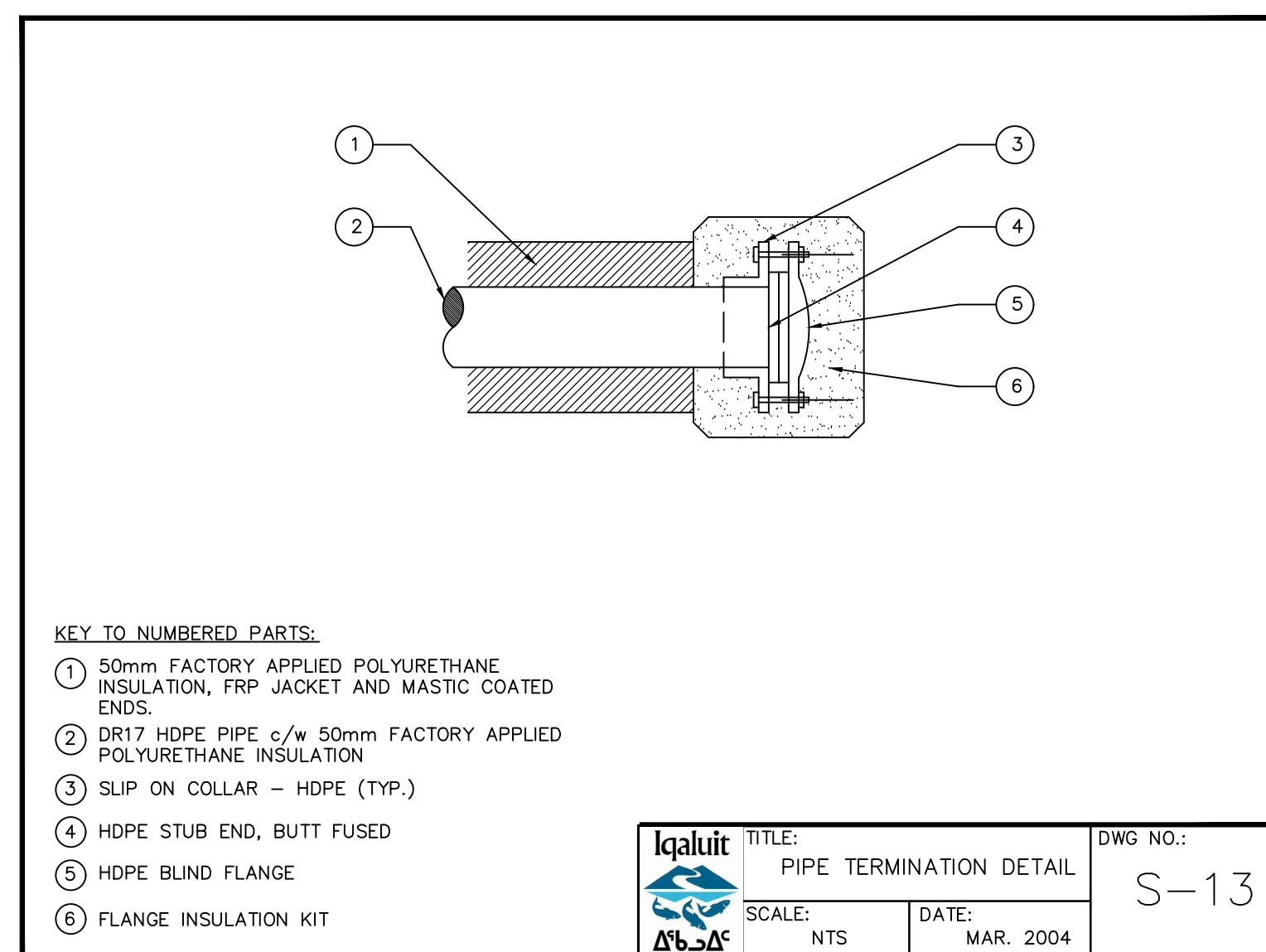
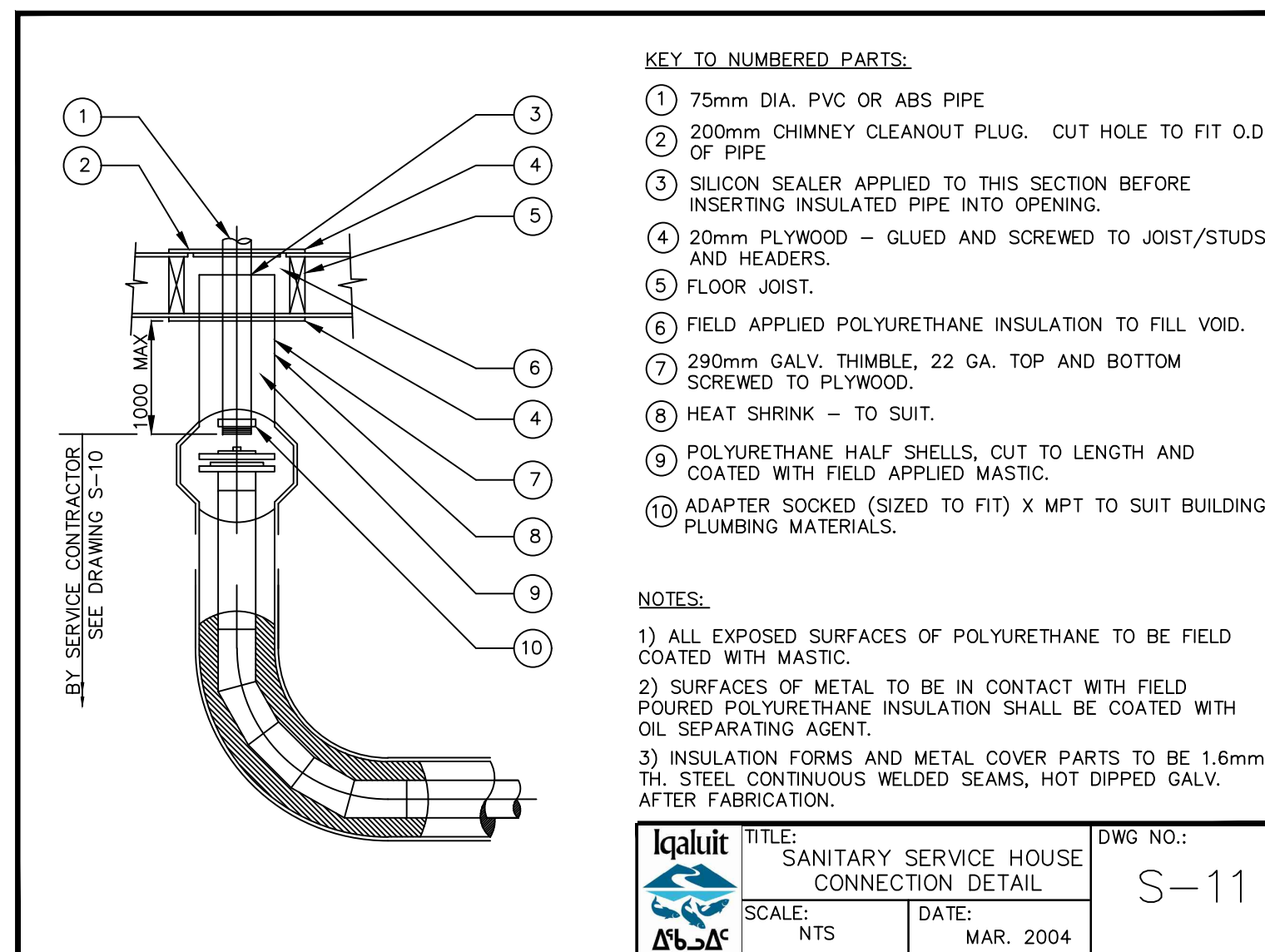
SCALE	DESIGNED BY	REVIEWED BY
N.T.S.		

CITY OF IQUALUIT P.O.BOX 460 IQUALUIT, NU, X0A 0H0 FAX. (867) 979-5600
exp Services Inc. c: +1 (613) 668-1889 f: +1 (613) 225-7330 4600 Highway 100, Unit 100 Oshawa, ON L1B 8H6 Canada www.exp.com
• BUILDINGS • EARTH & ENVIRONMENT • ENERGY • • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

BASEPLAN	---
DESIGN	C.K.
CHECKED	M.L.
CAD	A.F.
PROJECT MANAGER	I.P.C.
APPROVED	M.L.

PROJECT ATCO LOOP DECOMMISSIONING ATCO LOOP IQUALUIT, NU
SERVICING DETAILS_1

PROJECT No. FRN-21015261-AQ
SURVEY ---
DATE MAY 2023
DRAWING No. DE-01



CAUTION
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

[illegible]

SCALE

DESIGNED
BY

REVIEWED BY

CLIENT

CITY OF IQALUIT
P.O.BOX 460
IQALUIT, NU, X0A 0H0
FAX. (867) 979-5600



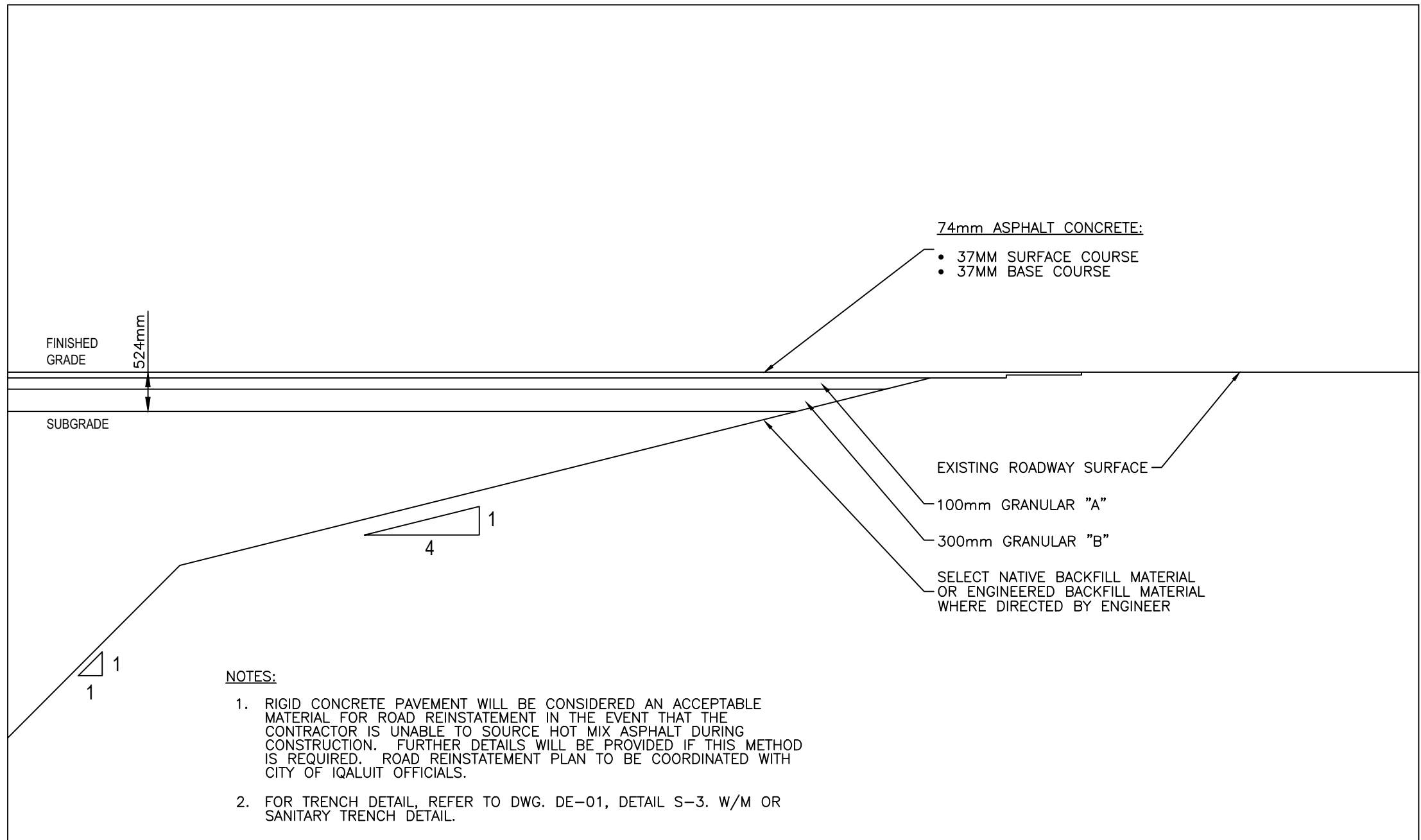
• BUILDINGS • EARTH & ENVIRONMENTAL
• INDUSTRIAL • INFRASTRUCTURE

BASEPLAN	---
DESIGN	C.K.
CHECKED	M.L.
CAD	A.F.
PROJECT MANAGER	I.P.C.
APPROVED	M.L.

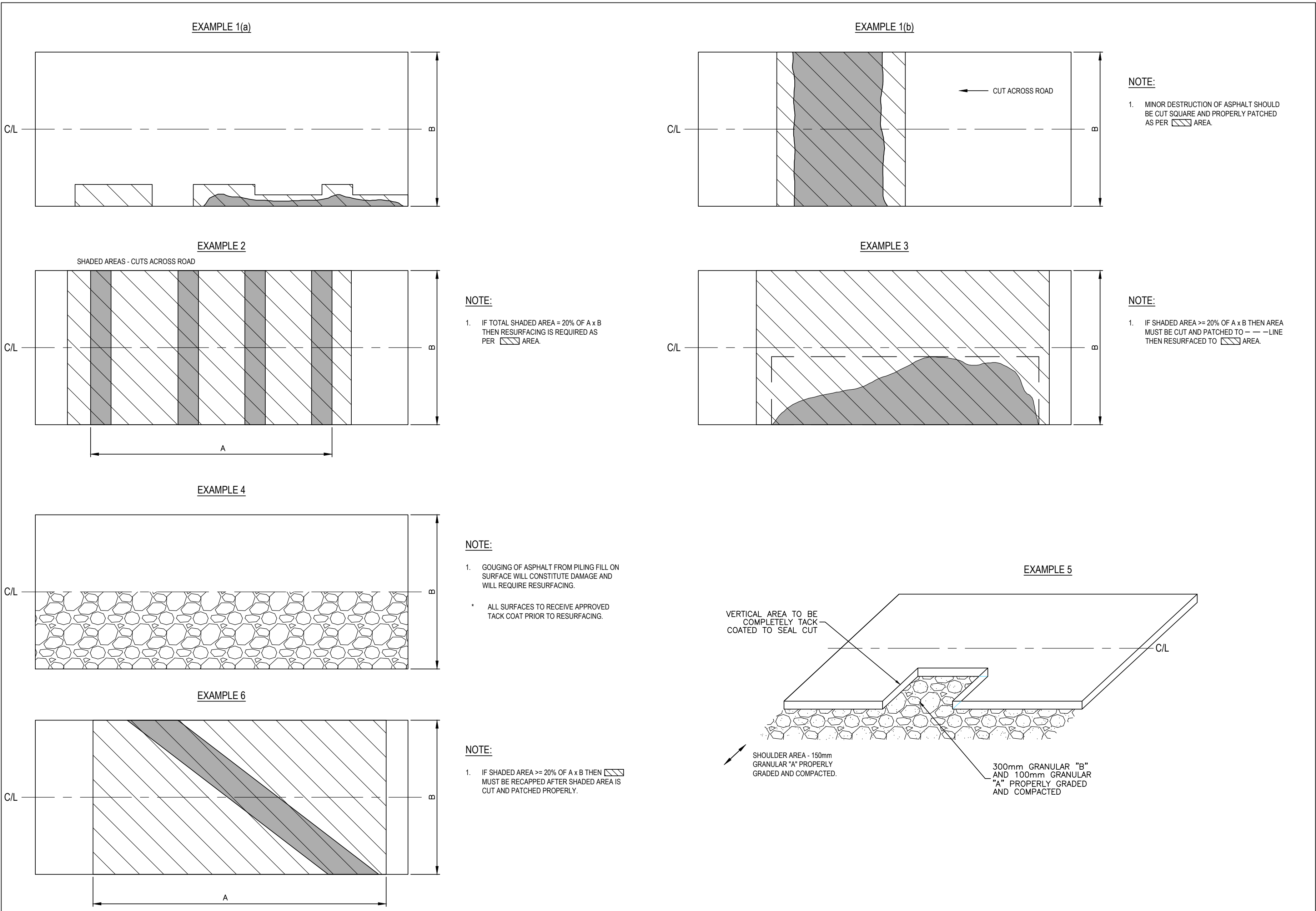
PROJECT
ATCO LOOP DECOMMISSIONING
ATCO LOOP
IQALUIT, NU

SERVICING DETAILS_2

PROJECT No.	FRN-21015261-A0
SURVEY	---
DATE	MAY 2023
DRAWING No.	DE-02



1 TYPICAL APSHALT ROAD REINSTATEMENT DETAIL
N.T.S.



2 TYPES OF ASPHALT DAMAGE AND REPAIR EXAMPLES
N.T.S.

CAUTION
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

REV	REVISION DESCRIPTION	DATE	BY	APPD	REV	REVISION DESCRIPTION	DATE	BY	APPD
					3	ISSUED FOR TENDER	02/05/23	CK	ML
					2	ISSUED FOR 99% SUBMISSION	17/06/22	CK	ML
					1	ISSUED FOR 50% SUBMISSION	06/01/22	CK	ML

SCALE	DESIGNED BY	REVIEWED BY	CLIENT
N.T.S.			

BASEPLAN	PROJECT
---	ATCO LOOP DECOMMISSIONING

DESIGN	CHECKED	CAD	PROJECT MANAGER	TITLE
C.K.	M.L.	A.F.	I.P.C.	ROAD REPAIR DETAILS

CITY OF IQALUIT P.O. BOX 460 IQALUIT, NU, X0A 0H0 FAX. (867) 979-5600	exp. Services Inc. 1-877-668-1889 (T) 1-613-225-7330 3650 Caspary Drive, Unit 100 Ottawa, ON K2B 8K6 Canada www.exp.com • BUILDINGS • EARTH & ENVIRONMENT • ENERGY • • INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •
--	--

DATE	PROJECT No.
MAY 2023	FRN-21015261-AQ

DATE	PROJECT No.
MAY 2023	FRN-21015261-AQ

Section VII - OTHER REFERENCE **DOCUMENTS**



COVID-19 - Standardized Protocols for All Canadian Construction Sites

Version 5
May 26, 2020

For inquiries: Contact Zack Mullins
at zmullins@cca-acc.com

TABLE OF CONTENTS

<u>Standardized Protocols for All Canadian Construction Sites</u>	<u>1</u>
<u>Prevention measures</u>	<u>1</u>
<u>Communication and awareness</u>	<u>1</u>
<u>Business-related travel</u>	<u>2</u>
<u>Working remotely</u>	<u>2</u>
<u>Access and movement to/from construction site</u>	<u>2</u>
<u>Monitoring the status of workers</u>	<u>2</u>
<u>Construction site and site trailer cleaning protocols</u>	<u>3</u>
<u>Limiting and removing internal touch point areas</u>	<u>3</u>
<u>Compartmentalization</u>	<u>3</u>
<u>Working in close proximity</u>	<u>4</u>
<u>Site operation</u>	<u>4</u>
<u>Deliveries</u>	<u>4</u>
<u>Work in occupied spaces</u>	<u>4</u>
<u>Protocol auditing</u>	<u>5</u>
<u>Other</u>	<u>5</u>
<u>Detection measures</u>	<u>5</u>
<u>Screening at entry of construction site</u>	<u>5</u>
<u>Response measures</u>	<u>5</u>
<u>Possible cases of COVID-19</u>	<u>5</u>
<u>Response plans</u>	<u>6</u>
<u>Other</u>	<u>6</u>

COVID-19 - STANDARDIZED PROTOCOLS FOR ALL CANADIAN CONSTRUCTION SITES

The Standardized Protocols for All Canadian Construction Sites outlines the best practices for construction sites in order to maintain the health and safety of all workers required to perform duties during the COVID-19 crisis. The protocols, which include prevention, detection and response measures, will minimize the impacts of the crisis and ensure business continuity in the construction industry. This is not a legal document. Some provinces and municipalities have implemented stricter measures than those found in this document, and contractors are responsible for compliance with the rules, regulations and practices required by the applicable authorities. At the end of this document, there are links to information from some of our partner associations and other industry stakeholders that are further tailored to province specific requirements.

The objectives of the Standardized Protocols are to:

- Prioritize the health and safety of workers and of their surrounding communities;
- Apply recommendations and best practices from federal, provincial, and municipal public health authorities to construction site procedures;
- Establish and maintain a common COVID-19 Pandemic Response Plan across construction sites; and
- Foster open communication amongst stakeholders and ensure a respectful work environment.

Standardized Protocols for All Canadian Construction Sites

Prevention measures

Communication and awareness

- Clear signage is posted at entry points on the construction site and outline the commitment of the contractor to maintain health and safety measures during the COVID-19 crisis, with relevant updates from appropriate jurisdictions' public health authorities and self-identification screening tools.
- Worksite policies as they relate to the COVID-19 crisis are communicated to workers and made available on site.
- All workers exercise the following recommended practices for reducing the risk of transmission as identified by the Public Health Agency of Canada (PHAC), Health Canada, and Centers for Disease Control and Prevention:
 - o Avoid touching eyes, nose and mouth with unwashed hands;
 - o When coughing or sneezing:
 - Cough or sneeze into a tissue or the bend of your arm, not your hand;
 - Dispose of any tissues you have used as soon as possible in a lined waste basket and wash your hands afterwards;
 - o Non-medical face-coverings (such as homemade cloth masks) should be worn as a potential mitigant to catching and transmitting the virus, but are not to be treated as substitutes for proper handwashing, physical distancing, and other protective measures. Masks should not be worn where they put an



individual at risk (e.g. when it may get caught in machinery). Face-coverings should be created and used in line with the guidelines provided by PHAC, found here: canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/prevention-risks/instructions-sew-no-sew-cloth-face-covering.html;

- o Clean and disinfect frequently touched objects and surfaces, including all reusable personal protective equipment (PPE);
- o Do not share personal items or supplies such as phones, pens, notebooks, tools, PPE, etc.;
- o Use and remove PPE with care, being mindful of which surfaces may be contaminated. Individuals must clean their hands after handling any used PPE;
- o Avoid common physical greetings, such as handshakes;
- o Maintain a minimum physical distance of two metres from others; and
- o Wash hands often with soap and water for at least 20 seconds after using the washroom, before handling food, after blowing nose, coughing, or sneezing, and before smoking. If hands are not visibly soiled, and soap and water are unavailable, alcohol-based hand sanitizer can be used.

Business-related travel

- Non-essential business travel is not authorized. Business travel is limited and on an exceptional basis only.
- All individuals returning from out of country must undergo a 14-day self-isolation period, as mandated by the federal government and outlined here: canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/latest-travel-health-advice.html.
- As some provincial governments impose similar restrictions for inter-provincial travel, any such requirements for self-isolation must be obeyed as applicable.

Working remotely

- Where practical, all office employees supporting a project work remotely. Meetings are held through teleconferencing or videoconferencing.

Access and movement to/from construction site

- Wherever possible, workers travel to site using individual modes of transportation (e.g., personal vehicle or bicycle). Additional parking arrangements are made as required.
- Workers are encouraged to change out of work clothes before entering their vehicle at the end of their shift. Work clothes should be handled carefully and washed upon arriving home.
- Entering and exiting of the worksite is monitored and controlled to ensure that the minimum physical distancing is not broken when shifts begin and end. Shift start and end times are staggered in five-minute intervals to accommodate this if needed.
- All non-essential individuals are not permitted access to the site.

Monitoring the status of workers

- Detailed tracking of worker's status on-site and off-site are kept at all times (e.g. fit to work, sick, off-work for family caring duties, etc.). A list of all quarantined workers is updated daily, with their privacy maintained.
- Records are kept of which individuals work together and when.



Construction site and site trailer cleaning protocols

- All offices and jobsites implement additional cleaning measures of common areas. All door handles, railings, ladders, switches, controls, eating surfaces, shared tools and equipment, taps, toilets, and personal workstation areas are wiped down at least twice a day with a disinfectant, such as disinfectant wipes. Individuals are responsible for cleaning and disinfecting their workstations.
- Additional sanitary measures are implemented on site: hand washing stations with a posted hand washing protocol, hand sanitizer stations, provision of disinfectant wiping products. These types of facilities are made available at site entries, exits, washrooms, eating areas, offices, and any other areas with commonly touched surfaces.
- Commonly touched surfaces on vehicles and equipment are thoroughly cleaned and disinfected at the end of shifts and between users.
- All cleaning and disinfecting is carried out per PHAC's recommendations here: canada.ca/en/public-health/services/publications/diseases-conditions/cleaning-disinfecting-public-spaces.html.

Limiting and removing internal touch point areas

- Limit access and use of shared devices like coffee machines, water fountains, microwave ovens, and similar. Means to clean and disinfect such devices between uses is provided.
- Limit use of common pens for sign-in sheet to construction site.
- Washroom modifications - Install more sinks and sinks with physical separation between users where feasible. Change out taps, paper towel dispensers and garbage cans to hands-free models.
- Remove doors/door handles - Look at all reasonable opportunities to remove doors or replace handles with hands-free options, such as foot-pull devices.
- Where touch points like door handles and water coolers remain, paper towels are provided to allow users to avoid skin contact.
- Gloves are worn whenever possible while on the worksite, but are treated the same as bare hands in terms of minimizing unnecessary touching of anything on site and the user's face.

Compartmentalization

- The construction site is to be segregated to the extent possible in zones or other methods to keep different crews/trades physically separated at all time. This promotes physical distancing and supports the containment of propagation should it arise.
- Eating is restricted to clearly identified dedicated eating areas with handwashing stations, cleaning and disinfectant materials, and adequate space to maintain minimum physical distancing.
- Upper limits are put on the number of people allowed in each zone and in facilities like washrooms, trailers, and eating areas at once to allow for the recommended minimum physical distancing.
- One-way staircases are established wherever practical to minimize worker contact.
- Freight elevators are operated/occupied by only one individual at a time or where feasible, by respecting the minimum physical distancing guidelines.



Working in close proximity

- Alternate arrangements are made as necessary to ensure workers avoid breaking the minimum physical distance with others for prolonged periods. Where this is not possible due to task-specific safety risks, a risk assessment is done to identify controls to protect the health and safety of the workers. This can include methods to minimize the duration or proximity of the task, use of physical controls (such as the use of clear plastic barriers), and as a last resort, PPE.
- A record is kept of all tasks requiring close-proximity work, including the task-specific safety risks that justify close-proximity and all the control measures implemented to protect workers from the risk of infection. The record should be reviewed regularly to determine if there are any additional safety measures that can be implemented for each task.

Site operation

- The number of in person meetings is minimized. If required, meetings should involve only necessary individuals and include six people or fewer. Minimum physical distancing is maintained, and meetings are held in open spaces when possible. If needed, 'Toolbox Talks' and similar meetings/updates are held in multiple sessions to accommodate this.
- The worksite is rearranged to reduce high-traffic areas and allow for the minimum physical distancing.
- Site teams are encouraged to put forward split/alternating shifts to avoid extensive intermingling. Voluntary shift offset and implementing time gaps between shifts are highly encouraged.
- Vehicles, equipment, and tools are assigned to a single individual, or, to the minimum number of operators needed for safe use.
- Where work is done in crews, the work is planned to minimize or eliminate the crossover of workers between crews.
- Project teams stagger break and lunch schedules to minimize the number of people in close proximity to one another. Enclosed lunchrooms are only made available during inclement weather.
- Work schedules are adjusted to provide time for proper cleaning and disinfecting as required.

Deliveries

- Delivery zones are clearly identified and limited to receivers and deliverers only.
- When possible, nothing is passed between the deliverer and the receiver (e.g. shipment documents and pens for signatures). Deliveries are unloaded solely by receivers using proper PPE, while deliverers remain in their vehicles.

Work in occupied spaces

- When working in spaces currently occupied (e.g. private residences), the minimum physical distancing with any occupants is strictly enforced. Where possible, workers and occupants are segregated in different rooms.
- Non-emergency work should not be done in any occupied spaces where an occupant is suspected to have contracted COVID-19 or is under self-isolation (per the directions of the applicable authorities). Emergency work can be carried out provided workers are equipped with nitrile gloves, Tyvek suits or coveralls, and facial/respiratory protection.



- Hands and tools are thoroughly cleaned before entering the workplace and after leaving, and any surfaces or equipment in the occupied space are disinfected before work is done on them.

Protocol auditing

- The jobsite's safety officer is responsible for ensuring appropriate health and safety measures have been implemented, and that directions of the appropriate health authorities are followed with respect to workers returning to work following a presumed or confirmed case of COVID-19.
- Contractors are to conduct periodic audits (frequency to be determined based on project scale and scope) to verify that the appropriate measures have been implemented and are maintained.

Other

- Any other measures deemed to increase the safety or limit the propagation of the virus.

Detection measures

Screening at entry of construction site

- Before entering the site, individuals must confirm that:
 - They are not currently exhibiting flu-like symptoms such as fever, tiredness, coughing, or congestion;
 - They have not returned from outside of Canada within the past 14 days;
 - To the best of their knowledge, they have not been in contact with someone with a confirmed or probable case of COVID-19; and
 - They have not been working on a site that was shut down due to the virus.
- Individuals who are at increased risk of serious illness (due to age, pregnancy or other medical condition) are not to be permitted on site.
- Any responses or results of any screening measures, whether they permit an individual on site or not, are to be kept private and treated as sensitive medical information.
- Workers who are not authorized to access the site are to be safely transported directly back home, or to a preferred location of self-isolation. When unable to do so themselves, a vehicle and driver will be arranged for them.
- When transporting a potentially ill individual, both driver and passenger are to be given masks and nitrile gloves. The passenger is to sit in the backseat, and the driver is to open and close the doors for them.

Response measures

Possible cases of COVID-19

- Individuals who have been potentially exposed to the virus, or who are exhibiting flu-like symptoms such as fever, tiredness, coughing, or congestion are instructed to:



- o Not come to work;
- o Contact their supervisor and/or human resources department;
- o Stay at home and self-isolate; and
- o Contact local health authorities for further direction.

Such individuals are required to follow the directions of the local health authority and may not return to work until given approval by the proper health authorities.

- Individuals who begin to display flu-like symptoms on site are instructed to avoid touching anything, take extra care to contain coughs and sneezes, and return home immediately to undergo self-isolation as directed by the local health authority..
- All areas on site potentially infected by a confirmed or probable case are barricaded to keep individuals two metres away until the area is properly cleaned and disinfected.

Response plans

- All contractors are to complete an integrated continuity plan to respond to partial or complete shutdown of construction sites or in the case of a severe limitation of site operations.

Other

- Refer to canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19.html for the latest information.

The situation related to COVID-19 is changing rapidly. This Protocol will be updated on an as required basis to reflect the latest broadly adopted measures.

For province specific guidance, please review the resources linked below. Questions on province-specific health and safety matters can be directed to the listed contacts.

British Columbia

British Columbia Construction Association

bccassn.com/media/Guidance%20to%20Construction%20Sites%20Operating%20During%20COVID19.pdf

BC Construction Safety Alliance

Mike Mckenna, Executive Director

mmckenna@bccsa.ca

Tammy Oliver, Senior Director

toliver@bccsa.ca



Alberta

Alberta Construction Association

albertaconstruction.net/wp-content/uploads/2020/04/PANDEMIC-PLANNING-FOR-THE-CONSTRUCTION-INDUSTRY.pdf

Alberta Roadbuilders and Heavy Construction Association

279e5ecb-ae4a-4a97-bda5-1b2fe77f0894.filesusr.com/ugd/77f1bc_683524748e3c482aac8a8f59e5a86218.pdf?index=true

Alberta Construction Safety Association

Dan MacLennan, CEO

dmaclellan@youracsa.ca

Tammy Hawkins, COO

thawkins@youracsa.ca

Saskatchewan

Saskatchewan Construction Association

scaonline.ca/third-party-information-bulletins.html

Saskatchewan Construction Safety Association

Thomas Archer, VP of Operations

thomasa@scsaonline.ca

Collin Pullar, President

collinp@scsaonline.ca

Heavy Construction Safety Association of Saskatchewan

Al Goldstone, Safety Director

alg@hcsas.sk.ca

Manitoba

Winnipeg Construction Association

togetherwebuild.ca/

Construction Safety Association of Manitoba

Sean Scott, Executive Director

sean@constructionsafety.ca

Derek Pott, Director of Operations

derek@constructionsafety.ca

Manitoba Heavy Construction Association

Don Hurst, Director

don@mhca.mb.ca



Ontario

ORBA / OGCA / RESCON / OSPE / OHBA

orba.org/wp-content/uploads/2020/03/ORBA-branded-COVID19-resource-and-best-management-practices-document-Final.pdf

Infrastructure Health & Safety Association

Enzo Garritano, President egarritano@ihsa.ca

Paul Casey, Vice President pcasey@ihsa.ca

Quebec

L'Association de la construction du Québec

acq.org/coronavirus/sante-securite-du-travail/

Commission des normes, de l'équité, de la santé et de la sécurité du travail

cnesst.gouv.qc.ca/salle-de-presse/covid-19/Pages/trousse.aspx?utm_source=CNESST&utm_medium=Carrousel-accueil&utm_campaign=Trousse_doutils

ASP Construction

Sylvie L'Heureux, Executive Director slheureux@asp-construction.org

New Brunswick

New Brunswick Construction Association

nbcsa.ca/wp-content/uploads/2020/04/Construction-Site-COVID-19-Prevention-Procedures.pdf

New Brunswick Construction Safety Association

Roy Silliker, CEO rsilliker@nbcsa.ca

Shelley Poirier, Senior Safety Advisor spoirier@nbcsa.ca

Nova Scotia

Construction Association of Nova Scotia

cans.ns.ca/covid-19-managing-covid-19-on-the-worksite/

Construction Safety Association of Nova Scotia

MJ MacDonald, CEO mmacdonald@constructionsafetyns.ca

Damon Alcock, Chief Safety Officer dalcock@constructionsafetyns.ca



Prince Edward Island*Construction Association of PEI*capei.ca/member_access/LiveEditor/images/Public%20Health%20Order%20-%20March%202020.pdf**Newfoundland and Labrador***Newfoundland and Labrador Construction Association*nlca.ca/critical-information-covid-19/*Newfoundland and Labrador Construction Safety Association*

Jackie Manuel, CEO

jmanuel@nlcsa.com**Yukon***Northern Safety Network Yukon*

Sheila Sergy, Executive Director

sheila@yukonsafety.com**Northwest Territories and Nunavut***Northern Construction Safety Association*

Chris Johnston, Executive Director

chris@nsa-nt.ca

CANADA
NUNAVUT

PUBLIC HEALTH ACT, S. Nu. 2016, c. 13

TRAVEL RESTRICTION ORDER #9

WHEREAS:

- A. The Minister of Health has declared a Public Health Emergency in Nunavut effective March 20, 2020 to address the novel coronavirus COVID-19 pandemic, and may renew this declaration every fourteen (14) days for the duration of the public health emergency;
- B. Pursuant to section 41(1) of the *Public Health Act*, the Chief Public Health Officer may take certain actions, including issuing directions or orders for the purposes of protecting the public health and preventing, remedying or mitigating the effects of the public health emergency;
- C. The Government of the Northwest Territories has imposed restrictions on entry into the Northwest Territories pursuant to section 33 of the Northwest Territories *Public Health Act*, S.N.W.T. 2007, c. 17; and
- D. The Government of Canada has imposed restrictions on entry into Canada pursuant to section 58 of the *Quarantine Act*;

THEREFORE, the Chief Public Health Officer hereby orders the following:

- 1. The Travel Restriction Order (#8) effective July 13, 2020 is rescinded and replaced with this Order.

Part 1: Nunavut and Northwest Territories Common Travel Area

- 2. Pursuant to subsection 41 (1) (e) of the Act, the Nunavut and Northwest Territories Common Travel Area is established, consisting of all parts of Canada within the territorial boundaries of Nunavut as set out in the *Nunavut Act* and the Northwest Territories as set out in the *Northwest Territories Act*.
- 3. All persons may travel throughout the Nunavut and Northwest Territories Common Travel Area, where:
 - a. They have not been physically present outside either the Nunavut and Northwest Territories Common Travel Area or the Nunavut and Churchill, Manitoba Common Travel Area in the fourteen (14) days prior to travel;

- b. They have completed any mandatory self-isolation protocol required by an order of the Chief Public Health Officer in Nunavut, the Northwest Territories, or Manitoba; and
 - c. They stay within the boundaries of the Nunavut and Northwest Territories Common Travel Area for the duration of travel.
- 4. Persons seeking to travel from the Northwest Territories to Nunavut must contact the Office of the Chief Public Health Officer for Nunavut and provide:
 - a. Contact information, such as an address and phone number, at the person's regular place of residence;
 - b. Contact information, such as an address and phone number where the person can be reached while in Nunavut; and
 - c. A written declaration containing the information set out in Appendix "A" to this Order.
- 5. Persons must produce proof of authorization to travel from the Office of the Chief Public Health Officer prior to travelling to Nunavut, except where persons are exempt from this requirement pursuant to paragraph 8.
- 6. All persons seeking to travel to the Northwest Territories from Nunavut must comply with any Orders issued by the Chief Public Health Officer of the Northwest Territories while they are present in the Northwest Territories.
- 7. All persons who leave the Nunavut and Northwest Territories Common Travel Area are subject to the isolation requirements set out in Part 3 of this Order.
- 8. Persons travelling on scheduled flights between the Kitikmeot Region and any other part of Nunavut containing a stopover or change of aircraft in Yellowknife, Northwest Territories are exempt from the requirements in paragraphs 4 and 5.

Part 2: Nunavut and Churchill, Manitoba Common Travel Area

- 9. Pursuant to subsection 41 (1) (e) of the Act, the Nunavut and Churchill, Manitoba Common Travel Area is established, consisting of all parts of Canada within the territorial boundaries of Nunavut as set out in the *Nunavut Act* and the municipal boundaries of the Town of Churchill in the Province of Manitoba as defined in the *Municipal Status and Boundaries Regulation*, Man. Reg. 567/88 R, and includes overland travel in unpopulated areas between the boundary between Nunavut and Manitoba and the Town of Churchill.

10. All persons may travel throughout the Nunavut and Churchill, Manitoba Common Travel Area, where:
- a. They have not been physically present outside either the Nunavut and Northwest Territories Common Travel Area or the Nunavut and Churchill, Manitoba Common Travel Area in the fourteen (14) days prior to travel;
 - b. They have completed any mandatory self-isolation protocol required by an order of the Chief Public Health Officer in Nunavut, the Northwest Territories, or Manitoba
 - c. They stay within the boundaries of the Nunavut and Churchill, Manitoba Common Travel Area for the duration of travel.
11. All persons seeking to travel from Nunavut to Churchill, Manitoba must contact the Office of the Chief Public Health Officer for Nunavut and provide:
- a. Contact information, such as an address and phone number, at the person's regular place of residence;
 - b. Contact information, such as an address and phone number where the person can be reached while in Nunavut; and
 - c. A written declaration containing the information set out in Appendix "A" to this Order.
12. All persons must produce proof of authorization to travel from the Office of the Chief Public Health Officer prior to travelling to Nunavut.
13. All persons seeking to travel to Churchill, Manitoba from Nunavut must comply with any Orders issued by the Chief Public Health Officer of Manitoba while they are present in Manitoba.
14. All persons who leave the Nunavut and Churchill, Manitoba Common Travel Area are subject to the isolation requirements set out in Part 3 of this Order.

Part 3: All Other Travel to Nunavut

15. Pursuant to subsection 41(1)(e) of the Act, all travel to Nunavut that originated from across any inter-jurisdictional border other than the boundary between Nunavut and the Northwest Territories or between Nunavut and the municipal boundaries of the Town of Churchill, Manitoba is hereby prohibited with the following exceptions:

- a. Nunavut residents returning to Nunavut bearing a letter of authorization from the Chief Public Health Officer in accordance with paragraph 16;
- b. Nunavut residents returning to Nunavut from medical travel and any Nunavut residents serving as medical travel escorts, subject to specific exemptions and the direction and authorization of the Chief Public Health Officer in accordance with paragraph 16;
- c. Non-residents entering Nunavut for the purposes of commencing a contract of employment bearing a letter of authorization from the Chief Public Health Officer in accordance with paragraph 16;
- d. Non-residents entering Nunavut for the purposes of family reunification bearing a letter of authorization from the Chief Public Health Officer in accordance with paragraph 16;
- e. Persons providing services in the course of importation/exportation of goods and other supply chain workers, including those persons who are necessary to maintain supply chain transportation services;
- f. Flight crews working on any flights arriving in Nunavut, including medical evacuation flights;
- g. Marine vessel crews working on vessels engaged in the annual marine resupply (sealift), subject to any specific directions and orders of the Chief Public Health Officer;
- h. Persons engaged in providing critical services;
- i. Persons engaged in providing support services to critical services workers;
- j. Nunavut Inuit exercising their rights as set out in Article 5 of the *Nunavut Agreement* and who exercise the right to harvest outside of Nunavut may travel back to their place of residence in Nunavut if they have not travelled to a community or populated area outside a Common Travel Area as defined in Part 1 or Part 2 of this order. If the person has traveled to a community or populated area outside of the Common Travel Area,

they shall not travel within Nunavut unless they do so in accordance with paragraph 15(a) of this order;

- k. A person from the Northwest Territories, who has an Aboriginal or treaty right in an area of Nunavut while exercising that right within Nunavut may travel back to their place of residence in the Northwest Territories if they have not travelled to a community or populated area outside the Common Travel Area set out in Part 1 of this order.
- l. A person from outside of Nunavut or the Northwest Territories, who has an Aboriginal or treaty right to harvest in an area of Nunavut while exercising that right within Nunavut. Those persons may continue to exercise those rights but shall not travel to a community or populated area of Nunavut;
- m. Transient workers in operating mines who enter Nunavut on private flights operating directly to and from the mine site; transient workers must remain at the mine site and shall not enter any community or populated area of Nunavut;
- n. Persons engaged in the construction of critical infrastructure projects, subject to specific directions and orders of the Chief Public Health Officer;
- o. Persons being transported to a correctional facility in Nunavut, along with those persons engaged in the transportation or escort to a correctional facility in Nunavut;
- p. Persons being transported to or from a hospital or health facility outside Nunavut pursuant to an order under the *Mental Health Act* or the *Public Health Act*, including patients and those persons who are required to travel with those patients;
- q. Members of the Canadian Armed Forces and civilian employees posted to the Canadian Forces Stations in Alert and Eureka who enter Nunavut on military flights operating directly to and from the stations; these individuals must remain at their assigned station and shall not enter any community or populated area of Nunavut;

- r. Any foreign national, including a Temporary Foreign Worker entitled to enter Canada pursuant to the Federal Orders-in-Council 2020-0523 or 2020-0469, with an urgent and substantial need to enter Nunavut bearing a letter of authorization from the Chief Public Health Officer;
 - s. Any Person, including flight and vessel crewmembers who enter Canada at a fixed or temporary Port of Entry in Nunavut who is permitted to enter Canada pursuant to Federal Orders-in-Council 2020-0523 or 2020-0469;
 - t. Any other Person with an urgent and substantial need to enter Nunavut bearing a letter of authorization from the Chief Public Health Officer; and
 - u. Members of the Canadian Coast Guard and Canadian Coast Guard Auxiliary on active service on vessels and stations in Nunavut.
16. Pursuant to subsection 41(1)(g) of the Act and in order to decrease or eliminate the risk to the public health in relation to novel coronavirus COVID-19, persons within Nunavut are subject to the following restrictions, as specifically set out below:
- a. Prior to returning to Nunavut, all persons listed in paragraphs 15 (a), (c), (d), (n), (r), (s), and (t) must complete a minimum fourteen-day isolation period, either voluntarily or subject to an order by an official having jurisdiction, at a place designated by the Chief Public Health Officer in Ottawa Ontario, Winnipeg Manitoba, or Edmonton Alberta. Upon completion of the isolation period, the Chief Public Health Officer will issue these persons with a clearance letter authorizing them to return to Nunavut.
 - b. Prior to returning to Nunavut, all persons listed in paragraph 15 (b) must complete a minimum fourteen-day isolation period at a place designated by the Chief Public Health Officer, either prior to returning to Nunavut or immediately upon their return, subject to the direction of the Chief Public Health Officer.

- c. All persons listed in paragraphs 15 (e), (f), (g), (h), (i), (j), (k), (l), (m), (o), (p), (q), and (u) are exempt from the fourteen-day isolation period.
- d. The Members of Parliament and Senators representing Nunavut and the Northwest Territories, and Members of the Nunavut Legislative Assembly are entitled to an exemption from the fourteen-day isolation period upon written request to the Chief Public Health Officer when travelling for official Parliamentary or Legislative Assembly business. For greater certainty, these individuals may choose to complete the fourteen-day isolation period set out in paragraph 16 (a) when travelling for official Parliamentary or Legislative Assembly business and must complete the isolation period when travelling for personal business.
- e. All persons seeking to travel to Nunavut, including Nunavut residents, must advise the Office of the Chief Public Health Officer if they have been outside of Canada at any time during the fourteen (14) days prior to their anticipated return to Nunavut, and demonstrate proof of compliance with any applicable quarantine and isolation orders issued under the *Quarantine Act*.
- f. The Chief Public Health Officer may issue certificates of authorization to individuals who can demonstrate that they have completed a fourteen-day isolation period. These residents do not have to complete the isolation period set out in paragraph 16 (a).
- g. The isolation periods in paragraphs 16 (a) and (b) may be extended to accommodate air carrier schedules and flight cancellations. This extension period shall not exceed six (6) days.
- h. Persons listed in paragraphs 15 (o) and (p) must return to Nunavut on charter flights arranged by the Government of Nunavut or the Government of Canada. These persons may be subject to isolation in a secure location upon their return to Nunavut.
- i. All persons who are exempt from the isolation period set out in paragraph 16 (a) shall abide by social distancing guidelines established by the Chief Public Health Officer. These persons shall also self-monitor

and contact a Medical Health Officer if they exhibit any symptoms of novel coronavirus COVID-19.

- j. All persons who are exempt from the isolation period set out in paragraph 16 (a) must self-monitor and contact a Medical Health Officer immediately to undergo a risk assessment.
 - k. Prior to entering Nunavut, all persons who travelled outside of Canada at any time in the fourteen days prior to entering Nunavut must produce proof of compliance with any applicable quarantine and isolation orders issued under the *Quarantine Act*.
 - l. Upon entering Nunavut, persons listed in paragraph 15 (s) must report to the Office of the Chief Public Health Officer within one (1) hour of arrival and shall not leave the airport or Port of Entry until directed by the Chief Public Health Officer.
 - m. Persons entering Nunavut from outside Canada must enter at the Iqaluit International Airport or to fixed or designated Ports of Entry.
 - n. Persons travelling on flights to Nunavut which must divert due to weather or mechanical reasons may continue travelling to Nunavut provided that the diversion lasts no longer than ninety (90) minutes and the persons remain onboard the aircraft or within the air terminal building at the diversion airport. If the diversion exceeds ninety (90) minutes, the flight must return to its departure point.
17. Persons exempted in paragraphs 16 (c) and (d) shall comply with all recommendations and directions provided by Medical Health Officers.
18. Nothing in this Order shall affect parents and their children from exercising their custody and access rights, except:
- a. As ordered by a court of competent jurisdiction; or
 - b. Where parent or the child is subject to a mandatory isolation order issued by an official having jurisdiction.
19. Pursuant to subsection 41(1)(f) of the *Public Health Act*, members of the Royal Canadian Mounted Police, municipal by-law enforcement officers, sheriffs appointed pursuant to the *Judicature Act*, the Chief Environmental Protection

Officer and Inspectors appointed pursuant to the *Environmental Protection Act*, and Conservation Officers appointed pursuant to the *Wildlife Act* are authorized to implement this order, including entering any premises other than a dwelling without a warrant.

20. Pursuant to subsection 41(4) of the *Public Health Act*, the peace officers listed in paragraph 18 may not enter a dwelling without a warrant unless the occupant or person in charge of the dwelling consents.
21. Failure to comply with this Order may be considered a breach of this Order issued under the *Public Health Act* and may result in penalties under the Act, which may include:
 - a. A \$575 fine for individuals; and
 - b. A \$2875 fine for corporations.
22. Providing false or misleading statements to the Chief Public Health Officer for the purposes of entering Nunavut or circumventing mandatory isolation constitutes a breach of this Order.
23. The Chief Public Health Officer may contact the Office of the Chief Public Health Officer for the Northwest Territories to confirm a traveller's compliance with paragraph 3 of this Order.

This order is effective at 12:01 am Eastern Time Tuesday, August 4, 2020 and remains in effect for the duration of the Public Health Emergency, unless otherwise rescinded.

Dr. Michael Patterson
Chief Public Health Officer

Appendix “A”

Nunavut and Northwest Territories Common Travel Area Nunavut and Churchill, Manitoba Common Travel Area Traveller’s Declaration

Background

1. The Chief Public Health Officer of Nunavut, in partnership with the Chief Public Health Officers of the Northwest Territories and Manitoba has established two Common Travel Areas:
 - a. The Nunavut and Northwest Territories Common Travel Area; and
 - b. The Nunavut and Churchill, Manitoba Common Travel Area.
2. This allows unrestricted travel between Nunavut and the Northwest Territories or between Nunavut and Churchill, Manitoba for anyone who has not travelled outside Nunavut or the Northwest Territories in the fourteen (14) days prior to travel and who have completed any mandatory self-isolation ordered by the Chief Public Health Officer of Nunavut, the Northwest Territories, or Manitoba.
3. Travellers who do not leave a Common Travel Area do not have to isolate prior to their return home.
4. If you leave a Common Travel Area at any time you will have to isolate at a designated facility prior to returning home.
5. The Nunavut and Churchill, Manitoba Common Travel area includes overland travel through unpopulated areas between the Nunavut-Manitoba boundary and Churchill.
6. All Travellers intending to travel to Nunavut must complete this declaration and submit it to CPHOTravelrequests@gov.nu.ca in order to receive a letter of authorization permitting travel and present it to the air carrier upon check-in for verification.
7. Travellers on flights to or from the Kitikmeot Region to any other part of Nunavut containing a stopover or change of aircraft in Yellowknife do not have to complete this Declaration.
8. A parent or guardian may complete the declaration on behalf of their minor children.
9. Making a false declaration is a breach of the Travel Restriction Order.

Declaration of Traveller

1. I, _____ intend to travel to _____
(community) on _____ (date).
2. I have been physically present within the boundaries of Nunavut, the Northwest Territories, or Churchill, Manitoba for the past fourteen (14) days.
3. I will not leave the following Common Travel Area during my trip (check the appropriate box):
 - a. Nunavut and Northwest Territories Common Travel Area ☐

- b. Nunavut and Churchill, Manitoba Common Travel Area ☐
4. I acknowledge that if I leave the Common Travel Area at any time during my trip, I will have to isolate at a designated facility for at least fourteen (14) days before I can return to Nunavut or the Northwest Territories, and will be responsible for arranging and paying to travel to a designated facility.
5. I consent to the collection of the Contact Tracing Information set out below.

Contact Tracing Information

The following information is collected pursuant to section 17 (1) of the *Public Health Act* and will be used to contact the Traveller in the event of an outbreak of novel coronavirus COVID-19, or where the Chief Public Health Officer has reasonable grounds to believe that the Traveller may have been exposed to novel coronavirus COVID-19. This information may be shared with the Chief Public Health Officer of the Northwest Territories or the Chief Public Health Officer of Manitoba.

Traveller's Permanent Address: _____

Traveller's Address in Nunavut: _____

(The name and community of the Traveller's tourist accommodation is acceptable)

Traveller's Phone Number(s): _____

Traveller's E-Mail Address (optional): _____

I make this declaration on _____ (date) at _____ (community).

Print Traveller's Name

Traveller's Signature

Privacy Notice

The information on this form is personal information and is protected by the *Access to Information and Protection of Privacy Act* and the *Public Health Act*. If you have questions about how the Government of Nunavut collects, uses, and discloses personal information, contact the Office of the Chief Public Health Officer or the Territorial ATIPP Office at atipp@gov.nu.ca.

PUBLIC HEALTH ACT, S. Nu. 2016, c. 13

ORDER RESPECTING SOCIAL DISTANCING AND GATHERINGS #9

WHEREAS:

- A. The Minister of Health has declared a Public Health Emergency in Nunavut effective March 20, 2020 to address the novel coronavirus COVID-19 pandemic, and the Minister may renew this declaration every fourteen (14) days for the duration of the Public Health Emergency;
- B. Pursuant to section 41(1) of the *Public Health Act* (“the Act”) the Chief Public Health Officer may take certain actions, including issuing directions or orders for the purposes of protecting the public health and preventing, remedying or mitigating the effects of the public health emergency:

THEREFORE, the Chief Public Health Officer hereby orders the following:

- 1. The Order Restricting Social Distancing and Gatherings (#8) issued August 17, 2020 is rescinded and replaced by this Order.

Part 1: Social Distancing

- 2. Pursuant to subsection 41(1)(g) of the Act:
 - a. All persons in Nunavut must maintain social distancing of two (2) metres wherever it is safe and practical to do so, except inside dwellings and between immediate family members.
 - b. Subject to specific closures or limitations as ordered by the Chief Public Health Officer, all not-for-profit and for-profit businesses and organizations operating or carrying on business in Nunavut may open for business but must implement social distancing of two (2) metres within these workplaces.
 - c. Subject to specific closures or limitations as ordered by the Chief Public Health Officer, any not-for-profit or for-profit business or organization carrying on business in Nunavut that cannot, due to its physical size, maintain the social distancing requirement set out in

clause 2 (b) must limit the number of customers or clients on its premises to no more than five (5) persons at a time.

- d. The five-person limit referred to in clause 2 (c) does not apply to businesses and organizations who can maintain social distancing requirements, including without limitation grocery stores, pharmacies, Canada Post Corporation post offices, fuel and motor vehicle service stations, and financial institutions.
- e. The social distancing requirements set out in clause 2 (b) and the five-person limit set out in clause 2 (c) do not apply to the following entities:
 - i. The Legislative Assembly, subject to the directions of the Speaker;
 - ii. Licensed Premises and Food Services Establishments subject to the Communicable Disease Order effective June 22, 2020;
 - iii. Institutions as defined by the Act;
 - iv. Hospitals and health centres designated under the *Hospital Insurance and Health and Social Services Administration Act* and the *Mental Health Act*;
 - v. Any Court subject to the directions of the Chief Justice of the applicable Court;
 - vi. Homeless shelters;
 - vii. Food banks;
 - viii. Home and community care programs operated by the Department of Health;
 - ix. Government of Nunavut offices and the offices of Nunavut public agencies listed in Schedules A, B, and C of the *Financial Administration Act*, subject to guidelines and directions issued by the Workers Safety and Compensation Commission;
 - x. Workplaces where the employer has limited access to essential workers and implemented a remote-work program for non-

essential workers, subject to guidelines and directions issued by the Workers Safety and Compensation Commission;

- xi. Construction sites, subject to guidelines and directions issued by the Workers Safety and Compensation Commission;
 - xii. Public swimming pools, gymnasia, and fitness centres, subject to specific guidelines and directions issued by the Chief Public Health Officer;
 - xiii. Licensed child day care facilities as defined in the *Child Day Care Act*; and
 - xiv. Any building during a mandatory evacuation or evacuation drill, subject to specific guidelines and directions issued by the Office of the Fire Marshal or the Workers Safety and Compensation Commission.
- f. In addition and for greater clarity, the social distancing requirements set out in clause 2 (b) and the five-person limit set out in clause 2 (c) do not apply to private motor vehicles and the following entities, organizations, and individuals:
- i. The Royal Canadian Mounted Police;
 - ii. Canada Border Services Agency;
 - iii. The Canadian Armed Forces;
 - iv. Municipal Enforcement Officers;
 - v. Other law enforcement officers appointed pursuant to a law of Nunavut or Canada;
 - vi. Child Protection Workers when acting in the course of their duties;
 - vii. Employees of the Nunavut Department of Justice Corrections Division and Correctional Service of Canada when acting in the course of their duties;
 - viii. Municipal Fire and Emergency Services;

- ix. Emergency medical responders, including air ambulance (medevac) crews;
- x. Persons, including volunteers, engaged in search and rescue activities;
- xi. Electrical generation facilities operated by Qulliq Energy Corporation;
- xii. Municipal utilities such as water, wastewater, and stormwater;
- xiii. Maintenance of public utilities and government facilities;
- xiv. Essential maintenance of buildings, including dwellings;
- xv. Employees or contractors of the Nunavut Housing Corporation, a local Housing Authority, or a local Housing Society performing essential maintenance of public housing and staff housing;
- xvi. Road maintenance and repair;
- xvii. Airports;
- xviii. Solid waste collection and disposal;
- xix. Individuals engaged in delivery services for food, medicine, and other goods;
- xx. Facilities operated by the Nunavut Liquor and Cannabis Commission;
- xxi. Employees and contractors of the Parks Canada Agency operating in national parks, national park reserves, and national historic sites of Canada;
- xxii. The Member of Parliament for Nunavut, the Senator for Nunavut, and Members of the Legislative Assembly conducting official or constituency business;
- xxiii. Chiropractors, Dentists, Massage Therapists, Psychologists, and Veterinarians providing in-person services in accordance with this Order;
- xxiv. Life guards working at public swimming pools;

- xxv. Security personnel working at a location listed in paragraph 3 (e) (ii), (iii), (iv), and (xi);
- xxvi. Personal service providers providing in-person services in accordance with this Order;
- xxvii. Taxi operators collecting more than one fare during a single trip, provided:
 - 1. That the first fare-paying passenger consents to the operator taking on multiple fares during a single trip;
 - 2. That the driver and all passengers wear non-medical masks for the duration of the trip;
 - 3. That the driver carries a supply of disposable non-medical masks for passenger use; and
 - 4. That no driver may refuse to accept a fare on the sole basis that the passenger does not consent to the driver taking on multiple fares and
- xxviii. The Canadian Coast Guard and Canadian Coast Guard Auxiliary when acting in the course of their duties.
- g. All providers of chiropractic treatments and massage therapy may open for business.
- h. All other providers of personal services as defined in the Act may open for business, provided that appropriate personal protective equipment is available for staff and customers upon request.
- i. Dental practitioners licensed under the *Dental Profession Act* may open for business, subject to guidelines and directions provided by the Chief Dental Officer.
- j. Veterinary practitioners licensed under the *Veterinary Profession Act* may open for business.
- k. Psychologists licensed under the *Psychologists Act* may open for business for in-person appointments and may provide virtual services within their scope of practice.

- l. Licensed child day care centres as defined in the *Child Day Care Act* may open for regular business subject to specific limitations as ordered by the Chief Public Health Officer or directed by the Minister responsible for the *Child Day Care Act*.
- m. Public Libraries as defined in the *Library Act*, libraries operated by Nunavut Arctic College, museums, and galleries may open for regular business, provided that the total number of occupants, including staff, does not exceed fifty per cent (50%) of the rated capacity for the room as established by the Office of the Fire Marshal.
- n. Public swimming pools may open for lane and group swimming and may operate saunas and hot tubs, but group sessions shall be limited to twenty-five (25) persons or fewer.
- o. Recreation centres, fitness centres, school gymnasias, cadet halls, and private fitness clubs may open for individual workouts, fitness classes, youth groups, cadets, and recreational sports, provided that the total number of occupants, including participants, facility staff, and spectators does not exceed the lesser of twenty-five (25) persons or fifty per cent (50%) of the rated capacity of each room as established by the Office of the Fire Marshal.
- p. Theatres may open for business, subject to the social distancing requirements set out in paragraph 2 (a) and the limits on public gatherings set out in paragraph 6.
- q. Places of worship, including but not limited to churches, mosques, and synagogues may open for in-person services, subject to the social distancing requirements set out in paragraph 2 (a) and the limits on public gatherings set out in paragraph 6.
- r. Group counselling and support groups including, but not limited to, Alcoholics Anonymous and Narcotics Anonymous, may meet indoors subject to the social distancing requirements set out in paragraph 2 (a) and the limits on public gatherings set out in paragraph 6.
- s. All persons shall maintain a distance of at least two (2) metres apart from any other person while in public, excepting members of their immediate household.

- t. No operator of a tourist accommodation as defined in the *Tourism Act* shall assign the same room to two or more individuals who are not travelling in the same party without the consent of all parties.
- u. Municipal arenas may open may open for individual workouts, fitness classes, and recreational sports, provided that the total number of occupants on the playing surface, including participants and officials does not exceed the lesser of fifty (50) persons or fifty per cent (50%) of the rated capacity of each room as established by the Office of the Fire Marshal. The total number of spectators shall not exceed fifty (50) persons.

Part 2: Gatherings

- 3. All public playgrounds, municipal parks, territorial parks, and territorial park reserves may open for regular operations.
- 4. All national parks and national park reserves as defined in the *Canada National Parks Act* and national historic sites of Canada listed in the *National Historic Sites of Canada Order* may open subject to any applicable orders and directions issued by the Minister responsible for the Parks Canada Agency.
- 5. All long-term care facilities, continuing care centres, and medical boarding homes may allow visitors in accordance with any applicable policies and subject to the following additional restrictions:
 - a. Each resident or inpatient may have no more than two (2) visitors at once;
 - b. Each visitor over three (3) years of age shall wear a non-medical mask or face covering; and
 - c. Visitors shall be restricted to the resident or inpatient's immediate family. For greater certainty, "immediate family" includes grandchildren and great-grandchildren.
- 6. All organized public gatherings shall be restricted to:
 - a. For outdoor gatherings, no greater than one hundred (100) persons; and
 - b. For indoor gatherings, no greater than:

- i. Fifteen (15) persons, where the gathering is in a dwelling;
 - ii. Twenty (20) persons, where the gathering is for group counselling and support group meetings;
 - iii. Twenty-five (25) persons or fifty per cent (50%) of the rated capacity for the room as established by the Office of the Fire Marshal, for gatherings in libraries, museums, and galleries as set out in subsection 2 (m), or where the gathering is for the recreational activities listed in subsections 2 (n) and (o);
 - iv. One Hundred (100) persons or seventy-five per cent (75%) of the rated capacity for the facility as established by the Office of the Fire Marshal, whichever is less, for:
 - 1. Gatherings at places of worship;
 - 2. Gatherings organized by the Government of Canada, Government of Nunavut, a municipal corporation, or a Designated Inuit Organization, Regional Inuit Organization, or institution of public government as defined in the *Nunavut Agreement*;
 - 3. Gatherings at conference facilities, community halls, and other rental meeting spaces; and
 - 4. Gatherings at theatres;
 - v. Seventy-five per cent (75%) of the rated capacity for the facility as established by the Office of the Fire Marshal for Food Service Establishments and Licensed Premises under the *Liquor Act*; and
 - vi. Fifteen (15) persons, for all other indoor gatherings other than dwellings.
7. For greater certainty, an organized public gathering as set out in clause 6 includes:
- a. Concerts;
 - b. Community Feasts;

- c. Organized Sporting Events;
 - d. Marriage ceremonies, funerals, and memorial services;
 - e. Meetings open to members of the general public;
 - f. In-person religious, spiritual, or cultural assemblies;
 - g. In-person group counselling and support group meetings; and
 - h. Celebrations for Thanksgiving Day, Hallowe'en, and Remembrance Day.
8. All social gatherings, including social gatherings in private dwellings, shall be restricted to:
- a. For outdoor gatherings, no greater than one hundred (100) persons;
 - b. For indoor gatherings in places other than private dwellings, no greater than fifteen (15) persons; and
 - c. For indoor gatherings in private dwellings, no greater than the total number of members of the household normally residing together plus fifteen (15) additional persons who do not reside in the dwelling.
9. For greater certainty, a social gathering is any scheduled or informal assembly, and includes:
- a. A party or celebration;
 - b. Play groups;
 - c. Club meetings;
 - d. Meals with individuals who do not reside together; and
 - e. Individuals gathering outdoors to play or watch sports and games; if social distancing is maintained, players and spectators shall be considered two separate groups.
10. For greater certainty, a social gathering as set out in clause 8 does not include:
- a. Members of a household residing together;

- b. Essential employees and contractors of the organizations listed in clauses 2 (e) and (f) attending at their place of work;
 - c. Individuals with no fixed address temporarily residing at the dwelling of a family member;
 - d. Individuals entering a building, including a dwelling to perform essential maintenance services;
 - e. Religious, Cultural, or Spiritual officiants entering a dwelling or institution to provide religious, cultural, or spiritual care to residents;
 - f. Delivery services for food, medicine, and other goods;
 - g. Individuals travelling in a motor vehicle provided that the number of passengers does not exceed the number of seats in the vehicle;
 - h. The Member of Parliament for Nunavut, the Senator for Nunavut, or a Member of the Legislative Assembly entering a building, including a dwelling, to conduct official or constituency business; and
 - i. Individuals evacuating any building, including a dwelling, as part of a mandatory evacuation or evacuation drill.
11. The individuals listed in clauses 10 (d), (e), and (f) shall conduct themselves in a manner that will not expose others to infection or to take other precautions to prevent or limit the direct or indirect transmission of novel coronavirus COVID-19 to others, including wearing appropriate personal protective equipment.
12. Nothing in this Order shall affect parents and their children from exercising their custody and access rights, except:
- a. As ordered by a court of competent jurisdiction; or
 - b. Where parent or the child is subject to a mandatory isolation order.
13. For greater certainty, parents and children exercising their custody and access rights is not a social gathering for the purposes of clause 8 of this Order.

Part 3: Mask Requirements for Exempt Travellers

14. For the purposes of this Part:

- a. “mask” means a commercial medical or non-medical mask or a home-made mask that covers the nose and mouth;
- b. “public place” means
 - i. retail businesses, or a building or room of a business where personal care services are provided;
 - ii. food service establishments or licensed premises as defined in the *Liquor Act*;
 - iii. places of worship;
 - iv. fitness centres, gymnasia, public swimming pools, arena, and other recreation facilities;
 - v. theatres, public libraries, museums, and cultural centres;
 - vi. conference facilities, community halls, and other rental meeting spaces
 - vii. places where federal, territorial, or municipal government services are available to the public;
 - viii. common areas, including elevators, of tourist accommodations;
 - ix. lobbies, reception areas, or elevators in office buildings;
 - x. common areas or public spaces at schools and at Nunavut Arctic College;
 - xi. public conveyances, including taxis;
 - xii. hospitals, health centres, medical boarding homes, and long-term care facilities;
 - xiii. airports;
 - xiv. all Courts, administrative tribunals, and institutions of public government; and

- xv. the Legislative Assembly, subject to the specific rules and directions of the Speaker.
15. All persons entering Nunavut who are exempt from the mandatory fourteen (14) day isolation period set out in the *Order Restricting Travel to Nunavut* must wear a mask while in a public place and at their place of work for the first fourteen (14) days following their arrival in Nunavut.
16. A person is exempt from the mask requirement set out in paragraph 15 if the person:
- a. is less than 2 years of age, or age 2 to 4 years and their caregiver cannot persuade them to wear a mask;
 - b. cannot wear a mask due to a medical condition;
 - c. is reasonably accommodated by not wearing a mask in accordance with the *Human Rights Act*;
 - d. is in the public place receiving care or being provider a service or while participating in an activity requiring the mask to be removed, in which the person may remove the mask for the duration of the care, service, or activity;
 - e. removes the mask momentarily for identification or ceremonial purposes;
 - f. is in a court, or a room where a proceeding or meeting of an administrative tribunal or institution of public government is being held; and
 - g. is consuming food or a beverage in a food service establishment, licensed premises as defined in the *Liquor Act*, theatre, or in any other location where food and beverages are being served.

Part 4: Enforcement

17. Pursuant to subsection 41(1)(f) of the Act, members of the Royal Canadian Mounted Police, municipal by-law enforcement officers, sheriffs appointed pursuant to the *Judicature Act*, the Chief Environmental Protection Officer and Inspectors appointed pursuant to the *Environmental Protection Act*, and Conservation Officers appointed pursuant to the *Wildlife Act* are authorized

to implement this order, including entering any premises other than a dwelling without a warrant.

18. Pursuant to subsection 41(4) of the Act, the peace officers listed in paragraph 12 may not enter a dwelling without a warrant unless the occupant or person in charge of the dwelling consents.
19. Failure to comply with this Order may be considered a breach of this Order issued under the Act and may result in penalties under the Act, which may include:
 - a. A \$575 fine for individuals; and
 - b. A \$2875 fine for corporations.

This order is effective 12:01 am Eastern Time Monday October 5, 2020 and remains in effect for the duration of the Public Health Emergency, unless otherwise rescinded.



Dr. Michael Patterson
Chief Public Health Officer

PROTOCOL

Critical Employees and Isolation

Since March 24, 2020 travel through all points of entry into Nunavut is prohibited to all travellers except for Nunavut residents, travellers from the Northwest Territories, non-residents moving to Nunavut for employment, non-residents travelling to Nunavut for family reunification, critical workers, essential workers, and anyone with an urgent and substantial need to enter Nunavut.

The Government of Nunavut must balance public health measures and the need to control the spread of COVID-19, with appropriate flexibility to ensure essential services continue to operate. Individuals who need to travel to Nunavut should therefore follow the protocol provided below.

Nunavut and Northwest Territories Common Travel Area

Nunavut and the Northwest Territories have established a common travel area allowing unrestricted travel within the Northwest Territories and Nunavut. All travellers seeking to enter Nunavut from the Northwest Territories must complete a traveller's declaration and submit it to the Chief Public Health Officer (CPHO). Travellers who leave the common travel area must complete a 14-day isolation period prior to returning to Nunavut.

Nunavut residents returning from anywhere other than the Northwest Territories

Nunavut residents are encouraged to avoid all non-essential travel outside of the territory. However, before returning to Nunavut, any person who has left will be required to enter mandatory isolation at a GN designated isolation facility outside of Nunavut for 14 days, even if they are asymptomatic¹, unless they also meet the "critical employee" criteria as defined below. Following completion of the mandatory isolation, the Chief Public Health Officer (CPHO) will provide them with a letter to confirm that they are approved for travel to Nunavut. Residents will have to present the letter as well as a proof of residency at the time of check-in before boarding the plane.

Non-Nunavut residents entering from anywhere other than the Northwest Territories

Non residents of Nunavut must apply for authorization to enter Nunavut. Non-residents may enter Nunavut for the purposes of commencing employment, family reunification, have an urgent and substantial need to do so, or they are required to provide an essential service in one of the communities. These travellers will also be required and must plan to spend the mandatory 14-day isolation in one of the designated facilities. If travellers in either category have been outside Canada, they must provide proof of compliance with federal quarantine orders. Any person entering Nunavut from outside Canada at a designated or temporary port of entry must report to the CPHO within 60 minutes of arrival and may not leave the port of entry until they are cleared to enter Nunavut.

¹ The symptoms of COVID-19 include fever, cough and difficulty breathing. These may occur within 14 days of possible exposure to a case.

Critical employees

A critical employee is defined as an employee who has an urgent and substantial need to enter Nunavut from any place in Canada other than the Northwest Territories in order to complete work that is critical to the well-being of the Territory.

1. Returning from another Canadian jurisdiction and *asymptomatic*:

Nunavut residents & non-residents

- Must contact the CPHO's office prior to booking their flights and provide a letter for the CPHO's review and approval. The letter should include the following:
 - The employee's travel history over the past three weeks;
 - The employee's name and birthdate²;
 - A statement that the employee is asymptomatic;
 - A brief explanation as to why the employee is deemed critical; and
 - The measures that will be taken by the employee to self-isolate outside of work hours.
- Upon arrival in Nunavut, the employee must commit for the initial first 14 days to:
 - Provide a daily update to their manager/supervisor on the status of their health and disclose the presence or absence of any signs or symptoms;
 - Self-monitor daily for signs and symptoms of illness;
 - Follow infection prevention and control protocols; including diligent hand hygiene;
 - Practice social distancing of two meters, reduce close contact with colleagues, and avoid shared spaces where possible (i.e., facilitate virtual arrangements);
 - Wear a mask at all times even if they are asymptomatic;
 - Maintain appropriate physical distancing with others (at least 2 meters) when travelling to and from work and between shifts;
 - Remain isolated at home on days when not required at their workplace;
 - Self-isolate immediately if symptoms develop and contact the public health unit or health centre to receive further instructions.

2. Travelling from another Canadian jurisdiction and *symptomatic*:

- Cannot return to the territory.
- After all symptoms have disappeared, they must contact the CPHO's office prior to making any travel arrangements to Nunavut.

3. Arriving from another country and *asymptomatic*:

- Enter mandatory isolation at a GN designated isolation facility outside of the Territory for 14 days. The federal quarantine requirement can be satisfied at the GN designated isolation facility.
- If the employee develops symptoms before the end of the 14-day isolation period, they must get tested and remain in isolation until test results are returned.

² This information will be kept confidential by the CPHO.

- If the result is negative, the employee can then travel to the community where their work is located as soon as the 14-day isolation period ends, provided they no longer have symptoms; or
- If the result is positive, the employee cannot return to Nunavut until they are cleared by the CPHO, DCPHO or designated alternate (e.g. medical officer of health).

4. Arriving from another country <i>and symptomatic</i> :

- Cannot return to the territory.
- After all symptoms have disappeared, they must contact the CPHO's office prior to making any travel arrangements to Nunavut.

Please contact CPHOtravelrequests@gov.nu.ca for more information.



NUNAVUT WATER BOARD

TYPE "A" WATER LICENCE NO. 3AM-IQA1626



TABLE OF CONTENTS

PART A:	SCOPE, DEFINITIONS, AND ENFORCEMENT.....	4
1.	SCOPE.....	4
2.	DEFINITIONS.....	5
3.	ENFORCEMENT.....	5
PART B:	GENERAL CONDITIONS.....	5
PART C:	CONDITIONS APPLYING TO SECURITY	7
PART D:	CONDITIONS APPLYING TO THE USE OF WATERS AND WATER MANAGEMENT PLANS	7
PART E:	CONDITIONS APPLYING TO THE DEPOSIT OF WASTE AND WASTE MANAGEMENT PLANS	8
PART F:	CONDITIONS APPLYING TO CONSTRUCTION	11
PART G:	CONDITIONS APPLYING TO MODIFICATIONS	12
PART H:	CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING.....	12
PART I:	CONDITIONS APPLYING TO MONITORING	13
PART J:	CONDITIONS APPLYING TO CLOSURE AND RECLAMATION	14
SCHEDULES	15
Schedule A:	Definitions	16
Schedule B:	Annual Reporting Requirements	20
Schedule I:	Condition Applying to Monitoring	21



Licence No. 3AM-IQA1626

Pursuant to the Nunavut Waters and Nunavut Surface Rights Tribunal Act and the Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to the

CITY OF IQALUIT

(Licensee)

P.O. BOX 460 IQALUIT, NU X0A 0H0

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use Water or deposit Waste for a period subject to restrictions and conditions contained within this Licence:

Licence Number / Type: **3AM-IQA1626 / TYPE "A"**

Water Management Area: **FROBISHER BAY WATERSHED (53)**

Location: **WITHIN CITY OF IQALUIT'S MUNICIPAL BOUNDARIES, QIKIQTANI REGION, NUNAVUT**

Classification: **MUNICIPAL UNDERTAKING**

Purpose: **USE OF WATERS AND DEPOSIT OF WASTE**

Quantity of Water not to be Exceeded: **1,100,000 CUBIC METRES ANNUALLY**

Date Licence Issuance: **JUNE 17, 2016**

Expiry of Licence: **JUNE 16, 2026**

This Licence issued (**Motion Number: 2016-02-P6-14**) and recorded at Goji Haven, Nunavut, includes and is subject to the annexed conditions.

Norman Mike
Nunavut Water Board,
Hearing Chair

APPROVED
BY: Minister of Indigenous and
Northern Affairs Canada

APPROVAL
DATE: _____



PART A: **SCOPE, DEFINITIONS, AND ENFORCEMENT**

1. SCOPE

- a. This Type “A” Water Licence No. 3AM-IQA1626 (“Replacement and Amended Licence” or “Licence”) authorizes the City of Iqaluit (“Licensee” or the “City”) to use Water and deposit Waste in support of a Municipal undertaking, as classified under Schedule 1 of the *Regulations*, within the City’s municipal boundaries at the following approximate geographic coordinates:

Undertaking	Latitude	Longitude
Overall Extents	63° 50' 56.31" N	68° 39' 49.87" W
	63° 50' 57.30" N	68° 33' 41.94" W
	63° 43' 48.91" N	68° 18' 12.53" W
	63° 41' 06.60" N	68° 18' 18.82" W
	63° 41' 04.08" N	68° 32' 44.20" W
	63° 44' 46.02" N	68° 39' 43.1 0" W
West 40 Landfill	63° 43' 58.15" N	68° 32' 08.54" W
Water Treatment Plant	63° 45' 12.24" N	68° 30' 22.79" W
Wastewater Treatment Plant	63° 44' 45.15" N	68° 32' 19.80" W

The scope of activities, works, and undertakings authorized in accordance with the terms and conditions of this Replacement and Amended Licence is as follows:

- a. Use, management, and protection of the Lake Geraldine drainage basin;
 - b. Management and protection of Waters surrounding the West 40 Landfill site;
 - c. Management, collection, and monitoring of leachate from the West 40 Landfill site and adjacent Sludge Management Facility;
 - d. Management of improved drainage works at the West 40 Landfill site;
 - e. Management, operation, and eventual closure and reclamation of the current West 40 Landfill site and associated solid waste disposal facilities;
 - f. Upgrades, operation, maintenance, monitoring, and eventual closure and reclamation of a Wastewater Treatment Plant (WWTP);
 - g. Operation, maintenance, monitoring, and eventual closure and reclamation of a Sludge Management Facility;
 - h. Operation, maintenance, monitoring and eventual closure and reclamation of a Sewage Lagoon Facility;
 - i. Implementation of contingency measures for the Wastewater and Landfill management facilities; and
 - j. Implementation of changes to the monitoring requirements including frequency, parameters, and stations being monitored.
- b. This Licence is issued subject to conditions contained herein with respect to the taking of Waters and the depositing of Waste of any type in any Waters or in any place under any



conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the Act, or other statutes imposing more stringent conditions relating to the quantity, type or manner under which any such Waste may be so deposited, this Licence shall be deemed to be subject to such requirements; and

- c. Compliance with the terms and conditions of this Licence does not absolve the Licensee from the responsibility for compliance with all applicable legislation, guidelines, and directives.

2. DEFINITIONS

- a. The Licensee shall refer to [Schedule A](#) for definitions of terms used in this Licence.

3. ENFORCEMENT

- a. Failure to comply with this Licence shall be a violation of the Act, subjecting the Licensee to the enforcement measures and the penalties provided for in the Act.
- b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the Act.
- c. For the purpose of enforcing the terms and conditions of this Licence with respect to the use of Water and deposit or Discharge of Waste in Waters, Inspectors appointed under the Act, hold all powers, privileges, and protections that are conferred upon them by the Act or by other applicable laws.

PART B: GENERAL CONDITIONS

- 1. The Licensee shall file, with the Board for review, no later than the 31st of March of the year following the calendar year being reported, an Annual Report formulated in accordance with the requirements under [Schedule B](#) of this Licence.
- 2. The Licensee shall maintain a copy of this Licence at the Municipal Office, potable Water Treatment Facility, and the Waste Treatment Facilities at all times.
- 3. The Licensee shall file an application for renewal of this Licence at least one (1) year prior to the Licence expiry.
- 4. The Licensee shall, to the satisfaction of an Inspector, install, operate, and maintain metres, devices or other appropriate methods for measuring the volumes of Water used and Waste Discharged or deposited.



Nunavut Water Board | Type "A" Water Licence No: 3AM-IQA1626

5. The Licensee shall post the necessary signs to identify the stations of the Monitoring Program included under [Schedule I](#) of this Licence. All signage shall be in the Official Languages of Nunavut.
6. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted cannot be undertaken without subsequent written approval and/or directions from the Board. The Board may alter or modify a Plan if necessary to achieve legislative objectives and will notify the Licensee in writing of acceptance, rejection, or alteration of the Plan.
7. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
8. The Licensee shall, within thirty (30) days of notification or within the timeframe specified by the Board, submit for review and/or Board's approval revisions for any plan found to be unacceptable to the Board.
9. Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of the Licence, and any additional terms and conditions imposed upon approval of a Plan by the Board shall also become part of the Licence. All relevant terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.
10. The Licensee shall review the Plans referred to in this Licence as required by changes in operation and/or technology and modify the Plans accordingly. Revisions to any Plan shall be submitted in the form of an addendum to be included within the Annual Report required under Part B, Item 1, complete with the lists of revisions detailing where significant content changes are made.
11. The Licensee shall immediately report to the NWT/NU 24-Hour Spill Report Line (867-920-8130) any spills of Waste associated with the Undertakings under this Licence including the potable Water Treatment Facility and Waste Treatment Facilities, which are reported to or observed by the Licensee.
12. Any communication with respect to this Licence shall be made in writing to the attention of:

Manager of Licensing
Nunavut Water Board
P. O. Box 119
Goji Haven, NU X0B 1J0
Telephone: (867) 360-6338
Fax: (867) 360-6369
Email: licensing@nwb-oen.ca

13. Any notice made to an Inspector shall be made in writing to the attention of:



Nunavut Water Board | Type "A" Water Licence No: 3AM-IQA1626

Water Resources Officer
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295
Fax: (867) 979-6445

14. The Licensee shall submit, to the Board for information or as otherwise directed, one (1) paper copy and one (1) electronic copy of all reports, studies, and Plans generated for the works, activities, and undertakings under this Licence. All Reports, studies or Plans submitted to the Board by the Licensee shall include an executive summary in English, Inuktitut, and French.
15. The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the Board is received by the Board and maintain on file a copy of the acknowledgment of receipt issued by the Manager of Licensing or his/her designate.
16. This Licence is assignable as provided for in section 44 of the Act.
17. The expiry or cancellation of this Licence does not relieve the Licensee from any obligation imposed by the Licence, or any other regulatory requirement.

PART C: **CONDITIONS APPLYING TO SECURITY**

1. The Licensee is not required to post reclamation security for the activities, works, and undertakings authorized under this Licence.

PART D: **CONDITIONS APPLYING TO THE USE OF WATERS AND WATER MANAGEMENT PLANS**

1. The Licensee is authorized to withdraw, from the Lake Geraldine Reservoir at Monitoring Station No. IQA-01, up to 1,100,000 cubic metres of Water annually for the relevant activities, works, and undertakings authorized under the scope of this Licence.
2. The Licensee shall submit to the Board for approval, within sixty (60) days of the Effective Date of the Licence, an updated manual for the potable Water Treatment Facility. The Manual shall be prepared in accordance with relevant aspects of the format outlined in the *Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories* (GNWT, 1996). The manual shall, address among other items, the following:
 - a. Purpose of facility;
 - b. Site setting;



- c. Operational procedures for storage, treatment and distribution of potable Water; Waste generated and hazardous substances associated with the facility; site inspections; and personnel training;
 - d. Maintenance procedures including equipment servicing;
 - e. Sampling and monitoring requirements; and
 - f. Emergency response measures.
3. The Licensee shall equip all freshwater intake structures with screens of appropriate mesh size that meet the requirements of Fisheries and Oceans (DFO) Canada's *Freshwater Intake End-of-Pipe Fish Screen Guidelines* (1995 or the most current) so as to prevent the entrainment of fish and control Water withdrawal rates such that fish do not become impinged within the screens.
4. The Licensee shall undertake Dam Safety Inspections (DSI) and/or Dam Safety Reviews (DSR) of the Lake Geraldine water supply facility in accordance with requirements of the Canadian Dam Association (CDA), *Dam Safety Guidelines* (2007, or the most current version). The Licensee shall submit for the Board's review, within the Annual Report required under Part B, Item 1, the report generated for the DSIs or DSRs along with the Licensee's recommended actions to address any deficiencies identified in the inspections and/or reviews.
5. The Licensee shall not remove any material from below the ordinary High Water Mark of any Water body unless otherwise approved by the Board in writing.
6. The Licensee shall not cause erosion to the banks of any body of Water and shall provide the necessary controls to prevent such erosion.
7. The Licensee shall implement necessary measures to control sediment and erosion prior to and during operations to prevent entry of sediments into Water.
8. The Licensee shall maintain the potable Water Treatment Facility in accordance with applicable guidelines, procedures, and regulations and to the satisfaction of an Inspector.
9. The Licensee shall, as part of any proposal to supplement the Lake Geraldine Reservoir, evaluate the potential impact on freshwater resources, including fish and fish habitat. The results of the evaluation must be included as part of any application to augment the Lake Geraldine Reservoir with Water from proximal water bodies.

PART E: **CONDITIONS APPLYING TO THE DEPOSIT OF WASTE AND WASTE MANAGEMENT PLANS**

1. The Licensee is authorized to use the Sewage Lagoon Facility and the Wastewater Treatment Plant to treat and dispose of Wastewater generated by the Undertaking authorized under this Licence until such time that the Upgraded Wastewater Treatment Plant authorized by the



Licensee is constructed and commissioned, or as otherwise approved by the Board in writing.

2. The Licensee shall provide written notice to an Inspector and the Board at least ten (10) days prior to any planned Discharges from the Solid Waste Facility, Sewage Lagoon Facility, Wastewater Treatment Plant, and the Upgraded Wastewater Treatment Plant once commissioned.
3. The Licensee shall establish the relevant monitoring stations for the facilities authorized under this Licence in accordance with [Schedule I](#).
4. The Licensee shall ensure that Surface Drainage or surface Water runoff associated with site activities or generated during the construction of any facility designed to withhold, divert, or retain Water or Waste, does not exceed the following Effluent criteria:

Parameter	Maximum Average Concentration	Maximum concentration of Any Grab Sample
Total Suspended Solids (TSS)	50.0 mg/L	100.0 mg/L
pH	Between 6 and 9.	

5. Upon commissioning of the Upgraded Wastewater Treatment Plant, the Sewage Lagoon Facility shall be used as a back-up facility or closed and reclaimed in accordance in Part J, Item 4.
6. The Licensee shall submit to the Board for approval in writing, within four (4) months of the Effective Date of the Licence, an Operation and Maintenance Manual for the Sewage Lagoon Facility that addresses requirements for both the Sewage Lagoon and Sludge Management Facilities. The manual shall be prepared in accordance with the *Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories* (GNWT, 1996).
7. The Licence shall submit to the Board for approval in writing, by December 21, 2018 or as otherwise directed by the Board in writing, an Operations and Maintenance Manual for the Upgraded Wastewater Treatment Plant that incorporates the requirements of Part E, Item 6. The manual shall be prepared in accordance with the *Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories* (GNWT, 1996).
8. The manual referred to in Part E, Item 7 shall supersede the manual referenced in Part E, Item 6, following approval by the Board in writing.
9. The Licensee shall submit to the Board for approval in writing, by December 31, 2018, an updated version of the plan entitled *City of Iqaluit Solid Waste Management Plan*, dated January 2014 that addresses relevant intervener’s comments and recommendations made during the licensing process, such as inclusion of details related to future uses of the landfill, timeframe for closure, and ongoing activities within the scope of this Licence.



10. The Licensee shall undertake Dam Safety Inspections (DSI) and/or Dam Safety Reviews (DSR) of the Wastewater Treatment Facilities in accordance with requirements of the Canadian Dam Association (CDA), *Dam Safety Guidelines* (2007, or most current version). The Licensee shall submit for the Board's review, within the Annual Report required under Part B, Item 1, the report generated for the DSIs or DSRs along with the Licensee's recommended actions to address any deficiencies identified in the inspections and/or reviews.
11. The Licensee shall dispose of and contain all municipal solid waste generated by the City at the West 40 Landfill as associated site(s) authorized under this licence or as otherwise approved by the Board in writing.
12. The Licensee shall submit to the Board for approval, within sixty (60) days of the Effective Date of the Licence, an updated Landfill Operation and Maintenance Manual that addresses concerns raised by intervening parties during the licensing process including the following:
 - a. Management of Leachate from the facility;
 - b. Updated sampling and monitoring requirements; and
 - c. Open burning practices.
 - d. Ongoing activities within
13. The Licensee shall collect and contain all leachate generated by the West 40 Landfill within the Landfill.
14. The Licensee shall submit to the Board for review, by December 31, 2017, an updated version of the document entitled *West 40 Landfill Drainage Management Review*, dated September 16, 2011, that addresses the concerns raised by intervening parties including information on the absence of permafrost related data.
15. The Inspector may authorize an emergency Discharge ,following the Licensee's written submission to the Inspector and to the Board, at least fifteen (15) days prior to discharge or as instructed by the Inspector, that includes the following information:
 - a. Proposed quantity of discharge;
 - b. Reason for discharge;
 - c. Identification of the Final Discharge Location;
 - d. Proposed sampling and analysis to be conducted; and
 - e. Proposed mitigation measures to implemented.
16. The Licensee shall submit to the Board and the Inspector for review, within sixty (60) days following any emergency Discharge authorized by the Inspector, a report that includes, among other items, an analysis of results for the emergency Discharge.
17. The Licensee shall maintain the Licensed Facilities to the satisfaction of an Inspector.



18. The Licensee shall remove from the site associated with the undertaking, all Hazardous Wastes, waste oil and non-combustible waste generated through the course of the operation, for disposal at a licensed waste disposal facility.
19. The Licensee shall maintain records of all Waste removed from site and records of confirmation of proper disposal of removed Waste. These records shall be made available to an Inspector or the Board upon request.

PART F: **CONDITIONS APPLYING TO CONSTRUCTION**

1. The Licensee shall, submit to the Board for review, within thirty (30) days prior to commencing construction of any facilities or infrastructure authorized under this Licence, for-construction designs and drawings, signed and stamped by an Engineer.
2. The Licensee shall ensure that all relevant approved facilities are designed and constructed to engineering standards such that, at a minimum, they comply with the most current version of the *Canadian Dam Safety Guidelines*.
3. The Licensee shall implement measures to ensure that all materials used in the construction of relevant facilities or infrastructure included under the scope of this Licence are free of contaminants, to the extent that they do not cause harmful or significant effects to Water.
4. The Licensee shall maintain shoreline stability during construction.
5. The Licensee shall ensure that all final designs and drawings are qualified by an Engineer confirming that:
 - a. Works are designed under sound engineering principles;
 - b. Design limitations are understood and communicated within the report; and
 - c. Measures are implemented to minimize impact to Water.
6. The Licensee shall, submit to the Board for review, within ninety (90) days of completion of any structure authorized under this licence, to contain, withhold, divert or retain Water or Wastes; a construction summary report prepared by an Engineer that includes, among other relevant information, as-built drawings, documentation of field decisions that deviated from original plans, and any data used to support these decisions.
7. The Licensee shall, if contamination of surface and/or ground water is encountered during construction and excavation, notify the Inspector immediately and implement the Spill Contingency Plan.
8. The Licensee shall develop and implement measures necessary to prevent and mitigate erosion and/or the release of sediment into Water during the construction of the Upgraded Wastewater Treatment Plant or during any construction activities associated with the Undertaking.



PART G: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written consent from the Board, carry out Modifications to the potable Water Treatment Facility and Waste Treatment Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
 - a. the Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
 - b. Such Modifications are consistent with the NPC Land Use Planning (NPC) Conformity Determination and the NIRB Screening Decision;
 - c. such Modifications do not place the Licensee in contravention of the Licence or the *Act*;
 - d. the Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
 - e. The Board has not rejected the proposed Modifications.
2. Modifications for which all of the conditions referred to in Part G, Item 1 have not been met can be carried out only with written approval from the Board.
3. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modifications. These plans and drawings shall be stamped by an Engineer.

PART H: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Licensee shall, submit to the Board for approval in writing, within thirty (30) days of the Effective Date of this Licence, an amalgamated and updated Spill Contingency Plan. The Plan shall address spill contingency planning requirements for all relevant aspects of works, activities, and undertakings associated with the scope of this Licence including the Sewage Lift Station.
2. The Licensee shall, subject to section 16 of the Regulations, report any unauthorized deposits of Waste or foreseeable unauthorized deposits of waste and/or Discharges of Effluent, and:
 - a. Employ, as required, the approved Spill Contingency Plan;
 - b. Report the incident immediately via the NWT/NU 24-Hour Spill Reporting Line (867) 920-8130 and to the Inspector at (867) 975-4295; and
 - c. For each spill occurrence, submit a detailed report to the Inspector, no later than thirty (30) days after initially reporting the event. The report shall include the amount and



type of spilled product, the GPS location of the spill, and the measures taken to contain, clean up and restore the spill site.

3. The Licensee shall, in addition to Part H, Item 2, regardless of the quantity of release of a harmful substance, report to the NWT/NU Spill Line if the release is near or into a Water body.

PART I: CONDITIONS APPLYING TO MONITORING

1. The Licensee shall monitor the relevant potable Water Treatment Facility and Waste Treatment Facilities authorized under this Licence in accordance with requirements included under [Schedule I](#).
2. The Licensee shall, submit Board for approval in writing, within sixty (60) days of the Effective Date of this Licence, an updated Monitoring Program that addresses monitoring requirements for the Water Treatment Facility and Waste Treatment Facilities. The Monitoring Program shall address, among other items, the requirements outlined in [Schedule I](#).
3. All analyses required under [Schedule I](#) shall be conducted using methods as described in the most recent edition of "*Standard Methods for the Examination of Water and Wastewater*", or by such other methods as approved by the Board in writing.
4. All laboratory analyses shall be performed at a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
5. The Licensee shall, submit to the Board for review, within sixty (60) days of the Effective Date of the Licence, an updated Quality Assurance/Quality Control (QA/QC) Plan prepared in accordance with *Quality Assurance (QA) and Quality Control (QC) Guidelines for Use by Class "A" Licensees in Meeting SNP Requirements and for Submission of a QA/QC Plan* (INAC, 1996 or most current version). The updated plan shall be accompanied by a letter from an Analyst of an accredited laboratory confirming acceptability of the Plan.
6. The Licensee shall measure by instrument and record in cubic metres, the monthly quantities of freshwater extracted from the Lake Geraldine Reservoir, at Monitoring Program Station No. IQA-01, used for all purposes under this Licence.
7. The Licensee shall measure, by instrument and record in cubic metres, the quantities of Effluent released from the Sewage Lagoon Facility at Monitoring Station No. IQA-02, Wastewater Treatment Plant and/or Upgraded Wastewater Treatment Plant at Monitoring Station No. IQA-04 and the West 40 Landfill at Monitoring Station No. IQA-08.
8. The Licensee shall measure and record in cubic metres, the monthly and annual volumes of sludge removed from the Wastewater Treatment Facilities.



9. The Licensee shall provide the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations of sources of Water utilized and Waste deposited under this Licence.
10. The Licensee shall include all of the data and information required by the Monitoring Program under [Schedule I](#) within the Annual Report required under Part B, Item 1 of the Licence or as otherwise requested by an Inspector and/or the Board.
11. Additional Monitoring may be requested by the Board and/or the Inspector.
12. The Monitoring Program and compliance dates specified in the Licence may be modified at the discretion of the Board in writing and do not constitute an application for Amendment as defined in the *Act*.

PART J: CONDITIONS APPLYING TO CLOSURE AND RECLAMATION

1. The Board has accepted the document entitled *Iqaluit Solid Waste Management Plan West 40 Landfill Decommissioning Technical Memorandum*, dated January 2014, submitted as additional information with the Application.
2. The Licensee shall submit to the Board for approval in writing, at least one (1) year prior to commencing the decommissioning of the West 40 Landfill, a Final Closure and Reclamation Plan prepared by an Engineer in accordance with industry’s best practices and relevant guidelines.
3. The Licensee shall, for the Plan required under Part J, Item 2, include a presentation of data and a discussion of environmental conditions existing before the use of the site by the Licensee as a municipal landfill, as well as remediation objectives.
4. The Licensee shall notify the Board in writing, at least one year prior to the implementation of final closure, of its intentions to proceed with final closure of any Water use or Waste disposal facilities included within the scope of this Licence, excluding the Facility under Part J, Item 2.



SCHEDULES

[Schedule A:](#) Scope, Definitions, and Enforcement

[Schedule B:](#) General Conditions

Schedule C: No Schedule for Security

Schedule D: No Schedule for Use of Water and Water Management Plans

Schedule E: No Schedule Waste Disposal and Waste Management Plans

Schedule F: No Schedule for Construction

Schedule G: No Schedule for Modifications

Schedule H: No Schedule for Spill Contingency Planning

[Schedule I:](#) Monitoring

Schedule J: No Schedule for Closure and Reclamation



Schedule A: Definitions

In this Licence, 3AM-IQA1626:

“**Act**” means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“**Addendum**” means the supplemental text that is added to a full plan, manual, or report, usually included at the end of the document and is not intended to require a full resubmission of the revised report. It may also be considered as an appendix or supplement;

“**Amendment**” means a change to any terms and conditions of this Licence through application to the NWB, requiring a change, addition, or deletion of specific terms and conditions of the Licence not considered as a modification;

“**Analyst**” means an Analyst designated by the Minister under section 85 (1) of the *Act*;

“**Annually**” means, in the context of monitoring frequency, one sampling event occurring every 365 days with a minimum of 200 days between sampling events;

“**Application**” means, for the purposes of this License, the totality of the NWB Public Register opened as a result of the filing of the application to replace and amend expired Water Licence 3AM-IQA0611(3AM-IQA0612);

“**Biannually**” means, in the context of the monitoring frequency, two sampling events occurring per calendar year, with a minimum of 150 days and a maximum of 210 days between sampling events;

“**Board**” means the Nunavut Water Board established under Article 13 of the *Nunavut Land Claims Agreement* and under section 14 of the *Act*;

“**Discharge**” means the release of any Water or Waste to the receiving environment;

“**Effective Date**” means the date on which the Minister of Indigenous and Northern Affairs Canada approves the Licence;

“**Effluent**” means treated or untreated liquid Waste material that is Discharged into the environment from the site water management facilities such as a settling pond or a treatment plant;

“**Engineer**” means a professional engineer registered to practice in Nunavut in accordance with the *Consolidation of Engineers and Geoscientists Act S. Nu 2008, c.2* and the *Engineering and Geoscience Professions Act S.N.W.T. 2006, c.16 Amended by S.N.W.T. 2009, c.12*;

“**Engineered Structure**” means any facility, designed and approved by a Professional Engineer who is registered with the Association of Professional Engineers, Geologists and Geophysicists of Nunavut;



“**Grab Sample**” means an undiluted quantity of material collected at a particular time and place that may be representative of the total substance being sampled at the time and place it was collected;

“**Greywater**” means the component of Effluent produced from domestic use (i.e. washing, bathing, food preparation and laundering), excluding Sewage;

“**Hazardous Waste**” means materials or contaminants categorized as dangerous goods under the *Transportation of Dangerous Goods Act* (1992), no longer used for their original purpose and intended for recycling, treatment, disposal or storage at appropriate facilities;

“**High Water Mark**” means the usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land (ref. *Department of Fisheries and Oceans Canada, Operational Statement: Mineral Exploration Activities*);

“**Inspector**” means an Inspector designated by the Minister under section 85 (1) of the Act;

“**Licence**” means this Type “A” Water Licence No. 3AM-IQA1626, issued by the Nunavut Water Board to the City of Iqaluit in accordance with the Act;

“**Licensee**” means the entity to whom Licence No. 3AM-IQA1626 is issued or assigned;

“**Minister**” means the Minister of Indigenous and Northern Affairs Canada (INAC);

“**Modification**” means an alteration to a physical work that may introduce a new structure or eliminates an existing structure and does not alter the purpose or function of the work;

“**Monitoring Program**” means the program to collect data on surface water and groundwater quality to assess impacts to the environment of an appurtenant undertaking;

“**Monthly**” means, in the context of monitoring frequency, one sampling event occurring within calendar month with a minimum of twenty-one (21) days between sampling events;

“**Nunavut Land Claims Agreement**” (NLCA) means the “*Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*,” including its preamble and schedules, and any Amendments to that agreement made pursuant to it;

“**Quality Assurance / Quality Control (QA/QC)**” Quality Assurance means the system of activities designed to better ensure that quality control is done effectively; Quality Control means the use of established procedures to achieve standards of measurement for the three principle components of quality: precision, accuracy and reliability;



“**Quarterly**” means divisions of the calendar year, comprised of three month intervals from January to December, inclusive (January – March, April – June, July – September and October – December);

“**Regulations**” means the *Nunavut Waters Regulations* (SOR/2013/669 18th April, 2013);

“**Sewage**” means all toilet wastes and greywater;

“**Sewage Lagoon Facility**” refers to the waste disposal facility and associated structures designed and constructed to treat Sewage in the City of Iqaluit since 1978, which has also been upgraded in subsequent years;

“**Sludge Management Facility**” means the facility located within the West 40 Landfill that is used for the disposal and treatment of sludge generated by the Wastewater Treatment Plant;

“**Solid Waste Facility**” means the West 40 Landfill, Sludge Management Facility and all other facilities identified in the Application that are designed and constructed to manage solid waste generated by the City of Iqaluit;

“**Surface Drainage**” means all surface waters resulting from the flow over, through or out of an operations area and is collected by means of Engineered structures;

“**Undertaking or Undertakings**” means an undertaking or undertakings in respect of which Water is to be used or Waste is to be deposited, as classified in Schedule 1 of the *Regulations*;

“**Upgraded Wastewater Treatment Plant (UWWTP)**” means the current Wastewater Treatment Plant, which was designed, constructed, and commissioned under Phase 1, for the preliminary treatment of Wastewater, in addition to the infrastructure scheduled for construction and commissioning by December 2018, under Phase 2, for the secondary treatment of Wastewater as described in the Application;

“**Use**” means use as defined in section 4 of the Act;

“**Waste**” means Water as defined in section 4 of the Act;

“**Waste Treatment Facilities**” refers to all facilities constructed and operated by the City of Iqaluit to manage solid and liquid Waste associated with this licence.

“**Wastewater**” means the water generated by site activities or originates on-site that requires treatment or any other water management activity;

“**Wastewater Treatment Facilities**” means the Sewage Lagoon, Wastewater Treatment Plant, Upgraded Wastewater Treatment Plant and associated facilities authorized under this Licence;



“**Wastewater Treatment Plant**” means the engineered system, located adjacent to the Sewage Lagoon Facility that is designed for the containment and preliminary treatment of Sewage generated by the City of Iqaluit as described in the Application;

“**Water or Waters**” means water as defined in section 4 of the *Act*;

“**Water Treatment Facility**” means the engineered facilities and appurtenances designed and constructed for the withdrawal storage treatment and distribution of fresh water for domestic purposes, described in the Application; and

“**West 40 Landfill**” means the Solid Waste Facility or original landfill facility along with its Northern Expansion and Sludge Management Facility that is designed to manage solid waste generated by the City of Iqaluit.



Schedule B: Annual Reporting Requirements

The Annual Report referred to in Part B, Item 1, shall include the following:

- a. The monthly and annual quantities in cubic metres of fresh Water withdrawn from the Lake Geraldine Reservoir at Monitoring Station No. IQA-01;
- b. The monthly and annual quantities in cubic metres of any Discharges from the Wastewater Treatment Facilities at Monitoring Stations IQA-02, IQA-04, and IQA-08;
- c. Copy of reports generated from Dam Safety Inspections and Dam Safety Reviews along with the Licensee’s proposed actions to address issues identified and/or updates on continuing actions to address issues;
- d. The monthly and annual quantities in cubic metres of sludge removed from the Wastewater Treatment Facilities;
- e. The monthly and annual quantities of Wastes disposed of at the West 40 landfill;
- f. A summary report which includes all data and information generated under the Monitoring Program, including the QA/QC program, in electronic and printed formats acceptable to the Board;
- g. A summary of all construction activities carried out for facilities under the Licence;
- h. A summary of modifications and/or major maintenance work carried out on the potable Water Treatment and Waste Treatment Facilities, including all associated structures;
- i. A progress report and revisions (if applicable) to any studies requested by the Board that relate to Waste management, Water use or reclamation and a brief description of any future studies planned by the Licensee including, a non-technical executive summary for the general public, translated into Inuktitut;
- j. Any revisions required, in the form of addenda, to Plans, Manuals and Reports approved under the Licence;
- k. A list and description, including volumes and Spill Report Line Identification Number, of all un-authorized Discharges, spills and summaries of follow-up action taken;
- l. A summary of any closure and reclamation work undertaken and an outline of any work anticipated for the next year, including any changes to implementation and scheduling;
- m. A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector;
- n. A brief update on the implementation plan of all facilities within the scope of this Licence including changes projected implementation and status of the Upgraded Wastewater Treatment Plant;
- o. A summary of any studies, reports and plans requested by the Board that relate to Waste disposal, Water use or reclamation and a brief description of any future studies planned; and
- p. Any other details on the use of Water or Waste disposal requested by the Board by November 1st of the year being reported.



Schedule I: Condition Applying to Monitoring

Table 1 – Water Quality Parameters		
Test Groups	Analytical Parameters	Units
Routine (R)	Alkalinity, Acidity, Chloride, Carbonate, Bicarbonate, Total Hardness, Hydroxide, Sulphate, Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Total Organic Carbon (TOC), Total Inorganic Carbon (TIC)	mg/L
	pH (field and lab)	pH units
	Oxidation-Reduction Potential (ORP) (field)	mV
	Conductivity (field and lab)	uS/cm
	Temperature (field)	°C
	Turbidity	NTU
Effluent (E)	Total Suspended Solids (TSS)	mg/L
	Temperature (field)	°C
	Conductivity (field and lab)	uS/cm
	pH (field and lab)	pH units
Acute Lethality (AL)	Based on Environment Canada’s <i>Procedure for pH Stabilization During the Testing of Acute Lethality of Wastewater Effluent to Rainbow Trout</i> (EPS 1/RM/50, March 2008), if single concentration test fails and un-ionized ammonia concentration is less than or equal to 1.25 mg/L	“Pass” / “Fail”
ICP- Metals Scan (Total)	Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Li, Mn, Mo, Ni, Se, Sn, Ag, Sr, Tl, Ti, U, V, Zn, Hg	mg/L
Nutrients (N)	Ammonia-N, Nitrate-N, Nitrite-N	mg N/L
	Total Phosphorus, Orthophosphate	mg/L
Biological (B)	Biochemical Oxygen Demand	mg/L
	Total and Fecal Coliform	CFU/100 mL
Potable Water (PW)	Fecal Coliform	CFU/100 mL
	ICP Metals (Total and dissolved)	mg/L
	Total Suspended Solids –TSS	mg/L
Flow (F)	Volume	m ³
Landfill Specific (LS)	Polychlorinated Biphenyls (PCBs) Benzene, Toluene, Ethylbenzene and Xylene (BTEX)	mg/L



Table 2¹ - Water Quality Monitoring Criteria

Station ID	Description	Status	Parameter	Testing / Measurement Frequency	Reporting Frequency
IQA-01	Lake Geraldine Reservoir – Raw Water	Active	R, PW	Monthly	Biannually
			F	Monthly	
IQA-01(#)	Based on Part I, Item 4 of Expired Licence	Inactive	N/A	N/A	N/A
IQA-02	Sewage Lagoon – Effluent Discharge Point	Active	B, N, E, ICP	Once prior to discharge; once during discharge; and once prior to the completion of discharge	Annually
			F	During decant	
IQA-03	Sewage Lagoon – Influent	Inactive	N/A	N/A	N/A
IQA-04	Wastewater Treatment Plant - Effluent	Active	B, N, E, ICP	Quarterly – Prior to commissioning of the WWTP	Annually
			B, N, E, ICP	Monthly – Following commissioning of the WWTP	
			AL	Annually – following commissioning of the WWTP	
			F	During Discharge	
IQA-05	Wastewater Treatment Plant - Influent	Active	B, E, N, ICP	Biannually – Prior to commissioning of the WWTP	Annually
				No testing requirements following commissioning of the WWTP	N/A
IQA-06	Sludge – From WWTP	Active	B, E, N, ICP	Quarterly	Annually
IQA-07	Surface Water entering West 40 Landfill – Based on Part E, Item 4 of the Expired Licence	Inactive	N/A	N/A	N/A



Station ID	Description	Status	Parameter	Testing / Measurement Frequency	Reporting Frequency
IQA-08	West 40 Landfill – Effluent Discharge Point, Based on Part E, Item 4 of the Expired Licence	Active	B, E, N, ICP, F, LS	Once prior to discharge; once during discharge; and once prior to the completion of discharge	Annually
			F	During Discharge	
IQA-08(#)	Based on E, Item 17, Part F, Item 10 & Part I, Item 4 of the Expired Licence	Inactive	N/A ²	N/A	N/A
IQA-08A	Station situated up-gradient of West 40 Landfill	Active	B, E, N, ICP, F, LS	Annually	Annually
IQA-08B	Station situated down-gradient of West 40 Landfill	Active			
IQA-09	Contaminated soil accepted at the West 40 Landfill	Inactive	NA	N/A	N/A

¹ Table 2 may be modified by the Board and re-issued where necessary. Re-issuance is not considered an Amendment to the application or Licence as defined in the *Act*.

² Means not applicable

Iqaluit



ᐃᑭᐱᐅᐢ

CITY OF IQALUIT

MUNICIPAL DESIGN GUIDELINES

JANUARY 2005

W:\ENGINEERING\CITY STANDARDS\MUNICIPAL DESIGN GUIDELINES - JANUARY 24, 2005.DOC

TABLE OF CONTENTS

A	WATER DISTRIBUTION SYSTEM	1
A-1	GENERAL	1
A-2	ORGANIZATIONS ISSUING STANDARDS:	1
A-3	WATER MAINS	1
A.3.1	<i>Flow Requirements</i>	1
A.3.2	<i>Pipe Sizing</i>	2
A.3.3	<i>Water Main Alignment and Location</i>	2
A.3.4	<i>Required Depth for Water Mains</i>	2
A.3.5	<i>Water Pipe Material</i>	3
A.3.6	<i>Water Main Installation</i>	4
A-4	VALVES.....	4
A.4.1	<i>Materials</i>	4
A.4.2	<i>Valve Location and Spacing</i>	5
A.4.3	<i>Valve Installation</i>	5
A-5	HYDRANTS	5
A.5.1	<i>Materials</i>	5
A.5.2	<i>Hydrant Location and Spacing</i>	6
A.5.3	<i>Hydrant Installation</i>	6
A-6	COUPLINGS AND ADAPTORS.....	6
A-7	TRENCHING BEDDING AND BACKFILLING	7
A-8	INSPECTION AND TESTING	8
A.8.1	<i>Testing</i>	8
A-9	DISINFECTION	8
A-10	OPERATION OF BOUNDARY VALVE & EXISTING HYDRANT	9
B	SANITARY SEWER SYSTEM.....	10
B-1	GENERAL	10
B-2	ORGANIZATIONS ISSUING STANDARDS:	10
B-3	SANITARY SEWERS.....	10
B.3.1	<i>Flow Generation Rates</i>	10
B.3.2	<i>Gravity Sewer Pipe Sizing</i>	11

<i>B.3.3</i>	<i>Sanitary Sewer Alignment and Location.....</i>	<i>11</i>
<i>B.3.4</i>	<i>Required depth for sanitary sewers</i>	<i>12</i>
<i>B.3.5</i>	<i>Sanitary Sewer Materials.....</i>	<i>12</i>
<i>B.3.6</i>	<i>Sewer Installation</i>	<i>13</i>
B-4	SANITARY CLEANOUT DESIGN AND LOCATION	13
B-5	TRENCHING, BEDDING AND BACKFILLING	14
B-6	INSPECTION AND TESTING	15
B-7	SANITARY WASTEWATER PUMPING SYSTEMS.....	15
<i>B.7.1</i>	<i>General</i>	<i>15</i>
<i>B.7.2</i>	<i>Standards and Approvals.....</i>	<i>15</i>
<i>B.7.3</i>	<i>Location</i>	<i>15</i>
<i>B.7.4</i>	<i>Configuration.....</i>	<i>16</i>
<i>B.7.5</i>	<i>Pumping Station Design</i>	<i>16</i>
<i>B.7.6</i>	<i>Valves and Piping</i>	<i>16</i>
<i>B.7.7</i>	<i>Water Supply.....</i>	<i>17</i>
<i>B.7.8</i>	<i>Alarms and Emergency Backup.....</i>	<i>17</i>
<i>B.7.9</i>	<i>Access and Maintenance.....</i>	<i>17</i>
<i>B.7.10</i>	<i>Heating and Ventilation.....</i>	<i>18</i>
<i>B.7.11</i>	<i>Building Requirements</i>	<i>18</i>
<i>B.7.12</i>	<i>Forcemains</i>	<i>19</i>
C	ACCESS VAULTS.....	20
C-1	GENERAL	20
C-2	ACCESS VAULT DESIGN	20
<i>C.2.1</i>	<i>Fabrication</i>	<i>20</i>
<i>C.2.2</i>	<i>Materials.....</i>	<i>20</i>
C-3	ACCESS VAULT CONSTRUCTION	21
C-4	ACCESS VAULT INSTALLATION	21
<i>C.4.1</i>	<i>Access Vault Location.....</i>	<i>21</i>
<i>C.4.2</i>	<i>Installation.....</i>	<i>22</i>
C-5	INSPECTION AND TESTING	22
<i>C.5.1</i>	<i>Static Leakage Test</i>	<i>22</i>
<i>C.5.2</i>	<i>Water Pressure Test.....</i>	<i>22</i>

C.5.3	<i>Air Pressure Test</i>	23
D	SERVICE CONNECTION	24
D-1	GENERAL	24
D-2	WATER SERVICE	24
D.2.1	<i>General</i>	24
D.2.2	<i>Materials</i>	24
D.2.3	<i>Service Installation</i>	25
D-3	SANITARY SERVICE	25
D.3.1	<i>General</i>	25
D.3.2	<i>Materials</i>	25
D.3.3	<i>Service Installation</i>	25
E	ROADWAYS, WALKING TRAILS, SNOW MOBILE TRAILS	26
E-1	GENERAL.....	26
E-2	DESIGN CRITERIA	26
E-3	ROAD STRUCTURE.....	27
E-4	CUL-DE-SACS	27
E-5	INTERSECTIONS	27
E-6	WALKING TRAILS AND SNOW MOBILE TRAILS.....	27
E-7	DRIVEWAYS.....	28
E-8	SIGNAGE.....	28
E-9	DRAINAGE AND CULVERTS.....	29
E-10	QUALITY ASSURANCE	29
F	TRUCKED WATER AND SANITARY SERVICES	30
F-1	GENERAL.....	30
F-2	WATER SERVICES	30
F-3	SANITARY SERVICES.....	30
F-4	SERVICE INSTALLATION	30
G	AGGREGATE	31
G-1	GENERAL	31
G-2	GRANULAR CLASSIFICATIONS	31

H	STORMWATER MANAGEMENT SYSTEM.....	33
H-1	GENERAL	33
H-2	ORGANIZATIONS ISSUING STANDARDS:	33
H-3	MINOR SYSTEM.....	33
	<i>H.3.1 Flow Rates</i>	<i>33</i>
H-4	MAJOR SYSTEM.....	34
	<i>H.4.1 General</i>	<i>34</i>
	<i>H.4.2 Lot Grading.....</i>	<i>34</i>
	<i>H.4.3 Swales</i>	<i>35</i>
	<i>H.4.4 Roadways</i>	<i>35</i>
I	STREET LIGHTING	36
I-1	STANDARD AND GUIDELINES.....	36
I-2	ENGINEERING DRAWINGS AND APPROVAL	36
I-3	DESIGN AND OPERATIONS	36
I-4	SAFETY	36
I-5	ENERGY USAGE.....	36
I-6	POLE LOCATION	37
I-7	TYPE OF POLE.....	37
I-8	AESTHETIC	37
I-9	FOUNDATIONS	37

A WATER DISTRIBUTION SYSTEM

A-1 GENERAL

These guidelines are intended as a guide only. The Design Engineer is responsible to ensure that the water system is designed and constructed according to accepted engineering practice.

These Guidelines shall not be considered as a substitute for a detailed material and construction specification prepared by the Design Engineer.

These Guidelines only apply in areas where underground water servicing is specified.

A-2 ORGANIZATIONS ISSUING STANDARDS:

ASTM-American Society for Testing and Materials

AWWA-American Water Works Association

CSA-Canadian Standards Association

NFPA-National Fire Protection Association

NSF-National Sanitation Foundation

Fire Underwriter's Survey

A-3 WATER MAINS

A.3.1 Flow Requirements

- | | | |
|--|---|-----------------------|
| 1. Average Daily Demand | - | 400 L/person/day |
| 2. Population Density (residential) | - | 3.5 persons/residence |
| 3. Maximum Daily Demand | - | 2 × Average Demand |
| 4. Peak Hourly Demand | - | 4 × Average Demand |
| 5. Minimum Residual Water Pressure During Peak Hour Flow | - | 350 kPa (50 psi) |
| 6. Minimum Residual Water Pressure During Maximum Day + Fire Flow | - | 140 kPa (20 psi) |
| 7. Minimum Residual Water Pressure Maximum Day Flow (for operation of residential fire sprinklers) | - | 350 kPa (50 psi) |

A.3.2 Pipe Sizing

1. Sizing of water mains shall be determined by hydraulic network analysis. Results shall be submitted to the City Engineer for approval.
2. The minimum size for a distribution main shall be 200mm. Lines must be sized to accommodate the anticipated land use.
3. The minimum size for a recirculation line shall be 50mm. Lines must be sized to accommodate the anticipated land use.
4. The maximum velocity under normal operating conditions shall not exceed 3.0 m/s.
5. Hazen-Williams “C” value shall be 120 for H.D.P.E. pipe.
6. Analysis shall be made to ensure that there is a minimum residual pressure of 350 kPa (50 psi) under Peak Hour Demand conditions.
7. Separate analysis shall be made to ensure that there is a minimum residual pressure of 140 kPa (20 psi) under Maximum Day Demand plus Fire Flow Conditions.

A.3.3 Water Main Alignment and Location

1. Water mains shall be located within the road right-of-way and outside the carriageway.
2. Water mains shall be located a minimum of 230mm outside of insulation to outside of insulation horizontally and 300mm from invert to obvert vertically from any sewer line.
3. Public Utility Lot (PUL) widths shall be at least 6.0m for a single utility and 8.0m for two utilities.
4. Water distribution and transmission systems in new subdivisions shall be looped.

A.3.4 Required Depth for Water Mains

1. The water main shall have a minimum depth of cover of 2.5m measured from finished grade to the top of pipe.
2. Water mains shall cross above sewer where ever possible. Water mains crossing below sewers shall require special approval from the City Engineer.
3. Water mains crossing above the sewer with sufficient clearance to allow for proper bedding and structural support of the pipes. Pipe clearance when passing over any sewer shall be a minimum of 300mm separation between the top of the sewer pipe and the bottom of the water main.
4. Water mains crossing under sewers shall be a minimum of 500mm separation between the bottom of the sewer pipe and the top of the water main. Efforts shall be made to pass over the sewer when possible.

A.3.5 Water Pipe Material

General

1. Approved materials shall be as per City of Iqaluit standards.
2. Only new materials shall be deemed acceptable. All materials found to be defective or damaged shall be replaced at the no cost to the City. The pipe shall not be more than two years old at the time of installation.
3. Records of quality control testing performed by the manufacturer shall be made available upon request.
4. All pipe and joint lubricants must be certified for potable water use in accordance with N.S.F. Standards.

Polyethylene

1. All pipe materials and fabrication shall conform to AWWA C901 or C906, as applicable
2. Polyethylene pipe shall conform to CSA B137.1 and ASTM F714, D3035, D3350
3. Water main shall be HDPE DR11 (Series 160, 1100 kPa)
4. All pipe to have a 50mm thickness shop cast polyurethane insulation and black jacket.
5. Moulded fittings shall conform to ASTM D2683 or D3261
6. Fabricated fittings shall be manufactured from pipe of the same series as that used in the piping system.
7. Pipe shall be joined by thermal butt-fusion, flange assemblies or compression type fittings.
8. Compression couplings shall be used with stainless steel inserts.
9. Couplers shall be Victaulic Type 995 for use with HDPE piping or approval equal.
10. Valves shall be cast iron gates valves with flanged connections.
11. Each pipe length shall be marked for use with potable water, the manufacturer's name, nominal pipe size, dimension ratio, material grade, manufacturing standard, and a code indicating the date and place of manufacture.

Steel Fittings

1. Fittings for H.D.P.E pressure pipe shall conform to AWWA C200 and C208 with a minimum working pressure of 1035 kPa and a yield point strength of 207 Mpa.
2. Slip-on flanges of forged steel shall conform to AWWA C207, Class D and flat faced or weld-neck flanges shall conform to ANSI B16.1, Class 125.
3. Use stainless steel double threaded studs with two nuts, ASTM A307, Grade B.
4. Full-faced rubber gaskets shall be used with 1035 kPa working pressure.

5. Weldolets and threadolets of forged steel shall comply with ASTM A105.
6. Welding of shop-fabricated fittings shall conform to CSA Z662.
7. The exterior of all fittings shall be factory coated with an epoxy coating conforming to AWWA C213.

A.3.6 Water Main Installation

1. The pipe installation shall be conducted in compliance with the pipe manufacturer's specifications.
2. Align pipes carefully from access vault to access vault. Keep joints free of mud, gravel and foreign material and ensure that the joint is complete as outlined in the manufacturer's specifications. Deflections shall not exceed those permitted by the manufacturer.
3. The pipe must be thoroughly flushed of all dirt, stones and pipe lubricant when complete.
4. The alignment of pipes less than 900mm in diameter shall not be more than 150mm of the designated alignment.
5. The invert of pipe shall not deviate from the design grade by more than 40mm.

A-4 VALVES

A.4.1 Materials

1. All water valves shall be certified to National Sanitation Foundation (NSF) Standard 61 – Drinking Water System Components: Health Effects and Standard 14 – Plastics and Plumbing System Components.

Pressure Reducing Valves

1. Valves 200mm and smaller shall be of single diaphragm type. Valves 250mm and larger shall be double diaphragm type.
2. Valves shall be globe style, hydraulically operated, pilot controlled with flanged cast iron body to ANSI B16.1, Class 125. Valves shall have type 304 stainless steel seat and stem.

Flow Control Valves

1. Valves shall be diaphragm type, globe or angle style with cast iron body and bronze trim.
2. Provide an "O" ring seat seal on main valve and strainer and needle valve on pilot inlet lines.

Air Valves

1. All air valves shall conform to AWWA C512 with cast iron body and stainless steel float. Minimum working pressure shall be 1035 kPa.

A.4.2 Valve Location and Spacing

1. The location and spacing of valves should be such that when the system is in operation:
 - No more than two hydrants will be put out of service by a water main shutdown
 - No more than four valves are required to effect a shutdown
 - No more than 20 lots are out of service due to a water main shutdown
2. Valves should be no greater than 250m apart.
3. Valves shall be located in access vault.
4. Valves shall be located at both ends of a main passing through a utility lot or easement and shall be placed 500mm from the property line.
5. Valves shall be the same size as the corresponding main.
6. All valves locations shall be reviewed and approved by the City Engineer and the Fire Department.

A.4.3 Valve Installation

1. Valves, valve casings and fittings shall be installed in accordance with the manufacturer's specifications.
2. Upon completion, all valve casings must be checked to ensure that they are plumb and that the operating nut can be turned properly.

A-5 HYDRANTS

A.5.1 Materials

1. All hydrants shall be 200mm Crane McAvity M-67 inline fire hydrants unless otherwise approved by the City Engineer.
2. All hydrants shall be certified to NSF Standard 61 – Drinking Water System Components: Health Effects and Standard 14 – Plastics and Plumbing System Components.
3. Compression type hydrants shall be supplied conforming to AWWA C502 for dry barrel fire hydrants.
4. Hydrant shall be designed for 1035 kPa working pressure.

5. Hydrants shall have one pumper connection, 146mm outside diameter, and two hose connections (63.5mm) with MPSH thread at least 415mm above the ground flange. Nipples shall be provided with caps without chains or cables. The hose and pumper caps and hydrant valve shall open clockwise.
6. Hydrants shall consist of a minimum 2.45m barrel with 300mm extension.
7. Hydrants shall have a 200mm cast iron outside diameter inlet elbow with bell end and harnessing lugs. Elbow shall be flanged to the barrel.
8. Valve stem in hydrant head to have “O” ring seals.
9. Operating nut shall be three sided, each side being a 36.5mm long arc.
10. Hydrants shall have stainless steel bolt assemblies throughout.
11. External paint shall conform to AWWA C550 – corrosion resistant fluorescent red.

A.5.2 Hydrant Location and Spacing

1. The maximum spacing between hydrants shall be 120m for residential areas
2. For school, industrial or commercial areas hydrant spacing shall be such as to provide complete coverage to the building from a maximum distance of 90m.
3. For sprinkled buildings, a hydrant shall be located within 45m of the building siamese connection.
4. All hydrants to be placed inside access vaults as per City of Iqaluit standards.
5. Hydrants and access vaults shall be located at the projection of the property lines where possible.
6. Hydrant spacing shall be approved by the Fire Department.

A.5.3 Hydrant Installation

1. Hydrants shall be installed in accordance with the manufacturer’s specifications and AWWA M17.
2. Upon completion, all hydrants must be checked to ensure that they are plumb and that the operating nut is functioning properly.

A-6 COUPLINGS AND ADAPTORS

1. Bolted sleeve couplings shall conform to AWWA C219 with ductile iron or carbon steel bodies with epoxy coating conforming to AWWA C213 or AWWA C550 as applicable. Coupling shall have a minimum operating pressure of 1035 kPa. Linings shall be in accordance with AWWA C210, C213 or C550 and be suitable for use with potable water.
2. Flange adapters shall conform to AWWA C219 with ductile iron or carbon steel bodies with epoxy coating conforming to AWWA C210, C213 or C550 as applicable.

The minimum operating pressure shall be 1035 kPa. Flanges shall conform to AWWA C207, Class D. Linings shall be in accordance with AWWA C210, C213 or C550 and be suitable for use with potable water.

3. Couplings for grooved and shouldered joints shall conform to AWWA C606 and shall have operating pressures, coatings and linings as above.

A-7 TRENCHING BEDDING AND BACKFILLING

1. All trenching and backfilling shall be completed in strict accordance with Occupational Health and Safety Guidelines.
2. If unsuitable soil conditions are encountered, proper measures for dealing with the conditions shall be identified either on the design drawings or as a brief report to the City Engineer prior to construction.
3. Modified Granular C pipe bedding shall be utilized in suitable soil conditions. Bedding sand shall have minimum depth of 100mm below the pipe, shall extend up both sides to the trench wall and provide a minimum cover of 300mm above the pipe.
4. Test pits are to be excavated every 15m to a depth of 450mm below the invert of the pipe to check for the presence of silt. Subexcavate 450mm below the invert of the pipe when silt is found and backfill with Granular B compacted to 95% Standard Proctor Density.
5. The minimum trench width measured at the pipe springline shall be the pipe outside diameter plus 450mm. The maximum trench measured at the pipe springline shall be the pipe outside diameter plus 600mm. The City Engineer must be notified if the trench must be excavated deeper or wider than specified.
6. Excavated material shall be stockpiled at a safe distance from the edge of the trench.
7. The Design Engineer shall identify areas where the trench excavation requires sheathing, shoring or bracing in order to protect workers, property or adjacent structures.
8. Trench excavations shall be kept free of water.
9. Utility trenches shall be adequately compacted.

Native backfill under existing or proposed roads or laneways shall be compacted to:

- 98% standard proctor density from subgrade to 1.5m below subgrade or original ground, whichever is lower;
- 95% standard proctor density greater than 1.5m from the subgrade or original ground, whichever is lower;

to a distance equal to the trench depth past the shoulder.

Granular backfill under existing or proposed roads or laneways shall be compacted to 95% of standard proctor density throughout the entire trench depth below subgrade to a distance equal to the trench depth past the shoulder.

Backfill in all other areas shall be compacted to 95% standard proctor density.

Subgrade and base course compaction for roadway construction shall be as specified in Section D – Roadways, Walking Trails and Snow Mobile Trails.

If the above standards cannot be achieved due to a large variation in soil types throughout the development, the City Engineer may at his sole discretion, establish a more appropriate standard on an individual case basis.

10. If the minimum compaction standards cannot be met due to abnormal weather or wet ground conditions, the City Engineer may establish a more suitable standard on a site-specific basis provided adequate justification is presented.
11. All landscaping, pavement structures, sidewalks, curb and gutter damaged or removed during trenching shall be restored or replaced unless otherwise directed by the City Engineer.
12. All debris, surplus fill and unused materials must be removed from the site.

A-8 INSPECTION AND TESTING

1. All water installations shall be subject to inspections by the City Engineer prior to issuance of the Substantial Certificate of Completion and Final Certificate of Completion.
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.
3. 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 Engineer with a report indicating any deficiencies and remediation.

A.8.1 Testing

1. The Fire Department shall be responsible for pressure and flow testing of the entire water system. If discrepancies are found, the Design Engineer shall indicate the corrective action that must undertake to remedy the deficiency.

A-9 DISINFECTION

1. Water mains are to be disinfected and flushed in accordance with AWWA C651.
2. Fill section of main to be disinfected with a chlorine solution, and measure the starting residual.
3. Disinfect for 24 hours and measure residual. If no chlorine is measured repeat the disinfection procedure.

4. When disinfection is completed, test for bacteria.
5. When the City Engineer has approved the bacteria test, flush water mains and safely discharge the water so that no downstream damage occurs.
6. If repairs are made on any section of pipe, disinfection shall be repeated.
7. The mains shall not be commissioned and put into use until the bacteriological sample results are approved by the City Engineer.

A-10 OPERATION OF BOUNDARY VALVE & EXISTING HYDRANT

1. City representatives shall be notified at least 24 hours in advance of valve operation requirements. City personnel shall operate the boundary valves.
2. Use of fire hydrants, tap faucets or the like, connected to the City's treated water supply is strictly forbidden. Any violations will result in appropriate fines as stipulated in the bylaws. All water used in the performance of the work must be obtained from truck fill stations as directed by the City.

B SANITARY SEWER SYSTEM

B-1 GENERAL

These guidelines are intended as a guide only. The Design Engineer is responsible to ensure that the sanitary sewer system is designed and constructed according to accepted engineering practice.

These Guidelines shall not be considered as a substitute for a detailed material and construction specification prepared by the Design Engineer.

These Guidelines only apply in areas where underground sanitary servicing is specified.

B-2 ORGANIZATIONS ISSUING STANDARDS:

ASTM – American Society for Testing and Materials

CSA – Canadian Standards Association

B-3 SANITARY SEWERS

B.3.1 Flow Generation Rates

The sanitary system shall be of sufficient capacity to carry peak flows plus an inflow and infiltration allowance. The flow and factors listed below shall be used as minimum requirements in the design of the sanitary sewer systems.

- | | | |
|-------------------------------------|---|---|
| 1. Average Sewage Flow | - | 400 L/person/day |
| 2. Population Density (residential) | - | 3.5 persons/residence |
| 3. Peak Sewage Flow | - | Average Flow x Peaking Factor |
| 4. Peaking Factor | - | $1 + 14/(4+P^{1/2})$ (residential) |
| | | (Harmon's Formulas) where P = the contributing design population in thousands |
| | | where $P < 1$, a peaking factor of 4.5 shall be used |
| | | 3.0 (non-residential) |

The total design peak flow rates for the sanitary sewer shall be the sum of the peak flow rates plus all extraneous flow allowances.

B.3.2 Gravity Sewer Pipe Sizing

The following design factors shall be used in determining the sanitary sewer pipe sizes:

1. Minimum pipe size - 200mm diameter
2. Manning's Formula "n" - 0.013
3. Required sewer capacity - $\frac{\text{Estimated Peak Design Flow}}{0.86}$
4. Minimum flow velocity - 0.6 m / sec (during average flow)
5. Maximum flow velocity - 3.0 m / sec
9. Minimum design slopes

Sewer Diameter (mm)	Minimum Design Slope
200	0.40%
250	0.28%
300	0.22%
375	0.15%
450	0.12%
525 and greater	0.10%

9. Minimum slopes shall be increased by 50% on all curved sections.
9. The minimum grade of the first upstream leg shall not be less than 1.0%.
9. It is recommended that all sanitary sewers be designed with a slope of 0.5% or greater, wherever possible.

B.3.3 Sanitary Sewer Alignment and Location

1. Sewer mains shall be located within the road right-of-way and outside the carriageway.
2. Sanitary sewers shall be located a minimum of 230mm outside of insulation to outside of insulation horizontally and 300mm from obvert to invert vertically from any waterline.
3. Public Utility Lot (PUL) widths shall be at least 6.0m for a single utility and 8.0 for two utilities.
4. Curved sewers shall run parallel to the road centre line.

B.3.4 Required depth for sanitary sewers

1. Sanitary sewers shall be installed at a sufficient depth to meet the following requirements:
2. The main shall have a minimum depth of cover to ensure the mains are in permafrost. No main shall be installed with less than 3.0m of cover measured from finished grade to the top of the pipe.
3. Gravity mains shall have sufficient depth to allow all buildings to drain by gravity to the sewer. Service lines shall have a minimum cover of 2m from the finished lot surface to the top of pipe at the property line.
4. Sanitary Sewers shall cross below water mains where ever possible. Sewers crossing above water mains shall require special approval from the City Engineer.
5. Sanitary sewer crossing above the water main with sufficient clearance to allow for proper bedding and structural support of the pipes. Pipe clearance when passing over any sewer shall be a minimum of 300mm separation between the top of the sewer pipe and the bottom of the water main.
6. Sanitary sewers crossing above water mains shall be a minimum of 500mm separation between the bottom of the sewer pipe and the top of the water main. Efforts shall be made to pass under the water main when possible.

B.3.5 Sanitary Sewer Materials

1. Only new materials shall be deemed acceptable. All materials found to be defective or damaged shall be replaced at no cost to the City.
2. Where specific products are specified, it is intended that approved equals are also acceptable. Approval must be obtained by the City Engineer prior to installation.
3. Polyethylene pipe and fitting shall conform to the following:
 - DR11 Polyethylene pipe shall conform to CSA B137.1 and ASTM D3035, D3350
 - Minimum pressure rating of 1100 kPa (series 160)
 - Moulded fittings shall conform to ASTM D2683 or D3261
 - Fabricated fittings shall be manufactured from pipe of the same series as that used in the piping system.
 - Pipe shall be joined by thermal butt-fusion, flange assemblies or compression type fittings.
 - Flanges shall be stainless steel or epoxy coated ductile iron conforming to ASTM A536-80 with stainless steel nuts, bolts and washers.
 - Compression couplings shall be used with stainless steel inserts.
 - Outlet sleeve saddle shall be Robar type 6626 or approved equal.

- Valves shall be cast iron gates valves with flanged connections.
- Each pipe length shall be marked with the manufacturer's name, nominal pipe size, dimension ratio, material grade, manufacturing standard, and a code indicating the date and place of manufacture.

B.3.6 Sewer Installation

1. The pipe and gasket installation shall be conducted in compliance with the pipe manufacturer's specifications. Installation of HDPE pipe and fittings shall conform to CSA-B137.1.
2. Pipe installation shall start at an access vault and work upstream to the next access vault.
3. Align pipes carefully when jointing. Keep joints free of mud, gravel and foreign material and apply sufficient pressure to ensure that the joint is complete as outlined in the manufacturer's specifications. Complete each joint before laying the next length of pipe. Deflections shall not exceed those permitted by the manufacturer.
4. The pipe must be thoroughly flushed of all dirt, stones and pipe lubricant when complete.
5. The alignment of pipes shall not be more than 150mm off the designated alignment.
6. The invert of the pipe shall not deviate from the design grade by more than 6mm plus 20mm per metre of diameter of sewer pipe.

B-4 SANITARY CLEANOUT DESIGN AND LOCATION

1. Clean outs shall be located at the end of each line, at all changes in pipe size, grade and alignment.
2. Clean outs shall be located in all access vaults.
3. The maximum distance between clean outs shall not exceed 120m.
4. The drop across access vaults should be of sufficient magnitude to account for any energy losses in the access vault.
5. Pipe deflections of less than 45° require a drop of at least 30mm
6. Pipe deflections of 45° to 90° require a drop of at least 50mm
7. Invert drops for pipes larger than 600mm or for high flow situations shall be assessed on an individual basis
8. The obvert elevation of a sewer entering a manhole shall not be lower than the obvert elevation of the outlet pipe.
9. Pipe deflection in the manhole shall not be greater than 90°.
10. Risers for service lines shall be required when sewer mains exceed 4 metres in depth.

B-5 TRENCHING, BEDDING AND BACKFILLING

1. All trenching and backfilling shall be completed in strict accordance with Occupational Health and Safety Guidelines.
2. If unsuitable soil conditions are encountered, proper measures for dealing with the conditions shall be identified either on the design drawings or as a brief report to the City Engineer prior to construction.
3. Modified Granular C pipe bedding shall be utilized in suitable soil conditions. Bedding sand shall have minimum depth of 100mm below the pipe, shall extend up both sides to the trench wall and provide a minimum cover of 300mm above the pipe.
4. Test pits are to be excavated every 15m to a depth of 450mm below the invert of the pipe to check for the presence of silt. Subexcavate 450mm below the invert of the pipe when silt is found and backfill with Granular B compacted to 95% Standard Proctor Density.
5. The minimum trench width measured at the pipe springline shall be the pipe outside diameter plus 450mm. The maximum trench measured at the pipe springline shall be the pipe outside diameter plus 600mm. The City Engineer must be notified if the trench must be excavated deeper or wider than specified.
6. Excavated material shall be stockpiled at a safe distance from the edge of the trench.
7. The Design Engineer shall identify areas where the trench excavation requires sheathing, shoring or bracing in order to protect workers, property or adjacent structures.
8. Trench excavations shall be kept free of water.

Native backfill under existing or proposed roads or laneways shall be compacted to:

- 98% standard proctor density from subgrade to 1.5m below subgrade or original ground, whichever is lower;
- 95% standard proctor density for depths greater than 1.5m from the subgrade or original ground, whichever is lower;

to a distance equal to the trench depth past the shoulder.

Granular backfill under existing or proposed roads or laneways shall be compacted to 95% of standard proctor density throughout the entire trench depth below subgrade to a distance equal to the trench depth past the shoulder.

Backfill in all other areas shall be compacted to 95% standard proctor density.

Subgrade and base course compaction for roadway construction shall be as specified in Section D.

If the above standards cannot be achieved due to a large variation in soil types throughout the development, the City Engineer may at his sole discretion, establish a more appropriate standard on an individual case basis.

9. If the minimum compaction standards cannot be met due to abnormal weather or wet ground conditions, the City Engineer may establish a more suitable standard on a site-specific basis provided adequate justification is presented.
10. All landscaping, pavement structures, sidewalks, curb and gutter damaged or removed during trenching shall be restored or replaced unless otherwise directed by the City Engineer.
11. All debris, surplus fill and unused materials must be removed from the site.

B-6 INSPECTION AND TESTING

1. All sewer installations shall be subject to inspections by the City Engineer prior to issuance of the Substantial Certificate of Completion and Final Certificate of Completion.
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.
3. 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 Engineer with a report indicating any deficiencies and remediation.

B-7 SANITARY WASTEWATER PUMPING SYSTEMS

B.7.1 General

1. Wastewater pumping systems shall only be installed where site constraints restrict the gravity collection system from tying to an existing sanitary trunk line. The requirement must be justified in an initial subdivision design report taking the development plans for the surrounding area into account.

B.7.2 Standards and Approvals

1. The design and construction of the pumping system must meet the requirements of other governmental authorities and regulations including Federal, Territorial and Municipal. The Design Engineer is responsible for all submissions and applications required for approval.

B.7.3 Location

1. The pumping station shall be located in such a manner as to minimize the impact to adjacent development in terms of visibility, odour and noise.

2. Pumping stations shall not be located in areas subject to flooding during a major rainfall event.
3. Pumping stations shall always be accessible by road.

B.7.4 Configuration

1. A wet well configuration with submersible pump or above ground suction head pump is preferred.
2. A wet well/dry well configuration may be considered for larger facilities.
3. A building will be required for all pumping stations.
4. A collection access vault shall intercept flow from all incoming sewers before discharge to the pumping station. The station shall receive flow from one inlet only.
5. Provision shall be made to shut off flow from the collection manhole if required.

B.7.5 Pumping Station Design

1. The pumps shall be sized to accommodate the maximum expected flow as determined by accepted engineering practice and according to the requirement specified in Section B.3.1 - Flow Generation Rates.
2. Pumping stations shall be equipped with two or more pumps sized such that if one pump is out of service, the remaining pump(s) is/are capable of pumping the design capacity flow rate. Pumps shall be identical and interchangeable for a duplex pumping station. Pumps starts shall alternate between pumps.
3. Pumps shall be provided by a well-recognized manufacturer.
4. Submersible pumps shall have a non-clog impeller design and flush valves.
5. Pump motors shall operate on 3-phase power wherever possible. This requirement may be relaxed by the City if 3-phase power cannot be supplied at a feasible cost.
6. Dead storage shall be minimized while meeting minimum depth requirements specified by the pump manufacturer.
7. Wet wells shall be sized based on accepted engineering practice. Storage shall be provided to minimize the frequency of pump starts but maximum retention time in the wet well should not exceed 30 minutes. The design shall meet pump manufacturer's specifications.
8. Wet wells shall be sized and equipped to accommodate operator access, maintenance and safety requirements.

B.7.6 Valves and Piping

1. The minimum diameter for all pump suction and discharge piping shall be 100mm.

2. Pipe sizing shall allow for minimum and maximum flow velocities of 0.75m/s to 3.5m/s respectively within the station.
3. The minimum pressure rating of piping within the station shall be determined based on calculated operating pressures but shall not be less than 900 kPa.
4. Pumps shall be connected in parallel to a common discharge header located within the station. Check valves and isolation valves shall be installed on the discharge line between each pump and the discharge header.
5. A forcemain isolation valve shall be installed on the main discharge pipe outside the wet well.

B.7.7 Water Supply

1. Water supply must be provided to the facility for washing/cleaning purposes.
2. The design shall ensure that the connection between the potable water supply and the wastewater pumping station does not cause contamination of the potable water supply. The design shall comply with the conditions stipulated in the Environment “Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems” for Water Supply and Wastewater Facilities.
3. Where a potable water supply is to be used for washing/cleaning purposes, a break tank, pressure pump and pressure tank shall be provided. In-line backflow preventers are not acceptable. The potable water shall be discharged to the break tank through an air gap at least 150mm above the maximum flood line or the spill line of the tank.

B.7.8 Alarms and Emergency Backup

1. Stations shall be equipped with or provided with the feature for future connection of remote sensing and telemetry equipment enabling operators to monitor the alarms.
2. Power must be supplied from two independent sources. In the event of a power failure, secondary power must automatically engage through a diesel generator or direct-coupled motor.
3. Special consideration shall be made to control any possible overflow in a manner acceptable to the City and the Department of Environment.

B.7.9 Access and Maintenance

1. Permanent hoist equipment and access hatches of sufficient size and capacity shall be provided for removal of station equipment.
2. All access points shall have locking devices.
3. Ladders shall be non-skid and shall comply with Occupational Health and Safety requirements.
4. Stations shall have adequate interior and exterior lighting.

5. An Operating and Maintenance manual shall be provided for the facility. The manual shall include a complete parts list for all mechanical and electrical components including control diagrams, schematics and manufacturer's operation, maintenance, service and repair specifications. Five (5) copies along with all commissioning and testing results shall be submitted to the City prior to issuance of the Substantial Certificate of Completion.

B.7.10 Heating and Ventilation

1. Forced mechanical ventilation is required for dry wells below ground level and for wet wells containing screens or mechanical equipment requiring maintenance or inspection.
2. Equipment shall be able to provide at least six air changes per hour. Provision shall be made for ventilation of the wells with portable equipment in case of system failure. Ventilation failure alarms are required.
3. There shall be no interconnection between wet well and dry well ventilation systems.
4. Multiple air inlets and outlets are recommended for dry wells over 5m deep. Air intakes and outlets shall be designed to function year round and screen openings should be sized to avoid frost build-up or clogging.
5. Air shall be forced into the dry well at a point 150mm above the pump floor and into the wet well at a point 150mm above water level.
6. Automatic heating and dehumidification equipment shall be provided in all dry wells.

B.7.11 Building Requirements

1. All lift stations shall be provided with a building to house all electrical and control equipment and to provide a workspace for pump maintenance.
2. Buildings shall be of an adequate size to allow for the required access hatches, hoist equipment, ventilation and control equipment while allowing for an appropriate workspace for pump maintenance.
3. Access to the wet well shall not be from within the building.
4. Building layout and access shall be designed to facilitate the removal of any equipment that may require off-site maintenance.
5. Structural members shall be masonry, concrete or structural steel. Wood frame buildings are not permitted. Buildings shall comply with the National Building Code.
6. The design shall incorporate measures to reduce the noise and odour impact on the surrounding development.
7. Buildings shall be designed to blend architecturally with the surrounding development.
8. Windows shall not be permitted in lift station buildings.

B.7.12 Forcemains

1. System head curves shall be developed for each forcemain to be submitted to the City Engineer upon request.
2. The minimum forcemain diameter shall be 100mm.
3. The pressure rating of the pipe shall be twice the operating pressure or 690 kPa, whichever is greater.
4. The velocity shall be within 0.9 m/sec to 3.5 m/sec. The minimum velocity for pipes larger than 300mm shall be 1.1 m/sec. Special design provisions in order to stabilize the line shall be incorporated when design velocities exceed 3.0 m/sec.
5. The forcemain design pressure shall allow for the normal static and dynamic operating pressures including water hammer effects.
6. A series of 45° bends shall be used in lieu of 90° bends.
7. Air release valves shall be installed in access vaults at all relative high points. Forcemain grades should be designed in order to avoid the requirement for an air release valve wherever possible.
8. Blow-off valves shall be provided at all low points.
9. Vacuum relief valves shall be installed wherever necessary in lines designed to drain by gravity between pumping cycles.
10. The forcemain invert at the receiving manhole shall be a maximum of 300mm above the highest invert. The outlet invert of a lagoon inlet manhole shall always be above the high water level.
11. When forcemain length exceeds 1000 metres, cleanouts should be installed in concrete access chambers complete with isolation valves and adaptor coupling for line flushing.

C ACCESS VAULTS

C-1 GENERAL

These guidelines are intended as a guide only. The Design Engineer is responsible to ensure that the access vaults are designed and constructed according to accepted engineering practice.

These Guidelines shall not be considered as a substitute for a detailed material and construction specification prepared by the Design Engineer.

C-2 ACCESS VAULT DESIGN

C.2.1 Fabrication

Steel access vaults (AVs) shall be prefabricated, complete with all piping, fittings, and accessories.

Fabricator to provide shop drawing, to be approved by the Design Engineer.

Access vaults are to be finished, inspected and tested in the prefabrication shop prior to shipping. A certificate of testing shall be provided for each access vault. The certificate shall include the date of testing, method of testing and test results, and shall be signed by the inspector.

All piping and fittings shall be set horizontally and vertically as shown on the detail drawing and in approved shop drawings.

C.2.2 Materials

1. Access vault to be constructed of steel plate:
 - Sides (interior and exterior) – 6 mm thick steel plate
 - Cover – 6 mm thick steel plate
 - Bottom – 10 mm thick steel plate
2. Urethane foam insulation shall be injected from above to prevent the formation of voids. Urethane foam insulation to have the following properties:

♦ Density (kg per cubic metre core) (ASTM D-1622):	35
♦ Compressive Strength kPa @ 25°C 10% Deflection measured axially (ASTM D-1621-64):	240
♦ Thermal Conductivity W/m°C @ 25°C (ASTM D-2326-64T):	0.0187
♦ Operating temperature range °C Cryogenic to +:	93
♦ Closed cell content % (ASTM D-2856):	90 min
♦ Water absorption gm/1000cc (ASTM D-2856):	12

- ♦ Dimensional Stability, % (ASTM D2126 Procedure B & E): 3
- 3. Pipe Fittings shall be constructed from “Tube Turn”, or approved equal standard wall welding fittings and 1,030 kPa (150 psi) flanges). All fitting shall be hot dipped galvanized inside and outside after fabrication.
- 4. Flanged cast iron fittings shall be “Grinnell” 1,030 kPa (150 psi), standard fittings, coated inside and outside with asphaltic coat tar epoxy paint, or approved equal.
- 5. Fabricated steel pipe supports shall be hot dipped galvanized.
- 6. Styrofoam insulation shall be Dow Chemical Company HI 410 kPa Styrofoam or approved equal.
- 7. All bolts and washers shall be cadmium plated.

C-3 ACCESS VAULT CONSTRUCTION

1. Access Vaults shall be constructed to a size to allow the required piping and fitting to be installed and maintained, and shall have a minimum inside dimension of 1830 millimetres.
2. Interior piping and fittings to be set horizontally and vertically as specified on Access Vault Design Drawings. Where an access vault has both water mains and sanitary sewers and unless otherwise specified, the water main and sanitary sewer shall be grade separated through the access vault.
3. All interior and exterior surfaces of the access vault, with the exception of the access vault top plate, lid and ladder shall be sandblasted and epoxy coated after fabrication as follows:
 - ♦ Surface Preparation: steel surfaces shall be prepared in accordance to the Steel Structures Painting Council specification SSPC #10 near white blast condition.
 - ♦ Painting: Access vault to be painted with two coats of epoxy paint, 8mils dry film thickness. Interior colour to be off white and exterior colour to be grey. Floors painted with Indurall Ruff Stuff 3300 or equal.
4. Access vault top plate, lid and ladder shall be hot dipped galvanized after fabrication. Galvanizing to conform to CSA G164 (minimum 610 g/m²).
5. The access vault cover shall have the words “Confined Space, Entry by Permit Only” stencilled on the exterior cover in red epoxy paint.

C-4 ACCESS VAULT INSTALLATION

C.4.1 Access Vault Location

1. Access vaults to be located at alignment or grade changes.
2. Access vaults shall be spaced at a maximum of 120 metres.

C.4.2 Installation

1. All work to be carried out in a dry excavation.
2. Access vaults shall be placed on 300 mm of Modified Granular 'C' bedding compacted to 95% standard proctor, and 38 mm thick Styrofoam insulation base. Bedding and Styrofoam to extend 300 mm beyond the base plate.
3. Base plate to be covered with 38 mm Styrofoam insulation, to extend 300 mm beyond the edge of the base plate. 10 mm thick filler piece to be installed between insulation below and above base plate.
4. Access vault to be backfilled with 300 mm modified granular 'C', 300 mm above insulation and adjacent to access vault.
5. Access vault shall be installed to maintain design alignments and grades.
6. Access vault shall extend above grade between 150 to 450 mm.
7. Damaged to exterior finish shall be repaired by repainting with epoxy paint to match manufactured finish.

C-5 INSPECTION AND TESTING

1. All materials are subject to inspection and testing at the discretion of the Engineer. Any materials found to be flawed or defected shall be rejected and shall be removed from the site and replaced.
2. The Contractor shall provide sufficient notice to the Engineer to allow the Engineer to witness and approve the test.
3. Written certificates shall be issued to the Contractor by the Engineer verifying successful completion of testing.

C.5.1 Static Leakage Test

1. Upon completion of the fabrication of the inner shell and the installation of the piping, and prior to the installation of the exterior shell the access vault shall have a static leakage test preformed. The inner shell shall be support above the floor, conduit entries capped and the access vault filled with water. There shall be no signs of leakage after 4 hours.

C.5.2 Water Pressure Test

1. Water main piping shall be water pressure tested at 1,380 kPa for four hours. There shall be no leakage or signs of leakage during the testing period.

C.5.3 Air Pressure Test

1. Sanitary sewer piping shall be air pressure/bubble tested at 100 kPa for two hours. There shall be no leakage or signs of leakage during the testing period.
2. Water pressure testing shall be an accepted alternative.

D SERVICE CONNECTION

D-1 GENERAL

These guidelines are intended as a guide only. The Design Engineer is responsible to ensure that the water system is designed and constructed according to accepted engineering practice.

These Guidelines shall not be considered as a substitute for a detailed material and construction specification prepared by the Design Engineer.

These Guidelines only apply where service connections are specified.

D-2 WATER SERVICE

D.2.1 General

1. Separate water service connections shall be provided for each separately titled lot.
2. The minimum size of a residential water service shall be a 25mm supply and a 25mm return placed inside a 100mm insulated carrier pipe. Non-residential service connections shall be sized according to anticipated demand.
3. Carrier Pipe for all water services shall be installed to the property line at the time of initial subdivision development.
4. Water services complete with service saddles and associated connection kit shall be installed at the time of house construction.
5. The minimum allowable distance between services shall be 1000mm.
6. Water services greater than 50mm shall be connected and valved inside an access vault.
7. Services shall be located such that they do not conflict with driveway locations.

D.2.2 Materials

1. Water service pipe shall be Series 160 SDR9. Polyethylene tubing conforming to AWWA C901 and CSA B137.1.
2. Compression connections with stainless steel inserts are required for all materials.
3. All fittings shall be designed for and operating pressure of 1035 kPa.
4. Water service saddles shall be stainless steel type 304, bronze or a combination. Bronze components shall conform to ASTM B62. Single or double band design.
5. Service saddles for use on polyethylene pipe shall be Romac type 101, 202, 305 or 306 series, Robar 2706 or approved equal for use on polyethylene pipe.
6. Operating rods shall be Type 304 stainless steel with brass cotter pins.

1. Residential water services shall be installed in common trench with the sanitary sewer services.
2. Tapping for residential service connections shall be done with full operating pressure in the main. The tap shall be made within 30° of the pipe crown and graded to service trench level.
3. A tapping valve and sleeve must be used for services 100mm and larger.

D-3 SANITARY SERVICE

D.3.1 General

1. Separate sanitary sewer connections shall be provided for each separately titled lot.
2. The minimum size of a residential gravity sanitary sewer service shall be 100mm.
3. Non-residential service connections shall be sized according to anticipated user requirements.
4. The sanitary services including sewer saddles shall be installed to property line at the time of the initial subdivision development.
5. The minimum grade for gravity sanitary sewer service line shall be 2.0% for 100mm diameter lines and 1% for 150mm diameter lines and larger.
6. Services shall be located such that they do not conflict with driveway locations.

D.3.2 Materials

1. Water service pipe shall be Series 160 SDR9. Polyethylene tubing conforming to AWWA C901 and CSA B137.1.
2. Sanitary sewer service saddle to be Robar No. 6626 outlet sleeve saddle – sized to fit main and service lateral.

D.3.3 Service Installation

1. Residential sanitary services shall be installed in common trench with the water services.

E ROADWAYS, WALKING TRAILS, SNOW MOBILE TRAILS

E-1 GENERAL

These guidelines are intended as a guide only. The Design Engineer is responsible to ensure that the transportation system is designed and constructed according to accepted engineering practice.

These Guidelines shall not be considered as a substitute for a detailed material and construction specification prepared by the Design Engineer.

For each new subdivision development, the appropriate roadway classifications and design designation shall be determined during the planning stages in consultation with City officials.

Where conflicts or inconsistencies with the General Municipal Servicing Standards arise due to adoption of other transportation planning documents, the more stringent requirements shall be satisfied.

These Guidelines only apply in areas where roadway construction is specified.

E-2 DESIGN CRITERIA

1. The trip generation rate for single detached housing in the City of Iqaluit shall be 9 one-way trips per household. Trip generation rates for other types of development shall be justified by the Design Engineer and approved by City Engineer.
2. The City of Iqaluit uses the following design designations for subdivision roads. The cross section elements for each of these design designations are shown in drawings at the back of this section.

Local Undivided

Collector undivided

Gravel surfaced

Gravel Surfaced

3. For the purpose of these servicing standards, all roadways within The City of Iqaluit will be considered collector roads or local roads. Although some may perform minor collector functions, local road design designations should apply to most roadways.
4. The roadway design shall be prepared considering the future requirements, economic factors, safety considerations, staging, and other road users not associated with the development.
5. The design speed selected should relate to the expected operating speed on the road after improvement. It should reflect public expectations and include an allowance for safety. The design speed is typically 10 km/hr higher than the anticipated posted speed limit.

E-3 ROAD STRUCTURE

1. Roadway structures shall be based on results of a geotechnical investigation. A report shall be submitted specifying the required structure and all design factors including design traffic loading and the design life. The road structures specified in the Municipal Standards are intended as minimum standards only.

E-4 CUL-DE-SACS

1. The maximum length for any cul-de-sac without a Public Utility Lot (PUL) is 120m from the centreline of the intersecting street to the start of the bulb. Cul-de-sacs in excess of 120m shall require a 6.0m minimum wide PUL allowing emergency vehicle access and water main looping.
2. PUL's provided to allow for emergency access shall be properly graded to ensure positive drainage and gravelled to prevent erosion.
3. Cul-de-sacs should be graded to drain towards the intersection unless a PUL is provided to allow drainage to escape to other drainage courses.
4. The minimum cul-de-sac bulb radius for residential areas is measured to the face of the curb or shoulder. Minimum radius shall be 14 metres.

E-5 INTERSECTIONS

1. Intersections shall be designed at 90° wherever possible. The minimum angle of intersection for two roadways shall be 75° unless otherwise approved by the City Engineer.
2. Intersection design shall incorporate accepted sight distances based on the roadway classification and good engineering practice.
3. Minimum intersection spacing shall be 60m measured from centreline to centreline.

E-6 WALKING TRAILS AND SNOW MOBILE TRAILS

1. Walking and snowmobile trail alignments and locations within any development must allow for adequate public access to Nuna, parks, recreational areas and environmental and municipal reserves.
2. Where trails cross drainage swales, ditches or natural drainage courses, culverts or footbridges shall be designed to accommodate a 1:25 year storm without overtopping.
3. Wherever possible, trails should be centered within the right-of-way. Trails may be offset from the centreline in situations where this will prevent conflicts with utilities sharing the same right-of-way.
4. Trail grading shall ensure positive drainage with a minimum grade of 0.5%. Grading shall be designed in order to incorporate the overall drainage pattern of the development.

5. Where the trail right-of-way is not shared with other utilities, it shall be a minimum of 6m wide.
6. The subgrade must be compacted to a minimum 95% Standard Proctor Density (SPD) for a depth of 150mm.
7. For granular trail, the excavation may require geotextile fabric liner prior to placement of the granular material depending on the type of in-situ material. The granular material shall be spread uniformly and compacted to 95% SPD.
8. Trail surfacing material must be approved by the City prior to installation. Walkway materials shall be selected to minimize the maintenance and replacement costs.

E-7 DRIVEWAYS

1. Driveways shall have a minimum clearance of 1.5 metres from any surface feature such as hydrants, power poles, curb cocks, etc...
2. Driveways shall not be situated on intersection turning radius.
3. For corner lots, the driveways should access the road with the lesser traffic volume, wherever possible. Wherever possible, driveways should not be located within 100m of an intersection with the exception of multi-lot subdivision.
4. For industrial lots, the selection of the driveway location may be delayed until parking lot configurations are determined. A caveat on title will be required to inform future owners of their responsibility to pay for the installation while adhering to design recommendations.
5. Residential driveways shall be between 7.5 and 9.0 metres in width. Industrial driveways shall be between 10.0 and 12.0 metres in width.
6. All driveways shall have the same structure as the adjoining roadway and be constructed up to the property line.

E-8 SIGNAGE

1. Traffic control signs shall be manufactured and installed in accordance with the latest edition of "Uniform Traffic Control Devices for Canada".
2. Street addressing signs shall be located within 10.0m of the intersection in the direction of the nearside approaching traffic. Signs shall be offset at least 1.0m from the edge of the road and mounted 3.0m to 3.5m above the finished road surface. Street addressing signs shall be a minimum size of 15cm x 60cm and a maximum of 15cm x 90cm. The lettering shall be 10cm high. If the address does not fit on the maximum size, two signs may be joined with an end bracket and H-clip. Signs shall have silver lettering with a blue background.
3. All signs shall be placed so as not to obstruct the view of oncoming vehicles.

E-9 DRAINAGE AND CULVERTS

1. Drainage systems shall meet the flow requirements outlined in Section G for both local and collector cross sections.
2. Ditches for roadways shall have back slopes no steeper than 3H:IV.
3. Swale and ditch grades shall match the road grades wherever possible.
4. Swale and ditch grades shall have a minimum grade of 0.5% wherever possible. Grades less than 0.5% shall be subject to review and approval by the City Engineer.
5. Drainage channels shall be provided with ditch checks and/or other means of erosion control as necessary.
6. Ditches shall have a flat bottom, width as per applicable design standard.
7. Culvert sizing is the responsibility of the Design Engineer. Culverts and ditches shall be designed to accommodate a 1:25 year rainfall event. Ditches shall be allowed to back up during such an event to the height of the subgrade.
8. Culverts shall be new galvanized corrugated steel pipe with a minimum wall thickness of 1.6mm or as required to meet the design loading criteria.
9. Minimum pipe sizes for various uses are as follows;

10. Residential Driveway Culvert	400mm diameter
11. Industrial Driveway Culvert	450mm diameter
12. Roadway Centreline Culverts	450mm diameter
13. All culverts shall have appropriate end treatments depending on application. Inverts shall be extended to the toe of the side slope.
14. The culvert grade shall not be less than the ditch grades at the inlet and outlet.
15. Culverts shall have a sufficient amount of cover to protect against damage from the expected traffic loading. Minimum cover shall be 300mm or one-half the diameter of the culvert, whichever is greater as measured from the finished shoulder grade to the top of the culvert.

E-10 QUALITY ASSURANCE

Quality control testing related to the roadway construction shall include but not necessarily limited to sieve analysis, densities, mix design, core sampling and concrete testing. Quality control shall be performed by an independent party and certified by a professional engineer licensed to practice in the Territory of Nunavut.

F TRUCKED WATER AND SANITARY SERVICES

F-1 GENERAL

These guidelines are intended as a guide only. The Design Engineer is responsible to ensure that the water system is designed and constructed according to accepted engineering practice.

These Guidelines shall not be considered as a substitute for a detailed material and construction specification prepared by the Design Engineer.

These Guidelines only apply in areas where trucked water and sewer servicing is specified.

F-2 WATER SERVICES

1. All single family residential water storage tanks shall be a minimum of 5,000 litres.

F-3 SANITARY SERVICES

1. All single family residential sanitary storage tanks shall be a minimum of twice the size of the water storage tanks.

F-4 SERVICE INSTALLATION

1. All installations must exceed applicable Nunavut, National Building and Canadian plumbing codes

G AGGREGATE

G-1 GENERAL

The following granular classifications will be used for City of Iqaluit projects.

G-2 GRANULAR CLASSIFICATIONS

ASTM Sieve Designation	Percent Passing			
	Granular A	Granular B	Granular C	Modified Granular C
200mm	-	-	100	-
100mm	-	100	-	-
75mm	-	95-100	-	-
50mm	-	-	-	-
38.1mm	-	-	-	-
25mm	100	45-100	50-100	-
19mm	85-100	-	-	-
12.5mm	65-90	-	-	-
9.5mm	50-73	-	-	100
4.75mm	35-55	25-70	20-100	55-100
1.8mm	15-40	-	10-100	30-100
0.425mm	-	4-50	-	-
0.300mm	5-22	-	2-65	10-50
0.075mm	2-8	0-8	0-8	0-10

1. Gradations to be within the limits specified when tested to ASTM C136-84a and ASTM C117-84 and are to have a smooth curve without any sharp breaks when plotted on a semi-log grading chart.
2. Granular A and Granular B to be crushed stone or crushed gravel and shall be free of clay lumps, cementation, organic material, frozen material and other deleterious materials.
3. Granular C to be crushed stone or gravel or screened stone or gravel and shall be free of clay lumps, cementation, organic material, frozen material and other deleterious materials.

4. Modified Granular C to be crushed stone or gravel or screened stone, gravel or sand and shall be free of clay lumps, cementation, organic material, frozen material and other deleterious materials.

H STORMWATER MANAGEMENT SYSTEM

H-1 GENERAL

These guidelines are intended as a guide only. The Design Engineer is responsible to ensure that the water system is designed and constructed according to accepted engineering practice.

These Guidelines shall not be considered as a substitute for a detailed material and construction specification prepared by the Design Engineer.

The stormwater management system should be designed with major and minor drainage systems. In general, a minor system consists of swales, ditches and culverts that have been designed in order to avoid property damage and flooding due to runoff generated by a 1 in 5 year rainfall event. When the capacity of the minor system is exceeded, the major system must provide a continuous overland flow route allowing the excess runoff to reach the designated ponding areas or water body.

H-2 ORGANIZATIONS ISSUING STANDARDS:

ASTM – American Society for Testing and Materials

CSA – Canadian Standards Association

H-3 MINOR SYSTEM

H.3.1 Flow Rates

1. The stormwater management system shall be designed as a separate system. Effluent from sanitary sewers or any potentially contaminated drainage shall not be discharged in the ditches or swales.
2. The Minor System shall be designed to accommodate the runoff generated from a 1:5 year or more frequent rainfall event without overflowing swales or ditches.
3. The Rational Method shall be used in estimating flows for the design of storm ditches and swales for areas less than 65 hectares.

$$Q = \frac{CIA}{360}$$

where Q = the design peak flow rate in cubic metres per second

I = the intensity of rainfall in millimetres per Hour

A = the contributing area in hectares

C = the runoff coefficient

4. Minimum runoff coefficients shall be according to the following table:

Land Use/Surface Characteristics	Runoff Coefficient, C
Residential Lots	0.2
Undeveloped Land	0.1
Pavement, concrete, buildings	0.9
Gravel Roadways	0.3

5. Due to the large variation in lot sizes for commercial and industrial areas, a weighted runoff coefficient for these types of developments can be calculated using the following formula:

$$C = \frac{(0.9 \times \text{Impervious Area}) + (0.15 \times \text{Pervious Area})}{\text{Total Area}}$$

6. The intensity for the rational formula is selected from the available rainfall data using the time of concentration (T_c). T_c is the sum of inlet time and travel time. The inlet time is the time for the overland flow to reach the ditch. The maximum inlet time for residential areas shall be 10 minutes. Inlet times for commercial or industrial areas shall be calculated on a site-specific basis.
7. For areas larger than 65 hectares, acceptable computer modeling of the area must be submitted for review.

H-4 MAJOR SYSTEM

H.4.1 General

The major conveyance system accommodates flows not intercepted by or beyond the capacity of the minor drainage system through planned surface flow routes and storage facilities. The intent of the major system is to provide surface flow management in order to minimize flooding and property damage from a 1:100 year rainfall event. The design of the major drainage system must not be limited to the immediate development area but must consider overland flows that may enter the area from adjacent land as well as down stream effects on adjacent development and receiving water bodies.

H.4.2 Lot Grading

Proper lot grading is the first step towards a well-planned major drainage system. The goal of the lot grading shall be to ensure that water flows away from the building. Flow from lots shall always have an escape route to a public right-of-way. The lot-grading plan shall develop a proper balance between the road elevation, proposed building elevations, surrounding development and existing topography.

Generally, the lots shall be designed to drain to adjacent laneways or public right of ways without crossing adjacent lots. An overall drainage plan will be required for all subdivisions.

H.4.3 Swales

1. Drainage swales on municipal or private property shall be constructed prior to any development of subdivision lots. Complete swale construction shall be a prerequisite to the issuance of the Substantial Certificate of Completion.
2. Drainage swales located on private property shall be covered by an easement in favour of the City. A minimum clearance of 200mm should be provided between the edge of the swale and the property line. Major rainfall event flows shall be contained within the easement.
3. Drainage swales crossing several properties for the collection of runoff shall not be permitted unless special circumstances warrant.
4. The minimum design slope for swales is 1%.

H.4.4 Roadways

Grading of streets comprising the major drainage system shall follow the guidelines listed below:

1. Continuity of over flow routes between adjacent developments shall be maintained.
2. Collectors shall have at least one lane that is not inundated.

Local roads should not have a depth of water more than 50mm above the crown of the road.

I STREET LIGHTING

I-1 STANDARD AND GUIDELINES

These guidelines are intended as a guide only. The Design Engineer is responsible to ensure that the water system is designed and constructed according to accepted engineering practice.

These Guidelines shall not be considered as a substitute for a detailed material and construction specification prepared by the Design Engineer.

The street lighting design shall be in accordance with the “Guide for the Design of Roadway Lighting” published by the Transportation Association of Canada (TAC) as well as applicable standards published by the Illuminating Engineering Society of North America (IES).

All roadway lighting systems shall be installed in strict compliance with the Canadian Electrical Code.

These Guidelines only apply in areas where street lighting is specified.

I-2 ENGINEERING DRAWINGS AND APPROVAL

1. The Design Engineer is responsible for the preparation and submission of design drawings prepared by a qualified professional engineer showing the layout, pole spacing, types and heights and luminaire wattages. The street lighting plan shall include all surface features and utilities. The layout, products and materials are subject to approval by the City.

I-3 DESIGN AND OPERATIONS

1. The Design Engineer shall be responsible to work with the local wires owner for the design, supply and installation of the street lighting system.
2. The responsibility for energizing the street lighting system shall be the responsibility of the City.

I-4 SAFETY

1. The lighting design shall ensure the proper illumination of conflict areas such as intersections and crosswalks. The design shall be prepared with public safety in mind.

I-5 ENERGY USAGE

1. The Street lighting design should be optimized to allow for the least possible energy consumption while still maintaining acceptable safety standards. The City of Iqaluit encourages the use of the highest efficiency lamps available at the time of installation.

I-6 POLE LOCATION

1. In some cases, the road and lot configuration will dictate the pole layout. Wherever possible, poles should be located at the projection of lot lines. Pole locations shall not conflict with other utilities or approaches. Spacing shall be selected by the Design Engineer and the City Engineer based on the optimum spacing/height/light distribution combination but shall not exceed the minimum standards published by the TAC.
2. Pole setbacks shall be as outlined in the TAC guidelines. Where roadways are designated for widening within five years of pole installation, the pole setback shall allow for said widening.

I-7 TYPE OF POLE

1. Pole types shall be consistent with adjacent developments. All poles within a new development shall be of the same type and height in order to obtain continuity.
2. All poles shall be resistant to all climatic and environmental conditions encountered within The City of Iqaluit.

I-8 AESTHETIC


1. Street lighting design shall be compatible with the type of development and proposed buildings.
2. The use of decorative poles shall be subject to approval by the City. Proposed decorative poles and luminaries should share common optical systems and components as other decorative items found in existing developments within the City.

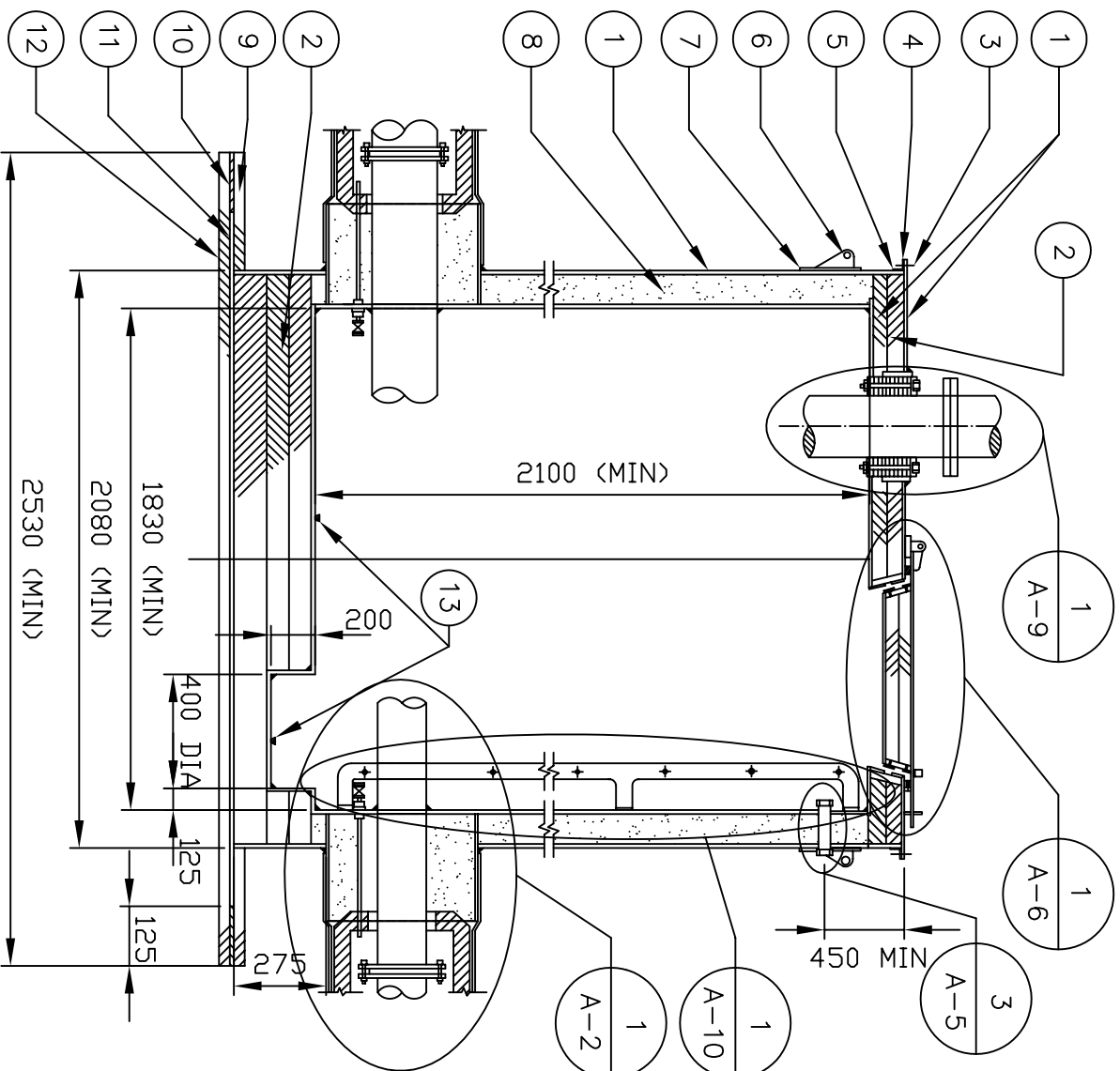
I-9 FOUNDATIONS

1. Foundations shall be designed based on the specific soil conditions on site. The foundations shall be designed to withstand all loading, wind loading in particular.

ACCESS VAULT – GENERAL NOTES

- 1) CONSTRUCT ACCESS VAULTS FROM 6mm STEEL PLATE WITH CONTINUOUS (FULLY) WELDED CONSTRUCTION. FABRICATE COMPLETELY PRIOR TO EPOXY COATING. WELDING AND FABRICATION TO CSA W59-1977 & W47-1-1973
- 2) ALL STEEL TO BE CSA G40.21 TYPE 260W OR ASTM A36-62T.
- 3) ALL PIPING INSIDE THE ACCESS VAULT TO BE PREFABRICATED TO THE LIMITS SHOWN ON THE TYPICAL SECTION AND AS SHOWN ON THE LAYOUT PLANS.
- 4) PROVIDE PIPE ENTRY SPOOL PIECES, LADDER MOUNTING STUDS & ALL OTHER ACCESS VAULT PARTS, ETC. AS REQUIRED, PREWELDED IN PLACE PRIOR TO SANDBLASTING AND EPOXY COATING.
- 5) ALL PREFABRICATED STEEL PARTS OF THE ACCESS VAULT (EXCEPT TOP PLATE HATCH AND LADDER) SHALL BE SANDBLASTED AND EPOXY COATED INSIDE AND OUTSIDE AS PER SPECIFICATIONS.
- 6) TOP PLATE, HATCH, HINGE, & LADDER SHALL BE HOT DIPPED GALVANIZED TO CSA G164 MINIMUM 610g/m².
- 7) ALL NUTS, BOLTS, WASHERS, SCREWS ETC. SHALL BE ZINC PLATED OR CADMIUM PLATED.
- 8) FLANGE INSULATION KITS AND STYROFOAM ACCESS VAULT BASE INSULATION SUPPLIED AS PART OF THE ACCESS VAULT.
- 9) HYDRANT, AND LINK SEAL JOINT TO BE SHIPPED SEPARATELY (INSIDE ACCESS VAULT).
- 10) PRIOR TO SHIPPING, ALL FACES OF FLANGES PROJECTING OUTSIDE THE ACCESS VAULT SHALL PROTECTED BY 5/8" THICK PLYWOOD COVER FIXED BY 4 BOLTS.
- 11) PROVIDED WITH EACH ACCESS VAULT SHALL BE 4 200mm DIA STEEL BUMPER POST, 1 TO INCLUDE SIGN.
- 12) PAINT SPECIFICATIONS:
 - SANDBLAST SSPC SP10
 - 2 COATS OF INTERGARD EX HB FROM INTERNATIONAL, 16 MILS DRY THICKNESS.
 - COLOURS: OUTSIDE – GREY
 INSIDE – BEIGE

	TITLE: ACCESS VAULT GENERAL NOTES		DWG NO.: A-1
	SCALE: NTS	DATE: MAR. 2004	



KEY TO NUMBERED PARTS:

- 1 6 THICK STEEL PLATE ACCESS VAULT CONSTRUCTION
- 2 URETHANE SHEET INSULATION CUT TO SIZE
- 3 12 CAD. PLATED STEEL BOLT, NUT, WASHER 32 MIN AT EQUAL SPACING
- 4 3 X 5 COMPRESSIBLE NEOPRENE RUBBER GASKET
- 5 10 THICK 50 X 50 MIN. ANGLE WELDED FULL LENGTH
- 6 LIFTING LUGS – TWO PER ACCESS VAULT, 150 X 75 X 12 THICK WITH 38 DIA LIFTING EYE
- 7 REINFORCING PLATE 200 X 200 X 12 CURVED TO EXTERIOR WALL RADIUS
- 8 FORMED IN PLACE INSULATION (URETHANE)
- 9 38 THICK STYROFOAM CUT TO MATCH EXTERIOR WALL RADIUS
- 10 FILLER PIECE – 10 THICK INSULATION
- 11 10 THICK STEEL BASE PLATE
- 12 38 THICK INSULATION
- 13 FROST PLUG

NOTES:

1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES.



TITLE:

ACCESS VAULT
DETAIL

DWG NO.:

A-2

SCALE:

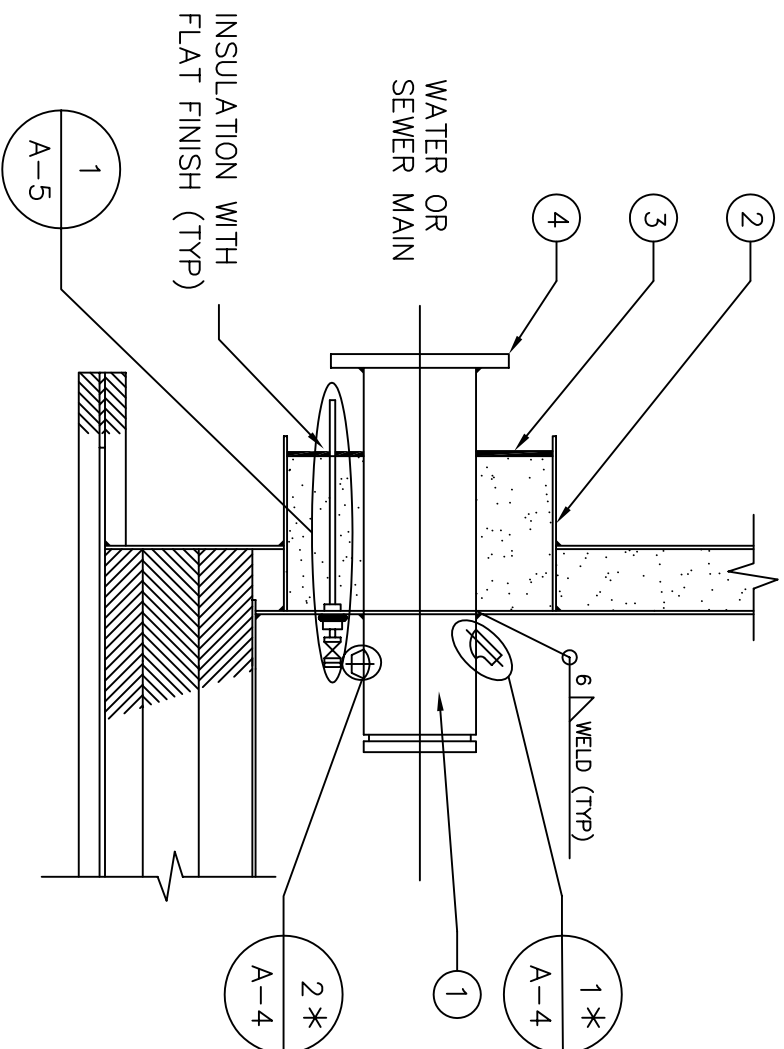
NTS

DATE:

MAR. 2004

KEY TO NUMBERED PARTS:

- ① SCHEDULE 80 STEEL PIPE SPOOL PIECE
- ② STEEL RING SECTION WELDED TO ACCESS VAULT OUTER WALL – 6mm TH x 407mm O.D. FOR 150 DIA, 470mm O.D. FOR 200 DIA, 535mm O.D. FOR 250 DIA
- ③ APPLY SILICONE CAULKING AT ALL PIPE ENTRY LOCATIONS.
- ④ WELDED STEEL SLIP-ON FLANGE, SIZED TO FIT



* REQUIRED ONLY ON WATER MAINS

1 WALL PENETRATION DETAIL

NOTES:

- 1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES.
- 2) AFTER INSTALLING DRAINS, TEST VALVE ASSEMBLY PRIOR TO INSTALLING FLANGE INSULATION



TITLE:

ACCESS VAULT
WALL PENETRATION
WATER OR SEWER MAINS

DWG NO.:

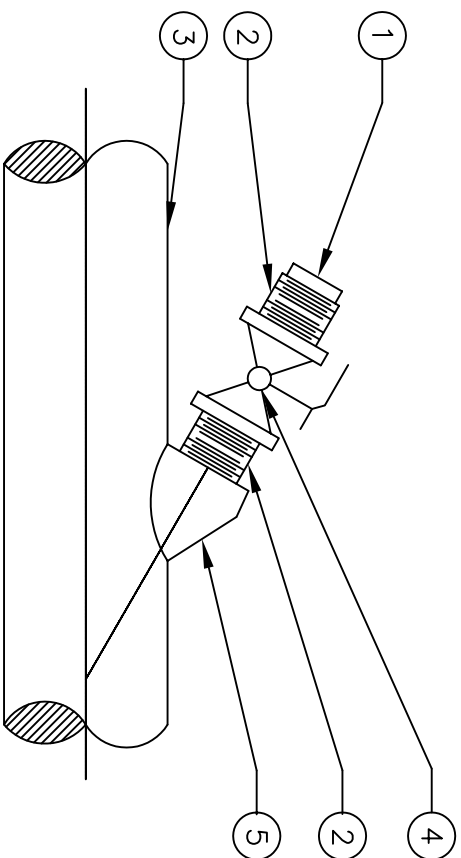
A-3

SCALE:

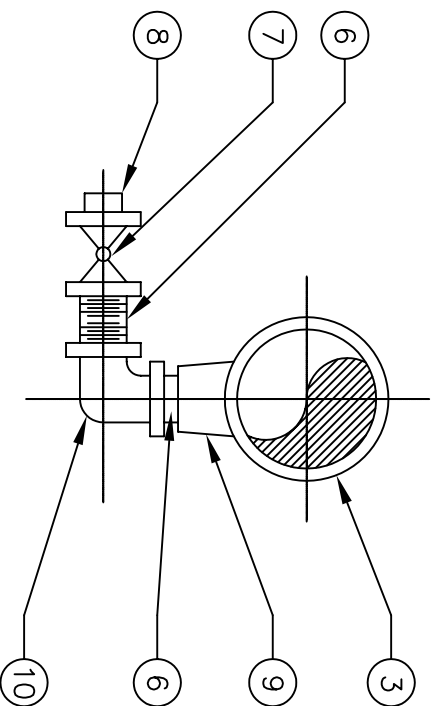
NTS

DATE:

MAR. 2004



1) LATEROLET CONNECTION



2) WATER MAIN DRAIN

KEY TO NUMBERED PARTS:

- ① 50mm DIA. N.P.T. PLUG
- ② 50mm DIA. N.P.T. NIPPLE
- ③ WATER MAIN – HOT DIPPED GALV. STEEL PIPING
- ④ 50mm DIA. BALL VALVE
- ⑤ 50mm DIA. LATEROLET
- ⑥ 25mm DIA. N.P.T. SHORT NIPPLE
- ⑦ 25mm DIA. BALL VALVE
- ⑧ 25mm DIA. N.P.T. PLUG
- ⑨ 25mm DIA. N.P.T. THEODOLET
- ⑩ 25mm DIA. 90 DEGREE ELBOW N.P.T. FEMALE

NOTES:

1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES



TITLE:

LATEROLET & DRAIN DETAILS

DWG NO.:

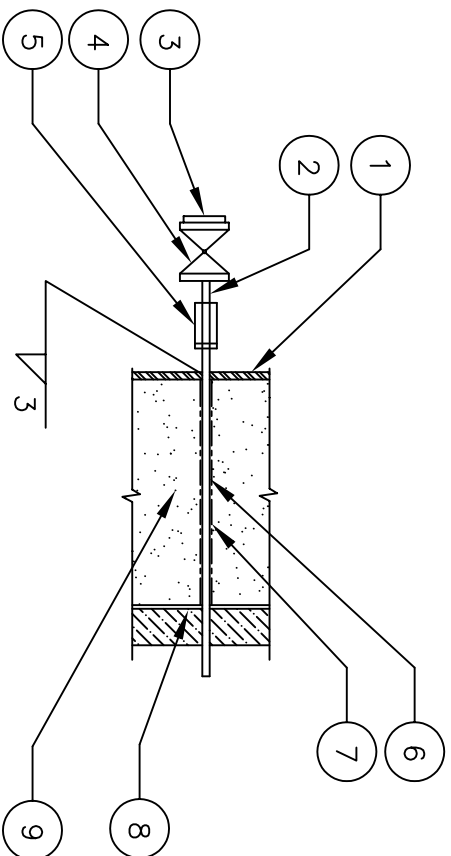
A-4

SCALE:

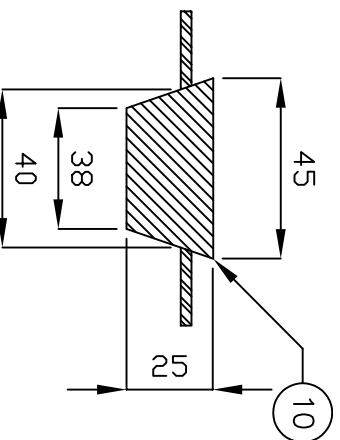
NTS

DATE:

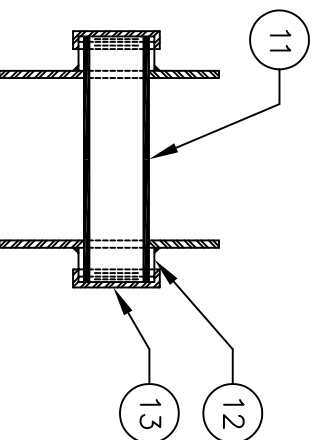
MAR. 2004



1 TEST/DRAIN VALVE DETAIL



2 FROST PLUG DETAIL



3 WALL SLEEVE DETAIL

KEY TO NUMBERED PARTS:

- ① 6 THICK STEEL PLATE ACCESS VAULT WALL
- ② 12 DIA. GALV. ST. NIPPLE
- ③ 12 DIA. PLUG
- ④ 12 DIA. SCREWED BALL VALVE
- ⑤ 12 DIA. GALV. ST. COUPLING
- ⑥ 12 DIA. GALV. ST. PIPE
- ⑦ DRILL THROUGH SHOP CAST POLYURETHANE INSULATION
- ⑧ FLANGE INSULATION KIT BY OTHERS
- ⑨ SHOP CAST POLYURETHANE INSULATION
- ⑩ FROST PLUG TO BE MADE FROM SOLID BLACK RUBBER DRIVEN TIGHTLY INTO HOLE.
- ⑪ 37 DIA RIGID PVC – OIL COAT SURFACE PRIOR TO INSULATING
- ⑫ 50 DIA. SCHEDULE 40 NIPPLE
- ⑬ 50 DIA. CAP

NOTES:

- 1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES.
- 2) PROVIDE FROST PLUG IN FLOOR PLATE AND SUMP HOLE.
- 3) PLUG TO HAVE A 10mm PROJECTION ABOVE FLOOR AFTER BEING PLACED TIGHTLY INTO HOLE.
- 4) 2 WALL SLEEVES REQUIRED PER ACCESS VAULT.



TITLE:

MISCELLANEOUS
ACCESS VAULT DETAILS

DWG NO.:

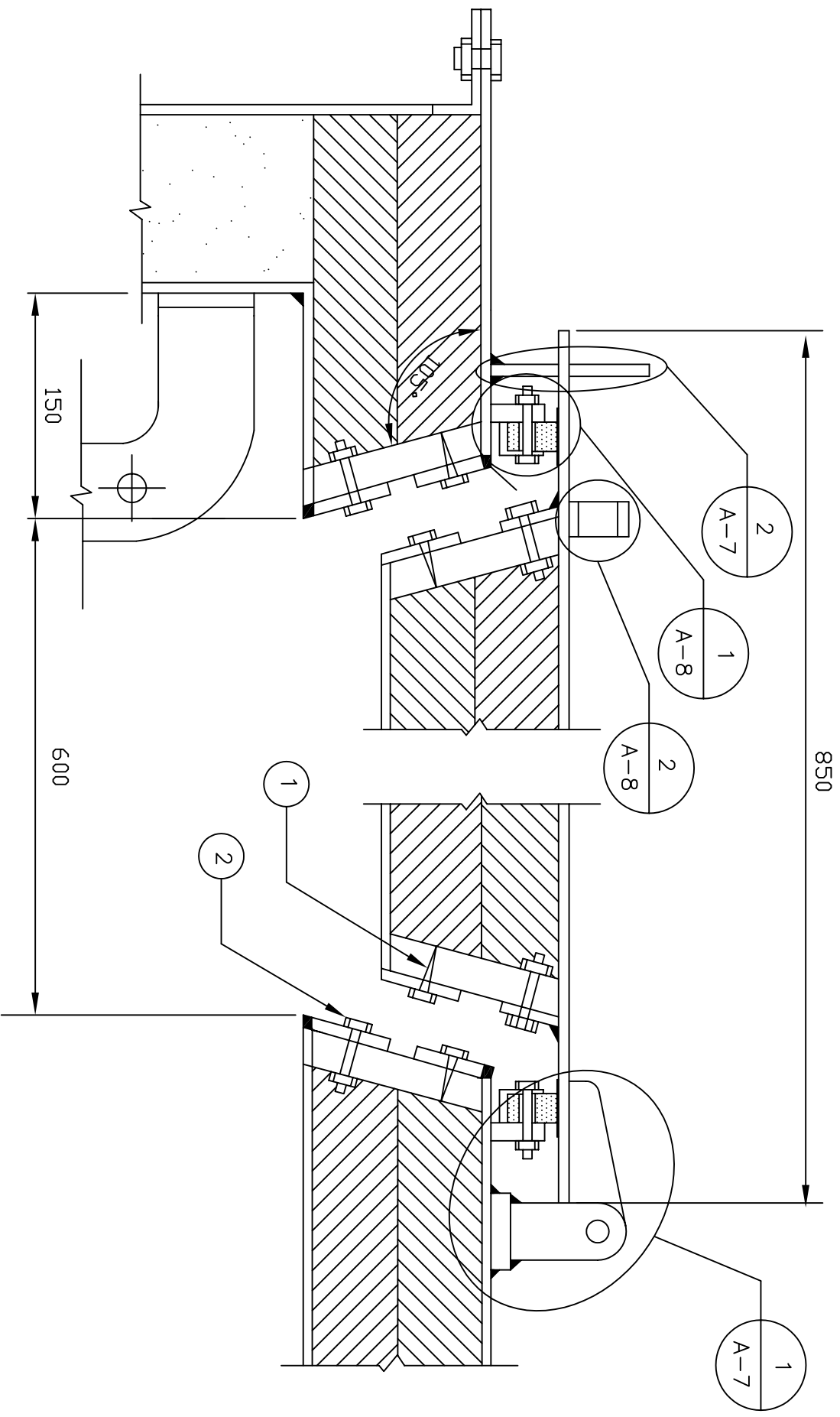
A-5

SCALE:

NTS

DATE:

MAR. 2004



KEY TO NUMBERED PARTS:

- ① #12-30 PAN HEAD SHEET METAL SCREWS AT 100 SPACING
- ② 6 GALV. BOLTS, NUT, & WASHER AT 100 SPACING

NOTES:

1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES.

① ACCESS VAULT COVER



TITLE:

ACCESS VAULT COVER
DETAIL

DWG NO.:

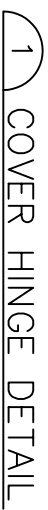
A-6

SCALE:

NTS

DATE:

MAR. 2004

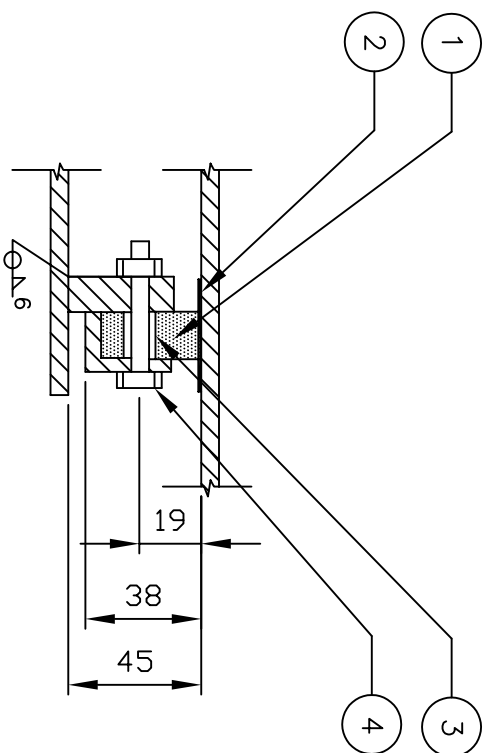


-
- Technical drawing of a mechanical part, showing two views (front and side) and three callouts (6, 7, 8) pointing to specific features.
- Front View (Top):**
- Overall height: 65
 - Overall width: 40
 - Feature 6: A hole with diameter $\phi 6$ located on the left side.
 - Feature 7: A hole located on the right side.
- Side View (Bottom):**
- Overall width: 20
 - Feature 8: A hole located on the right side.
 - Dimensions: 45 and 35 (indicating the position of the hole relative to the centerline).

- 2) TWO HINGES ARE REQUIRED PER COVER.
- 3) HINGES TO BE SPACED AT 400mm APART

2 LOCK HASP DETAIL

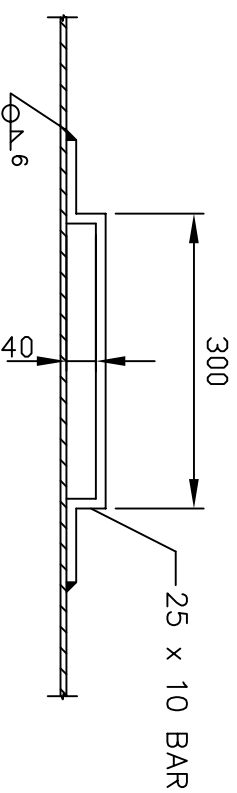
MAR. 2004



KEY TO NUMBERED PARTS:

- ① 37 DIA METKA IND. TG-155 GASKET
- ② 25 WIDE TEFLON TAPE APPLIED TO DOOR
- ③ 6.5 X 17 SPACER
- ④ 6 X 31 CAD. PLATED STEEL BOLT 150 SPACING

1 COVER SEAL DETAIL



2 COVER HANDLE DETAIL

NOTES:

1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES.



TITLE:

ACCESS VAULT COVER
MISC. DETAILS

DWG NO.:

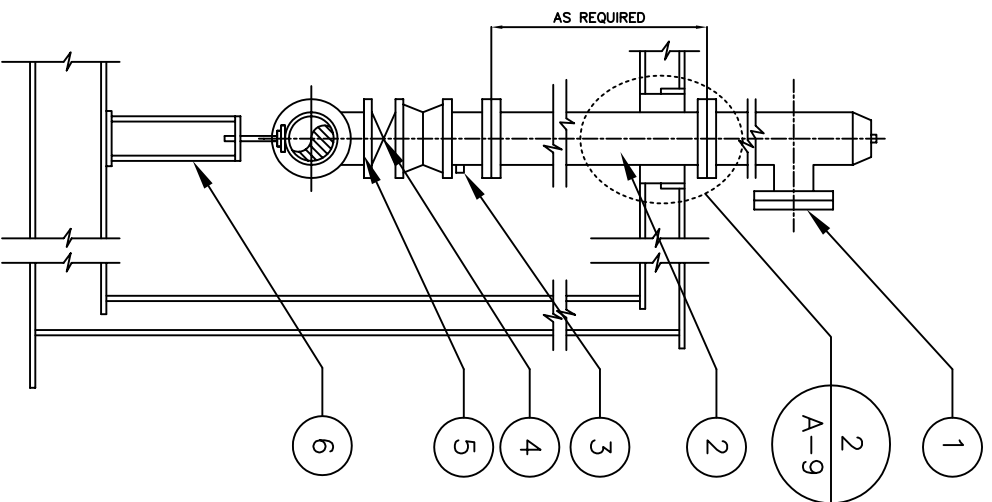
A-8

SCALE:

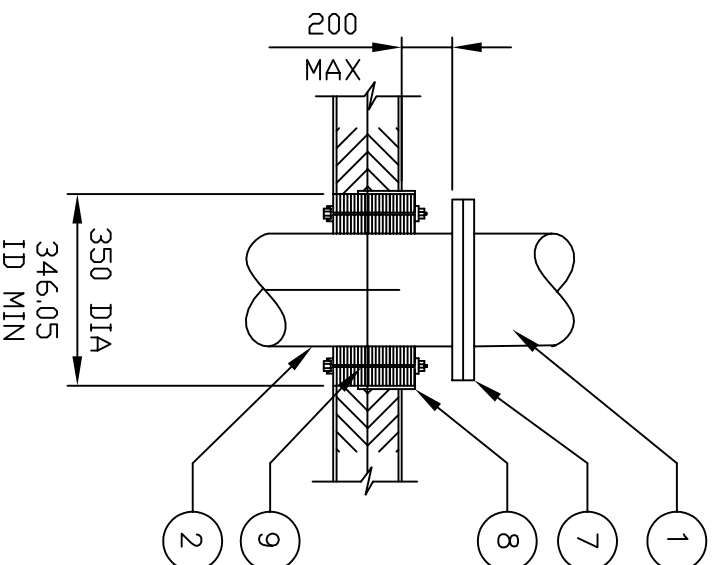
NTS

DATE:

MAR. 2004



1 FIRE HYDRANT DETAIL



2 HYDRANT PENETRATION DETAIL

KEY TO NUMBERED PARTS:

- ① 200mm CRANE McAVITY M-67 "IN-LINE" FIRE HYDRANT
- ② FIRE HYDRANT BARRELL
- ③ VALVE & CAP TO MATCH HYDRANT DRAIN PORT
- ④ 200 mm LUG TYPE BUTTERFLY VALVE COMPLETE WITH OPERATOR
- ⑤ FLANGE TEE 1080 KPA - DIA. TO MATCH MAIN AND HYDRANT SIZE
- ⑥ PIPE SUPPORT, SEE DETAIL DWG A-15
- ⑦ HYDRANT FLANGE
- ⑧ 350 DIA SCHEDULE 10 (364 I.D.) STEEL PIPE x 100 LONG WELDED TO ACCESS VAULT TOP PLATE
- ⑨ THUNDER-LINE CORP LINK-DEAL MODEL LS-500-C (200X350) OR APPROVED EQUAL

NOTES:

- 1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES.



TITLE:

FIRE HYDRANT
DETAILS

DWG NO.:

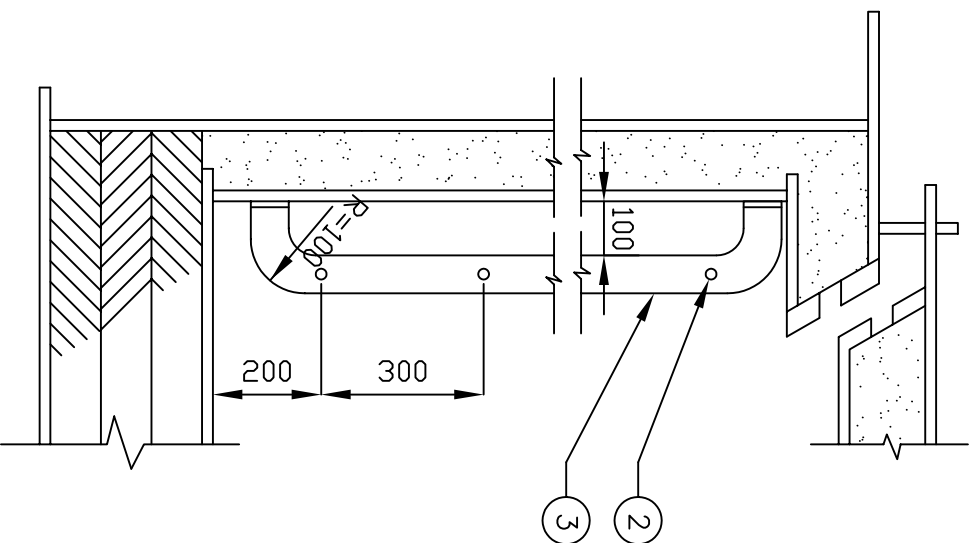
A-9

SCALE:

NTS

DATE:

MAR. 2004

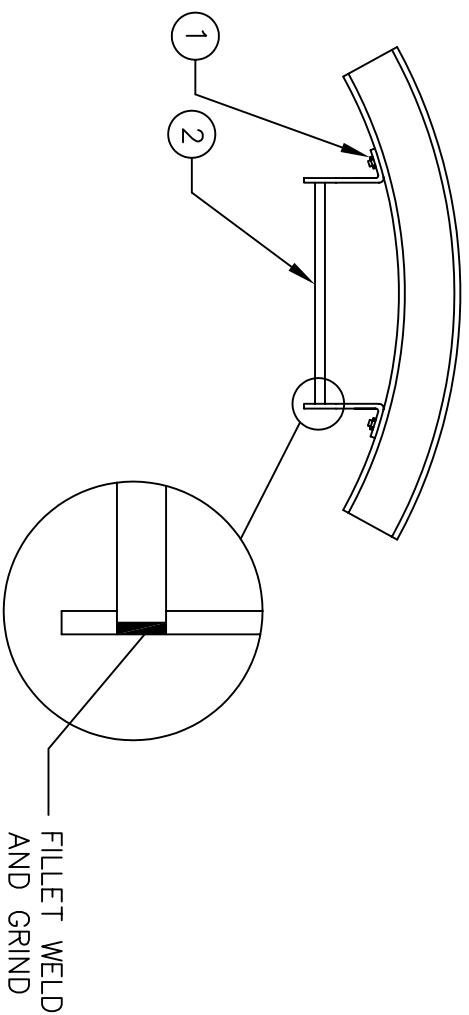


ELEVATION

1 LADDER DETAIL

NOTES:

- 1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES.
- 2) LADDER TO BE HOT DIPPED GALV. AFTER FABRICATION.



PLAN

KEY TO NUMBERED PARTS:

- ① 12 DIA STUD WELDED TO INNER WALL C/W FASTENING NUTS
- ② 20 DIA RUNGS INSERTED HALFWAY THROUGH HOLES IN STRINGER, FILLET WELD REMAINDER OF HOLE AND GRIND SMOOTH – SEE DETAIL PLAN VIEW
- ③ 63.5 x 9.5 FLAT BAR STRINGER, BENT TO MAKE SUPPORTS AND DRILLED THROUGH FOR RUNGS



TITLE:

LADDER DETAIL

DWG NO.:

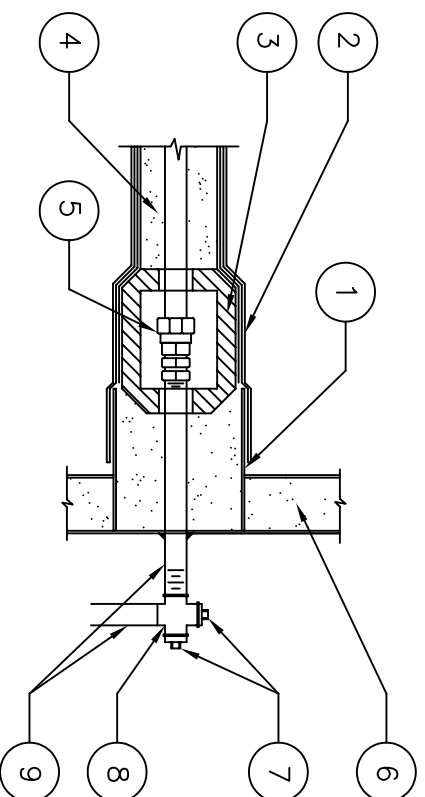
A-10

SCALE:

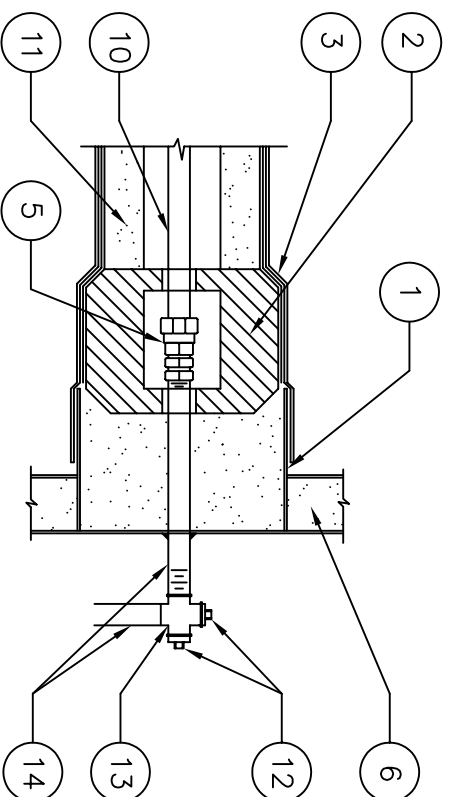
NTS

DATE:

MAR. 2004



1 50mm WALL PENETRATION



2 25mm WALL PENETRATION

KEY TO NUMBERED PARTS:

- ① STEEL RING SECTION WELDED TO ACCESS VAULT INNER WALL – 6mm TH x 300 O.D. FOR 50mm DIA. , 275mm O.D. FOR 25mm DIA
- ② 2 LAYERS OF HEAT TRACE (0.09" THICK BLACK POLYETHYLENE SELF ADHESIVE)
- ③ INSULATED HALF SHELLS
- ④ 50mm DIA HDPE PIPE, c/w 50mm URETHANE INSULATION & 2 LAYER OF POLYETHYLENE BLACK JACKET
- ⑤ COMPRESSION FITTING, c/w SLEEVE AND INSERT – 2 REQUIRED – SIZED TO FIT
- ⑥ ACCESS VAULT WALL
- ⑦ 50mm DIA. N.P.T PLUG
- ⑧ 50 x 50 x 50 x 50 mm CROSS
- ⑨ 50mm SCH. 80 IPS
- ⑩ 25mm DIA HDPE SERIES 160 TUBING
- ⑪ 100mm DIA. HDPE SERIES 100 PIPE, c/w 50mm URETHANE INSULATION AND POLYETHYLENE BLACK JACKET
- ⑫ 25mm DIA. N.P.T. PLUG
- ⑬ 25 x 25 x 25 x 25 mm CROSS
- ⑭ 25mm DIA. SCH. 80 IPS

NOTES:

1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES.



TITLE:
25mm & 50mm WALL
PENETRATION DETAILS

DWG NO.:

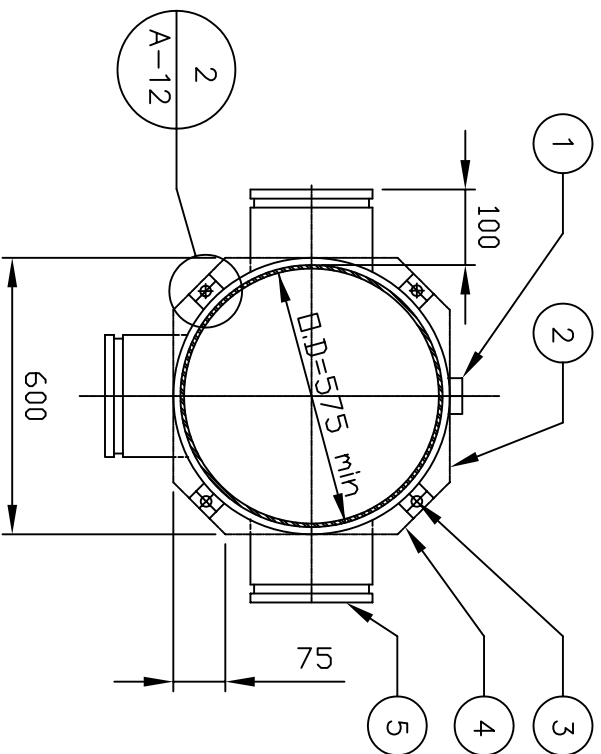
SCALE:

NTS

DATE:

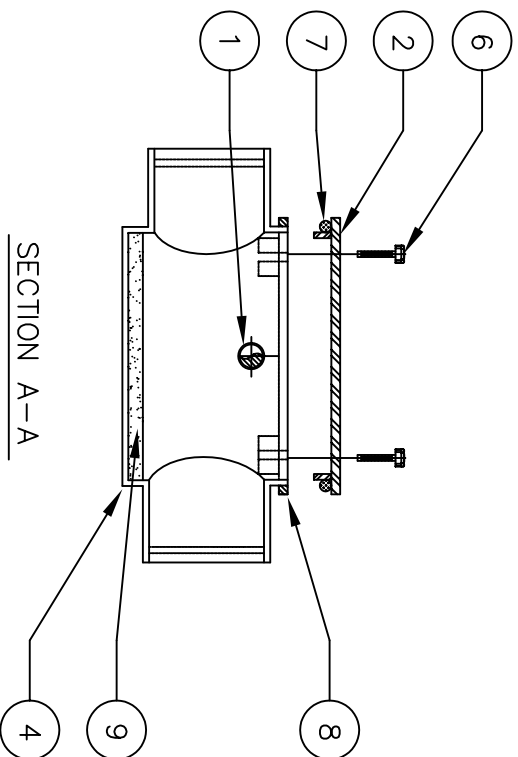
MAR. 2004

A-11



NOTE:
1. O.D. TO BE SIZED BY CONTRACTOR

PLAN

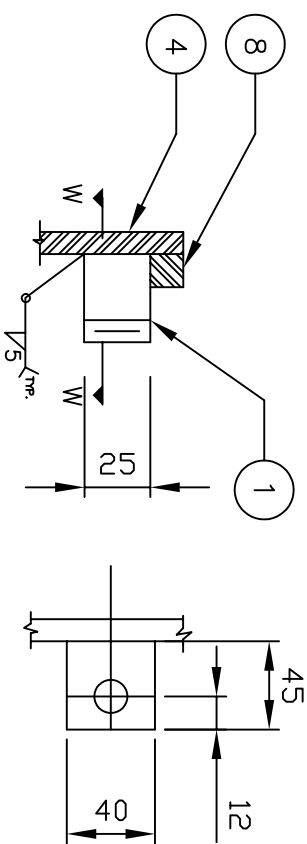


SECTION A-A

1 TYPE 1 CLEANOUT - TEE

KEY TO NUMBERED PARTS:

- 1 25 N.P.T. HALF COUPLING AND PLUG
- 2 FABRICATED CLEANOUT COVER FROM 6 TH PLATE CONTINUOUS BUTT WELDED AND HOT DIPPED GALV. AFTER FABRICATION
- 3 BOLT LUGS TAPPED 12 NC
- 4 FABRICATED CLEANOUT BODY FROM 6 TH PLATE CONTINUOUS BUTT WELD AND HOT DIPPED GALV. AFTER FABRICATION
- 5 SCHEDULE 40 STEEL - NIPPLE VICTAULIC GROOVED (SIZE TO MATCH PIPE SIZE)
- 6 12 NC X 73 LONG CAD PLATED HEX HEAD SCREW AND WASHER TO FIT COVER
- 7 20K ONE PIECE SOFT RUBBER GASKET O RING STRETCH TO FIT COVER
- 8 12 SQ. ROD RIM
- 9 CEMENT MORTAR BENCHING SUPPLIED AND INSTALLED BY INSTALLING CONTRACTOR



SECTION W-W

2 BOLT & LUG DETAIL

NOTES:

- 1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES.



TITLE:

CLEANOUT

DWG NO.:

TYPE 1 - TEE

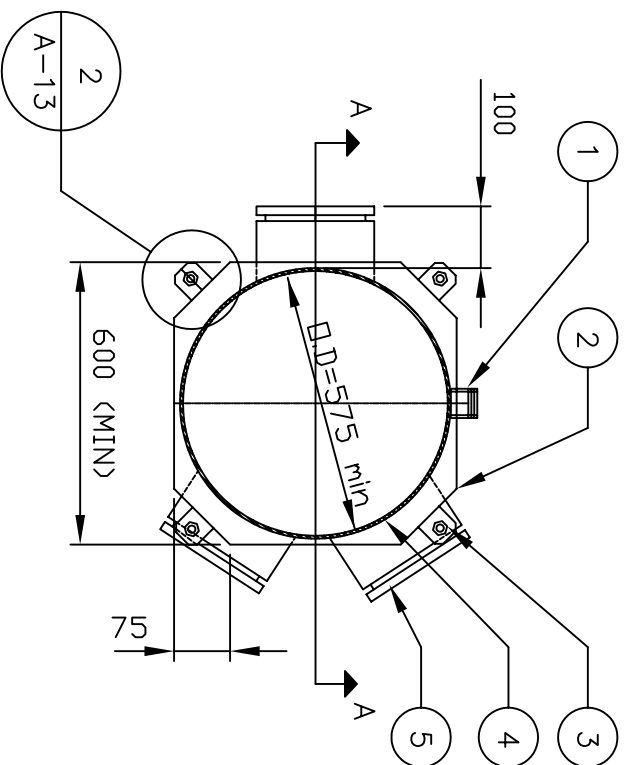
A-12

SCALE:

NTS

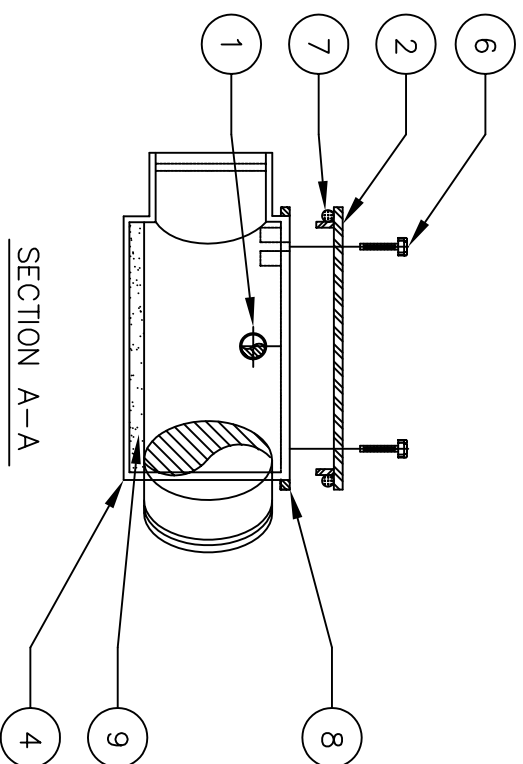
DATE:

MAR. 2004



NOTE:
1. O.D. TO BE SIZED BY CONTRACTOR

PLAN

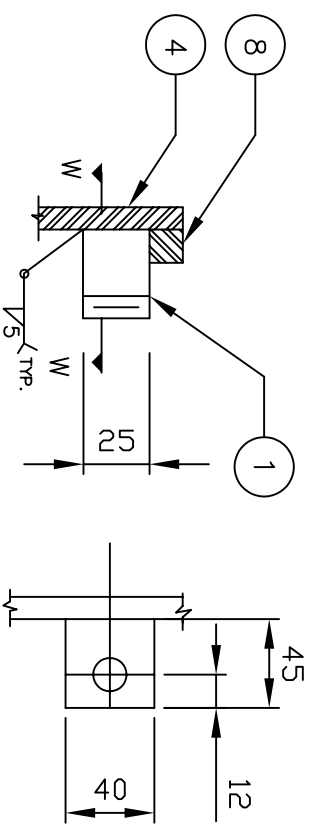


SECTION A-A

1 TYPE 1 CLEANOUT – WYE

KEY TO NUMBERED PARTS:

- 1 25 N.P.T. HALF COUPLING AND PLUG
- 2 FABRICATED CLEANOUT COVER FROM 6 TH PLATE CONTINUOUS BUTT WELDED AND HOT DIPPED GALV. AFTER FABRICATION
- 3 BOLT LUGS TAPPED 12 NC
- 4 FABRICATED CLEANOUT BODY FROM 6 TH PLATE CONTINUOUS BUTT WELD AND HOT DIPPED GALV. AFTER FABRICATION
- 5 SCHEDULE 40 STEEL – NIPPLE VICTAULIC GROOVED (SIZE TO MATCH PIPE SIZE)
- 6 12 NC X 73 LONG CAD PLATED HEX HEAD SCREW AND WASHER TO FIT COVER
- 7 20K ONE PIECE SOFT RUBBER GASKET O RING STRETCH
- 8 12 SQ. ROD RIM
- 9 CEMENT MORTAR BENCHING SUPPLIED AND INSTALLED BY INSTALLING CONTRACTOR



SECTION W-W

2 BOLT & LUG DETAIL

NOTES:

- 1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES.



TITLE:

CLEANOUT

TYPE 2 – WYE

DWG NO.:

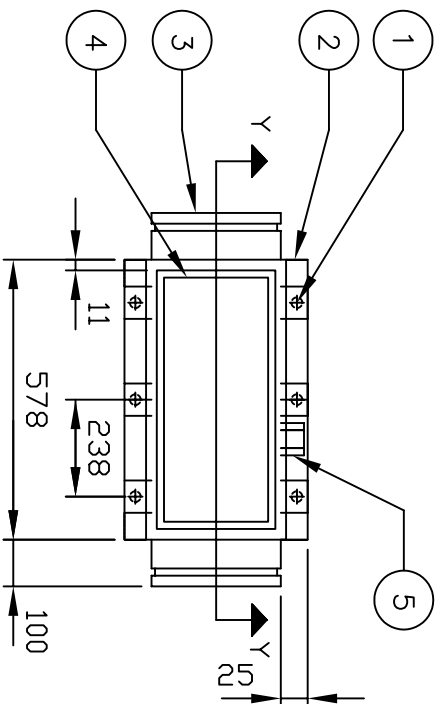
A-13

SCALE:

NTS

DATE:

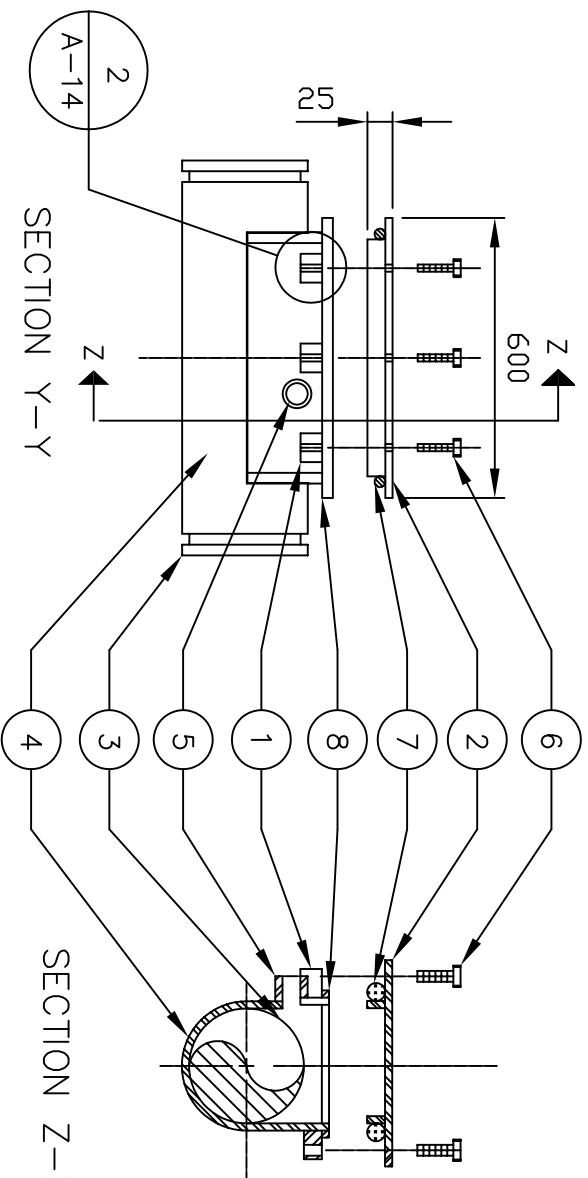
APR. 2005



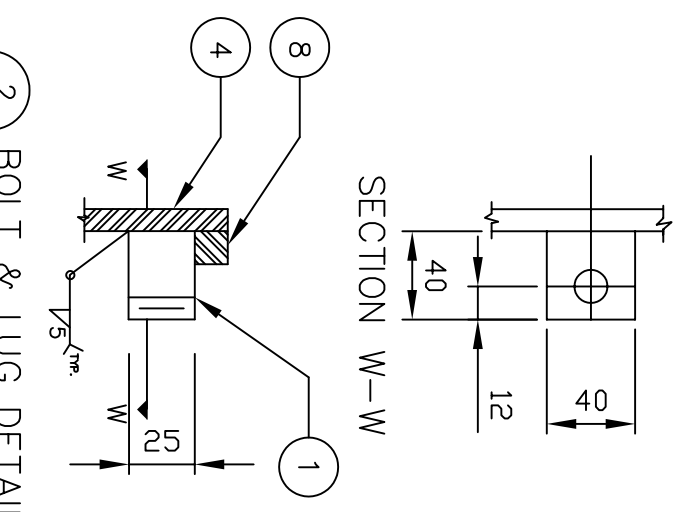
PLAN

KEY TO NUMBERED PARTS:

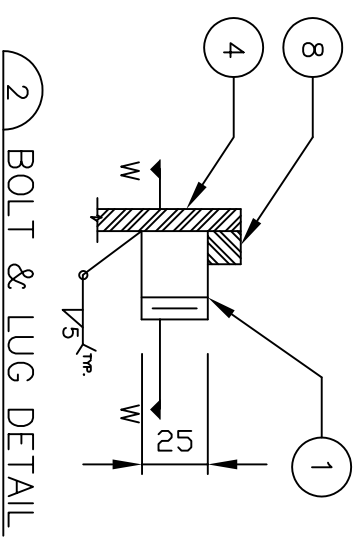
- ① BOLT LUGS TAPPED 12 NC
- ② FABRICATED CLEANOUT COVER FROM 6 TH PLATE CONTINUOUS BUTT WELDED AND HOT DIPPED GALV. AFTER FABRICATION
- ③ SCHEDULE 40 STEEL - NIPPLE VICTAULIC GROOVED (SIZE TO MATCH PIPE SIZE)
- ④ FABRICATED CLEANOUT BODY FROM 6 TH PLATE CONTINUOUS BUTT WELD AND HOT DIPPED GALV. AFTER FABRICATION
- ⑤ 25 N.P.T. HALF COUPLING AND PLUG
- ⑥ 12 NC X 73 LONG CAD PLATED HEX HEAD SCREW AND WASHER
- ⑦ 20K ONE PIECE SOFT RUBBER GASKET O RING STRETCH TO FIT COVER
- ⑧ 12 SQ. ROD RIM



SECTION Y-Y



SECTION Z-Z



SECTION W-W

① TYPE 2 CLEANOUT

NOTES:

1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES.



TITLE:

CLEANOUT - TYPE 2

DWG NO.:

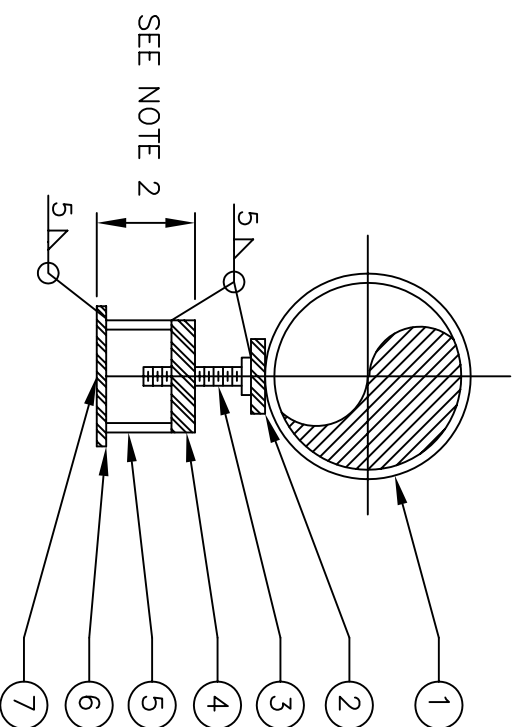
A-14

SCALE:

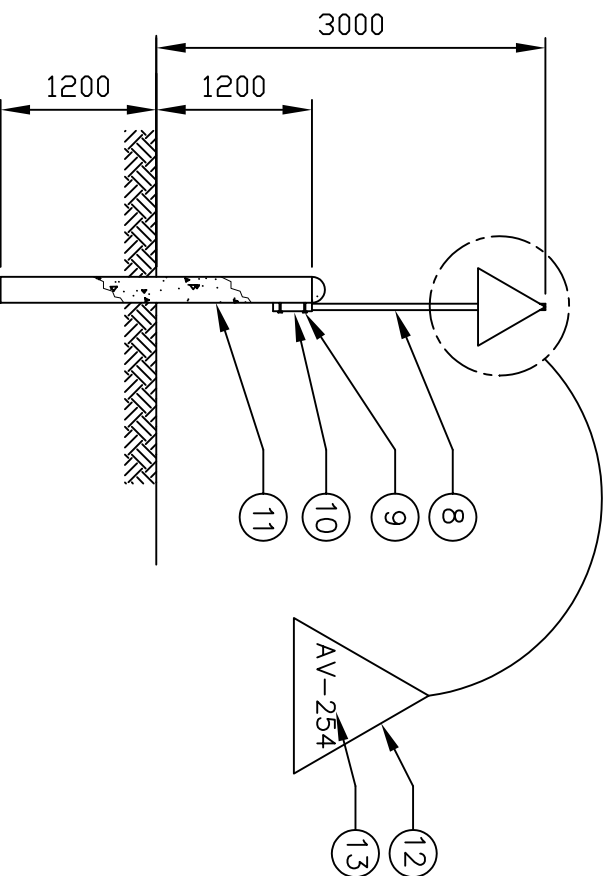
NTS

DATE:

MAR. 2004



1 PIPE SUPPORT DETAIL



2 BUMPER POST DETAIL

KEY TO NUMBERED PARTS:

- 1 WATER MAIN – HOT DIPPED GALV. STEEL PIPING
- 2 75mm DIA x 12 TH PLATE
- 3 20mm x 15 'O' BOLT
- 4 20 TH THICK PLATE DRILLED & TAPPED
- 5 100mm DIA. SCHEDULE 40 STEEL PIPE
- 6 150 x 150 x 12 TH PLATE
- 7 2 – 15mm DIA. HOLES
- 8 50mm DIA. GALV. STEEL PIPE MAST – 4 – 11mm DIA. BOLT HOLES.
- 9 2 – 9mm DIA. x 89mm LONG GALV. BOLTS THROUGH SLEEVE AND MAST.
- 10 65mm DIA. STEEL SLEEVE WELDED TO POST, c/w 2 – 11mm DIA. DRILLED HOLES
- 11 200mm DIA. STEEL PIPE POST EPOXY COATED AND FILLED WITH CONCRETE.
- 12 3mm TH STEEL PLATE SIGN PAINTED RED c/w 2 – 11mm DIA DRILLED BOLT HOLES. SIGN SECURED TO MAST WITH 2 – 9mm DIA x 76 LG. GALV. BOLTS.
- 13 WHITE LETTERING, 100mm HIGH. LETTERING TO MATCH ACTUAL ACCESS VAULT NUMBERING.

NOTES:

- 1) SEE DRAWING A-1 FOR GENERAL ACCESS VAULT NOTES
- 2) HEIGHT TO BE 100mm FOR SANITARY OR WATER IN SEPARATE AV, 500mm FOR WATER IN COMMON AV.
- 3) POST, SLEEVE AND MAST TO BE PAINTED RED AFTER FABRICATION
- 4) 4 BOLLARDS REQUIRED PER ACCESS VAULT. ONE BOLLARD PER ACCESS VAULT TO INCLUDE MAST AND SIGN.



TITLE:

MISCELLANEOUS
ACCESS VAULT DETAILS

DWG NO.:

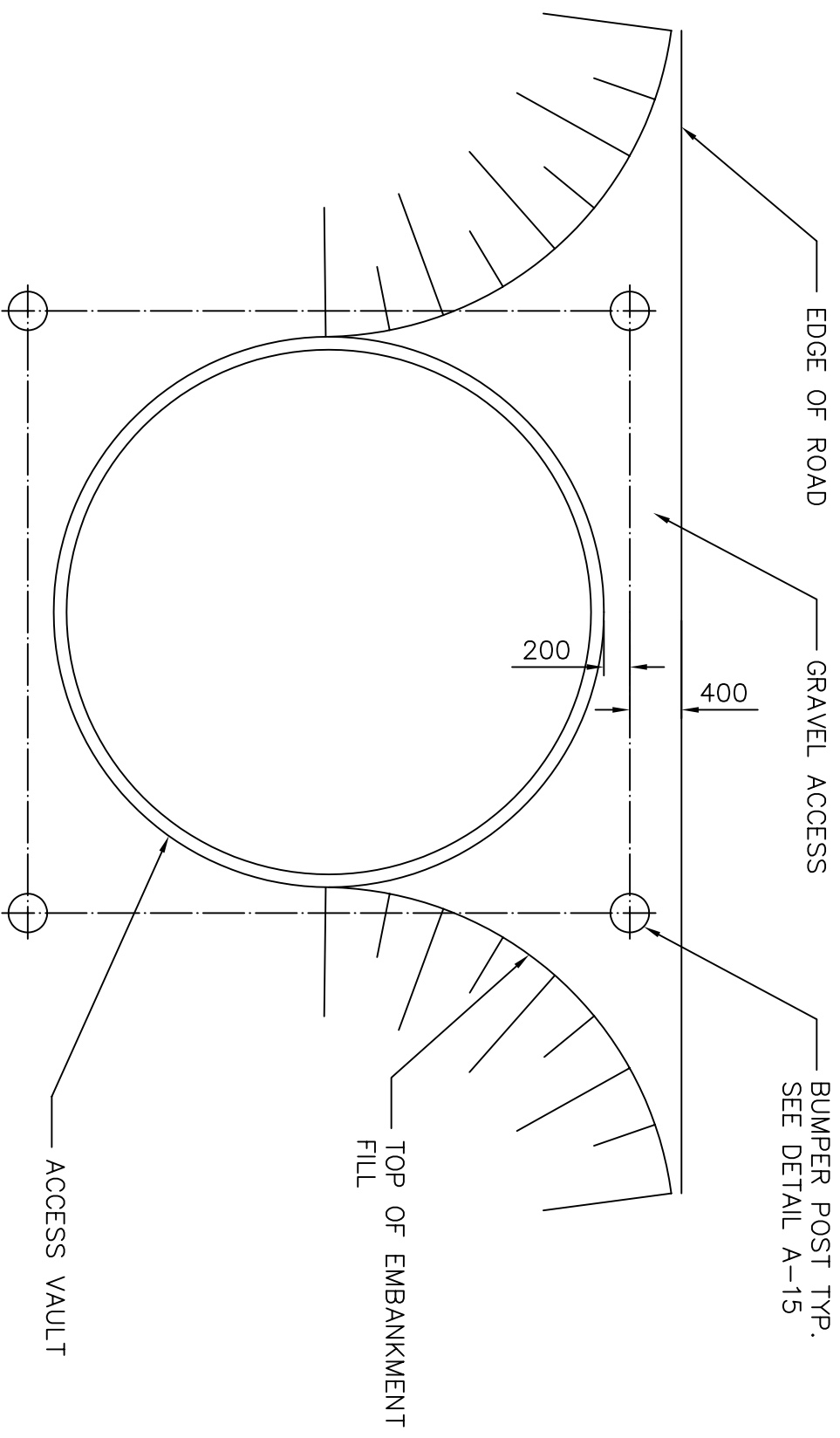
A-15

SCALE:

NTS

DATE:

MAR. 2004



TITLE: ACCESS VAULT BUMPER POST LOCATION DRAWING		DWG NO.: A-16
SCALE: NTS	DATE: APR. 2005	

Building Type	Water Supply	Water Return	Sanitary Sewer	Carrier Pipe
Single family	25 mm	25 mm	100 mm	100 mm
2-plex	25 mm	25 mm	100 mm	100 mm
3-plex	25 mm	25 mm	100 mm	100 mm
4-plex	25 mm	25 mm	100 mm	100 mm
6-plex	38 mm	25 mm	150 mm	150 mm
8-plex	38 mm	25 mm	150 mm	150 mm
10-plex	38 mm	25 mm	150 mm	150 mm



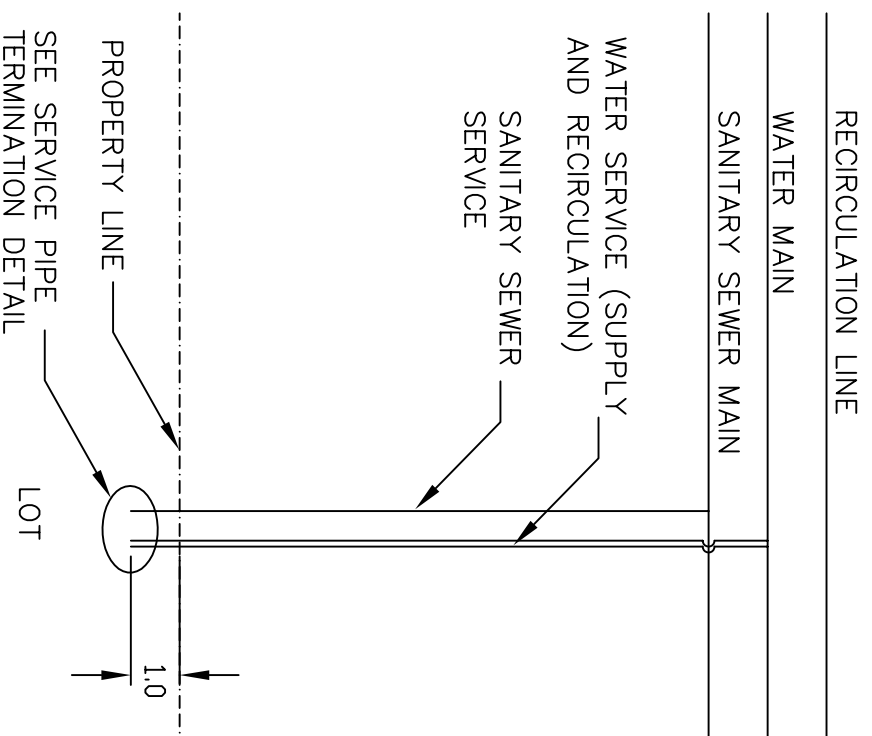
TITLE: SERVICE LATERAL
SIZING TABLE

SCALE:
NTS

DATE:
MAR. 2004

DWG NO.:

S-1



PLAN

NOTES:

1. MINIMUM SLOPE OF SANITARY SERVICE TO BE 2%
2. CAP ENDS OF SERVICE USING A BLIND FLANGED CONNECTION FOR FUTURE TIE-IN BY LOT OWNER.
3. MARK END OF SERVICE WITH 100mm x 100mm WOODEN STAKE, FROM PIPE INVERT TO A MINIMUM OF 500mm ABOVE THE GROUND. EXPOSED STAKE TO BE PAINTED RED AND MARKED TO INDICATE EITHER WATER OR SEWER.



TITLE:

TYPICAL RESIDENTIAL
SERVICE CONNECTION

DWG NO.:

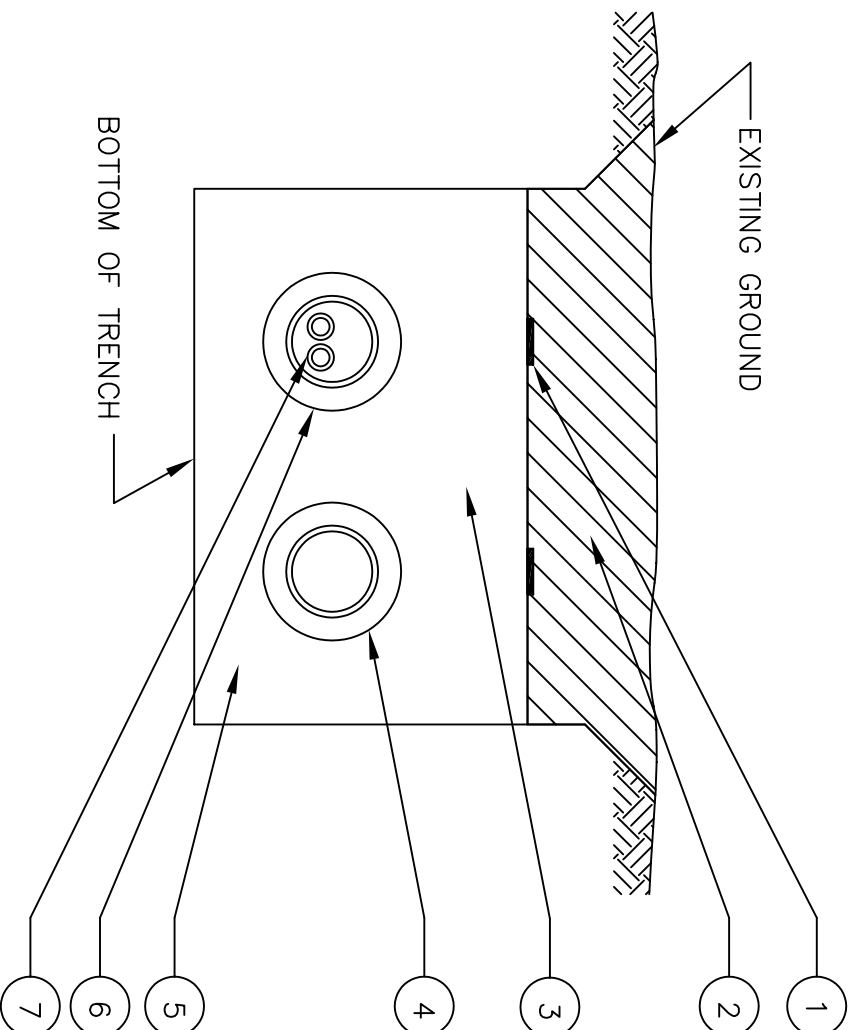
S-2

SCALE:

NTS

DATE:

MAR. 2004



KEY TO NUMBERED PARTS:

- ① WARNING TAPE.
- ② SELECT NATIVE BACKFILL MATERIAL, OR ENGINEERED BACKFILL WHERE DIRECTED BY ENGINEER.
- ③ SAND BACKFILL, COMPACTED TO 90% STANDARD PROCTOR, MINIMUM 300mm COVER OVER SERVICE PIPES.
- ④ 100mm DIA SANITARY SERVICE – DR17 HDPE PIPE c/w 50mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ⑤ SAND BEDDING COMPACTED TO 90% STANDARD PROCTOR, 150mm (IN ROCK) DEEP.
- ⑥ 100mm DIA CARRIER PIPE – DR17 HDPE PIPE c/w 50mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ⑦ 25mm SUPPLY AND 25mm RECIRCULATION WATER SERVICE, COILED DR11 HDPE PIPE INSIDE CARRIER PIPE.

NOTES:

1. PIPES TO BE SPACED AT 230mm, OR GREATER, FROM TRENCH WALL AND OTHER PIPES TO ALLOW COMPACTION.
2. TEST PITS TO BE DUG EVERY 15m TO A DEPTH OF 500mm BELOW PIPE INVERT TO CHECK FOR PRESENCE OF SILT. SUBEXCAVATE TO A DEPTH OF 450mm BELOW PIPE INVERT AND BACKFILLED WITH GRANULAR B COMPACTED TO 90% STANDARD PROCTOR.
3. SERVICE PIPES TO HAVE A MINIMUM OF 600mm OF COVER TO TOP OF INSULATION.



TITLE:

SERVICE TRENCH DETAIL

DWG NO.:

S—3

SCALE:

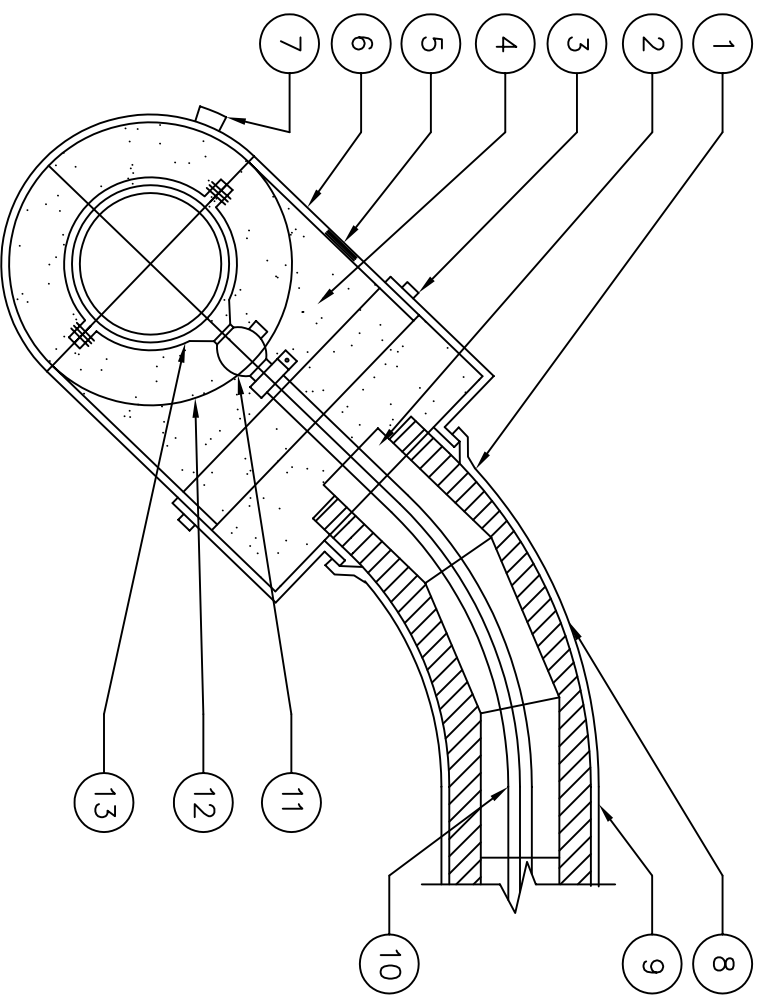
NTS

DATE:

MAR. 2004

KEY TO NUMBERED PARTS:

- ① HEAT SHRINK SLEEVE, MIN. 100mm LAP ON BLACK JACKET.
- ② POLYURETHANE FOAM PLUG
- ③ GALV. SHEET METAL SCREWS
- ④ FIELD POURED POLYURETHANE INSULATION FOAM (207 kPa COMPRESSIVE STRENGTH).
- ⑤ HOLES FOR FOAM INJECTION – TO BE MASTIC COATED AFTER FOAM INJECTION.
- ⑥ INSULATION FORM (SEE DETAIL S-14), SIZED TO FIT WATER MAIN O.D. AND SERVICE LATERAL O.D., 25mm LAP REQUIRED ON EACH SIDE.
- ⑦ STAINLESS STEEL GEAR CLAMPS.
- ⑧ FACTORY FABRICATED DR17 HDPE 45 DEGREE BEND c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS.
- ⑨ DR17 HDPE PIPE c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS.
- ⑩ DR11 CTS HDPE (MIN. DIA 25mm – MAX. DIA 50mm) SUPPLY & RETURN WATER SERVICE PIPE CONTINUOUS LENGTH FROM COIL STOCK.
- ⑪ BRONZE BALL CORPORATION STOP (SIZED TO FIT) – MIP T INLET x CTS DR11 HDPE – JOINT OUTLET c/w STAINLESS STEEL INSERTS STIFFENERS. 2 REQUIRED PER SERVICE.
- ⑫ WATER MAIN – DR11 HDPE PIPE c/w 50mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ⑬ ROBAR 2706 TAPPING SADDLE, DOUBLE STRAP.



NOTES:

- 1) ALL EXPOSED SURFACES OF POLYURETHANE TO BE FIELD COATED WITH MASTIC.
- 2) METAL SURFACES IN CONTACT WITH FIELD POURED POLYURETHANE INSULATION SHALL BE COATED WITH OIL SEPARATING AGENT.



TITLE:

WATER SERVICE
CONNECTION AT MAIN

DWG NO.:

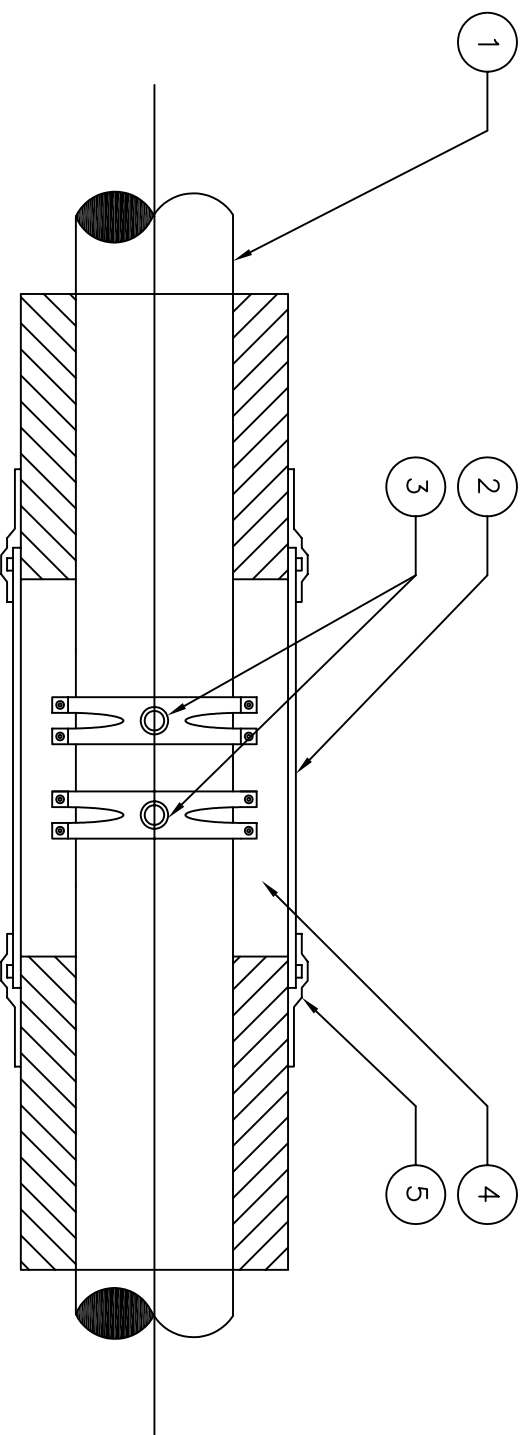
S-4

SCALE:

NTS

DATE:

MAR. 2004



KEY TO NUMBERED PARTS:

- ① WATER MAIN – DR11 HDPE PIPE c/w 50mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ② INSULATION FORM (SEE DETAIL S-14), SIZED TO FIT WATER MAIN O.D. AND SERVICE LATERAL O.D., 25mm LAP REQUIRED ON EACH SIDE.
- ③ ROBAR 2706 TAPPING SADDLE, DOUBLE STRAP.
- ④ FIELD POURED POLYURETHANE INSULATION FOAM (207 kPa COMPRESSIVE STRENGTH).
- ⑤ HEAT SHRINK SLEEVE, MIN. 100mm LAP ON BLACK JACKET.

NOTES:

- 1) ALL EXPOSED SURFACES OF POLYURETHANE TO BE FIELD COATED WITH MASTIC.
- 2) METAL SURFACES IN CONTACT WITH FIELD POURED POLYURETHANE INSULATION SHALL BE COATED WITH OIL SEPARATING AGENT.



TITLE: WATER SERVICE
CONNECTION AT MAIN
PLAN

DWG NO.:

S-5

SCALE: NTS

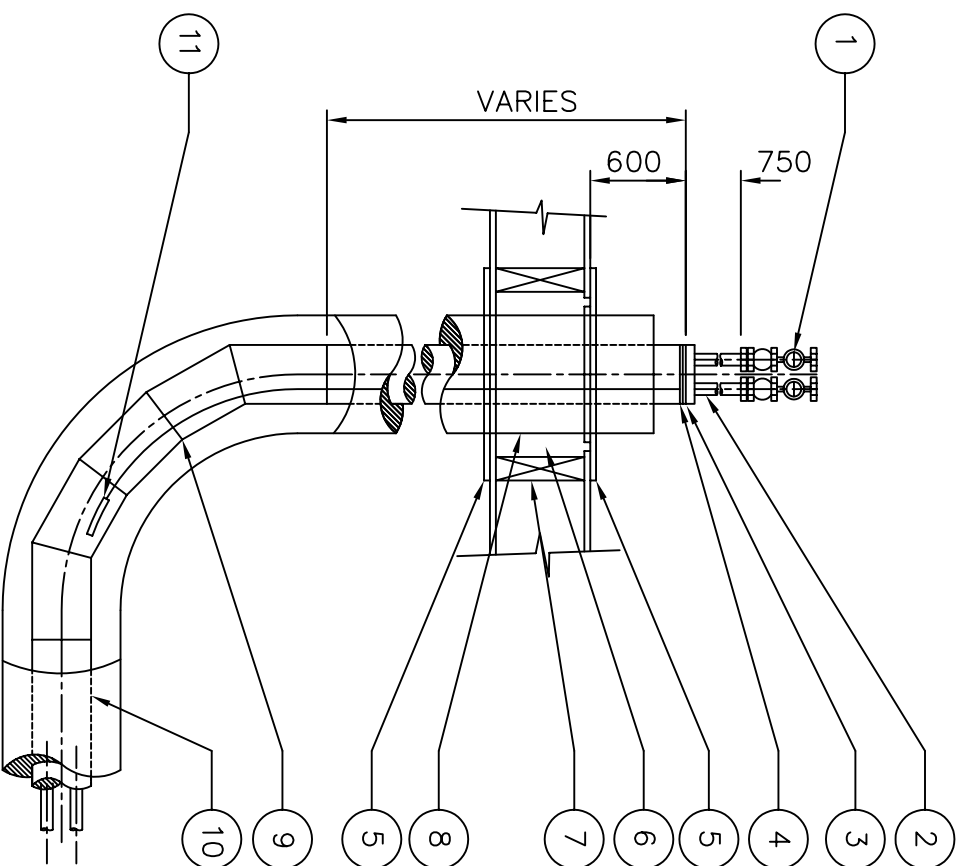
DATE: MAR. 2004

KEY TO NUMBERED PARTS :

- ① 25mm BALL VALVES, COMPRESSION WITH SEAMLESS STAINLESS STEEL INSERT – MULLER H-15219 OR EQUAL.
- ② FIELD INSTALLED 25mm OR 38mm CTS HDPE DR11 SUPPLY & RETURN WATER SERVICE PIPE – CONTINUOUS LENGTH FROM COIL STOCK.
- ③ SECURITY CAP.
- ④ STAINLESS STEEL GEAR CLAMP HOLDING SECURITY CLAMP IN PLACE.
- ⑤ 20mm PLYWOOD GLUED AND SCREWED TO JOIST/STUDS AND HEADERS. CAULK WITH SILICON ALL AROUND.
- ⑥ POLYURETHANE INSULATION FROM PORTABLE FOAM PACK TO FILL VOID.
- ⑦ FLOOR JOIST.
- ⑧ FIBREGLASS REINFORCED PLASTIC THIMBLE.
- ⑨ LONG RADIUS 90 DEGREE BEND – HDPE DR11 C/W FACTORY APPLIED 50mm POLYURETHANE INSULATION AND FRP JACKET.
- ⑩ 100mm OR 150mm CARRIER PIPE – HDPE DR11 C/W FACTORY APPLIED 50mm POLYURETHANE INSULATION AND FRP JACKET.
- ⑪ THERMOSTAT BULB.

NOTES:

1. ALL EXPOSED SURFACES OF POLYURETHANE TO BE FIELD COATED WITH MASTIC.
2. THE INSIDE SURFACE OF METAL TO BE IN CONTACT THE FIELD POURED POLYURETHANE INSULATION SHALL BE COATED WITH OIL SEPARATING AGENT.



TITLE:

WATER SERVICE
RISER AT HOUSE

DWG NO.:

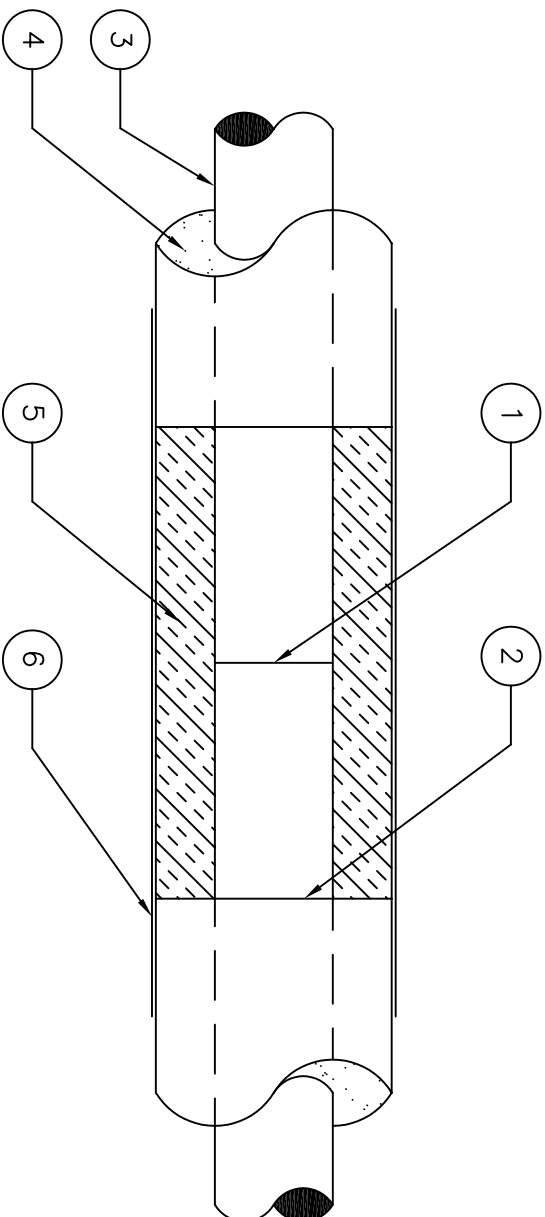
S-6

SCALE:

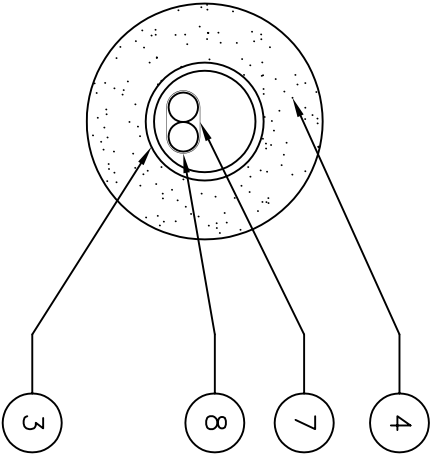
NTS

DATE:

MAR. 2004




PLAN

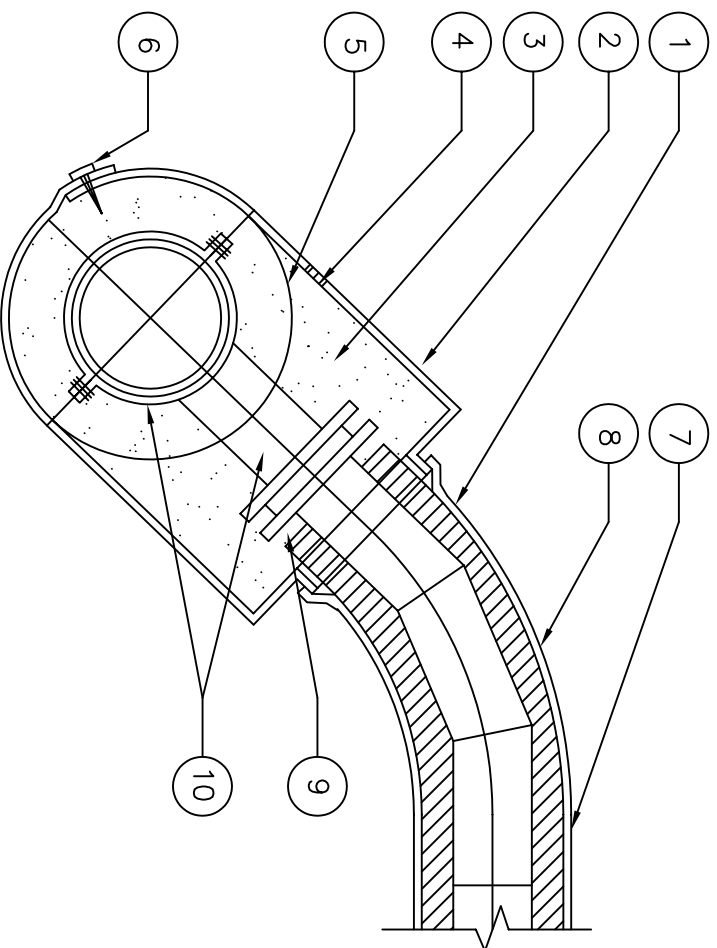


CROSS SECTION

KEY TO NUMBERED PART:

- ① FIELD BUTT FUSION JOINT MADE BY A QUALIFIED AND LICENSED TECHNICIAN.
- ② FIELD COAT ALL EXPOSED POLYURETHANE WITH MASTIC.
- ③ HDPE SERIES DR 17 SANITARY SEWER SERVICE
- ④ 50mm NOMINAL THICKNESS SHOP CAST POLYURETHANE INSULATION c/w BLACK JACKET.
- ⑤ POLYURETHEAN HALF SHELLS CUT TO FIT AND COATED WITH MASTIC.
- ⑥ MASTIC LINED HEAT SHRINK TAPE – 100mm OVERLAP ON SHELLS AND PIPE JACKET.
- ⑦ TWO FULL TURNS OF POLYESTER PACKAGING TAPE APPLIED EVERY 2m MIN.
- ⑧ FIELD INSTALL 25mm, 38mm OR 50mm CTS HDPE DR 11 SUPPLY AND RETURN WATER SERVICE PIPE (SEE S-1 FOR PIPE SIZING) – CONTINUOUS LENGTH FROM COILED STOCK.

 Igaluit		TITLE:	DWG NO.:
		JOINT DETAIL	S-7
		WATER SERVICE	
SCALE:	DATE:		
NTS	MAR. 2004		



KEY TO NUMBERED PARTS:

- ① HEAT SHRINK SLEEVE, MIN. 100mm LAP ON BLACK JACKET.
- ② INSULATION FORM (SEE DETAIL S-14), SIZED TO FIT WATER MAIN O.D. AND SERVICE LATERAL O.D., 25mm LAP REQUIRED ON EACH SIDE.
- ③ FIELD POURED POLYURETHANE INSULATION FOAM (207 kPa COMPRESSIVE STRENGTH).
- ④ HOLES FOR FOAM INJECTION – TO BE MASTIC COATED AFTER FOAM INJECTION.
- ⑤ SANITARY SEWER – DR11 HDPE PIPE c/w 50mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ⑥ GALV. SHEEL METAL SCREWS
- ⑦ DR17 HDPE PIPE c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS.
- ⑧ FACTORY FABRICATED DR17 HDPE 45 DEGREE BEND c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS.
- ⑨ FLANGE STUB END, c/w BACKUP RING, BUTT FUSED TO END OF SERVICE LATERAL.
- ⑩ ROBAR No. 6626 OUTLET SLEEVE SADDLE – SIZED TO FIT MAIN AND SERVICE LATERAL.

NOTES:

- 1) ALL EXPOSED SURFACES OF POLYURETHANE TO BE FIELD COATED WITH MASTIC.
- 2) METAL SURFACES IN CONTACT WITH FIELD POURED POLYURETHANE INSULATION SHALL BE COATED WITH OIL SEPARATING AGENT.



TITLE:

SANITARY SERVICE
CONNECTION AT MAIN

DWG NO.:

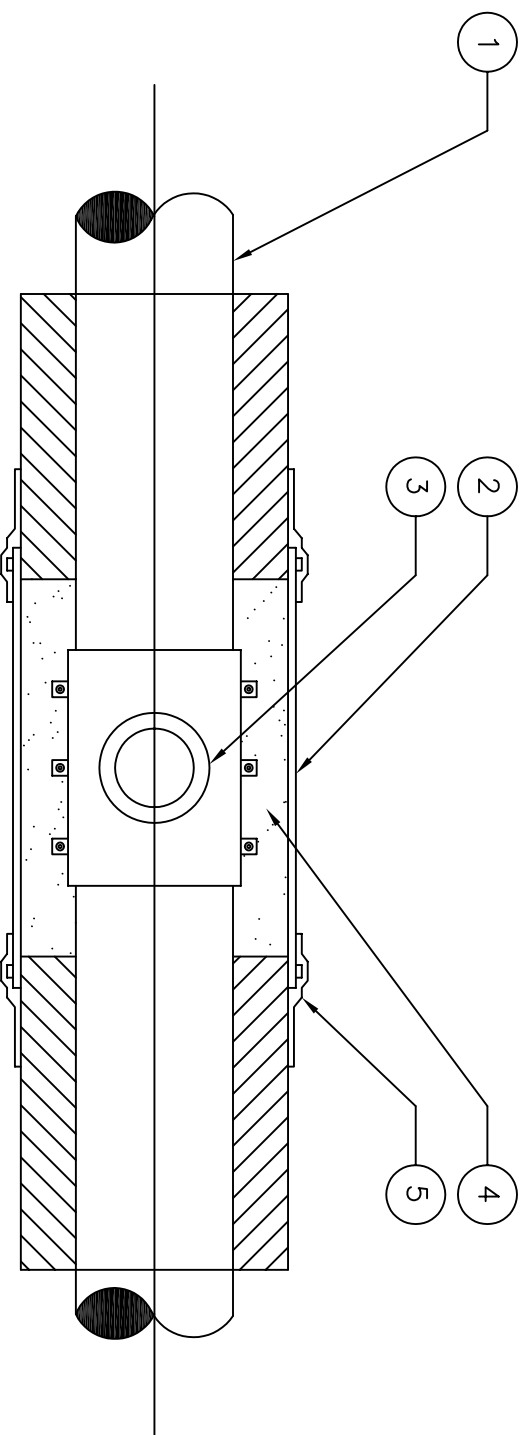
S-8

SCALE:

NTS

DATE:

MAR. 2004



KEY TO NUMBERED PARTS:

- ① SANITARY SEWER – DR11 HDPE PIPE c/w 50mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ② INSULATION FORM (SEE DETAIL S-14), SIZED TO FIT SANITARY SEWER O.D. AND SERVICE LATERAL O.D., 25mm LAP REQUIRED ON EACH SIDE.
- ③ ROBAR No. 6626 OUTLET SLEEVE SADDLE – SIZED TO FIT MAIN AND SERVICE LATERAL.
- ④ FIELD POURED POLYURETHANE INSULATION FOAM (207 kPa COMPRESSIVE STRENGTH).
- ⑤ HEAT SHRINK SLEEVE, MIN. 100mm LAP ON BLACK JACKET.

NOTES:

- 1) ALL EXPOSED SURFACES OF POLYURETHANE TO BE FIELD COATED WITH MASTIC.
- 2) METAL SURFACES IN CONTACT WITH FIELD POURED POLYURETHANE INSULATION SHALL BE COATED WITH OIL SEPARATING AGENT.



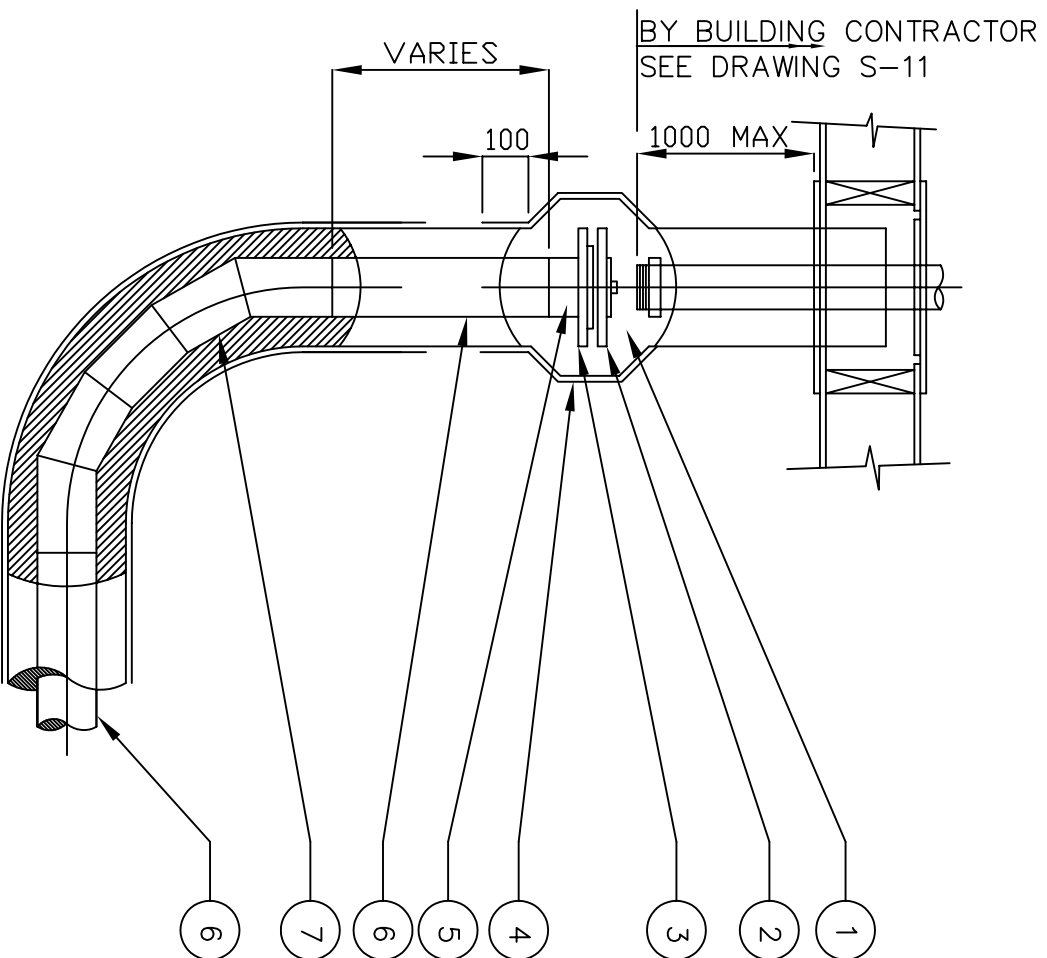
TITLE: SANITARY SERVICE
CONNECTION AT MAIN
PLAN

DWG NO.:

S-9

SCALE: NTS

DATE: MAR. 2004



KEY TO NUMBERED PARTS:

- ① INSULATION KIT FOR FLANGE ASSEMBLY
- ② COMPANION FLANGE (SIZED TO FIT PIPE DIA.), WITH RUBBER GASKET AND BOLTS DRILLED AND TAPPED, c/w PVC TEMP. PLUG (SIZED TO FIT).
- ③ BACKUP RING FOR FLANGE ASSEMBLY.
- ④ HEAT SHRINK TO FIT OVER INSULATION KIT.
- ⑤ HDPE STUB END FUSED TO SANITARY SERVICE PIPE (SIZED TO FIT).
- ⑥ SANITARY SERVICE PIPE, HDPE DR17 c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS.
- ⑦ FACTORY FABRICATED DR17 HDPE 45 DEGREE BEND c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS.

NOTES:

- 1) ALL EXPOSED SURFACES OF POLYURETHANE TO BE FIELD COATED WITH MASTIC.
- 2) SURFACES OF METAL TO BE IN CONTACT WITH FIELD POURED POLYURETHANE INSULATION SHALL BE COATED WITH OIL SEPARATING AGENT.
- 3) INSULATION FORMS AND METAL COVER PARTS TO BE 1.6mm TH. STEEL CONTINUOUS WELDED SEAMS, HOT DIPPED GALV. AFTER FABRICATION.



TITLE:

SANITARY SERVICE RISER

DWG NO.:

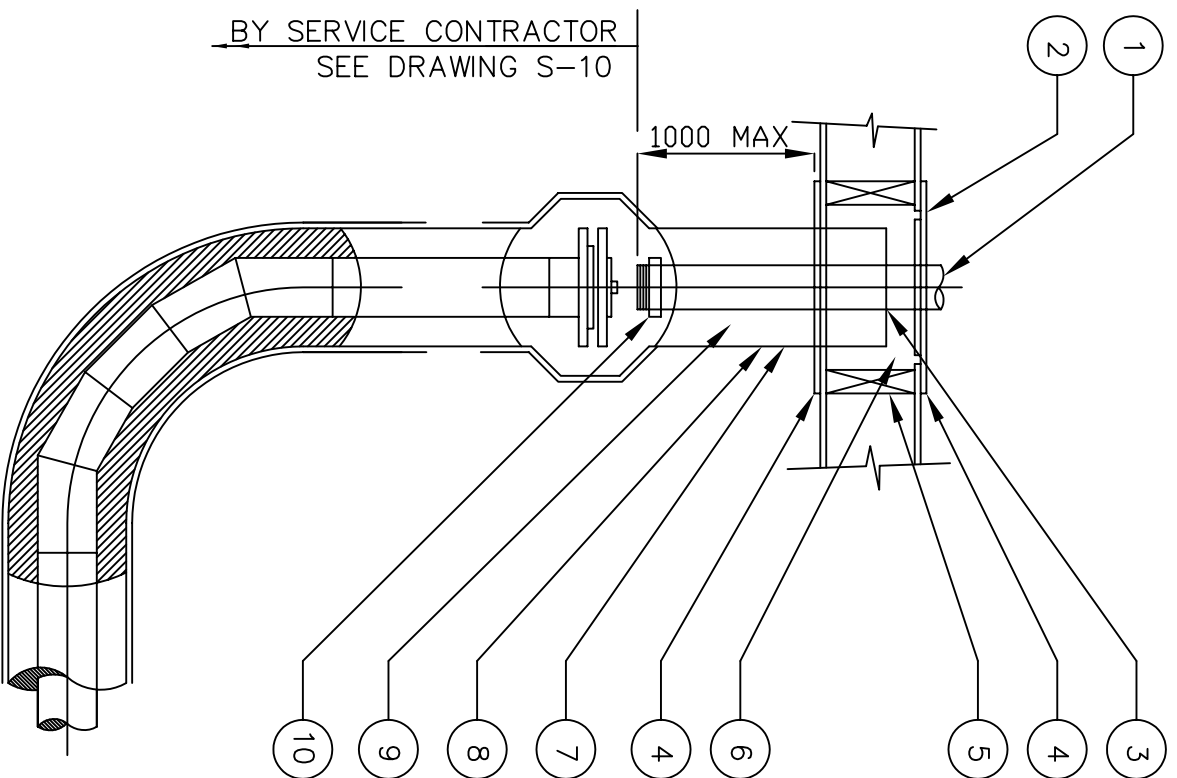
S-10

SCALE:

NTS

DATE:

MAR. 2004



KEY TO NUMBERED PARTS:

- 1) 75mm DIA. PVC OR ABS PIPE
- 2) 200mm CHIMNEY CLEANOUT PLUG. CUT HOLE TO FIT O.D. OF PIPE
- 3) SILICON SEALER APPLIED TO THIS SECTION BEFORE INSERTING INSULATED PIPE INTO OPENING.
- 4) 20mm PLYWOOD – GLUED AND SCREWED TO JOIST/STUDS AND HEADERS.
- 5) FLOOR JOIST.
- 6) FIELD APPLIED POLYURETHANE INSULATION TO FILL VOID.
- 7) 290mm GALV. THIMBLE, 22 GA. TOP AND BOTTOM SCREWED TO PLYWOOD.
- 8) HEAT SHRINK – TO SUIT.
- 9) POLYURETHANE HALF SHELLS, CUT TO LENGTH AND COATED WITH FIELD APPLIED MASTIC.
- 10) ADAPTER SOCKED (SIZED TO FIT) X MPT TO SUIT BUILDING PLUMBING MATERIALS.

NOTES:

- 1) ALL EXPOSED SURFACES OF POLYURETHANE TO BE FIELD COATED WITH MASTIC.
- 2) SURFACES OF METAL TO BE IN CONTACT WITH FIELD POURED POLYURETHANE INSULATION SHALL BE COATED WITH OIL SEPARATING AGENT.
- 3) INSULATION FORMS AND METAL COVER PARTS TO BE 1.6mm TH. STEEL CONTINUOUS WELDED SEAMS, HOT DIPPED GALV. AFTER FABRICATION.



TITLE:

SANITARY SERVICE HOUSE
CONNECTION DETAIL

DWG NO.:

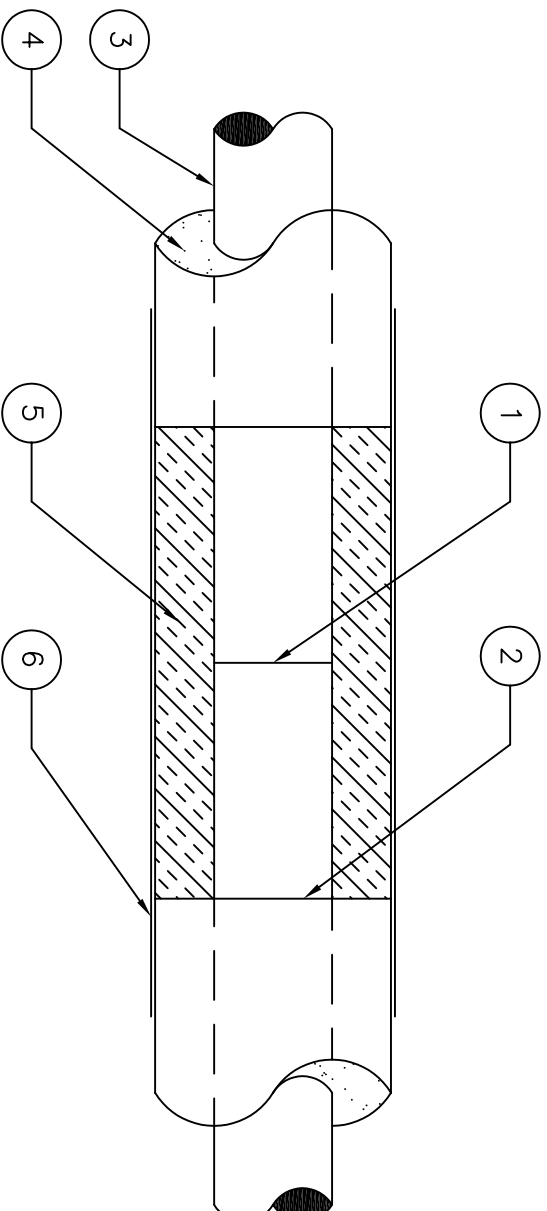
S-11

SCALE:

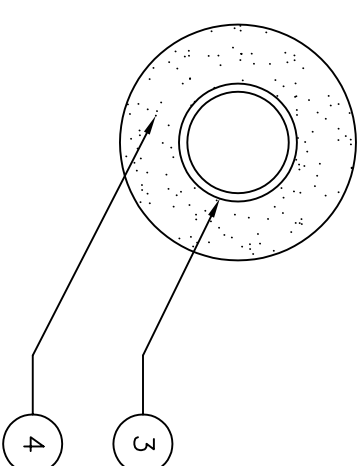
NTS

DATE:

MAR. 2004



PLAN



CROSS SECTION

KEY TO NUMBERED PART:

- ① FIELD BUTT FUSION JOINT MADE BY A QUALIFIED AND LICENSED TECHNICIAN.
- ② FIELD COAT ALL EXPOSED POLYURETHANE WITH MASTIC.
- ③ HDPE SERIES DR 17 SANITARY SEWER SERVICE
- ④ 50mm NOMINAL THICKNESS SHOP CAST POLYURETHANE INSULATION c/w BLACK JACKET.
- ⑤ POLYURETHANE HALF SHELLS CUT TO FIT AND COATED WITH MASTIC.
- ⑥ MASTIC LINED HEAT SHRINK TAPE – 100mm OVERLAP ON SHELLS AND PIPE JACKET.



TITLE:

JOINT DETAIL
SANITARY SERVICE

DWG NO.:

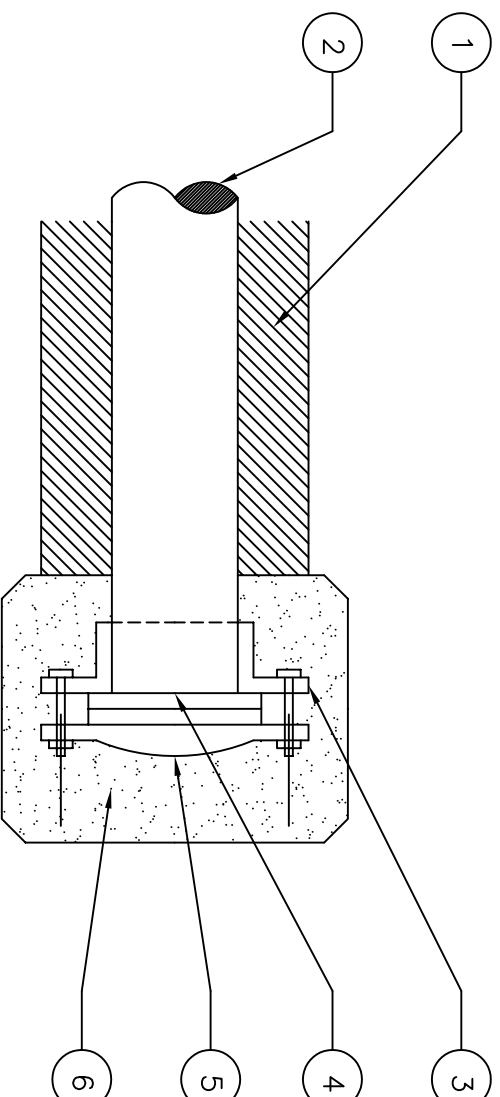
S-12

SCALE:

NTS

DATE:

MAR. 2004



KEY TO NUMBERED PARTS:

- ① 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS.
- ② DR17 HDPE PIPE c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION
- ③ SLIP ON COLLAR – HDPE (TYP.)
- ④ HDPE STUB END, BUTT FUSED
- ⑤ HDPE BLIND FLANGE
- ⑥ FLANGE INSULATION KIT



TITLE:

PIPE TERMINATION DETAIL

DWG NO.:

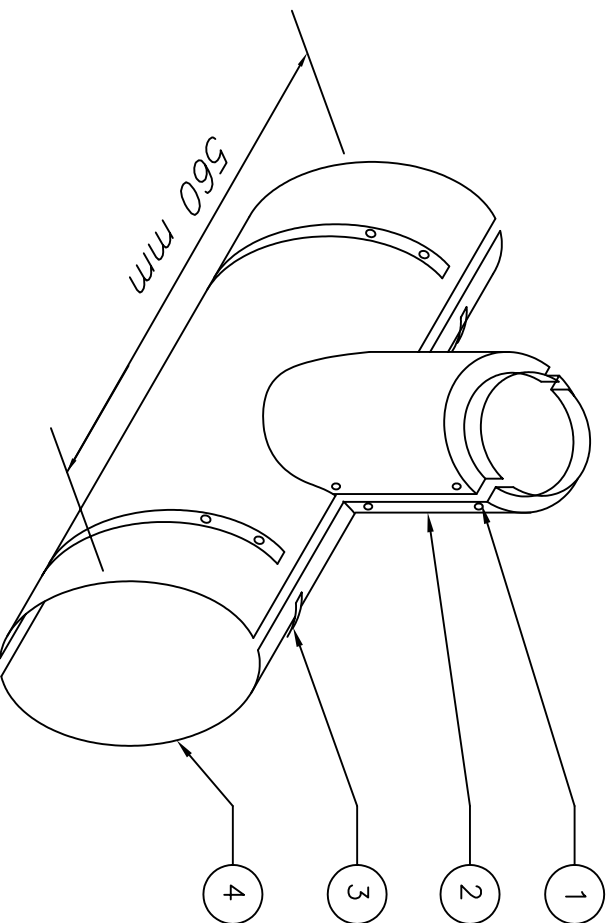
S-13

SCALE:

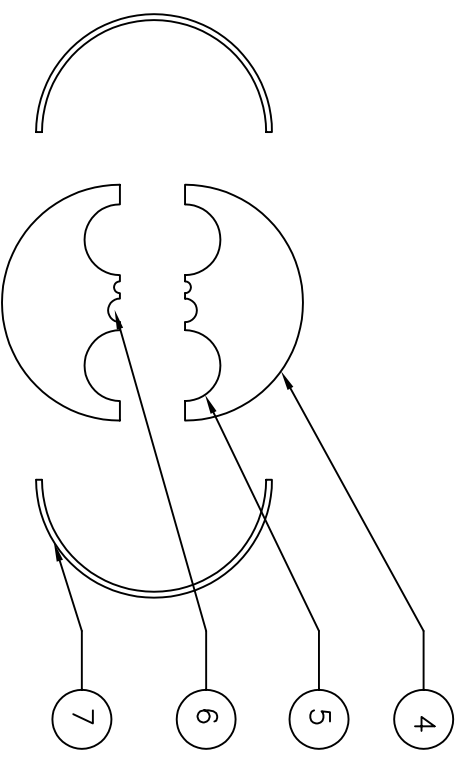
NTS

DATE:

MAR. 2004



1 STEEL INSULATION FORM



2 SECURITY CAP DETAIL

KEY TO NUMBERED PARTS:

- ① HOLES TO BE DRILLED IN FIELD TO SUIT, FOR GALVANIZED SHEET METAL SCREWS.
- ② DIA. TO SUIT INSULATED MAIN O.D. AND REQUIRED 25mm LAP ON EACH SIDE.
- ③ STAINLESS STEEL GEAR CLAMPS.
- ④ 20mm PLYWOOD TO FIT PIPE O.D.
- ⑤ HOLES TO FIT HPDE SUPPLY AND RETURN LINES.
- ⑥ HOLE FOR THERMOSTAT BULB AND HEAT TRACE CABLE.
- ⑦ 22 GAUGE SHEET METAL GALVANIZED.



TITLE:

MISC. DETAILS
SERVICE CONNECTIONS

DWG NO.:

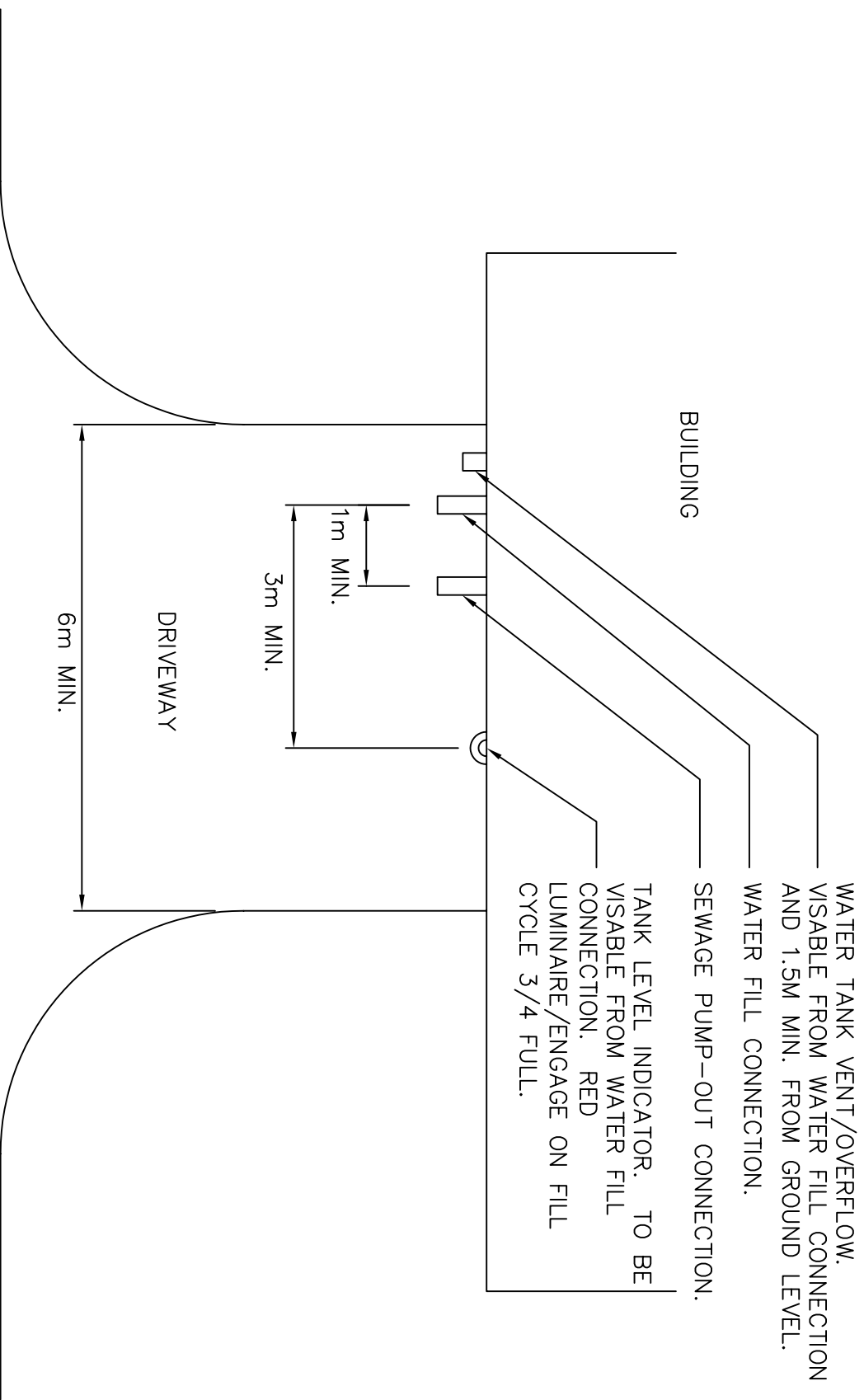
S-14

SCALE:

NTS

DATE:

MAR. 2004



TITLE:

TRUCKED SERVICE
DRIVEWAY LAYOUT DETAIL

DWG NO.:

S-16

SCALE:

NTS

DATE:

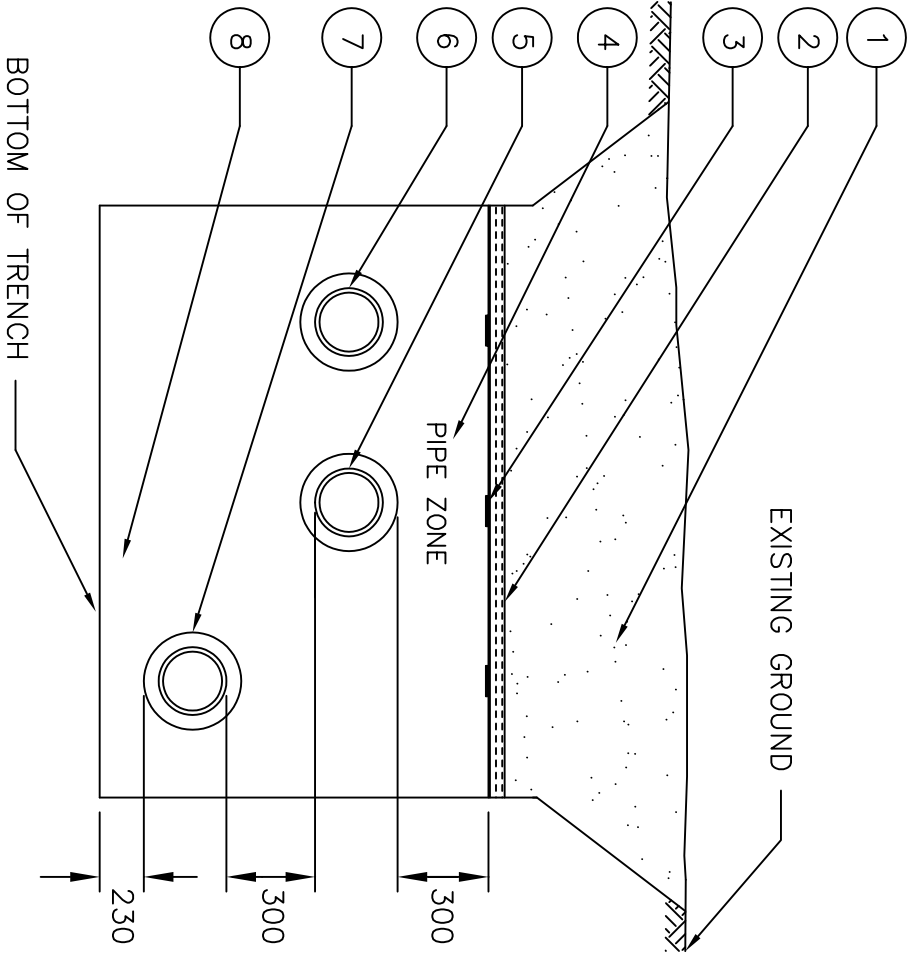
MAR. 2004

KEY TO NUMBERED PARTS:

- 1 SELECT NATIVE BACKFILL MATERIAL, OR ENGINEERED BACKFILL WHERE DIRECTED BY ENGINEER.
- 2 50mm TRENCH INSULATION – STYROFOAM HI 40, 2440mm WIDE. ADDITIONAL TRENCH INSULATION AS DIRECTED BY ENGINEER.
- 3 WARNING TAPE.
- 4 SAND BACKFILL, COMPACTED TO 90% STANDARD PROCTOR, MINIMUM 300mm COVER OVER PIPES.
- 5 WATER MAIN – DR11 HDPE PIPE c/w 50mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
- 6 RECIRCULATION LINE – DR11 HDPE PIPE c/w 50mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
- 7 SANITARY SERVICE – DR11 HDPE PIPE c/w 50mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
- 8 SAND BEDDING COMPACTED TO 90% STANDARD PROCTOR, 150mm (230mm IN ROCK).

NOTES:

- 1. PIPES TO BE SPACED 230mm, OR GREATER, FROM FROM TRENCH WALL AND OTHER PIPES TO ALLOW COMPACTION.
- 2. TEST PITS TO BE DUG EVERY 15m TO A DEPTH OF 500mm BELOW PIPE INVERT TO CHECK FOR PRESENCE OF SILT. SUBEXCAVATE AS REQUIRED, TO A DEPTH OF 450mm BELOW PIPE INVERT AND BACKFILLED WITH GRANULAR B COMPACTED TO 95% STANDARD PROCTOR.
- 3. SANITARY SEWER TO HAVE A MINIMUM 3.0m COVER. IF COVER IS LESS THAN 3.0m, THE THICKNESS OF THE TRENCH INSULATION TO BE INCREASED.



EXISTING SURFACE	REINSTATEMENT
ASPHALT	2 X 37mm ASPHALT 150mm GRANULAR 'A' 300mm GRANULAR 'B'
GRAVEL ROAD	100mm GRANULAR 'A' 300mm GRANULAR 'B'



TITLE:

TRENCH DETAIL
W/M, RECIRC & SAN

DWG NO.:

U—1

SCALE:

NTS

DATE:

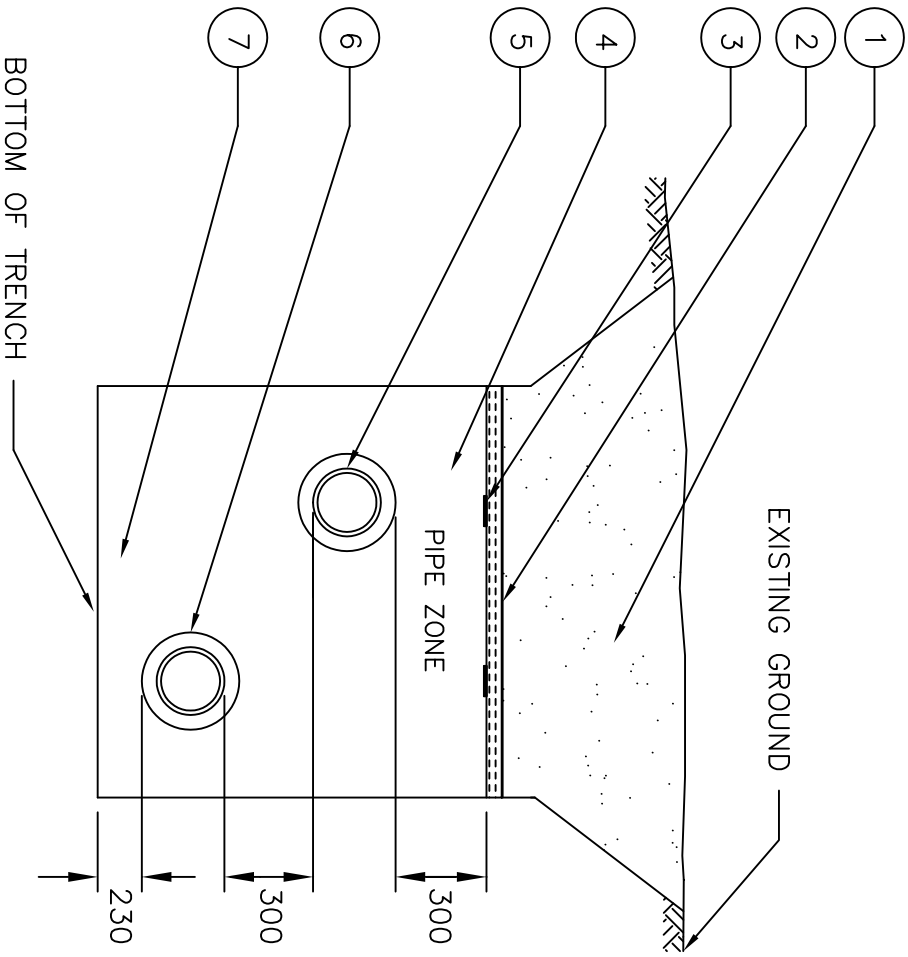
MAR. 2004

KEY TO NUMBERED PARTS:

- ① SELECT NATIVE BACKFILL MATERIAL, OR ENGINEERED BACKFILL WHERE DIRECTED BY ENGINEER.
- ② 50mm TRENCH INSULATION – STYROFOAM HI 40, 2440mm WIDE. ADDITIONAL TRENCH INSULATION AS DIRECTED BY ENGINEER.
- ③ WARNING TAPE.
- ④ SAND BACKFILL, COMPACTED TO 90% STANDARD PROCTOR, MINIMUM 300mm COVER OVER PIPES.
- ⑤ WATER MAIN – DR11 HDPE PIPE c/w 50mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ⑥ SANITARY SERVICE – DR11 HDPE PIPE c/w 50mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ⑦ SAND BEDDING COMPACTED TO 90% STANDARD PROCTOR, 150mm (230mm IN ROCK).

NOTES:

1. PIPES TO BE SPACED 230mm, OR GREATER, FROM TRENCH WALL AND OTHER PIPES TO ALLOW COMPACTION.
2. TEST PITS TO BE DUG EVERY 15m TO A DEPTH OF 500mm BELOW PIPE INVERT TO CHECK FOR PRESENCE OF SILT. SUBEXCAVATE AS REQUIRED, TO A DEPTH OF 450mm BELOW PIPE INVERT AND BACKFILLED WITH GRANULAR B COMPACTED TO 95% STANDARD PROCTOR.
3. SANITARY SEWER TO HAVE A MINIMUM 3.0m COVER. IF COVER IS LESS THAN 3.0m, THE THICKNESS OF THE TRENCH INSULATION TO BE INCREASED.



EXISTING SURFACE	REINSTATEMENT
ASPHALT	2 X 37mm ASPHALT 150mm GRANULAR 'A' 300mm GRANULAR 'B'
GRAVEL ROAD	100mm GRANULAR 'A' 300mm GRANULAR 'B'



TITLE:

TRENCH DETAIL
W/M, SANITARY

DWG NO.:

U-2

SCALE:

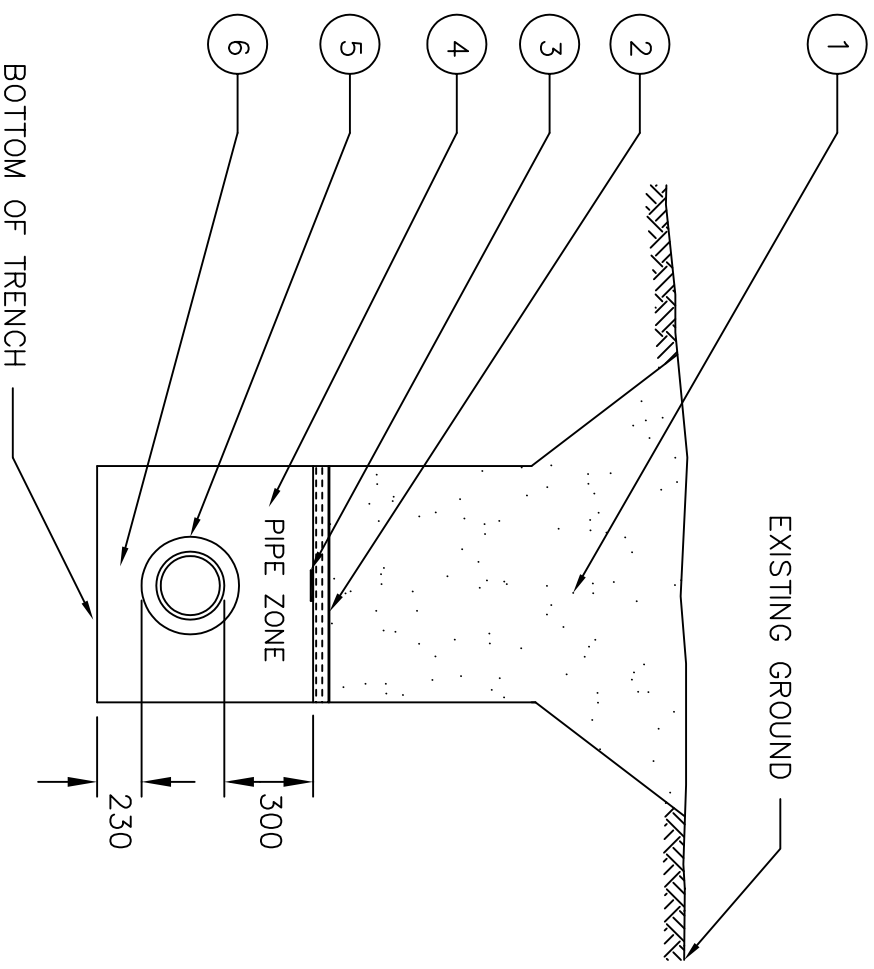
NTS

DATE:

MAR. 2004

KEY TO NUMBERED PARTS:

- ① SELECT NATIVE BACKFILL MATERIAL, OR ENGINEERED BACKFILL WHERE DIRECTED BY ENGINEER.
- ② 50mm TRENCH INSULATION – STYROFOAM HI 40, 1220mm WIDE. ADDITIONAL TRENCH INSULATION AS DIRECTED BY ENGINEER.
- ③ WARNING TAPE.
- ④ SAND BACKFILL, COMPACTED TO 90% STANDARD PROCTOR, MINIMUM 300mm COVER OVER PIPES.
- ⑤ WATER MAIN OR SANITARY SWER – DR11 HDPE PIPE c/w 50mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ⑥ SAND BEDDING COMPACTED TO 90% STANDARD PROCTOR, 150mm (230mm IN ROCK).



NOTES:

1. TEST PITS TO BE DUG EVERY 15m TO A DEPTH OF 500mm BELOW PIPE INVERT TO CHECK FOR PRESENCE OF SILT. SUBEXCAVATE AS REQUIRED, TO A DEPTH OF 450mm BELOW PIPE INVERT AND BACKFILLED WITH GRANULAR B COMPACTED TO 95% STANDARD PROCTOR.
2. SANITARY SEWER TO HAVE A MINIMUM 3.0m COVER. IF COVER IS LESS THAN 3.0m, THE THICKNESS OF THE TRENCH INSULATION TO BE INCREASED.

EXISTING SURFACE	REINSTATEMENT
ASPHALT	2 X 37mm ASPHALT 150mm GRANULAR 'A' 300mm GRANULAR 'B'
GRAVEL ROAD	100mm GRANULAR 'A' 300mm GRANULAR 'B'



TITLE:

TRENCH DETAIL
W/M OR SANITARY

DWG NO.:

SCALE:

NTS

DATE:

APR. 2005

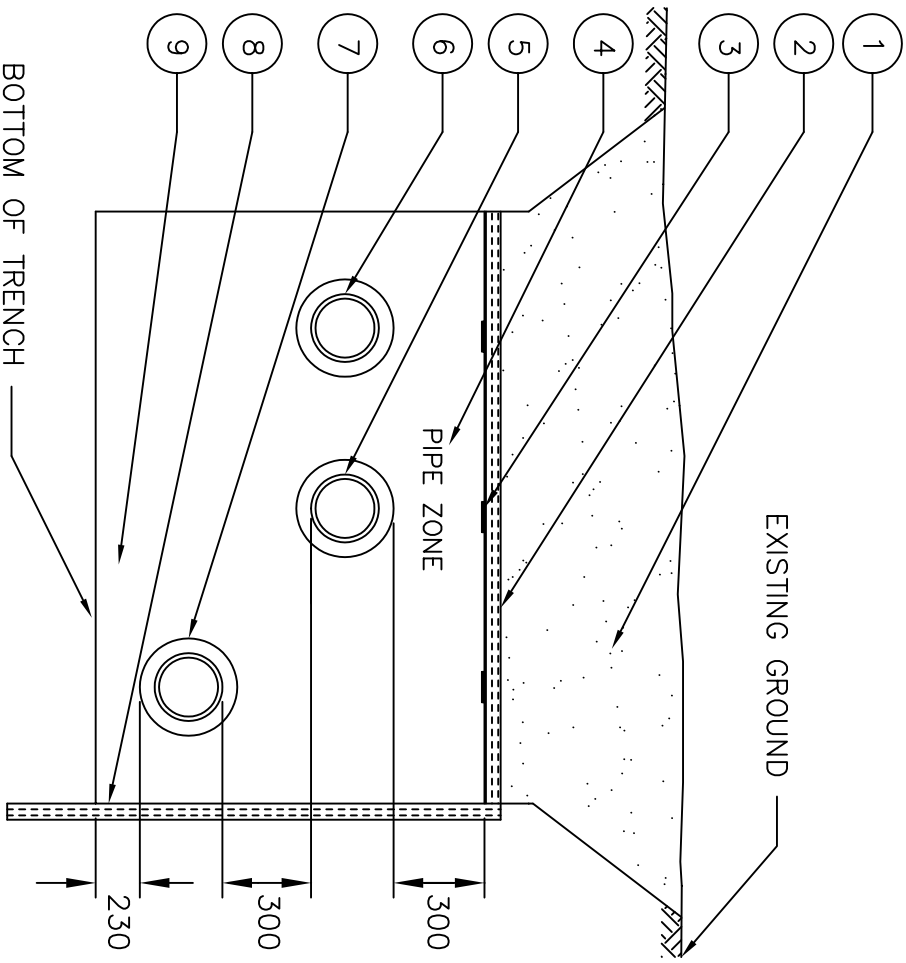
U-3

KEY TO NUMBERED PARTS:

- ① SELECT NATIVE BACKFILL MATERIAL, OR ENGINEERED BACKFILL WHERE DIRECTED BY ENGINEER.
- ② 50mm TRENCH INSULATION – STYROFOAM HI 40, 2440mm WIDE. ADDITIONAL TRENCH INSULATION AS DIRECTED BY ENGINEER.
- ③ WARNING TAPE.
- ④ SAND BACKFILL, COMPACTED TO 90% STANDARD PROCTOR, MINIMUM 300mm COVER OVER PIPES.
- ⑤ WATER MAIN – DR11 HDPE PIPE c/w 50mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ⑥ RECIRCULATION LINE – DR11 HDPE PIPE c/w 50mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ⑦ SANITARY SERVICE – DR11 HDPE PIPE c/w 50mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ⑧ VERTICAL TRENCH INSULATION – 50mm STYROFOAM HI 40, TO EXTEND FROM TRENCH INSULATION TO 450mm BELOW PIPE INVERT. TO BE INSTALL PARALLEL TO CULVERTS OR AS DIRECTED BY ENGINEER.
- ⑨ SAND BEDDING COMPACTED TO 90% STANDARD PROCTOR, 150mm (230mm IN ROCK).

NOTES:

1. PIPES TO BE SPACED 230mm, OR GREATER, FROM FROM TRENCH WALL AND OTHER PIPES TO ALLOW COMPACTION.
2. TEST PITS TO BE DUG EVERY 15m TO A DEPTH OF 500mm BELOW PIPE INVERT TO CHECK FOR PRESENCE OF SILT. SUBEXCAVATE AS REQUIRED, TO A DEPTH OF 450mm BELOW PIPE INVERT AND BACKFILLED WITH GRANULAR B COMPACTED TO 95% STANDARD PROCTOR.
3. SANITARY SEWER TO HAVE A MINIMUM 3.0m COVER. IF COVER IS LESS THAN 3.0m, THE THICKNESS OF THE TRENCH INSULATION TO BE INCREASED.



EXISTING SURFACE	REINSTATEMENT
ASPHALT	2 X 37mm ASPHALT 150mm GRANULAR 'A' 300mm GRANULAR 'B'
GRAVEL ROAD	100mm GRANULAR 'A' 300mm GRANULAR 'B'



TITLE: TRENCH DETAIL

DWG NO.:

W/M, RECIRC & SAN
VERTICAL TRENCH INSUL.

U-4

SCALE:

NTS

DATE:

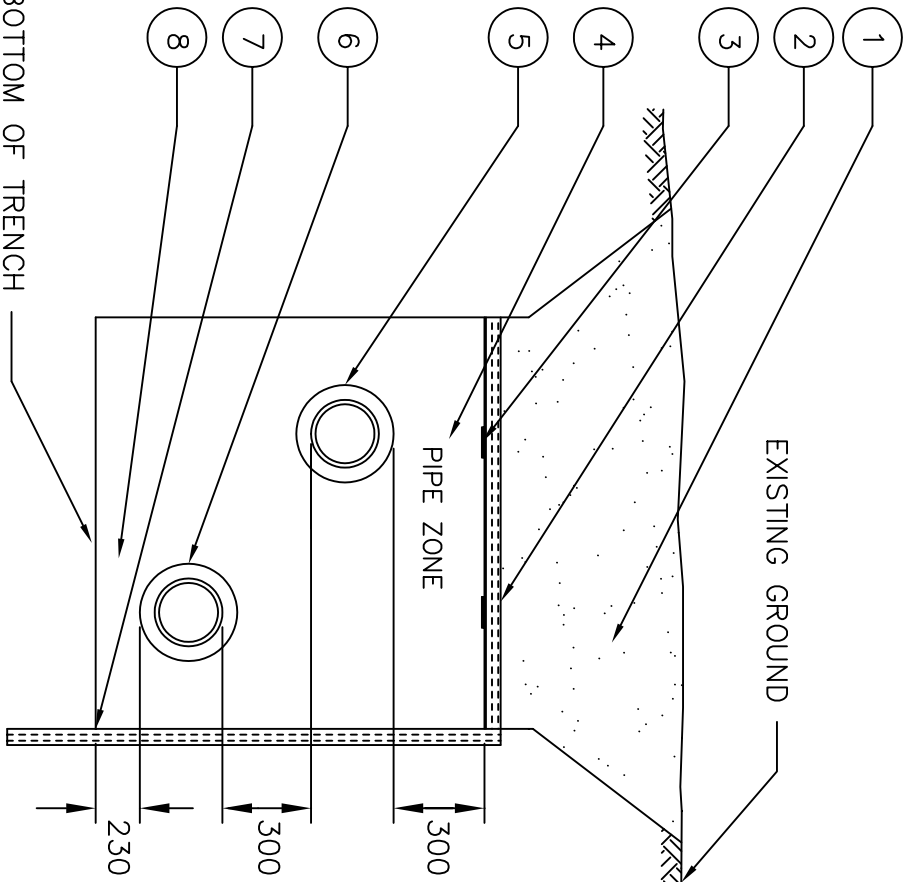
MAR. 2004

KEY TO NUMBERED PARTS:

- 1 SELECT NATIVE BACKFILL MATERIAL, OR ENGINEERED BACKFILL WHERE DIRECTED BY ENGINEER.
- 2 50mm TRENCH INSULATION – STYROFOAM HI 40, 2440mm WIDE. ADDITIONAL TRENCH INSULATION AS DIRECTED BY ENGINEER.
- 3 WARNING TAPE.
- 4 SAND BACKFILL, COMPACTED TO 90% STANDARD PROCTOR, MINIMUM 300mm COVER OVER PIPES.
- 5 WATER MAIN – DR11 HDPE PIPE c/w 50mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
- 6 SANITARY SERVICE – DR11 HDPE PIPE c/w 50mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
- 7 VERTICAL TRENCH INSULATION – 50mm STYROFOAM HI 40, TO EXTEND FROM TRENCH INSULATION TO 450mm BELOW PIPE INVERT. TO BE INSTALL PARALLEL TO CULVERTS OR AS DIRECTED BY ENGINEER.
- 8 SAND BEDDING COMPACTED TO 90% STANDARD PROCTOR, 150mm (230mm IN ROCK).

NOTES:

- 1. PIPES TO BE SPACED 230mm, OR GREATER, FROM FROM TRENCH WALL AND OTHER PIPES TO ALLOW COMPACTION.
- 2. TEST PITS TO BE DUG EVERY 15m TO A DEPTH OF 500mm BELOW PIPE INVERT TO CHECK FOR PRESENCE OF SILT. SUBEXCAVATE AS REQUIRED, TO A DEPTH OF 450mm BELOW PIPE INVERT AND BACKFILLED WITH GRANULAR B COMPACTED TO 95% STANDARD PROCTOR.
- 3. SANITARY SEWER TO HAVE A MINIMUM 3.0m COVER. IF TRENCH INSULATION TO BE INCREASED.



EXISTING SURFACE	REINSTATEMENT
ASPHALT	2 X 37mm ASPHALT 150mm GRANULAR 'A' 300mm GRANULAR 'B'
GRAVEL ROAD	100mm GRANULAR 'A' 300mm GRANULAR 'B'



TITLE: TRENCH DETAIL
w/m & SANITARY
VERTICAL TRENCH INSUL.

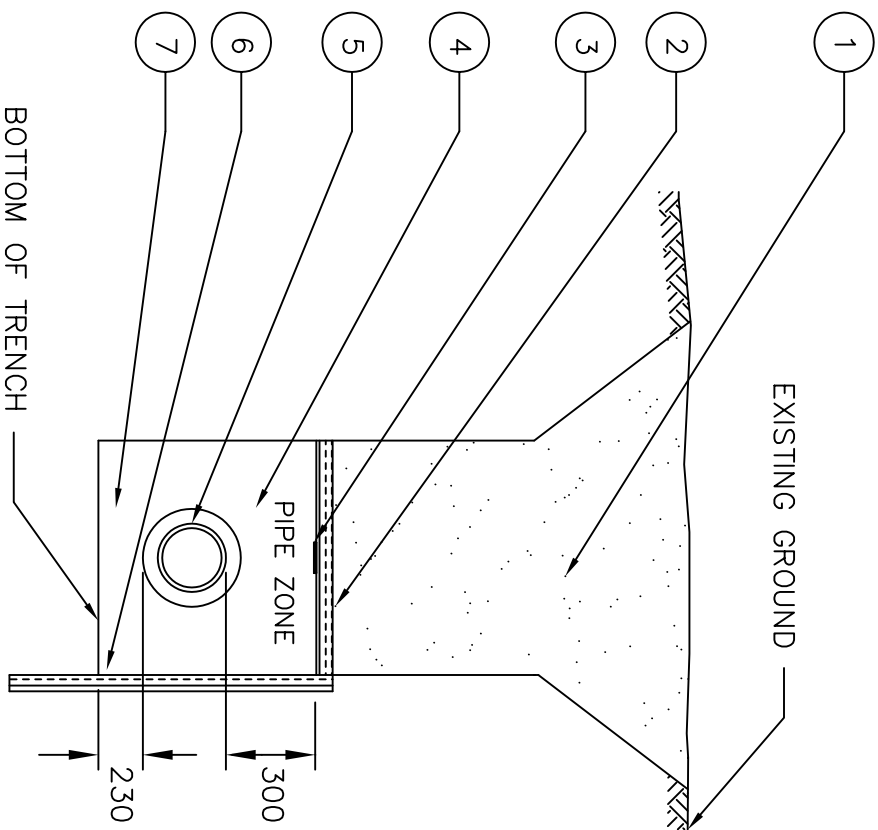
DWG NO.: U-5

SCALE: NTS

DATE: MAR. 2004

KEY TO NUMBERED PARTS:

- ① SELECT NATIVE BACKFILL MATERIAL, OR ENGINEERED BACKFILL WHERE DIRECTED BY ENGINEER.
- ② 50mm TRENCH INSULATION – STYROFOAM HI 40, 2440mm WIDE. ADDITIONAL TRENCH INSULATION AS DIRECTED BY ENGINEER.
- ③ WARNING TAPE.
- ④ SAND BACKFILL, COMPACTED TO 90% STANDARD PROCTOR, MINIMUM 300mm COVER OVER PIPES.
- ⑤ WATER MAIN OR SANITARY SEWER – DR11 HDPE PIPE c/w 50mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
- ⑥ VERTICAL TRENCH INSULATION – 50mm STYROFOAM HI 40, TO EXTEND FROM TRENCH INSULATION TO 450mm BELOW PIPE INVERT. TO BE INSTALL PARALLEL TO CULVERTS OR AS DIRECTED BY ENGINEER.
- ⑦ SAND BEDDING COMPACTED TO 90% STANDARD PROCTOR, 150mm (230mm IN ROCK).



NOTES:

1. TEST PITS TO BE DUG EVERY 15m TO A DEPTH OF 500mm BELOW PIPE INVERT TO CHECK FOR PRESENCE OF SILT. SUBEXCAVATE AS REQUIRED, TO A DEPTH OF 450mm BELOW PIPE INVERT AND BACKFILLED WITH GRANULAR B COMPACTED TO 95% STANDARD PROCTOR.
2. SANITARY SEWER TO HAVE A MINIMUM 3.0m COVER. IF COVER IS LESS THAN 3.0m, THE THICKNESS OF THE TRENCH INSULATION TO BE INCREASED.

EXISTING SURFACE	REINSTATEMENT
ASPHALT	2 X 37mm ASPHALT 150mm GRANULAR 'A' 300mm GRANULAR 'B'
GRAVEL ROAD	100mm GRANULAR 'A' 300mm GRANULAR 'B'



TITLE: TRENCH DETAIL

DWG NO.:

W/M OR SANITARY
VERTICAL TRENCH INSUL.

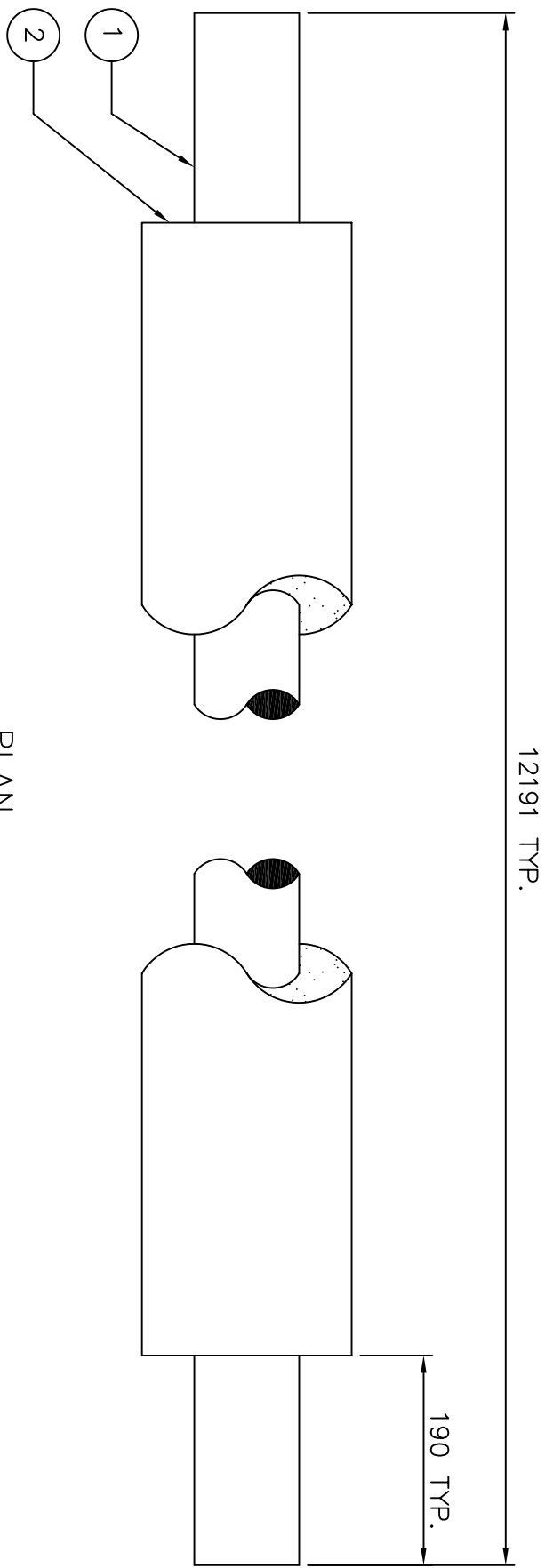
SCALE:

DATE:

NTS

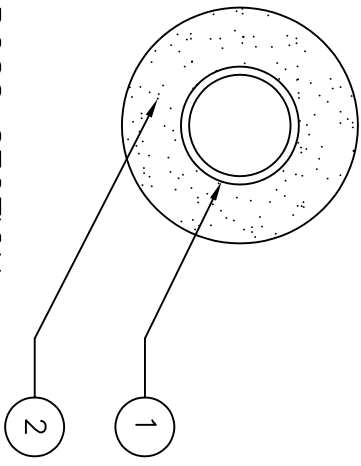
APR. 2005

U—6




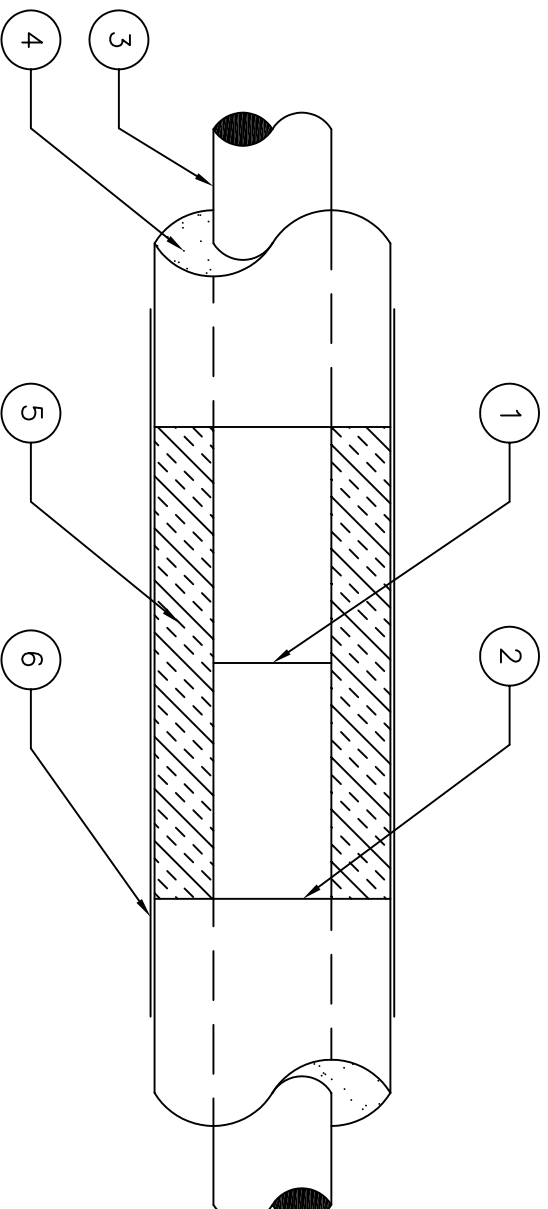
PLAN

- KEY TO NUMBERED PART:
- ① HDPE SERIES DR 11 WATER OR SANITARY SEWER MAIN.
 - ② 50mm NOMINAL THICKNESS SHOP CAST POLYURETHANE INSULATION c/w BLACK JACKET.



CROSS SECTION

	TITLE:	TYPICAL	DWG NO.:
	SANITARY SEWER OR WATER MAIN		U-7
SCALE:	DATE:		
NTS	MAR. 2004		



KEY TO NUMBERED PART:

- ① FIELD BUTT FUSION JOINT MADE BY A QUALIFIED AND LICENSED TECHNICIAN.
- ② FIELD COAT ALL EXPOSED POLYURETHANE WITH MASTIC.
- ③ HDPE SERIES DR 11 WATER OR SANITARY SEWER MAIN.
- ④ 50mm NOMINAL THICKNESS SHOP CAST POLYURETHANE INSULATION c/w BLACK JACKET.
- ⑤ POLYURETHANE HALF SHELLS CUT TO FIT AND COATED WITH MASTIC.
- ⑥ MASTIC LINED HEAT SHRINK TAPE – 100mm OVERLAP ON SHELLS AND PIPE JACKET.



TITLE: JOINT DETAIL
SANITARY SEWER
OR WATER MAIN

SCALE:
NTS

DATE:
MAR. 2004

DWG NO.:

U—8