Construction Tender

Project No: 05-2020

Name of Project: Cape Dorset P-Lake Sewage Lagoon

Project Location: Cape Dorset

Nunavut Water Board
MAR 1 3 2006
Public Registry

Government of Nunavut

Revised: April 2000

ADDENDUM

Project No.	Project Title:
Division/Region:	Client:
Community:	Date of Issue:
Contractor:	Consultant:

TO ALL BIDDERS

1. General:
   - 1.1 This addendum shall be read in conjunction with the Drawings and Specification prepared for the above.
   - 1.2 Where inconsistent with the above, this addendum shall govern. This addendum forms an integral part of the Contract Documents and shall be included therein.
   - 1.3 No consideration shall be allowed for increase to the CONTRACT PRICE (extras) due to failure of the Contractor or Sub-contractor not being familiar with this addendum.
   - 1.4 The Tenderer will insert in the Tender Form the numbers of the addenda received by him during the tendering period and taken into account by him in preparing his tender.

SCOPE OF THE ADDENDUM

NUNAVUMMI NANGMINIQAQTUNIK IKAJUUTI (NNI POLICY) FIRST COMPREHENSIVE REVIEW

The First Comprehensive Review of the NNI Policy was completed in the fall of 2003. Cabinet has approved the report and the recommendations of the NNI Review Committee. **The changes affecting this tender are outlined herein and take effect on April 1st, 2004.**

1. INSTRUCTIONS TO TENDERERS

.1 Reference: Clause 4 – Inuit, Nunavut and Local Incentives and Appendices "B-1" and "B-2"

Instruction: Tenderers are hereby reminded of the requirements to maximize the use of Nunavut, Inuit and/or Local subcontractors and suppliers available to the fullest extent practical on this project. Further to clause 4, and pursuant to the 2003 First Comprehensive Review of the NNI Policy, the GN hereby requires Tenderers to invite Nunavut, Inuit and/or Local companies to bid on subcontracts.

2. APPENDIX J - NUNAVUMMI NANGMINIQAQTUNIK IKAJUUTI (NNI POLICY)

.1 Reference: Section 7.0 – Policy Objectives

Instruction: Insert the following paragraph at the end of Section 7.1: "These objectives are not listed in order of importance and should not be interpreted as such."

.2 Reference: Section 11.0 – Evaluation Process and Bid Adjustment

.1 Instruction: Sub-section 11.1 (b) is hereby revised as follows:

all Tenders meeting the requirements of 11.1.a and the cost criteria of relevant Proposals shall then be adjusted based upon the Nunavut Business status, Inuit Firm status, and Local status of the proponent, general contractor, subcontractors, and suppliers;

ADDENDUM

.2 Instruction: Sub-section 11.1. (b) (i) is hereby revised as follows:

the adjustment for the labour component shall be based on estimates of payroll expenditures made by the general contractor, subcontractors and suppliers, for Nunavut, Inuit, and Local payroll expenditures that form part of the bid; but no bid adjustment shall be given for estimates of Inuit payroll expenditures over and above the minimum required.

For greater clarity and certainty, the interpretation of 11.1. (b) (i) above means that no bid adjustment will be given for Inuit Labour, over and above the minimum requirement set out in Appendix "K".

For Example: On a total payroll estimate of $350,000 where the Inuit payroll estimate is $200,000 and the minimum Inuit payroll requirement is 45%, the bidder shall only receive bid adjustments on the first $157,500 of Inuit payroll (45%), even though the estimated Inuit payroll is approximately 67%.

.3 Instruction: **For all Tenders closing** on or after April 1, 2004:

Sub-section 11.1. (c) – Bid Adjustment Values:

i. the bid adjustment values shall be as follows:
   (i) Nunavut firm status, an adjustment of 7%;
   (ii) Inuit firm status, an adjustment of 7%;
   (iii) Local status, an adjustment of 7%.

.3 Reference: Section 12.0 - Bonuses and Penalties

Instruction: Replace sub-section 12.3 with the following language:

Where applicable, in the area of employment, a bonus or penalty shall be calculated as follows:

(a) a bonus shall be calculated as 1% of the total labour content of the contract for each 1% of the amount by which employment exceeds the mandatory requirement; or
(b) a penalty shall be calculated as 2% of the total labour content of the contract for each 1% of the amount by which employment does not meet the mandatory requirement.

For greater clarity and certainty, s.12.3 (a) means a Bonus of 1% of the Total Payroll when the Contractor exceeds the minimum Inuit Labour requirement, and s.12.3 (b) means a Penalty of 2% of the Total Payroll when the Contractor fails to meet the minimum Inuit Labour requirement.

Example 1: Where the minimum requirement for Inuit Labour is 45%, and the Contractor, at Final Completion of the Work, has actually spent 67% of his payroll dollars on Inuit Labour, the Inuit Labour Bonus is calculated as follows:

Total Payroll x Percent Exceeded* or $350,000 x 22% = $77,000.

*Percent Exceeded = Percent Achieved - Percent Required

ADDENDUM

Example 2: Where the minimum requirement for Inuit Labour is 45%, and the Contractor, at Final Completion of the Work, has actually spent 37% of his payroll dollars on Inuit Labour, the Inuit Labour Penalty is calculated as follows:

Total Payroll x Percent Not Met* or $350,000 x 8% x 2 = $56,000.

*Percent Not Met = Percent Required - Percent Achieved

.4 **Reference: Section 18.0 – Appeals**

Instruction: Replace Section 18 of the NNI Policy with the new Section 18 (4 pages attached). An Appeals Board has now been established.

3. GENERAL CONDITIONS

.1 **Reference: Clause 4 – Subcontracting by Contractor**

Instruction: Add the following sentence to GC4.3: The Contractor shall invite Nunavut, Inuit and/or Local companies to bid on subcontracts where the Contractor is not already using Nunavut, Inuit and/or Local companies as subcontractors.

END OF ADDENDUM

Project Officer	Date
Project Manager	Date
Other	Date

ADDENDUM

Addendum No. TWO (2)

Project No.	Project Title:
Division/Region:	Client:
Community:	Date of Issue:
Contractor	Consultant

TO ALL BIDDERS

1. General:
   - .1 This addendum shall be read in conjunction with the Drawings and Specification prepared for the above.
   - .2 Where inconsistent with the above, this addendum shall govern. This addendum forms an integral part of the Contract Documents and shall be included therein.
   - .3 No consideration shall be allowed for increases (extras) to the CONTRACT PRICE due to failure of the Contractor or Sub-contractor not being familiar with this addendum.
   - .4 The Tenderer will insert in the Tender Form the numbers of the addenda received by him during the tendering period and taken into account by him in preparing his tender.

SCOPE OF THE ADDENDUM

1. Reference: Entire Document

Instruction: All references to the Department of Public Works & Services shall be read as "the Department of Community and Government Services", "CGS" or "the Owner" as applicable.

2. Reference: General Conditions 61 and 62

Instruction: Delete GC62. The Contractor will obtain and pay for course of construction insurance for this project. As a result, re-number GC61 General Insurance Conditions as GC62 and insert the following replacement clause as a new GC61:

GC61 PROPERTY INSURANCE (All "Risks" Course of Construction Insurance)

61.1 Contractor will obtain and pay for course of construction insurance for this project, as described in the following paragraphs.

61.2 **All "Risks" Course of Construction Insurance** on a very broad basis, to protect as Insureds, all those who have direct participation in the construction project, for claims which may arise as a result of loss or damage during course of construction.

61.2 **Coverage:** "All Risks" of physical loss or damage or destruction while said project is in course of construction, site preparation, reconstruction, repair, erection, fabrication, testing, and including all materials, equipment machinery, structures, property, fitting, fixtures, betterment, and supplies of any nature whatsoever to enter into and form part of the finished project while at the site of operations or elsewhere in Canada or the Continental United States or America, all the property of the Insureds or the property of others for which the insureds have assumed responsibility, or for whom the Insured are required to carry insurance, including while on a river or lake crossing ferry in connection with land transportation, and including goods in transit to the site.

61.3 **Term:** From the commencement of work to the date of the Substantial Completion as certified by the Owner.

61.5 **Limit of Liability:** The limit of liability at the project site will be for the estimated full completed value of the project including, but not limited to, owner-supplied labour or materials, reasonable profit, insurance costs, overhead, taxes, labour, administrative fees and all other expenses which are incurred as additional costs as a result of a partial or total loss.

61.6 **Deductible:** The Contractor shall be responsible for the deductible to a maximum of $50,000.

END OF ADDENDUM

Project Officer:	Date:
Projects Manager:	Date:
Other:	Date:

TABLE OF CONTENTS – August 2003

Tender

Contract

Specifications

GOVERNMENT TENDER

Community & Government Services, Hon. Levinia Brown, Minister

Cape Dorset P-Lake Sewage Lagoon

Construction of a One Cell Sewage Lagoon and Associated Road Works

- Cape Dorset, Nunavut -

For the purposes of this tender call the provisions of the Nunavummi Nangminiqaqtunik Ikajuuti (NNI Policy) apply.

Sealed tenders addressed to the Assistant Regional Director, Regional Director's Office, Department of Community & Government Services, Government of Nunavut, Aqsarnit Building, Pond Inlet, NU *X0A OSO* will be received on or before:

4 P.M. Local Time, Pond Inlet, *date___*, 2006

A $50.00 non-refundable charge is levied for tender documents. To be considered each tender must be submitted on the forms provided and must be accompanied by the security stated in the tender documents.

Tender Enquiries to: Rocky Jaworenko, Contracts Clerk
Tel: (867) 899-7617

Technical Enquiries to: Anjan Joshi, **Project Officer**
Government of Nunavut
Tel: (867) 899-7312
Or
Gary Strong, Dillon Consulting
Tel: (867) 920-4555

INSTRUCTIONS TO TENDERERS

1. INSTRUCTIONS

.1 Tenders are to be sealed and should be submitted in the envelopes provided.

.2 Tender envelopes must show the Project Name, Closing Date, Name and Address of the Tenderer on the **Exterior** of the Envelope.

.3 Tenders must be submitted on the forms provided.

.4 Failure by the Tenderer to comply with these Instructions to Tenderers may result in the tender submitted being disqualified. Disqualification shall be at the sole discretion of the Owner.

2. RECEIPT OF TENDERS

.1 Tenders must be received at the Tender Address by the Owner on or before the exact time and date fixed for their receipt.

.2 Any Tenders received after the closing time shall be rejected and returned unopened to the Tenderer. If only one Tender is received and that Tender is received late, the Tender may be accepted at the sole discretion of the Owner.

.3 Tenders shall be opened as soon as practicable after the tender closing time in accordance with Instruction 4.4.

.4 Tenders received by facsimile, except as permitted elsewhere in this tender, will not be accepted and if received shall be disqualified.

3. AMENDMENTS TO TENDERS

.1 Amendments to a tender by letter, facsimile or other written means are acceptable provided that the amendment:

(.i) Is received on or before the exact time and date fixed, for the receipt of Phase I of the Tender (except for amendments to Appendix B-2 Substantiation of Bid Adjustment) and;

(.ii) Contains the tender reference, closing date, name and address of the contractor and a signature.

.2 Amendments to tenders received by facsimile will be accepted by the Owner provided that the conditions included in Clause 3.1 are met and in addition:

(.i) Amendments to tenders are transmitted via the Owner's facsimile number:

(867) 899-7327 in Pond Inlet, NU

(.ii) The Owner shall not be held liable for any claim, demand or other action should a facsimile transmission be interrupted, not received in its entirety, received after the stated closing time and date, received by another facsimile unit other than stated herein, or for any other reason over which the Owner does not have control.

(.iii) The amendment should indicate only the applicable changes and in such a manner that the total bid is not revealed.

.3 Verbal instructions will not be considered as a valid instruction for tender purposes, nor shall they be considered as having any bearing upon the tender submission.

4. INUIT, LOCAL AND NUNAVUT INCENTIVES and Appendices "B-1" and "B-2"

.1 One of the priorities of the Owner is to ensure that materials, equipment, labour and other services of Local, Nunavut and Inuit businesses are used to the fullest extent practical on this project, therefore, the Owner has implemented the Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy which shall apply on this contract. Tenderers are required to comply with the requirements of the NNI Policy and to submit the required information within the deadlines stipulated. A copy of the current NNI Policy is attached as Appendix J.

.2 The Tenderer shall show intention to not only meet the minimum levels of Inuit Labour prescribed in Appendix K of this tender, but also to use the maximum amount of Local, Nunavut and/or Inuit labour, and subcontractors and suppliers available. Failure to do so indicated by a comparison to other Tenderers may result in disqualification by the Owner as a non-responsive tender. A Contractor that for previous contracts with similar prescribed Inuit Labour had failed to meet the minimum prescribed Inuit Labour MAY be deemed "not responsible" (as defined in the Government Contract Regulations) for this tender.

.3 For purposes of this tender, Local shall be considered to be the community in which the work is undertaken unless noted otherwise in these Tender Documents.

.4 In order to comply with the requirements of this Tender and specifically those included in the "Instructions to Tenderers" Clause 4, the Contractor is required to complete the attached forms entitled Appendix "B-1" "General Contractors & Subcontractors Dollar Amount" and Appendix "B-2" "Substantiation of Bid Adjustment".

.5 **Joint Ventures: If the bidder is comprised of more than one party as in the case of a joint venture, (but not a partnership) for the purposes of the application of the NNI adjustments, each party to the joint venture will be treated as a separate contractor, and the value of their respective Nunavut, Inuit, and local content will be treated in the same manner as separate contractors.**

.6 **This Tender will close in two phases as follows:**

Phase I Tender Close: The Contractor shall complete the Tender Form and all required appendices and shall submit them no later than the time identified for the Phase I closing of Tenders.
The Contractor shall indicate on the Appendix "B-1" "General Contractors & Subcontractors Dollar Amount" the bid value and names of all major businesses which will be providing goods and services to the Contractor in order to complete the Work. No further detail is required at the time of Phase I Tender closing. At the time established for the Phase I Tender closing, the Owner shall receive Tenders and shall record the names of the Contractors who have submitted Tenders. Those Tenders shall remain unopened and held in a secure place by the Owner for a period of 24 hours.

Phase II Tender Close: Within 24 hours following the Phase I Tender close, excluding holidays and weekends, the Contractor shall supply to the Owner a detailed Appendix "B-2" "Substantiation of Bid Adjustments" showing the actual amounts of Local, Nunavut, Inuit and Other content in respect to Payroll, Material, Equipment, Transportation, Accommodation and Other Costs.

This detailed Appendix "B-2" "Substantiation of Bid Adjustments" shall be submitted in a sealed envelope or by facsimile with clear identification as to the name of the Tender and the Tenderer, and shall be received prior to the Phase II Tender close which shall be 24 hours, excluding holidays and weekends, after the Phase I Tender closing. Detailed Appendix "B-2" "Substantiation of Bid Adjustments" received late may be disqualified.

Bids shall be opened after the Phase II closing.

NOTE 1: The Contractor shall only receive a bid adjustment when a completed Appendix "B-1" "General Contractors & Subcontractors Dollar Amount" and Appendix "B-2" "Substantiation of Bid Adjustments" have been submitted in accordance with the above. Tenders submitted without such a submission shall receive no bid adjustment at all.

5. SCHEDULE OF UNIT PRICES

.1 The Tenderer shall submit a schedule of unit prices on Appendix "C" or Appendix "D" as appropriate. Unit prices shall include the cost to supply and install as appropriate, and include all statutory charges, overhead, profit and the Contractor's contingency allowance.

6. OPTIONS & SUBSTITUTIONS SPECIFIED BY THE OWNER - Appendix "E"

.1 Tenders shall be based on the materials, methods, firms and equipment named in the Specifications and this shall constitute the base bid. Where more than one material or manufacturer is specified, any one of those specified may be selected and included in base bid.

.2 The Owner may wish to consider options or substitutions to the base bid. When the Owner lists items in Appendix "E" " Contractors should indicate the effect on the stipulated price that each item makes to the base bid. The lowest acceptable tender may be determined by adding or deducting any or all of these items to the base bid. Failure to complete this Appendix "E" when requested may result in the tender being disqualified at the sole discretion of the Owner.

7. OPTIONS PROPOSED BY THE TENDERER - Appendix "F"

.1 Tenderers may propose their own option in Appendix "F". To be considered the following requirements shall be met:

(a) Total Tender amount quoted must be based on products specified and not on options.

(b) Options proposed shall be listed and any difference in price shown in the appropriate place on Appendix "F".

(c) Options proposed must allow for all changes and adjustments in other work as may be necessary to form a complete and finished job. No additional claims will be considered at a later date.

(d) Submissions must contain sufficient information to enable the Owner to determine the acceptability of such proposed options. Include such information as reasons for submission, manufacturing details, performance data, dimensions and clearances, effects on other work and other pertinent facts.

(e) The Owner reserves the right to accept or reject any option proposed by the Tenderer.

(f) By submitting an option on Appendix "F" the Tenderer relinquishes any proprietary right to such option. The Owner reserves the right to release the Option to other Tenderers in order to obtain competitive prices.

8. ADDENDA

.1 Addenda issued prior to the tender closing time shall be incorporated into the tender and shall become part of this tender. Receipt of addenda shall be acknowledged on the Tender Form by the Tenderer. Failure to acknowledge Addenda may result in the disqualification of the Tender at the sole discretion of the Owner.

9. TENDERING DOCUMENTS - Appendix "A"

.1 Tenders shall be based on the documents listed in Appendix "A" "List of Tender Documents".

10. BID SECURITY AND INSURANCE REQUIREMENTS

.1 When Tendering

(a) **For a Tender Less than $100,000:** No bid security accompanies this tender.

(b) **For a Tender $100,000 and Over:** The Tenderer shall enclose bid security in accordance with either:

(i) a Bid Bond, in a form approved by the Federal Treasury Board and from a company whose bonds are acceptable to the Owner, in an amount of at least 10% of the Tender. Bonds shall be made payable to the Owner or;

(ii) a bid security deposit in an amount of at least 5% of the tender. The deposit must be a certified cheque, Bank Draft, a bank Irrevocable Letter of Guarantee, or such other bid security as the Owner considers acceptable. The bid security deposit must be payable to the Owner.

(c) The bid security deposit, as indicated above, may be forfeited at the discretion of the Owner if the Tenderer refuses to enter into a contract when called upon to do so.

(d) The Tenderer understands that if the bid security furnished is not in the approved form, as described herein, the tender is subject to disqualification at the sole discretion of the Owner

.2 Upon Award of Contract

(a) Upon notification of acceptance of a Tender, the successful Tenderer shall furnish within 14 days of the date of the notification of acceptance:

(i) The security specified in Clause GC56 to GC57 inclusive of the attached contract.

(ii) The Insurance specified in Clause GC58 to GC 62 inclusive of the attached contract.

11. SIGNATURES

.1 Tenders are to be properly signed and executed in accordance with the Laws of Nunavut.

.2 The Tenderer, or the person or persons duly authorized to sign on his behalf, must initial and date each and every correction, change, erasure or alteration contained in this completed tender document.

.3 At the sole discretion of the Owner, the failure by the Tenderer to properly sign and execute the tender may result in the disqualification of the tender.

12. GOODS AND SERVICES TAX

.1 The Tenderer shall exclude the Goods and Services Tax from his bid shown on bid forms and appendices.

.2 The Government of Nunavut will pay the Goods and Services Tax (GST); however, do not include the GST in your bid amounts shown on the tender form and appendices.

.3 The successful Tenderer may invoice for Goods and Services Tax (GST).

.4 Further information in this regard may be obtained from the Owner at the specified Tender Address.

13. WORKERS COMPENSATION ACT/COMPANIES ACT AND GENERAL COMPLIANCE WITH LAWS

.1 Tenderers are hereby notified that the Owner will check with the appropriate agencies prior to award of a contract to ensure that the successful Tenderer complies with the Workers Compensation and Companies Acts.

.2 The Contractor shall be required to comply, and shall require its subcontractors to comply, with all applicable laws, orders, rules and regulations; and, without limiting the generality of the foregoing, the Contractor shall at its sole expense comply with all unemployment insurance, Worker's Compensation, income tax, payroll tax, Canada Pension Plan, occupational health and safety and environmental protection legislation.

14. REQUIREMENT FOR USING HOTELS OR BED AND BREAKFAST FACILITIES

.1 On contracts where a Commercial Room and Board Facility (as defined below) exists within the community, the Contractor is required to use a Commercial Room and Board Facility to house and feed all workers directly employed by the Contractor and by any subcontractor or agent or any other business working on the project. The Contractor is not required to use Commercial Room and Board Facilities for workers who are Local Residents as defined in the NNI Policy.

.2 The following definitions apply to this contract:

a. "Commercial Room and Board Facility" means a Hotel or a Bed and Breakfast (Tourist Home) that holds a Tourist Establishment Licence issued by the GN under the Travel and Tourism Act.

b. "Community" means the community in which the work is located as defined in the contract and includes the entire area within a 20-kilometre radius of the community.

.3 The Commercial Room and Board Facility must:

a. meet the applicable requirements under the Public Health Act, and of the Eating or Drinking Place Regulations

b. 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.

15. STORAGE OF PROPANE CYLINDERS

.1 The successful Tenderer is advised that they are responsible for the proper care and storage of propane cylinders on the job site in accordance with the Nunavut Fire Prevention Act. The penalty for non-compliance is up to $10,000 fine and/or 1 year jail term.

A copy of the Nunavut Fire Prevention Act is available by contacting:

The Fire Marshall's Office
Department of Community Government and Transportation
Government of Nunavut
Tel: (867) 975-5316 Fax: (867) 975-5330

16. TRANSPORTATION

.1 The Contractor is to comply with requirements of Appendix "H" titled "Transportation of Materials".

17. AVAILABILITY OF OWNER STOCKPILED GRANULAR MATERIAL

.1 Granular materials are not available from Owner's stockpiles. Tenderers are advised to make enquiries regarding the availability and cost of granular material in the community.

a. In many communities, purchase of granular materials including delivery and placement, is available from either the local hamlet office or from a local contractor.

b. If the Contractor obtains granular material directly from the local borrow pit/quarry, they shall have all required borrow pit/quarry permit(s) in place, and shall submit a copy to the Engineer prior to obtaining the granular materials, and shall pay applicable fees.

i. Contact Community Government and Transportation (CGT) Regional Office, Planning and Lands Division, to apply for borrow pit/quarry permits; certain Hamlets may be able to grant these permits.

ii. Contractors are advised that:
- **they are legally bound by the permit to adhere to conditions and requirements stipulated in the borrow pit/quarry permit, and**
- **the granting of a borrow pit/quarry permit is subject to a Nunavut Impact Review Board (NIRB) screening process, which can take a number of months for approval."**

18. ACCEPTANCE

.1 Tenders containing qualifications other than in the manner prescribed may be disqualified at the sole discretion of the Owner.

.2 The submission of the lowest or any tender will not necessarily result in the award of a contract. The Owner reserves the right to cancel this tender, in whole or in part at any time and to re-tender the same for any reason whatsoever without incurring any liability, and no bidder will have any claim against the Owner as a consequence.

.3 The Owner reserves the right to negotiate the tendered price solely with the low bidder (after adjustments in accordance with the Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy), in order to achieve a reduced scope of work and price of up to 15%. The Owner further reserves the right to re-invite tenders from the low bidders without going to public tender in order to achieve a reduced scope of work greater than 15%, so long as the fundamental nature of the contract has not changed.

END OF INSTRUCTIONS TO TENDERERS

TENDER FORM

1. PROJECT INFORMATION

Project Title: Cape Dorset P-Lake Sewage Lagoon

Project Location: Cape Dorset Project Number: 05-2020

Project Owner: The Government of Nunavut, herein the "Owner", represented by the Minister of the

Department of Community & Government Services

2. OFFER
(Information to be completed by Tenderer)

_____
Company Name

(herein the "Tenderer") offers to the Owner to furnish all necessary tools, plant, services, materials and labor to execute and complete in a careful and workmanlike manner the Work described in the Plans and Specifications for the prices as set out in Clause 4 or 5 of this Tender Form. The Tenderer hereby acknowledges receipt of Addenda No.1 to No.2 inclusive and hereby agrees they form part of this Tender.

3. GENERAL AGREEMENT
(Information to be completed by Tenderer)

The Tenderer agrees:

.1 To substantially perform the Work in compliance with the required completion schedule stated in the tender documents, or if no schedule is stated, to substantially perform the Work within _____ weeks from the date of notification of acceptance of the tender, or within a reasonable period of time after award;

.2 That he 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 sources of supply of the materials required; has investigated labor conditions and has arranged for the continuous performance of the Work described in the Tender Documents;

.3 That the list of Tender Documents included in Appendix "A" shall be and is the complete tender and this offer is made subject to all provisions contained therein;

.4 That this tender supersedes and cancels all communications, negotiations, and agreements relating to the Work other than contained in the completed tender.

4. FOR A CONTRACT BASED ON A LUMP SUM (Information to be completed by Tenderer)

The Tenderer agrees that the following is the lump sum referred to in Clause 2 of this Tender Form and that this is the Tenderer's total Tender price:

_____DOLLARS ($_____)

An illegible submission may be disqualified at the sole discretion of the Owner. When there is a discrepancy between the written and numerical amount, the lowest version will govern.

TENDER FORM

5. FOR A CONTRACT PRICE BASED ON UNIT PRICES (Information on Appendix "D" to be completed by Tenderer)

(a) **For a Unit Price Contract, the Contractor shall complete Appendix "D".**

(b) For a unit price contract, the contract value shall be the Total Estimated Contract Price shown on Appendix "D".

(c) When an arithmetic error is identified on Appendix "D", the tendered Unit Price shall take precedence over the Total Estimated Contract Price and the Owner shall correct the arithmetic error as explained below.

(d) The Total Estimated Contract Price shall equal the sum of all Extensions (Column 6) for all items listed on Appendix "D". In the event that an arithmetic error is made in adding the individual Extensions listed in Column 6, the Owner shall correct the arithmetic error.

(e) Each Extension shall be equal to the Estimated Quantity (Column 3) multiplied by the tendered Unit Price (Column 5). In the event that an arithmetic error is made in multiplying the Estimated Quantity (Column 3) by the tendered Unit Price (Column 5) the Owner shall correct the arithmetic error including the Extension and the Total Estimated Contract Price.

(f) The Total Estimated Contract Price is based on estimated quantities; the final Contract amount owing to the Contractor shall be determined by taking the actual quantities that are incorporated in, or made necessary by the Work, as confirmed by count and measurement, and multiplying by the appropriate tendered Unit Price adjusted by any changes that are made in accordance with the provisions of the Contract Documents.

6. DECLARATIONS (Information to be completed by Tenderer)

The Contractor hereby declares that:

.1 No person, firm or corporation other than the undersigned has any interest in this Tender or in the proposed Contract for which the Tender is made, except as revealed by the tender or as may be required by the terms of this Contract for which the Tender is made;

.2 This Tender is irrevocable for a period of thirty (30) calendar days from the date of Phase I Tender Closing, as explained in Instructions to Tenderers 4.4;

.3 The Tenderer acknowledges that the Owner may extend the above thirty (30) day period to sixty (60) days provided that notification of extension is made within fifteen (15) calendar days of Phase I Tender Closing date, and that this extension shall result in an increase or decrease to the stipulated price of:

$_____ addition to stipulated price

or

$_____ reduction to stipulated price

(Any increase and decrease to the stipulated price, shall not be subject to an adjustment under the Nunavummi Nangminiqaqtunik Ikajuuti Policy.)

TENDER FORM

7. SIGNATURES (Information to be completed by Tenderer)

Signed, sealed and submitted for and on behalf of:

Company_____
(Full Legal Business Name)

_____
(Street Address)

_____
(Mailing Address)

_____
(Community, Territory/Province and Postal Code)

Signature_____

Name & Title_____

Dated at_____ this_____ day of_____, 20

Witness_____

Dated at_____ this_____ day of_____, 20

LIST OF TENDER DOCUMENTS - APPENDIX A

(Information to be completed by OWNER)

Project Number: 05-2020

The following is the list or description of the tender documents referred to in the Tender for this Project.

Tender

1. Tender Advertisement
2. Instructions to Tenderers
3. Tender Form
4. Appendices to Tender: A, B, B-1, B-2, C, D, E, F, G, H, I, J and K
5. Addenda (issued during Tender period): Addendum#____ to ____
   (list Addenda when preparing the contract documents after award)

Contract

1. Articles of Agreement
2. Terms of Payment
3. General Conditions
4. Special Provisions:
5. Drawings (list):

   Drawing numbers 000, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110

6. Technical or General Specifications
   Refer to technical specification index

Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy Forms - Appendix B

LOCAL/NUNAVUT/INUIT EMPLOYMENT AND TRAINING

Local/Nunavut/Inuit employment and training are high priorities with the Government of Nunavut (GN). General Contractors and Sub-contractors contracted for work on Government of Nunavut projects are required to hire Local and Nunavut and Inuit residents to the maximum extent possible. Information regarding available Local and Nunavut and Inuit workers can be obtained from a Federal Government Employment Centre, a Federal Government Outreach Centre, or Hamlet Office, and Education Department Career Centres of the Government of Nunavut.

Federal Government Employment Centres:

Location	Phone Number	Facsimile Number
Rankin Inlet	(867) 645-2853	(867) 645-2148
Iqaluit	(867) 979-6271	(867) 979-6070

Federal Government Outreach Centres or Hamlet Offices:

Location	Phone Number	Facsimile Number
Arviat	(867) 857-2678	(867) 857-2502
Qikiqtarjuaq (Broughton Island)	(867) 927-8832	(867) 927-8120
Cape Dorset	(867) 897-8943	(867) 897-8030
Clyde River	(867) 924-6220	(867) 924-6293
Pond Inlet	(867) 899-8935	(867) 899-8940
Cambridge Bay	(867) 983-2120	(867) 983-2570
Baker Lake	(867) 793-2517	(867) 793-2509
Taloyoak	(867) 561-6341	(867) 561-5057
Kuugaruk (Pelly Bay)	(867) 769-6281	(867) 769-6069
Kugluktuk (Coppermine)	(867) 982-4471	(867) 982-3060
Gjoa Haven	(867) 360-7141	(867) 360-6049
Igloolik	(867) 934-8830	(867) 934-8757
Pangnirtung	(867) 473-8953	(867) 473-8832

Training is encouraged on all construction projects and, in some tenders, will be made a contract requirement. Funding to offset training costs is provided through the Building and Learning strategy, the Apprenticeship Program, the Training On The Job Program and Women in Trades and Technology, and as a contract bonus pursuant to the Nunavummi Nangminiqaqtunik Ikajuuti Policy, Government of Nunavut. Contractors can obtain further information from the Education Department Career Centres, Government of Nunavut.

Education Department Career Centres, Government of Nunavut:

Location	Phone Number	Facsimile Number
Cambridge Bay	(867) 983-7214	(867) 983-2004
Iqaluit	(867) 975-5653	(867) 975-5670
Rankin Inlet	(867) 645-5039	(867) 645-2148
Igloolik	(867) 934-8192	(867) 934-8808

EMPLOYMENT REPORT

The successful General Contractor will be required to complete an Employment Report for ALL site employees that have worked on this project. The Contractor is required to complete a standard GN employment report.

A SAMPLE of the required Employment Report is attached on the following page. This form is available from the Owner.

This information **must** be submitted with each Progress Claim on contracts over $100,000.00 as well as with the Substantial Certificate of Completion, updated with the Final Certificate of Completion.

For projects under or equal to $100,000.00 the Employment Report must be submitted with the substantial Certificate of Completion, updated with the Final certificate of Completion. At the sole discretion of the owner, the information may be required with each Progress Claim.

It is the General Contractor's responsibility to obtain the required information from the sub-trades and sub-sub-trades.

The successful General Contractor shall comply with the requirements of Clauses GC52, GC53, GC54 and GC55. Specifically in respect to Clause GC54, if requested to do so by the Owner, the successful General Contractor shall be responsible to obtain an "Employee Verification and Consent Form" included as Appendix "B", page 4.

EMPLOYMENT REPORT

Project Name:	Project Location:
General Contractor:	Project No: Contract No:
Report Submitted by (General/Subcontractor):	Reporting Period From: To:

This Employment Report is Submitted With: *(CHECK ONE)*

☐ Progress Claim No. _____ Date:	☐ Substantial Certificate of Completion Date:	☐ Final Certificate of Completion Date:

Employee's Name	** Inuit Yes	No	Employee's Address: (Street Address & Mailing if different)	Date Hired:	Date Terminated:	Hrs. Work. This Period:	Hours Worked To Date:	Gross Income This Period:	Gross Income To Date:	* Class

Contractors / Subcontractors Name & Title (Print)	Contractors / Subcontractors Signature:	Date:

* Classifications:

1. Superintendent	2. Carpenter	3. Carpenter Apprentice	4.Labourer	5. Mechanical	6. Mechanical Apprentice	7. Electrician	8. Electrical Apprentice	9. Drywaller/ Painter	10. Drywaller / Painter Apprentice	11. Other (specify)

**Beneficiary of the Nunavut Land Claim Agreement

EMPLOYEE VERIFICATION AND CONSENT FORM

TO: GOVERNMENT OF NUNAVUT (GN)

My full name is _____
(Print or Type)

My permanent home address is (mailing and physical address) _____

_____

I am employed by _____

On _____
(Name or Description of Project)

I have lived in Nunavut for at least the past 12 months and in _____

_____ For at least the past 6 months.
(Community)

AND TO WHOM IT MAY CONCERN

I hereby authorize any Federal, Provincial or Territorial government department or agency to release particulars and/or a copy of my Nunavut Health Care Card, Nunavut Driver's License, Nunavut Motor Vehicle Registration, Nunavut General Hunting License, and Nunavut Tungavik Inc. (NTI) to release my Beneficiary number or card, or any other documentation which the GN may deem helpful or necessary in verifying my place of residence or Beneficiary status.

_____ _____
(Witness) (Employee Signature)

Signed _____, _____
(Date) (Year)

Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy Forms - Appendix B

BID ADJUSTMENT INFORMATION

- This contract shall be awarded to the Tenderer who is responsive and responsible (as defined in the Government Contract Regulations) and who has submitted a tender that, after the application of any tender adjustment permitted under the Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy, is lower than that submitted by any other responsive and responsible Tenderer. Bid and contract requirements have been developed to comply with the letter and the spirit and intent of the NNI Policy.

- If and when requested by the GN, the Tenderer shall, prior to award, provide the GN with any and all clarifications, substantiations or further explanation about the proposals made by the Tenderer in respect to Local, Nunavut, Inuit and other content contained in their bid and reflected on Appendices "B-1" and "B-2".

- Tenderers are required to identify the dollar value of Own Forces as well as to name **ALL** subcontractors/suppliers and to identify their dollar value.
- Amendments affecting the tendered price shall require the Tenderer to also amend Appendix "B-1" to reflect the change, prior to the Phase I tender closing.

- Dollar value of Own Forces/Subcontractors noted in Appendix "B-1" shall include all amounts listed in Appendix "B-2" (i.e. payroll, transportation, equipment, etc.) for the Tenderer and all subcontractors. B-2 amounts that exceed the B-1 amounts will not be considered for bid adjustment.

- Dollar value(s) for payroll on Appendix "B-2" shall include all payroll costs for all divisions of work identified as Own Forces.

- An approved Nunavut Business or Inuit Firm will only receive bid adjustments for subcontractors, suppliers, payroll, and other bid components for those parts of bid that are Own Forces, or that are subcontracted to approved Nunavut businesses and/or Inuit firms, or for payroll to Inuit or Nunavut Residents. Bid adjustments will not be given for those portions of the bid that are not Nunavut or Inuit content. The definition of "Nunavut Business", "Inuit Firm", "Inuit" and "Nunavut Resident" are to be those definitions in the NNI Policy Definitions Appendix.

- Any business that is not an approved Nunavut Business, two weeks prior to tender closing, or is not an approved Inuit Firm prior to tender close, will not receive a bid adjustment for their portion of the bid, with the exception of the Inuit and/or Nunavut Payroll components, and amounts listed on Appendix B-1 as subcontracted to Nunavut and/or Inuit firms approved by the foregoing deadlines. Payroll to Inuit and Payroll to Nunavut Residents, need not be supplied by an Inuit Firm or a Nunavut Business to receive a bid adjustment.

- A Tenderer (General Contractor) that is not a Nunavut Business or an Inuit Firm will only receive bid adjustments for Inuit and/or Nunavut Payroll amounts, and for amounts identified on Appendix B-1 as going to approved Nunavut Businesses and/or Inuit Firms. A completed Appendix B-2 for each named Nunavut Business and/or Inuit firm listed on Appendix B-1 must be submitted by the General Contractor for the Nunavut and/or Inuit subcontractor or supplier amounts to be eligible for bid adjustment.
- For companies listed as suppliers of materials, to receive the Nunavut bid adjustment, the company listed must be specifically approved by the GN for Supply of the applicable type of materials 2 weeks prior to the closing.
- to be eligible for an extra adjustment for"Local", the bid amount must first be eligible for an adjustment as a Nunavut business, or an Inuit firm.

APPENDIX B-1

General Contractors & Sub-Contractors Dollar Amount

Project Title: _Cape Dorset P-Lake Sewage Lagoon

Project Location: Cape Dorset Project Number 05-2020

Tenderers are required to identify the dollar value of Own Forces as well as ALL Sub-Contractors that will be involved in the completion of this project. This Appendix MUST be submitted no later than the time and date set for the Phase I tender closing. If this Appendix is not submitted or is incomplete the tenderer may be disqualified. By signing this Tender, the Tenderer is certifying that the information on this Appendix is correct. Changes to this information will not be accepted after Phase I Tender Closing. The owner reserves the right to ask the tenderer for substantiation of information provided.

General Contractor: (Full Business Name)	**Own Forces Amount: ($)** **$**
Sub-Contractors: (Full Business Name)	**Sub-Contract Amount: ($)**
1.	$
2.	$
3.	$
4.	$
5.	$
6.	$
7.	$
8.	$
9.	$
10.	$
Other(s)	**Amount: ($)**
1.	$
2.	$
3.	$
4.	$
5.	$
TOTAL	$

Form Date: March 2001

SUBSTANTIATION OF BID ADJUSTMENT - APPENDIX B-2

Project Name:
Project Location:
Project Number:
General Contractor:

This Appendix must be received within 24 hours of the Phase I tender close. To receive bid adjustments, as per the Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy, all tenderers **MUST** complete this form. The Nunavut, Local and Inuit firm status, as defined by the NNI Policy, of named companies will be verified by the owner. The owner reserves the right to request substantiation of information provided. No changes with respect to this information will be allowed without written authorization of the owner. Dollar value for payroll shall include all divisions of work identified as own forces.

General Contractor (full business name):

Payroll	Local Nunavut Residents	Nunavut Res. (excl. Local)	Local Inuit Beneficiaries	Inuit Benficiaries (excl. Local)	Total $ Inuit Payroll	% Inuit of Total Payroll	Other Payr. - not Nunavut or Inuit	**Total Payroll**
	$	$	$	$	(for GN use)	(for GN use)	$	$
Cost Components (excluding Payroll)	***Nunavut Firms** (not NTI approved Inuit)		***Nunavut & **Inuit Firms** (GN & NTI approved)		****Inuit Firms** (not GN approved Nunavut)		**Other**	* approved by GN ** approved by NTI
Identify Work to be Completed by own Forces or Name Subcontractor/ Supplier	Local & Nunavut (excluding Inuit)	Nunavut (excl. Local & Inuit)	Inuit & Local & Nunavut	Inuit & Nunavut (excluding Local)	Inuit & Local	Inuit (excluding Local)	(not GN or NTI approved firm)	**Total each Line**
General Expenses:	$	$	$	$	$	$	$	$
Accommodation:	$	$	$	$	$	$	$	$
Sealift:	$	$	$	$	$	$	$	$
Other Transportation:	$	$	$	$	$	$	$	$
Sitework:	$	$	$	$	$	$	$	$
Framing/Structural:	$	$	$	$	$	$	$	$
Name the Material Supplier(s) below	Note: Business must be specifically approved by the GN for supply of applicable product to receive Nunavut bid adjustment.							
1	$	$	$	$	$	$	$	$
2	$	$	$	$	$	$	$	$
3	$	$	$	$	$	$	$	$
List Miscellaneous Expenses below	Note: The name of the applicable company, or an indication of "own forces" must be given, to be considered for bid adjustment.							
1	$	$	$	$	$	$	$	$
2	$	$	$	$	$	$	$	$
3	$	$	$	$	$	$	$	$
TOTALS: Payroll + Other Cost Components	$	$	$	$	$	$	$	$
Total $ and % Inuit Content (for GN use):								
This section for GN use: NNI adjustments: 14% Nunavut, -3% Local, -3% Inuit — Amount Qualified for NNI Adjustment	$	$	$	$	$	$	$	$
Adjustment - %	17%	14%	20%	17%	6%	3%	0%	
NNI Adjusted	$	$	$	$	$	$	$	$

Form Date: March 2001

SUBSTANTIATION OF BID ADJUSTMENT - APPENDIX B-2

Project Name:
Project Location:
Project Number:
General Contractor:

This Appendix must be received within 24 hours of the Phase I tender close. To receive bid adjustments, as per the Nunavummi Nangminiqaqtunik Ikajuuti (NN.) Policy, all tenderers **MUST** complete this form. The Nunavut, Local and Inuit firm status, as defined by the NNI Policy, of named companies will be verified by the owner. The owner reserves the right to request substantiation of information provided. No changes with respect to this information will be allowed without written authorization of the owner. Dollar value for payroll shall include all divisions of work identified as own forces.

Mechanical Sub-Contractor (full business name):

Payroll	Local Nunavut Residents	Nunavut Res. (excl. Local)	Local Inuit Beneficiaries	Inuit Benficiaries (excl. Local)	Total $ Inuit Payroll	% Inuit of Total Payroll	Other Payr. - not Nunavut or Inuit	**Total Payroll**
	$	$	$	$	(for GN use)	(for GN use)	$	$
Cost Components (excluding Payroll) Identify Work to be Completed by own forces or Name Subcontractor/ Supplier	***Nunavut Firms** (not NTI approved Inuit)		***Nunavut & **Inuit Firms** (GN & NTI approved)		****Inuit Firms** (not GN approved Nunavut)		**Other**	* approved by GN ** approved by NTI
	Local & Nunavut (excluding Inuit)	Nunavut (excl. Local & Inuit)	Inuit & Local & Nunavut	Inuit & Nunavut (excluding Local)	Inuit & Local	Inuit (exluding Local)	(not GN or NTI approved firm)	**Total each Line**
General Expenses:	$	$	$	$	$	$	$	$
Accommodation:	$	$	$	$	$	$	$	$
Sealift:	$	$	$	$	$	$	$	$
Other Transportation:	$	$	$	$	$	$	$	$
General Plumbing:	$	$	$	$	$	$	$	$
Sprinklers:	$	$	$	$	$	$	$	$
Insulation:	$	$	$	$	$	$	$	$
Sheet Metal:	$	$	$	$	$	$	$	$
Controls:	$	$	$	$	$	$	$	$
List Material Supplier(s) below	Note: Business must be specifically approved by the GN for supply of applicable product to receive Nunavut bid adjustment.							
1	$	$	$	$	$	$	$	$
2	$	$	$	$	$	$	$	$
3	$	$	$	$	$	$	$	$
List Miscellaneous Expenses below	Note: The name of the applicable company, or an indication of "own forces" must be given, to be considered for bid adjustment.							
1	$	$	$	$	$	$	$	$
2	$	$	$	$	$	$	$	$
3	$	$	$	$	$	$	$	$
TOTALS: Payroll + Other Cost Components	$	$	$	$	$	$	$	$
Total $ and % Inuit Content (for GN use):								
This section for GN use: NNI adjustments: 14% Nunavut, -3% Local, -3% Inuit — Amount Qualified for NNI Adjustment	$	$	$	$	$	$	$	$
Adjustment - %	17%	14%	20%	17%	6%	3%	0%	
NNI Adjusted	$	$	$	$	$	$	$	$

Form Date: March 2001

SUBSTANTIATION OF BID ADJUSTMENT - APPENDIX B-2

Project Name:

Project Location:

Project Number:

General Contractor:

This Appendix must be received within 24 hours of the Phase I tender close. To receive bid adjustments, as per the Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy, all tenderers **MUST** complete this form. The Nunavut, Local and Inuit firm status, as defined by the NNI Policy, of named companies will be verified by the owner. The owner reserves the right to request substantiation of information provided. No changes with respect to this information will be allowed without written authorization of the owner. Dollar value for payroll shall include all divisions of work identified as own forces.

Electrical Sub-Contractor (full business name):

Payroll	Local Nunavut Residents	Nunavut Res. (excl. Local)	Local Inuit Beneficiaries	Inuit Benficiaries (excl. Local)	Total $ Inuit Payroll	% Inuit of Total Payroll	Other Payr. - not Nunavut or Inuit	**Total Payroll**
	$	$	$	$	(for GN use)	(for GN use)	$	$

Cost Components (excluding Payroll)	***Nunavut Firms** (not NTI approved Inuit)		***Nunavut & **Inuit Firms** (GN & NTI approved)		****Inuit Firms** (not GN approved Nunavut)		**Other**	* approved by GN ** approved by NTI
Identify Work to be Completed by own forces or Name Subcontractor/ Supplier	Local & Nunavut (excluding Inuit)	Nunavut (excl. Local & Inuit)	Inuit & Local & Nunavut	Inuit & Nunavut (excluding Local)	Inuit & Local	Inuit (exluding Local)	(not GN or NTI approved firm)	**Total each Line**
General Expenses:	$	$	$	$	$	$	$	$
Accommodation:	$	$	$	$	$	$	$	$
Sealift:	$	$	$	$	$	$	$	$
Other Transportation:	$	$	$	$	$	$	$	$
General Electrical:	$	$	$	$	$	$	$	$
Fire Alarm Systems:	$	$	$	$	$	$	$	$
Lighting Control Equip.:	$	$	$	$	$	$	$	$
Security System:	$	$	$	$	$	$	$	$
Controls:	$	$	$	$	$	$	$	$
List Material Supplier(s) below	Note: Business must be specifically approved by the GN for supply of applicable product to receive Nunavut bid adjustment.							
1	$	$	$	$	$	$	$	$
2	$	$	$	$	$	$	$	$
3	$	$	$	$	$	$	$	$
List Miscellaneous Expenses below	Note: The name of the applicable company, or an indication of "own forces" must be given, to be considered for bid adjustment.							
1	$	$	$	$	$	$	$	$
2	$	$	$	$	$	$	$	$
3	$	$	$	$	$	$	$	$
TOTALS: Payroll + Other Cost Components	$	$	$	$	$	$	$	$
Total $ and % Inuit Content (for GN use):								
This section for GN use: NNI adjustments: 14% Nunavut, -3% Local, -3% Inuit — Amount Qualified for NNI Adjustment	$	$	$	$	$	$	$	$
Adjustment - %	17%	14%	20%	17%	6%	3%	0%	
NNI Adjusted	$	$	$	$	$	$	$	$

Form Date: March 2001

SUBSTANTIATION OF BID ADJUSTMENT - APPENDIX B-2

Project Name:
Project Location:
Project Number:
General Contractor:

This Appendix must be received within 24 hours of the Phase I tender close. To receive bid adjustments, as per the Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy, all tenderers MUST complete this form. The Nunavut, Local and Inuit firm status, as defined by the NNI Policy, of named companies will be verified by the owner. The owner reserves the right to request substantiation of information provided. No changes with respect to this information will be allowed without written authorization of the owner. Dollar value for payroll shall include all divisions of work identified as own forces.

Other Sub-Contractor (full business name):

Payroll	Local Nunavut Residents	Nunavut Res. (excl. Local)	Local Inuit Beneficiaries	Inuit Benficiaries (excl. Local)	Total $ Inuit Payroll	% Inuit of Total Payroll	Other Payr. - not Nunavut or Inuit	**Total Payroll**
	$	$	$	$	(for GN use)	(for GN use)	$	$
Cost Components (excluding Payroll)	***Nunavut Firms** (not NTI approved Inuit)		***Nunavut & **Inuit Firms** (GN & NTI approved)		****Inuit Firms** (not GN approved Nunavut)		**Other**	* approved by GN ** approved by NTI
Identify Work to be Completed by own forces or Name Subcontractor/ Supplier	Local & Nunavut (excluding Inuit)	Nunavut (excl. Local & Inuit)	Inuit & Local & Nunavut	Inuit & Nunavut (excluding Local)	Inuit & Local	Inuit (exluding Local)	(not GN or NTI approved firm)	**Total each Line**
General Expenses:	$	$	$	$	$	$	$	$
Accommodation:	$	$	$	$	$	$	$	$
Sealift:	$	$	$	$	$	$	$	$
Other Transportation:	$	$	$	$	$	$	$	$
List Material Supplier(s) below	Note: Business must be specifically approved by the GN for supply of applicable product to receive Nunavut bid adjustment.							
1	$	$	$	$	$	$	$	$
2	$	$	$	$	$	$	$	$
3	$	$	$	$	$	$	$	$
List Miscellaneous Expenses below	Note: The name of the applicable company, or an indication of "own forces" must be given, to be considered for bid adjustment.							
1	$	$	$	$	$	$	$	$
2	$	$	$	$	$	$	$	$
3	$	$	$	$	$	$	$	$
TOTALS: Payroll + Other Cost Components	$	$	$	$	$	$	$	$
Total $ and % Inuit Content (for GN use):								
This section for GN use: NNI adjustments: 14% Nunavut, -3% Local, -3% Inuit — Amount Qualified for NNI Adjustment	$	$	$	$	$	$	$	$
Adjustment - %	17%	14%	20%	17%	6%	3%	0%	
NNI Adjusted	$	$	$	$	$	$	$	$

Note: for additional "Other Sub-contractors" use photocopies of this page

SCHEDULE OF VALUES
STIPULATED PRICE CONTRACTS ONLY - APPENDIX C

(Information to be Completed by Tenderer and Submitted with Tender)

Project Number: 05-2020

Item	Description	Estimated Quantity	Unit	Tendered Price
1	Rock Removal	6,200	cu. m.	
2	Granular Fill (borrow for Road)	21,700	cu. m.	
3	Granular Fill (borrow for Berms)	25,200	cu. m.	
4	Rip Rap	2,865	cu. m.	
5	400mm dia. Culvert	70	m	
6	1200mm dia. Culvert	23	m	
7	Guardrail	1,814	m	
8	Roadside Delineators	96	ea.	
9	Bentonite Liner	4,135	sq. m.	
10	Bollards	12	ea.	
11	Discharge Flume	1	lump sum	
12	Lagoon Discharge structure and piping	1	lump sum	
13	Balance of Project			
			Subtotal	
14	Contingency Allowance			

TOTAL TENDERED PRICE FOR THIS PROJECT	

(TOTAL TENDERED PRICE FOR THIS PROJECT TO BE REPEATED IN WRITING BELOW)

_____

NOTES:
Include in the contract price, the contingency allowance as shown in the schedule to provide for changes in work as determined and authorized by the engineer and approved by the owner

Payment of the contingency allowance or portion thereof shall only be made in the event that the Engineer authorizes additional work to which the unit or lump sump prces of the tender form do not apply. Unused portions of the Contingency Allowance will be retained by the Owner

Signature of Tenderer

Name of Tenderer (please print)

Date

LIST OF UNIT PRICES
STIPULATED PRICE CONTRACTS ONLY - APPENDIX C

(Information to be Completed by Tenderer and Submitted with Tender)

Project Number: 05-2020

The following are our unit prices for the units of work listed hereunder. The base price for the work is included in our tender, page 1 of Appendix C; these unit prices apply only to variances of the estimated quantity.

TO BE COMPLETED BY THE GN			TO BE COMPLETED BY THE TENDERER	
Unit of Work			Unit Price ($)	
Item	Description	Unit	Addition	Deletion
1	Rock Removal	cu.m.	$	$
2	Granular Fill (borrow for Road)	cu.m.		
3	Granular Fill (borrow for Berms)	cu.m.		
4	Rip Rap	cu.m.		
5	400mm dia. Culvert	m		
6	1200mm dia. Culvert	m		
7	Guardrail	m		
8	Roadside Delineators	ea.		
9	Bentonite Liner	Sq.m.		
10	Bollards	Ea.		
11	Discharge Flume	Lump sum		
12	Lagoon Discharge structure and piping	Lump sum		

LIST OF UNIT PRICES
UNIT PRICE CONTRACTS ONLY - APPENDIX D

(Information to be Completed by Tenderer and Submitted with Tender)

Project Number: _____

(a) The conditions in Tender Form, Clause 5.0 apply to the completion of this Appendix.

(b) If space for listing items is insufficient, the Owner shall annex a list and make reference to it on this form.

(c) Type or print tendered values clearly. An illegible submission may be disqualified at the sole discretion of the Owner.

TO BE COMPLETED BY THE GN				TO BE COMPLETED BY THE TENDERER	
1. No	2. Description	3. Estimated Quantity	4. Unit	5. Unit Price	6. Estimated Total Price
				Total Estimated Contract Price	

LIST OF OPTIONS & SUBSTITUTIONS
SPECIFIED BY THE OWNER - APPENDIX E

(To be Completed by Tenderer and Submitted with Tender)

Project Number: 05-2020

In accordance with Clause 6 of the Instructions to Tenderers, indicate the effect on the stipulated price for the following options and substitutions listed by the Owner. The Tenderer further agrees that the following prices may be used in the evaluation of the submitted Tender.

All Options, Substitutions and Separate Prices shall include all work necessary for and incidental to the work described.

	Effect on Stipulated Price ($) (To be Completed by Tenderer and Submitted with Tender)	
Description of Options & Substitutions (To be Completed by the GN)	$ Addition to Stipulated Sum Price	$ Reduction to Stipulated Sum Price

LIST OF OPTIONS
PROPOSED BY THE TENDERER - APPENDIX F

(Information to be Completed by Tenderer and Submitted with Tender)

Project Number: 05-2020

In accordance with Clause 7 of the Instructions to Tenderers, the Tenderer may propose options or substitutions below. The cost of such options and substitutions are NOT included in the stipulated price.

If this form is not used, the Tenderer should draw a line through the form and initial.

	Effect on Stipulated Price ($)	
Description of Options & Substitutions proposed by Tenderer	$ Addition to Stipulated Sum Price	$ Reduction to Stipulated Sum Price

PLANT AND EQUIPMENT LIST - APPENDIX G

(Information to be Completed by Tenderer and Submitted with Tender)

Project Number: 05-2020

The following list is the complete description of plant and equipment I/We propose to use in the execution of this contract. Such plant and equipment will be made available for inspection prior to the award of contract. The plant and equipment shall be moved to the project site upon direction from the Owner and shall not be removed from the site until completion of the contract without written approval from the Owner.

Description of unit such as make, model, year and serial #.	Capacity such as size and horsepower rating	Auxiliary and/or special equipment, such as power take-off and power control units.	Condition	Present Location

TRANSPORTATION OF MATERIALS - APPENDIX H

1. Transportation, shipping and handling of materials and all costs thereof are the responsibility of the Contractor unless otherwise noted. **Modes of transporting materials shall be decided by the Contractor unless by marine transport in which case Clause 2 shall apply.**

2. Whenever marine (water) transport is to be utilized, the Contractor shall use the Government of Nunavut specified carriers, and space should be booked directly with the carriers, as follows:

   2.1 For the following communities in the Baffin Region:

   South Baffin: Cape Dorset, Kimmirut, and Pangnirtung,
   and
   High Arctic including North Baffin:
   Arctic Bay, Clyde River, Grise Fiord, Nanisivik, Pond Inlet, Qikiqtarjuaq (Broughton Island), and Kugaaruk (Pelly Bay) (as far as Nanisivik for furtherance), and Resolute Bay

   Nunavut Eastern Arctic Shipping (NEAS),
   By ships loading at the Montreal area Port of Valleyfield:
   Contact: John Lepine
   Phone, Toll free: (877) 225-6327
   Fax: (514) 523-7875

   for transport to **Kugaaruk** beyond Nanisivik, the Carrier is:
   Canada Coast Guard
   Contact: John Perry Perrozzino
   Phone: (613) 998-1585
   Fax: (613) 991-9261

   2.2 For the following communities in the Baffin and Kivalliq Regions:

   Foxe Basin: Hall Beach, Igloolik, and Repulse Bay,
   and
   Iqaluit,
   and
   Kivalliq: Arviat, Baker Lake, Chesterfield Inlet, Coral Harbour, Rankin Inlet, Sanikiluaq, and Whale Cove (Note: shipping to Kivalliq is from Montreal area):

   Nunavut Sealink and Supply (NSSI),
   By ships loading at the Montreal area Port of Ste-Catherine:
   Contact: Daniel Desgagné
   Phone: (450) 635-0833
   Fax: (450) 635-5126

2.3 For the following communities in the Kikmeot Region:

Kitikmeot: Cambridge Bay, Kugluktuk (Coppermine), Gjoa Haven, and Taloyoak:

Northern Transportation Company Limited (NTCL),
By barges loading at Hay River, Northwest Territories
Contact: Lynette Storoz
Phone: (867) 874-5100
Fax: (867) 874-5102

3. The annual shipping rates offered by marine carriers are dependent upon anticipated cargo quantities including the materials for construction projects; therefore, Contractors are to bid using the published sailing schedules and rates available from the above marine carriers, and also available from the Department of Public Works and Services, Finance Division, Contact: John Fast, Traffic Coordinator at (867) 975-5437.

4. In exceptional or extraordinary circumstances, where the specified marine carrier's sailing schedule is in substantial conflict with the project schedule, the GN will review the circumstances, taking into account the adverse impact on the project and the specified marine carrier's interests, and the GN 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.

5. If a Contractor uses a marine carrier other than the GN contracted marine carrier without the GN's written authorization to do so, the Contractor shall be responsible for extra freight cost, administrative costs or any other costs, incurred by the GN which result directly or indirectly from the Contractor's failure to use the GN specified marine carrier as set out in this Appendix. The Contractor shall also be responsible to refund to the GN any monies saved by the Contractor by using a marine carrier other than the specified marine carrier as set out in this Appendix H.

CONTRACTOR'S CERTIFICATE OF INSURANCE - APPENDIX I - page 1 of 2

INSURED: _____

SCHEDULE OF MANDATORY INSURANCE			
Type of Insurance	**Insurer, Policy Number**	**Policy Period**	**Limit of Liability/Amount**
COMPREHENSIVE GENERAL LIABILITY INCLUDING NON-OWNED AUTOMOBILE LIABILITY		From: To:	BODILY INJURY $_____ Each Person $_____ Each Accident $_____ Aggregate Products PROPERTY DAMAGE $_____ Each Accident $_____ Aggregate Products **Or,** BODILY INJURY & PROPERTY DAMAGE $_____ Inclusive $_____ Aggregate Products
AUTOMOBILE LIABILITY (OWNEDLEASED VEHICLES)		From: To:	BODILY INJURY $_____ Each Person $_____ Each Accident PROPERTY DAMAGE $_____ Each Accident **Or,** BODILY INJURY & PROPERTY DAMAGE $_____ Inclusive
ADDITIONAL COVERAGES REQUIRED MARKED BY [ ]			
[]UMBRELLA LIABILITY		From: To:	$ Limits $_____ S.I.R.
[]CONTRACTOR'S EQIPMENT		From: To:	
[]OTHER			

This is to certify that policies as described above have been issued through the undersigned to the Insured named above and are in force at this time. If cancelled or changed in any manner, for any reason, during the period of coverage as stated herein so as to affect this certificate, immediate written notice will be given by the undersigned to the Department.

(Be sure to complete and sign the reverse side2 nd page of this form.)

PARTICULARS OF INSURANCE

GENERAL LIABILITY	AUTOMOBILE LIABILITY
[ ] Premises Property and Operations [ ] Products and Completed Operations [ ] Blanket Contractual - All Written Agreements [ ] Occurrence Property Damage [ ] Broad Form Property Damage [ ] Contingent Employers Liability [ ] Personal Injury [ ] Employees as Additional Insureds [ ] Cross Liability - Severability Of Interests [ ] Blasting, Collapse, Underpinning [ ] Exclusions deleted as follows: [ ] [ ] [ ] Owners' & Contractors' Protective Liability	[ ] S.E.F. No. 4a Explosive Endorsement [ ] S.E.F. No. 21b Blanket Fleet Endorsement [ ] [ ] **AIRCRAFT LIABILITY** [ ] [ ] **WATERCRAFT LIABILITY** [ ]

REMARKS (STATE DEDUCTIBLES) IF ANY

THIS IS TO CERTIFY THAT INSURANCE AS DESCRIBED AS ABOVE IS IN FORCE AT THIS TIME.

Name and Address of Insurance Agent, Broker or Insurance Company

Written notice of any changes or cancellation of this policy shall be sent to the Owner at the following address:

Date _____

By _____
(Authorized Representative)

Nunavummi Nangminiqaqtunik Ikajuuti

Nunavummi Nangminiqaqtunik Ikajuuti

Prepared by

The GN / NTI Contracting Working Group

March 17, 2000

CONTENTS

Appendices

Nunavummi Nangminiqaqtunik Ikajuuti

1.0 Coming Into Effect

1.1 This Policy is in effect on and after April 1, 2000 for every contract initiated on or after April 1, 2000.

2.0 Replacement

2.1 On its coming into effect, the Policy replaces the Nunavut Contracting Procedures for the Nunavut Settlement Area and the Nunavut Business Incentive Policy. Any guidelines or directives previously issued under those two replaced policies continue in effect until otherwise modified, but shall be interpreted so as to comply with the Policy.

3.0 Authority

3.1 In exercising its wider responsibilities and prerogatives, the Cabinet may, on an exceptional basis, depart from the application of provisions of the Policy.

4.0 Title:

4.1 The Policy is entitled the "Nunavummi Nangminiqaqtunik Ikajuuti" or "NNI Policy".

5.0 Application

5.1 Subject to sections 5.2 and 5.3, the Policy applies to the design, award, administration and interpretation of any Contract:

(a) to which the Government of Nunavut, or any of its Public Agencies or Public Boards as described in the Financial Administration Act is a party;

(b) where the Government of Nunavut provides, directly more than 51% of the total Contract funds; and,

(c) where the Government of Nunavut provides, directly more than 51% of the annual operating funds of one of the parties.

5.2 The Policy does not apply to:

(a) a contract that provides the Government of Nunavut with insurance against liability;

(b) a Government of Nunavut Employment Contract; or,

(c) a contract for the supply of emergency services,

5.3 Unless otherwise agreed by the Government of the Northwest Territories, the Policy does not apply to a contract where one of the parties is

1) a public body that is administered on behalf of the Government of Nunavut by the Government of the Northwest Territories; or,

2) a joint body of the Government of Nunavut and the Government of the Northwest Territories.

6.0 Definitions

6.1 Unless otherwise required by the context, terms used in the Policy have the meanings set out in Appendix A.

7.0 Policy Objectives

7.1 The Policy has the following objectives:

(a) Good Value and Fair Competition
To secure goods and services for the Government of Nunavut at the best value, recognizing the higher cost of doing business in Nunavut, and using a contracting process that is clear, fair and equitable.

(b) Strengthening the Nunavut Economy
To build the economy of Nunavut and its communities by strengthening business sector capacity and increasing employment.

(c) Inuit Participation
Subject to ss.16(2), to bring about a level of Inuit participation in the provision of goods and services to the Government of Nunavut that reflects the Inuit proportion of the Nunavut population.

(d) Nunavut Education and Training
Subject to ss.16(2), to increase the number of trained and skilled Nunavut Residents in all parts of the workforce and business community to levels that reflect the Inuit proportion of the Nunavut population.

8.0 The Bathurst Mandate

8.1 The Policy has been developed in a way consistent with the Government of Nunavut's 1999 Bathurst Mandate.

9.0 The Clyde River Protocol

9.1 The Policy has been developed in cooperation with Nunavut Tunngavik Incorporated in a way consistent with the "Protocol to Govern Working Relations Between the Government of Nunavut and Nunavut Tunngavik Incorporated" (the Clyde River Protocol'), signed in November 1999

10.0 Relationship to Nunavut Land Claims Agreement (NLCA)

10.1 The Policy is aimed at implementing the Government of Nunavut's obligations under Article 24 of the NLCA.

10.2 The Policy shall be interpreted so as to respect to the letter and intent of the NLCA.

11.0 Evaluation Process and Bid Adjustment

11.1 The evaluation process for the award of Tenders and for the cost criteria portion of Requests for Proposals shall be as follows:

(a) all Tenders submitted should meet minimum contract requirements specified in the request for tender or proposal and should demonstrate a capability of carrying out the work;

(b) all Tenders meeting the requirements of 11.1.a and the cost criteria of relevant Proposals shall then be adjusted based upon Nunavut Business status, Inuit Firm status, and Local status of the proponent, general contractor, subcontractors, and suppliers, including the labour component;

(i) the adjustment for the labour component shall be based on estimates of payroll expenditures made by the general contractor, subcontractors and suppliers, for Nunavut, Inuit, and Local payroll expenditures that form part of the bid; and,

(ii) in the absence of any qualitative or contrary considerations based on quality of goods and services, conduct, past performance, or other like considerations, the lowest tender after adjustments shall be awarded the contract.

(c) the bid adjustment values shall be as follows:

(i) Nunavut firm status, an adjustment of 14%;

(ii) Inuit firm status, an additional adjustment of 3%;

(iii) Local status, an additional adjustment of 3%

11.2 The evaluation process for the award of Proposals shall be as follows:

(a) all Proposals submitted should meet minimum contract requirements specified in the Request For Proposals and should demonstrate a capability of carrying out the work;

(b) all proposals meeting the requirements of 11.2.a will be evaluated to determine which appears to offer the best overall value to the Government of Nunavut, based on the evaluation criteria established in the RFP;

(c) for Proposals where there is a clear cost criteria the bid adjustment values outlined in 11.1.c will be applied to that portion of the evaluation;

(d) Inuit content criteria will be included in the evaluation criteria established for each RFP. The Inuit content values shall be, at a minimum, as follows:

(i) for Inuit employment 10%

(ii) for Inuit ownership 5%

11.3 Details of the evaluation process shall be further described in procedures developed by the Responsible Department and made available to the public.

11.4 The bid adjustment values for goods contracts will be applied to the first $00,000.00 only.

11.5 Evaluation criteria, consistent with the Policy Objectives contained in 7.0, and based on the Bid Adjustment Values and Content Ratings identified in this section, may be developed by the Responsible Department for specific types of professional services contracts or other distinctive sub-categories of contract.

12.0 Bonuses and Penalties

12.1 Contracts may provide for:

(a) a bonus that shall be applied in the event that minimum threshold requirements set by the Contracting Authority in the request for tenders or proposals have been exceeded; or,

(b) a penalty that shall be applied in event that minimum threshold requirements set by the Contracting Authority in the request for tenders or proposals have not been met.

12.2 Where applicable, bonuses or penalties shall apply with respect to Inuit participation in employment, project management, and training.

12.3 Where applicable, in the area of employment, a bonus or penalty shall be calculated as 1⁄3 of 1% of the total labour content of the contract for each 1% of the amount by which employment either exceeds or does not meet the mandatory requirement.

12.4 Bonuses and penalties shall be calculated for Local Inuit Labour andór Nunavut Inuit Labour.

12.5 In the area of Inuit management, a bonus or penalty in the amount of 2% of the total labour content shall be determined on the basis of whether an Inuk is employed as a Project Manager, either locally or for Nunavut. A larger bonus, but not a larger penalty, of an additional 1% shall be determined for a locally employed Inuk Project Manager than a Nunavut employed Inuk Project Manager.

12.6 Where applicable, a bonus or penalty shall be determined on the basis of on-going evaluation as to whether Inuit are provided training in the following areas:

(a) entry level or support positions, involving the performance of basic tasks; and,
(b) apprenticeship or development positions, involving on-the-job training and classroom instruction aimed at professional skills and accreditation;

12.7 Bonuses and penalties shall be determined for the provision of training to both non-Local Inuit and Local Inuit.

13.0 Maximum Bonuses and Penalties

13.1 The maximum total bonuses and penalties to be determined for a single Contract for employment, management, and training shall not exceed 25% of the total labour price.

14.0 Monitoring and Enforcement Procedures

14.1 Monitoring and enforcement procedures shall be developed and applied:

(a) generally, to ensure compliance with the Policy by Contractors;

(b) more specifically, to ensure that bonuses and penalties are based on actual performance;

(c) to ensure that the Policy is applied consistently across departments of the Government of Nunavut, the various regional and local offices of those departments, and those GN Public Agencies and Boards set out in the Financial Administration Act.

15.0 Application of Monitoring and Enforcement Procedures

15.1 Each Contract Authority within the Government of Nunavut is responsible for monitoring and enforcement of Contracts under which it expend funds.

15.2 Each Contract Authority within the Government of Nunavut shall provide monitoring and enforcement information to the Responsible Department in a manner that may be stipulated by that department.

15.3 The Government of Nunavut, through the Responsible Department shall provide Nunavut Tunngavik Incorporated with information in a timely manner regarding the outcomes of its monitoring and enforcement activities.

16.0 Periodic Review

16.1 It is recognized that achieving the objectives of the Policy will require consistent and persistent effort.

16.2 It is further recognized that the achievement of objectives may be most realistically and reliably secured by measured progress over time.

16.3 The substance and application of the Policy should therefore be reviewed and revised on a periodic basis to ensure that progress towards objectives is being made in a demonstrable and balanced way.

17.0 Review Committee

17.1 A Contracting Policy Review Committee, consisting of representatives appointed by the

Government of Nunavut and Nunavut Tunngavik Incorporated, shall be established to review the implementation of the Policy on a periodic basis and, in any event, at least on an annual basis.

17.2 As part of its mandate, the Review Committee shall develop and apply specific mechanisms for assessing progress towards objectives and making recommendations for adjustments to the Policy.

17.3 As part of its mandate, the Review Committee shall examine monitoring and enforcement concerns arising out of the implementation of the Policy.

17.4 The Review Committee will conduct a comprehensive review at the end of the first three-year period, and every five years thereafter

17.5 The Review Committee shall submit all of its work to the Government of Nunavut and Nunavut Tunngavik Incorporated.

17.6 In carrying out its work, the Review Committee shall make efforts to collect public input and to consult with interested parties. Without limiting the ability of the Committee to make other parts of its work available to the public, these annual and multi-year reviews shall in all cases be made available to the public.

18.0 Appeals and Arbitration

18.1 A Contractor that has submitted a proposal or Tender and that wishes to challenge an award of Tender or proposal may do so within five (5) days of the award announcement by directing the challenge to the Contracting Authority. The Contracting Authority shall have five (5) business days to respond to the challenge.

18.2 Any further challenge of an award shall be directed in writing to a Contracting Appeals Board.

18.3 An independent Contracting Appeals Board shall be formed, consisting of the representatives of three parties, appointed to terms of two years. A representative shall be appointed by each of the following :

i) the Government of Nunavut;

ii) Nunavut Tunngavik Incorporated; and,

iii) the Nunavut Chambers of Commerce.

18.4 The Board shall convene within 21 days of receiving a challenge.

18.5 Upon hearing a challenge, the Appeals Board may:

i) uphold the award; or

ii) recommend remedial actions.

18.6 The decision of the Appeals Board shall be binding and final.

18.7 If, in the sole opinion of the Appeals Board, a challenge of an award is frivolous or vexatious, then the Board may seek administrative costs against the party who brought the challenge.

18.8 An annual report, including financial statements, shall be prepared by the Appeals Board and submitted to the Government of Nunavut and to Nunavut Tunngavik Incorporated. In addition, these annual reports shall be made available to the public.

18.9 Notwithstanding that an appeal may be pending, the Contracting Authority may award the Contract.

19.0 Financial Resources

19.1 The expenditure of funds by the Government of Nunavut under the Policy is conditional on approval of such funds in the Main Estimates by the Legislative Assembly and on there being a sufficient uncommitted balance in the appropriated item for the fiscal year in which the expenditure is required, and on meeting such further requirements as may be set out in the Financial Administration Act.

20.0 Transition for Certain Businesses

20.1 The Government of Nunavut recognizes the contribution made to the Nunavut economy by a number of companies that have operated for many years in Nunavut that do not qualify as a Nunavut Business under this Policy. Accordingly, any business that, immediately before the coming into effect of the Policy, qualified as a Nunavut Business for the purpose of the Business Incentive Policy, shall qualify as a Nunavut Business under this Policy until the second anniversary of the coming into effect of this Policy.

20.2 For greater certainty, section 20.1 shall cease to have any application on the second anniversary of the coming into effect of the Policy and no business shall continue to qualify as a Nunavut Business or Inuit Firm unless it meets the definitions for those terms set out in Appendix A.

21.0 Revisions to or repeal of this Policy

21.1 Cabinet may make changes to this policy consistent with the obligations of the Government of Nunavut in Article 24 of the Nunavut Land Claims Agreement which requires a collaborative process with Nunavut Tunngavik Inc. in the maintenance of preferential procurement policies, procedures and approaches.

APPROVED BY CABINET

DATE:

Original is signed by the Premier

Paul Okalik, Premier

Includes Appendix A -Seven pages

APPENDIX A: DEFINITIONS

The following definitions apply to the Policy and its Procedures.

Article 23 - the Article of the Nunavut Land Claims Agreement dealing with Inuit Employment within Government.

Article 24 - the Article of the Nunavut Land Claims Agreement dealing with Government Contracts.

Bid - a tender or an offer to sell or provide goods, services, or construction that is submitted to a Contract Authority in response to a Request for Bids or Tenders.

Bid Adjustment - the amount by which the face value of a Bid is reduced in accordance with Section 6(2) of this Policy. The Bid Adjustment is used for Bid evaluation purposes only. The Bid price minus the Bid Adjustment will be referred to as the adjusted price.

Bid Security - security given by a Bidder or Proponent to guarantee entry into a Contract.

Bidder - an individual, partnership, corporation, society or co-operative who submits a Bid.

Contract - a written agreement between a Contracting Authority and another party to provide goods, perform services, construct public works, or lease real property, for consideration, and includes

i. Contracts for the supply of goods.

ii. construction Contracts.

iii. Contracts for the supply of services.

iv. leases.

Contract Authority - a Government of Nunavut Minister, a Deputy Minister, or a public officer with the duties and authorities set out in the Financial Administration Act and Regulations thereto.

Contract Price - the price or price formulated in a Contract.

Contract Security - a deposit of securities by the Contractor which the Contracting Authority may convert to carry out the Contractor's obligations under the Contract.

Contractor - a corporation, partnership or individual that has been awarded a Contract for the execution of work or services under the terms of a Contract.

DIO - Nunavut Tunngavik Incorporated or such other Inuit organizations that, from time to time, Nunavut Tunngavik Incorporated may, by notice to the Government of Nunavut, designate.

Employment Contract - a Contract which establishes an employer-employee relationship.

Financial Administration Act - the Financial Management Act, R.S.N.W.T 1990 (as adopted by Nunavut) c. F-3 and amendments thereto.

General Contractor - a Contractor who contracts to undertake an entire Contract, rather than a portion of the Contract.

Goods Contract - a Contract for the purchase of articles, commodities, equipment, goods, materials or supplies which may include installation.

Government - the Government of Nunavut.

Government of Nunavut - all Territorial Government departments and all public agencies defined by the Financial Administration Act, S.N.W.T. 1987 (1), c.16, Part IX and Schedules A, B, and C, as amended for Nunavut pursuant to s.29 and 76.05 of the federal Nunavut Act but excluding the Northwest Territories Power Corporation.

Inuit (singular: Inuk) - a person described in Article 1.1.1 of the Nunavut Land Claims Agreement (NLCA) and who has enrolled himself or herself on the Inuit Enrolment List under Article 35 of the NLCA.

Inuit Content - the dollar value of the goods and services required by the Contract supplied by any Inuit Firm or Inuit sole proprietorship, and Inuit Labour. Inuit Content may include:

i. goods and services supplied by an Inuit Firm or Inuit supplier acting as the General Contractor. These are referred to as "own forces";

ii. goods and services supplied by an Inuit Firm or Inuit supplier so long as these goods and services are required for the completion of the Contract and are paid for by the Contract.

iii. Inuit labour by an Inuit Firm or a non-Inuit Firm

Inuit Enrolment List - the list of Inuit maintained by Nunavut Tunngavik Incorporated under Article 35 of the Nunavut Land Claims Agreement.

Inuit Firm - an entity which complies with the legal requirements to carry on business in the Nunavut Settlement Area, and which is

i. a limited company with at least 51% of the company's voting shares beneficially owned by Inuit, or
ii. a cooperative controlled by Inuit, or
iii. an Inuk sole proprietorship or partnership; and
iv. able to present evidence of inclusion on NTI's Inuit Firms Registry.

Inuit Firms Registry - the list of Inuit Firms that is maintained by Nunavut Tunngavik Incorporated in accordance with Article 24.7.1 of the Nunavut Land Claims Agreement.

Inuit Labour - labour, including professional services, provided in any capacity by an Inuk or Inuit, and not necessarily through an Inuit Firm.

Inuit Training -Training of an Inuk or Inuit related to a specific Contract that has been pre-approved by the Contract Authority.

Inuk Project Manager - an Inuk [ordinarily resident in th e Subject Community]who is capable of undertaking all aspects of the management of the project, and has decision-making authority over day-to-day matters affecting the project.

Invite - to call publicly for Bids.

Local Business - a Nunavut Business which has been resident in the Subject Community for the four months prior to application and in addition complies with the following criteria:

i. maintains an approved place of business by leasing or owning office, commercial or industrial space or where applicable, residential space, in the community on a year-round basis for the primary purpose of operating the subject business, and
ii. maintains a Local Resident Manager, and
iii. undertakes in the Subject Community the majority of its management and administrative functions related to its operations in the Subject Community, and
iv. has applied for and received designation as a Local Business at least two weeks prior to the Tender opening.

Local Content - the goods and services required by the Contract and supplied by any Local Business or Local Labour. Local Content may include:

i. goods, services or labour supplied by a local business acting as the General Contractor. These are referred to as "own forces";

ii. goods, services or labour supplied by any other Local Business or Local Supplier that are required for the completion of the Contract and are provided for by the Contract.

Local Labour - labour of Local Residents related to a Contract, not necessarily through a Local Business.

Local Resident - a Nunavut Resident who has been ordinarily resident in the subject community for the last four months.

Local Resident Manager - a Local Resident who is capable of undertaking all aspects of the management of the Local Business and has absolute decision-making authority over day to day matters affecting the Local Business. The Government of Nunavut may waive this requirement in the case of a newly appointed Local Resident Manager, on proof that within six months the Local Resident Manager will have met the residency requirements.

Local Supplier - a supplier of goods in the Subject Community, to whom the public has access and from whom the public may purchase directly from a Representative Inventory of items

offered for sale. The supplier must be and must have been a Local Resident for the four months prior to application. The Government of Nunavut may recognize as a Local Supplier a business that does not "physically" carry in inventory specific goods due to factors such as high cost/low demand, made-to-order goods, or articles of a nature that the Government is the sole requisitioner.

Nunavummi Nangminiqaqtunik Ikajuuti (NNI) - the name of this Policy in Inuktitut, meaning "Assistance for Nunavut Businesses."

Nunavummi Nangminiqaqtunik Ikajuuti Business Directory - the list of Nunavut Businesses that have applied and met the requirements of the NNI for Nunavut Business Status.

Nunavut Business

A business which complies with the legal requirements to carry on business in Nunavut, and meets the following criteria:

i. is a limited company with at least 51 percent of the company's voting shares beneficially owned by Nunavut Residents, or
ii. is a co-operative with at least 51 percent of the Residents' voting shares beneficially owned by Nunavut, or
iii. is a sole proprietorship, the proprietor of which is a Nunavut Resident, or
iv. is a partnership, the majority interest in which is owned by Nunavut Residents and in which the majority benefits, under the partnership agreement, accrue to Nunavut Residents and complies with :

v. maintains a registered office in Nunavut by leasing or owning office, commercial or industrial space or in the case of service oriented businesses, residential space, in Nunavut on an annual basis for the primary purpose of operating the subject business, and
vi. maintains a Resident Manager, and
vii. undertakes the majority of its management and administrative functions related to its Nunavut operations in Nunavut, and
viii. has received designation as a Nunavut Business at least two weeks prior to the Tender opening.

Nunavut Content - the goods and services required by the Contract and supplied by any Nunavut Business or Nunavut Supplier. Nunavut Content may include:

i. goods, services or labour supplied by a Nunavut Business acting as the General Contractor. These are referred to as "Own Forces";

ii. goods, services or labour supplied by any other Nunavut Business or Nunavut Supplier that are required for the completion of the Contract and are paid for by the Contract.

Nunavut Resident - a person who:

i. is on the NTI Inuit Enrollment List; or has spent the last twelve months ordinarily resident in Nunavut, and
ii. has a valid Nunavut Healthcare Card andór other accepted proof of residency such a Nunavut General Hunting Licence, a Nunavut Driver's Licence, a lease or rental receipt, and provides a physical address where residing.

Nunavut Supplier - a Nunavut Business that is a supplier of goods to which the general public has access and from whom the general public can purchase directly from a Representative Inventory of items offered for sale.

Nunavut Land Claims Agreement (NLCA) - the Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada, signed on May 25, 1993, and any amendments thereto.

Nunavut Tunngavik Incorporated (or NTI) - the corporation incorporated under the Canada Corporations Act, and the Inuit party to the Nunavut Land Claims Agreement.

Own Forces - goods, services or labour supplied by a Nunavut Business acting as the General Contractor.

Professional Services - services such as legal, accounting or consulting services provided to the Government of Nunavut by way of a Contract by an individuals or professional service companies.

Proponent - an individual, partnership, corporation or cooperative who submits a Proposal.

Proposal - an offer, either unsolicited or in response to a Request for Proposals, to propose a solution to a problem, need or objective, under stated terms and conditions.

Public Agency - any public agency defined by the Financial Administration Act, S.N.W.T. 1987 (1), c.16, Part I, and Schedules A, B, and C, as amended for Nunavut pursuant to s.29 and 76.05 of the federal Nunavut Act, but excluding the Northwest Territories Power Corporation.

Public Board -Those boards defined as Public Boards in the Financial Administration Act Regulations concerning Government contracts.

Public Tender - a Request for Bids made by public advertisement.

Qualification Committees - committees in the Kivalliq, Kikmeot, and Baffin Regions chaired by the Responsible Department, and responsible for determining the eligibility of businesses to be included on the **Nunavummi Nangminiqaqtunik Ikajuuti Directory.**

Request for Bids - a document defining the minimum standards to be met by Bidders and the specific requirements for goods, services or construction, so as to permit the comparison of Bids on the basis of price.
Request for Tenders - a document defining the minimum standards to be met by Tenderers and the requirements of the Contract so as to permit the comparison of Bids on the basis of price.

Request for Proposals - a document inviting companies to propose a solution to a problem, need or objective, so as to permit the comparison of proposals on the basis of a number of factors including price.

Representative Inventory - for a company that is a supplier of goods, an inventory stored in the community where the company is located, that consists of the type of goods that the supplier deals in. The inventory volume should be large enough to generally to meet the demand of Local and Nunavut Residents and is to be re-stocked as goods are sold so that goods are usually available off the shelf.

Resident Manager - a Nunavut Resident who is capable of undertaking all aspects of the management of the Nunavut Business and has absolute decision making authority over day-to-day matters affecting the Nunavut Business. The Government of Nunavut may waive this requirement in the case of a newly appointed Resident Manager, on proof that within six months the Resident Manager will have met the residency requirements.

Responsible Department - The Department of the Government of Nunavut which holds responsibility for implementing the Nunavummi Nangminiqaqtunik Ikajuuti Policy.

Security - cash, a bank draft or certified cheque payable to the Government, or such other Security specified in the Request for Tender or Contract documents.

Solicit - to request Bids from a limited number of businesses based on some form of pre-qualification.

Standing Offer Agreement - a method of supply used to provide direct access to sources of supply for goods andór services, on an as-needed basis, for specific periods of time, at prearranged prices and delivery conditions.

Subcontractor - includes any party that does not have a direct Contract with the owner, **or** has entered into a Contract with the General Contractor to supply goods or services that will be incorporated into the entire project covered by the Contract.

Subject Community - the community or communities wherein or adjacent to where the Contract performance is undertaken. Where the work is undertaken outside the legal boundaries of a community, the Government of Nunavut may:

i. define "community" to include that adjacent community in any case, or
ii. define "community" to include both or all adjacent communities, where two or more communities, such as Hall BeachIgloolik and Arc tic BayNanisivik, are both very close to the work site.
iii. The name(s) of the Subject Community or Communities to be included in the term "Subject Community" for the purpose of receiving a local preference shall be specified in all Tender documents and Contracts.

Tender - a Bid or offer to sell or provide goods, services, or construction that is submitted to a Contract Authority in response to a Request for Bids or Tenders.
Tenderer - a person, partnership or corporation who submits a Tender.

Tender Adjustment - the amount by which the face value of a Tender is reduced in accordance with Section 6(2) of this Policy. The Tender Adjustment is used for Bid evaluation purposes only. The Tender price minus the Tender Adjustment will be referred to as the adjusted price.

Training - training related to a specific Contract, that has been pre-approved by the Contract Authority.

Project Number: 05-2020

CONTRACTOR'S OBLIGATIONS TO PROVIDE INUIT CONTENT - APPENDIX K

1.0 GENERAL

This contract pertains to work in Nunavut and contains provisions regarding minimum prescribed levels of Inuit Labour that must be met or exceeded in the performance of the work. The requirements set out in this Appendix Ko meet minimum prescribed levels of Inuit Labour is a fundamental term of the contract. The minimum prescribed level of Inuit Labour shall be complied with.

If the amount of Inuit Labour identified by the bidder on Appendix "B-2" of the tender is less than with the tender requirements, this would result in an obvious qualification to the tender submission by the bidder that would ordinarily cause the tender to be considered non-responsive.

For an Inuit Labour level achieved which differs from the level prescribed, a bonus or penalty will be assessed in accordance with the NNI Policy, specifically Articles 12.3 and 12.4 of the Policy. A bonus would be for exceeding the minimum prescribed Inuit Labour level, and a penalty would be for not meeting the minimum prescribed Inuit Labour level.

"Inuit Labour" and "Inuit Goods and Services" identified on the tender forms shall receive a bid adjustment in accordance with the NNI Policy and the adjustment percentages indicated on Appendix B-2 forms. "Inuit Goods and Services" means "Inuit Content" as defined in the Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy definition appendix; the NNI Policy is attached as tender Appendix "J

Damages as described in contract General Condition GC 55 may apply if the Inuit Labour andór Inuit Goods and Services proposed by the Contractor on the tender Appendix B-2 forms are not met. In addition, if the minimum prescribed levels of Inuit Labour identified on page 4 of this Appendix is not met, then for future tenders where there are similar prescribed minimum levels for Inuit Labour , the Contractor may be deemed "not responsible" (as defined in the Government Contract Regulations.)

2.0 DEFINITIONS

.1 "Inuit (singular Inuk)" means a person described in Article 1.1.1 of the Nunavut Land Claims Agreement (NLCA) and who has enrolled himself or herself on the Inuit Enrolment List under Article 35 of the NLCA.

.2 "Inuit firm" means an entity which complies with the legal requirements to carry on business in the Nunavut Settlement Area, and which is,

- .1 a limited company with at least 51% of the company's voting shares beneficially owned by Inuit, or
- .2 a cooperative controlled by Inuit, or
- .3 an Inuk sole proprietorship or partnership; and
- .4 is included on Nunavut Tunngavik Inc. (NTI)'s Inuit Firms Registry

.3 "Labour"

For the purpose of this contract and specifically Appendix K"Labour" means the Labour (including Inuit labour) used on the job in any capacity and including, for example, tradespeople, administrative staff and professional staff whether in a head office or in a site office and attributable to this project. "Inuit Labour" refers to the status of employees and may be directly provided by the general contractor or indirectly through a sub contractor, and is not necessarily through an Inuit Firm.

.4 "Goods and Services"

For the purpose of this contract and specifically Appendix K"Goods and Services" means the entire dollar value of the Work including Labour. For further clarification "Inuit Goods and Services" includes all labour of Inuit firms attributable to and paid from the Contract. "Inuit Goods and Services" are to have the same meaning as the term "Inuit Content" used in the General Conditions of the Construction Contract.

.5 "Inuit Content"
"Inuit Content" is defined as the dollar value of the goods and services required by the Contract supplied by any Inuit Firm or Inuit sole proprietorship and Inuit Labour. Inuit Content may include:

i. goods and services supplied by an Inuit Firm or Inuit supplier acting as the General Contractor. These are referred to as "own forces";
ii. goods and services supplied by an Inuit Firm or Inuit supplier so long as these goods and services are required for the completion of the Contract and are paid for by the Contract.
iii. Inuit labour by an Inuit Firm or a non-Inuit Firm.

3.0 REQUIREMENTS

.1 The Contractor shall maximize the value of Inuit Labour and Inuit Goods and Services and shall meet or exceed the Inuit Labour minimum level identified in this appendix when bidding. In the performance of the work, the Contractor shall meet or exceed the amounts tendered on Appendix B-2.

.2 The Contractors shall submit records on a monthly basis, or as specified, indicating the amount of Inuit Labour and Inuit Goods and Services used. No payment shall be due or payable to the Contractor if the Contractor fails to supply these reports to the Owner.

4.0 FAILURE TO ACHIEVE INUIT CONTENT REQUIREMENTS

In addition to the bonus or penalty prescribed by the Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy for exceeding or not meeting the minimum prescribed Inuit Labour level set out on page 4 of this Appendix Kthe following damages may apply for not meeting Inuit Labour and ór Inuit Goods and Services requirements:

.1 There is a requirement to provide no less than the levels of Inuit Labour and Inuit Goods and Services tendered by the Contractor on Appendix B-2 of the tender. Failure to meet this requirement by achieving the levels tendered may result in the Owner applying damages described in the contract General Condition GC 55.

.2 Additionally, if the contractor fails to meet the prescribed minimum Inuit Labour set out on page 4 of this Appendix Kthen for future tenders where there are similar prescribed minimum levels for Inuit Labour the Owner may deem the Contractor to be "not responsible" (as defined in the Government Contract Regulations).

.3 The Owner may terminate this contract prior to Final Completion if the Contractor has not demonstrated compliance with the requirement to attain the prescribed minimum levels of Inuit Labour set out on page 4 of this Appendix K

5.0 INDEMNIFICATION

.1 The Contractor shall indemnify the Owner against any claim brought by any person because of any failure by the Contractor to achieve the prescribed levels of Inuit Labour prescribed by this contract.

6.0 WAIVER OF INUIT CONTENT REQUIREMENTS

.1 The prescribed level of Inuit Labour shall only be reduced when sufficient Inuit Labour is not available and the Contractor has requested and received prior approval by the Owner in writing to reduce the prescribed levels.

Inuit Labour

It is a fundamental term of this contract that the contractor shall maximize the value of Inuit labour used to perform the Work. Therefore the GN has set a minimum percent by dollar value for the use of Inuit labour. The Inuit labour content may be provided by the general contractor or any subcontractor and may include professional or administrative staff or skilled or unskilled trades people, and not necessarily through an Inuit Firm. The minimum may only be reduced where sufficient Inuit labour is not available and the approval of the Owner has been obtained in writing.

For the purposes of this contract the GN has prescribed that the following minimum percent of the total labour for this job by dollar value shall be provided by Inuit workers.	20 % **Prescribed** minimum level of Inuit labour as a percent of total labour by dollar value.

Substantiation

In order to substantiate the amount of Inuit Labour the general contractor shall be responsible for providing an amalgamated employment report that shall reflect the Inuit labour used by the general contractor and any other sub contractor or supplier. The general contractor shall submit this employment report with every Progress Claim. Receipt of an employment report shall be a condition precedent to the release of a progress payment, an interim payment andór a final payment.

If requested, the general contractor shall also provide a completed "Employee Verification and Consent Form" for an Inuit worker.

Construction Contract

Project No: 05-2020

Name of Project: Cape Dorset P-Lake Sewage Lagoon

Project Location: Cape Dorset

Contract Number: _____

Government of Nunavut

Revised: April 2000

ARTICLES OF AGREEMENT

These Articles of Agreement, effective on the _____ day of _____, 20____.

Between

_____

(herein the "Owner")

and

_____

(herein the "Contractor")

witness that in consideration for the mutual promises and obligations contained in the contract, the Owner and the Contractor covenant and agree as follows:

A1 CONTRACT DOCUMENTS

1.1 Subject to A1.4 and A1.5, the documents forming the contract between the Owner and the Contractor, referred to herein as the contract documents are all of those documents referred to on Appendix A of the Tender and;

1.1.1 any Addenda issued during the Tender period and identified in Clause 2 of the Tender Form,

1.1.2 any amendment or variation of the contract documents that is made in accordance with the General Conditions,

1.2 1.2.1 The Owner hereby designates _____

as the Owner's Representative for the Department of _____ of the Government of Nunavut.

1.2.3 The Contractor hereby designates _____
as the Contractor's Representative.

1.3 In the contract;

1.3.1 "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/or

1.3.2 "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 the 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.

A2 DATE OF COMPLETION OF WORK AND DESCRIPTION OF WORK

2.1 The Contractor shall, between the effective date of the Agreement and the _____ day of _____, 20__, in a careful and workmanlike manner, diligently perform and complete the following work:

_____

which work is more particularly described in the Plans and Specifications.

A3 CONTRACT AMOUNT

3.1 Subject to any increase, decrease, deduction, reduction, or set-off permitted under the terms of the contract, the Owner shall pay the Contractor at the times and in the manner that is set out or referred to in the Agreement;

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, and/or

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 that is set out in a Final Certificate of Measurement referred to in GC43.7 multiplied in each case by appropriate unit price that is set out in the Unit Price Table "Appendix D" in consideration for the performance of the work or the part thereof that is subject to a Unit Price Arrangement.

3.2 For the information and guidance of the Contractor and the person administering the contract on behalf of the Owner, 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 Owner to the Contractor for the part of the work to which a Unit Price Arrangement is applicable will not exceed

$_____

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.

A4 UNIT PRICE TABLE

4.1 The Owner and the contractor agrees that Appendix "D" of the Tender is the Unit Price Table for the purposes of the Contract.

4.2 The Unit Price Table that is set out in A4.1 designates the part of the work to which a Unit Price Arrangement is applicable.

4.3 The part of the work that is not designated in the Unit Price Table referred to in A4.2 is the part of the work to which a Fixed Price Arrangement is applicable.

A5 FINANCIAL ADMINISTRATION ACT (NUNAVUT)

The attention of the Contractor is drawn to the following statutory provision. It is a condition of this Agreement that payment hereunder is subject to Section 46 of the Financial Administration Act (Nunavut) as amended or re-enacted in successor legislation during the term of this Contract. Section 46 currently provides as follows: "It is a condition of every contract made by or on behalf of the Government requiring an expenditure that an expenditure pursuant to the contract will be incurred only if there is a sufficient uncommitted balance in the appropriated item for the fiscal year in which the expenditure is required under the Contract."

A6 JOINT AND SEVERAL LIABILITY

If the Contractor is comprised of more than one party, as in the case of a joint venture or a partnership, then in that event such parties declare themselves to be bound jointly and severally with one another with respect to the fulfilment of all the terms and conditions of this agreement and hereby renounce their benefits of division and discussion and the obligations of such parties shall be joint and several, and each party shall execute this agreement.

SIGNED, SEALED AND DELIVERED in the presence of:

Contractor: Contractor's Full Legal Business Name and Address:

_____ (Seal)

_____

_____

Facsimile No. _____

- _____
  Signature

  _____
  Name

  _____
  Title

  _____
  Date

- _____
  Signature

  _____
  Name

  _____
  Title

  _____
  Witness

  _____
  Name

  _____
  Title

Owner: Owner's Full Business Name and Address

_____

_____

Government of Nunavut _____

Facsimile No. (867) _____

- _____
  Signature

  _____
  Name

  _____
  Title

  _____
  Date

  _____
  Witness

  _____
  Title

END OF ARTICLES OF AGREEMENT

TERMS OF PAYMENT

TP1 AMOUNT PAYABLE - GENERAL

1.1 Subject to any other provisions of the contract, the Owner, hereinafter in these Terms of Payment the "Government of Nunavut" will pay the Contractor, at the times and in the manner hereinafter set out, the amount by which the aggregate of the amounts described in TP2 exceeds the aggregate of the amounts described in TP3, and the Contractor shall accept that amount as payment in full satisfaction for everything furnished and done by the contractor in respect of the Work to which the payment relates.

TP2 AMOUNT PAYABLE TO THE CONTRACTOR

2.1 The amounts "payable to the Contractor" are the aggregate of:

2.1.1 the amounts referred to in the Articles of Agreement, and
2.1.2 the amounts, if any, that are payable to the Contractor pursuant to the General Conditions, and
2.1.3 the amounts, if any, that are a bonus for Inuit Labour achieved, as described in the Nunavummi Nangminiqaqtunik Ikajuuti (NNI Policy) for the Work, and
2.1.4 the applicable Goods and Services Tax (GST).

TP3 AMOUNTS PAYABLE TO THE GOVERNMENT OF NUNAVUT

3.1 The amounts "payable to the Government of Nunavut" are the aggregate of the amounts, if any, that the Contractor is liable to pay the Government of Nunavut pursuant to the within contract, including any penalty assessed for Inuit Labour shortfalls, as described in the Nunavummi Nangminiqaqtunik Ikajuuti (NNI Policy) for the Work.

3.2 When making any payment to the Contractor, the failure of the Government of Nunavut to deduct an amount referred to in TP3.1, from an amount referred to in TP2 shall not constitute a waiver of the right to do so, or an admission of lack of entitlement to do so in any subsequent payment to the Contractor.

TP4 TIME OF PAYMENT

4.1 For the purposes of this Term of Payment, "payment period" means a period of 30 consecutive days or such other interval as is agreed between the Contractor and the Government of Nunavut.

4.2 The Contractor shall, on the expiration of a payment period, deliver to the "Representative", as designated by the Government of Nunavut and set out in Article of Agreement A1.2.1, in respect of that payment period a written invoice for that part of the Work that has been completed with the required associated backup and a listing of material that was delivered to the Work site but not incorporated into the Work during that payment period. The Contractor's official invoice shall include, as a minimum; - a full description of the Work and materials, the Contract number, the Contractor's GST Registration Number, and the dollar values as follows: Sub-total #1 (no GST), the Holdback, Sub-total #2 (Sub-total #1 less the Holdback), and the Grand Total (Sub-total #2 plus GST).

4.3 The Representative, as designated by the Government of Nunavut, will, not later than ten days after receipt of the invoice referred to in TP4.2:

4.3.1 inspect or otherwise satisfy themselves that the part of the Work and the materials described in the invoice have been provided in a satisfactory manner (an inspection may be carried out by either a Representative designated by the Government of Nunavut, or its' consultant), and
4.3.2 coordinate with the Contractor to resolve any disagreements on the content and amount of the invoice (obtaining a corrected invoice from the Contractor if changes are required), and
4.3.3 complete a Request for Contact Payment (RCP), indicating on it the date that the Contractor's invoice was approved, and

4.3.4 send to the Government of Nunavut, Public Works and Services Department (PW&S)'s finance section the original invoice that has been agreed upon along with a Request for Contact Payment (RCP) signed by the Representative, as designated by the Government of Nunavut, (and PW&S's Regional Project Manager or the Regional Director depending on the signing authority of these persons) and a copy of the PW&S's Major Works Contract Payment Check List with the appropriate sections filled out. In addition, the Representative, as designated by the Government of Nunavut, will send a copy of the agreed invoice and the RCP to the Contractor.

4.4 Subject to TP1, the Government of Nunavut, will pay the Contractor in accordance with the amounts stipulated hereunder. Invoices of Nunavut Contractors, as defined by the Nunavummi Nangminiqaqtunik Ikajuuti (NNI Policy), will become due and payable 20 days after receipt of the invoice, provided the invoice is approved by the Representative, as designated by the Government of Nunavut, as specified in TP4.3. Invoices from other Contractors will become due and payable 30 days after approval of the invoice by the Representative, as designated by the Government of Nunavut, as specified in TP4.3:

4.4.1 an amount that is equal to 95% of the value that is indicated in that invoice if a labour and material payment bond has been furnished by the Contractor, or;

4.4.2 an amount that is equal to 90% of the value that is indicated in that invoice if a labour and material payment bond has not been furnished by the Contractor.

4.5 Subject to TP1 and TP4.6, the Government of Nunavut will, not later than 20 days for Nunavut Contractors (as defined by the Nunavummi Nangminiqaqtunik Ikajuuti (NNI Policy) of the GN) or 30 days for other Contractors after the date of issue of a Substantial Certificate of Completion referred to in GC43.2, pay the Contractor the amount referred to in TP1 less the aggregate of;

4.5.1 the sum of all payments that were made pursuant to TP4.4,

4.5.2 an amount that is equal to the Government of Nunavut's estimate of the cost to the Government of Nunavut of rectifying defects described in the Substantial Certificate of Completion, and

4.5.3 an amount that is equal to the Representative, as designated by the Government of Nunavut, estimate of the cost to the Government of Nunavut of completing the parts of the Work described in the Substantial Certificate of Completion other than the defects referred to in TP4.5.2

4.6 It is a condition precedent to the Government of Nunavut's obligation under TP4.5 that:

4.6.1 the Contractor has made and delivered to the Government of Nunavut's Representative a statutory declaration described in TP4.7 in respect of a Substantial Certificate of Completion referred to in GC43.2, and

4.6.2 the Contractor has complied with the various requirements to provide Inuit Local and Nunavut Employment and involvement reports as set out in this contract.

4.7 A statutory declaration referred to in TP4.6 and TP4.9 shall be submitted on the attached form, page 4 & 5.

4.8 Subject to TP1 and TP4.9, the Government of Nunavut will, not later than 20 days for Nunavut Contractors (as defined by the Nunavummi Nangminiqaqtunik Ikajuuti (NNI Policy) of the GN or 30 days for other Contractors after the date of issue of a Final Certificate of Completion referred to in GC43.1 and provided that the Government of Nunavut is in receipt of statutory declaration as described in TP4.7, pay the Contractor the amount referred to in TP1 less the aggregate of:

4.8.1 the sum of all payments that were made pursuant to TP4.4, and;

4.8.2 the sum of all payments that were made pursuant to TP4.5.

TP5 PROGRESS REPORT AND PAYMENT THEREUNDER NOT BINDING ON THE GOVERNMENT OF NUNAVUT

5.1 Neither a RCP referred to in TP4.3 nor any payment made by the Government of Nunavut, pursuant to these Terms of Payment shall be construed as an admission by the Government of Nunavut, that the Work, material or any part thereof is complete, is satisfactory or is in accordance with the contract.

TP6 RIGHT OF SET-OFF

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

6.2 For the purposes of this Terms of Payment document, "current contract", means a contract between the Government of Nunavut and the Contractor;

6.2.1 under which the Contractor has an undischarged obligation to perform or supply work, labour or material, or;

6.2.2 in respect of which the Government of Nunavut, has, since the date on which the Articles of Agreement were made, exercised any right to take the work that is subject of the contract out of the Contractor's hands.

TP7 PAYMENT IN EVENT OF TERMINATION

7.1 If the contract is terminated pursuant to GC40, the Government of Nunavut, will pay the Contractor any amount that is lawfully due and payable to the Contractor as soon as is practicable under the circumstances.

Certificate of Completion

STATUTORY DECLARATION

THE MATTER OF a contract bearing

#

between the Government of Nunavut and

(Insert full name of contractor)

herein the Contractor,

for
(briefly describe the work to be performed)

dated the _____ day of _____,

and

IN THE MATTER OF the Certificate of Completion relating thereto

TO WIT:

I, _____ of _____
(print or type full name of declarant) (declarant's city of residence)

DO SOLEMNLY DECLARE:

(1) That I am _____
(print or type declarant's position or title with the Contractor or state that the declarant is the Contractor)

And as such have a personal knowledge of the said contract and of the facts and matters stated herein.

(2) That all assessments and levies under The Unemployment Insurance Act, The Workers' Compensation Act or other social or labour legislation in respect of the said contract have been fully paid:

(3) That all subcontractors, labourers and suppliers of materials and equipment whatsoever who have entered into agreements to supply goods or services which have been incorporated into the construction of this project have been fully paid except for contractual holdbacks and the further amount(s), if any, which is (are) listed below which is (are) being withheld from the subcontractor(s) listed herein, due to legitimate dispute(s) arising out of the performance, or lack of performance, of the work by the listed subcontractor(s).

Subcontractor(s)	Amount(s) in Dispute and Being Withheld
_____	_____
_____	_____
_____	_____

Certificate of Completion - STATUTORY DECLARATION
2nd page

and the following amounts, if any, which are being withheld pending payment to the Contractor by the Government of Nunavut.

Subcontractor(s)	Amount(s) Being Withheld
_____	_____
_____	_____
_____	_____

And I make this SOLEMN DECLARATION conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the LAWS OF CANADA and NUNAVUT.

DECLARED before me at _____

this _____ day of _____,

(Signature of Declarant)

(signature of person before whom declaration is made)

(print name of person before whom declaration is made)

A Notary Public, Commissioner, etc. _____

(please state clearly authority for receiving solemn declarations - notaries to affix notary seal)

NOTE 1 Where the Contractor is a corporation or a partnership, declarant's position in the corporation or partnership, and the corporation or partnership name should be clearly shown in No. 1.

NOTE 2. Where the Contractor is an individual, that person must make the declaration. Where the Contractor is a partnership the declaration must be made by one of the partners. Where the Contractor is an incorporated company, the declaration must be made by the President, Vice-President, Secretary Treasurer or a Director. If any other person makes the declaration, two copies of the by-law issued under the corporation seal, authorizing the individual to execute documents must be submitted with the first declaration of each contract.

If this declaration is not complete in every detail, it will be returned for completion and payment will be delayed.

The following section of the Criminal Code of Canada is hereby brought to the attention of the Declarant:

122. Everyone who, not being a witness in a judicial proceeding but being permitted, authorized or required by law to make a statement by affidavit, by solemn declaration or orally under oath, makes in such statement, before a person who is authorized by law to permit it to be made before him, an assertion with respect to a matter of fact, opinion, belief or knowledge, knowing that the assertion is false, is guilty of an offense and is liable to imprisonment for fourteen years.

122.1 (1) Everyone who, not being specially permitted, authorized or required by law to make a statement by affidavit, by solemn declaration or orally under oath, makes in such a statement, before a person who is authorized by law to permit it to be made before him, an assertion with respect to a matter of fact, opinion, belief or knowledge, knowing that the assertion is false, is guilty of an offense punishable on summary conviction."

GENERAL CONDITIONS

GENERAL CONDITIONS

GC1 INTERPRETATION

1.1 In the contract

1.1.1 where reference is made to a part of the contract by means of numbers preceded by letters, the reference shall be construed to be a reference to the particular part of the contract that is identified by that combination of letters and numbers and to any other part of the contract referred to therein.

1.1.2 "contract" means the contract documents referred to in the Articles of Agreement.

1.1.3 "contract security" means any security given by the Contractor to the Owner in accordance with the contract.

1.1.4 "Engineer" means the officer or employee of the Owner who is designated pursuant to the Articles of Agreement and includes a person specially authorized by him to perform, on his behalf, any of his functions under the contract.

1.1.5 "material" includes all commodities, articles and things required to be furnished by or for the Contractor under the contract for incorporation into the work.

1.1.6 "person" includes, unless the context otherwise requires, a partnership, proprietor-ship, firm, joint venture, consortium and a corporation.

1.1.7 "plant" includes all animals, tools, implements, machinery, vehicles, buildings, structures, equipment and commodities, articles and things other than material, that are necessary for the due performance of the contract.

1.1.8 "subcontractor" means a person to whom the Contractor has, subject to GC4, subcontracted the whole or any part of the work.

1.1.9 "substantial performance" as defined in the lien legislation applicable to the Place of Work. If such legislation is not in force, is not applicable or does not contain such definition, substantial performance shall have been reached when Work is ready for use or is being used for the purpose intended and is so certified by the Engineer.

1.1.10 "superintendent" means the employee of the Contractor who is designated by the Contractor to act pursuant to GC18.

1.1.11 "work" includes, subject only to any express stipulation in the contract to the contrary, everything that is necessary to be done, furnished or delivered by the Contractor to perform the contract.

1.2 The division into sections, the table of contents, and the headings in the contract documents, other than in the Plans and Specifications, form no part of the contract but are inserted for convenience of reference only.

1.3 In interpreting the contract, in the event of discrepancies or conflicts between anything in the Plans and Specifications and the General Conditions, the General Conditions govern.

1.4 In interpreting the Plans and Specifications, in the event of discrepancies or conflicts between

1.4.1 the Plans and Specifications, the Specifications govern;

1.4.2 the Plans, the Plans drawn with the largest scale govern, and

1.4.3 figured dimensions and scaled dimensions, the figured dimensions govern.

1.5 Any reference to a statutory provision shall include any subordinate legislation made and from time-to- time amended, extended or re-enacted.

1.6 This Agreement shall be governed by and construed in accordance with the laws of Nunavut and the laws of Canada as applicable therein.

1.7 Unless otherwise indicated, all dollar amounts referred to in the Agreement are in lawful money of Canada.

1.8 In any provision of this Agreement 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 Agreement shall continue in full force and effect. In the event any provision of this Agreement, 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 Agreement shall remain in full force and effect.

1.9 Failure by either party to exercise any of its rights, powers or remedies hereunder or its delay to do so shall not constitute a waiver of those rights, powers or remedies. The single or partial exercise of a right, power or remedy shall not prevent its subsequent exercise or the exercise of any other right, power or remedy.

1.10 The Contractor shall be required to comply, and shall require its subcontractors to comply, with all applicable laws, orders, rules and regulations; and, without limiting the generality of the foregoing, the Contractor shall at its sole expense comply with all unemployment insurance, Worker's Compensation, income tax, payroll tax, Canada Pension Plan, occupational health and safety and environmental protection legislation.

GC2 SUCCESSORS AND ASSIGNS

2.1 The contract shall inure to the benefit of and be binding upon the parties hereto and their lawful heirs, executors, administrators, successors and assigns.

GC3 ASSIGNMENT OF CONTRACT

3.1 The contract may not be assigned by the Contractor, either in whole or in part without the written consent of the Owner.

GC4 SUBCONTRACTING BY CONTRACTOR

4.1 Subject to this General Condition, the Contractor may subcontract any part of the work so long as such subcontracting is consistent with the information provided on Appendix B-1 and B-2 of the Tender.

4.2 The Contractor shall notify the Engineer of his intention to subcontract.

4.3 A notification referred to in GC4.2 shall identify the part of the work, and the subcontractor with whom it is intended to subcontract.

4.4 The Engineer may, within six days of receipt by him of a notification referred to in GC4.2, object to the intended subcontracting.

4.5 If the Engineer objects to a subcontracting pursuant to GC4.4, the Contractor shall not enter into the intended subcontract.

4.6 The Contractor shall not, without the written consent of the Owner change a subcontractor who has been engaged by him in accordance with this General Condition and the tender form, and if any changes are made without consent, the contract may be terminated at the option of the Owner.

4.7 Every subcontract entered into by the Contractor shall adopt all of the terms and conditions of this contract that are of general application.

4.8 Neither a subcontracting nor the Engineer's consent to a subcontracting by the Contractor shall be construed to relieve the Contractor from any obligation under the contract or to impose any liability upon the Owner

GC5 AMENDMENTS

5.1 No amendment or change in any of the provisions of the contract shall have any force or effect until it is reduced to writing.

GC6 NO IMPLIED OBLIGATIONS

6.1 No implied terms or obligations of any kind by or on behalf of the Owner shall arise from anything in the contract and the express covenants and agreements therein contained and made by the Owner are the only covenants and agreements upon which any rights against the Owner are to be founded.

6.2 The contact supersedes all communications, negotiations and agreements, either written or oral, relating to the work that was made prior to the date of the contract.

GC7 TIME OF ESSENCE

7.1 Time is of the essence of the contract.

GC8 INDEMNIFICATION BY CONTRACTOR

8.1 The Contractor shall indemnify and save the Owner harmless from and against all claims, demands, losses, damages, actions, suits or proceedings by whomever made, brought or prosecuted and in any manner based upon, arising out of, related to, occasioned by or attributable to the activities of the Contractor, his servants, agents, and subcontractors in performing the work including an infringement or an alleged infringement of patent of invention or any kind of intellectual property.

8.2 For the purposes of GC8.1, "activities" includes but is not limited to any act improperly carried out, any omission to carry out an act and any delay in carrying out an act.

GC9 INDEMNIFICATION BY THE OWNER

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

9.1.1 lack of or a defect in the Owner's title to the work site whether real or alleged; or

9.1.2 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 the contract employing a model, plan or design or any other thing related to the work that was supplied by the Owner to the Contractor.

GC10 NOTICES TO CONTRACTOR

10.1 Notices for the purposes of GC37.1.1, GC39 and GC40 shall be in writing and shall be given

10.1.1 by delivering the notice to the Contractor in person or, if the Contractor is a partnership, firm, joint venture consortium or corporation, to a senior administrative or executive officer thereof, or

10.1.2 by mailing the notice to the Contractor at his address set out in the Articles of Agreement.

10.2 A notice referred to in GC10.1 shall be deemed to have been received by the Contractor

10.2.1 if it was delivered pursuant to GC10.1.1, on the day that it was delivered, and

10.2.2 if it was sent by mail pursuant to GC10.1.2, on the earlier of the day it was received by the Contractor and the sixth day after it was mailed.

10.3 Any notice, consent, order, direction, decision, or other communication, other than a notice referred to in

GC10.1, that may be given to the Contractor pursuant to the contract may be given in any manner, but it shall be deemed to have been received by the contractor, if it is in writing.

10.3.1 on the day that it was delivered to the superintendent, or

10.3.2 on the sixth day after it was mailed to the Contractor at his address set out in the Articles of Agreement.

10.4 Where the postal service is disrupted by a strike, a notice, consent, order, direction, decision or other communication may be given to the Contractor by facsimile and shall be deemed to have been received by the Contractor twenty-four hours after it was transmitted.

GC11 MATERIAL, PLANT AND REAL PROPERTY SUPPLIED BY THE OWNER

11.1 Subject to GC11.2, the Contractor is liable to the Owner for any loss or damage to material, plant or real property that is supplied or placed in the care, custody and control of the contractor by the Owner for use in connection with the contract, whether or not that loss or damage is attributable to causes beyond the Contractor's control.

11.2 The Contractor is not liable to the Owner for any loss or damage to material, plant or real property referred to in GC11.1 if that loss or damage results from and is directly attributable to reasonable wear and tear.

11.3 The Contractor shall not use any material, plant or real property referred to in GC11.1 except for the purpose of performing this contract.

11.4 When the Contractor fails to make good any loss or damage for which he is liable under GC11.1 within a reasonable time after being required to so by the Engineer, the Engineer may cause the loss or damage to be made good at the Contractor's expense, and the Contractor shall thereupon be liable to the Owner for the cost thereof and shall, on demand, pay to the Owner an amount equal to that cost.

11.5 The Contractor shall keep such records of all material, plant and real property referred to in GC11.1 as the Engineer from time to time requires and shall satisfy the Engineer, when requested, that such material, plant and real property are at the place and in the condition in which they ought to be.

GC12 MATERIAL, PLANT AND REAL PROPERTY BECOME THE PROPERTY OF THE OWNER

12.1 All material and plant and the interest of the Contractor in all real property, licenses, powers and privileges acquired, used or provided by him for the contract shall, from the time of their acquisition, use or provision, be the property of the Owner for the purposes of the work and they shall continue to be the property of the Owner

12.1.1 in the case of material, until the Engineer indicates that he is satisfied that it will not be required for the work; and

12.1.2 in the case of plant, real property, licenses, powers and privileges, until the Engineer indicates that he is satisfied that the interest vested in the Owner therein is no longer required for the purposes of the work.

12.2 Material or plant that is the property of the Owner by virtue of GC12.1 shall not be taken away from the work site or used or disposed of except for the purposes of the work without the written consent of the Engineer.

12.3 The Owner is not liable for loss of or damage from any cause to the material or plant referred to in GC12.1 and the Contractor is liable for such loss or damage notwithstanding that the material or plant is the property of the Owner

GC13 MUNICIPAL PERMITS

13.1 The Contractor shall, within 30 days after the date of the contract, tender to a municipal authority an amount

equal to all fees and charges that would be lawfully payable to that municipal authority in respect of building permits as if the work were being performed for a person other than the Owner

13.2 Within 10 days of making a tender pursuant to GC13.1, the Contractor shall notify the Engineer of his action and of the amount tendered and whether or not the municipal authority has accepted that amount.

13.3 If the municipal authority does not accept the amount tendered pursuant to GC13.1, the Contractor shall pay that amount to the Owner within 6 days after the time stipulated in GC13.2.

13.4 For the purposes of GC13.1, to GC13.3, "municipal authority" means any authority that would have jurisdiction respecting permission to perform the work if the owner were not the Owner.

GC14 PERFORMANCE OF WORK UNDER DIRECTION OF ENGINEER

14.1 The Contractor shall

14.1.1 permit the Engineer to have access to the work and its site at all times during the performance of the contract;

4.1.2 furnish the Engineer with such information respecting the performance of the contract as he may require; and

14.1.3 give the Engineer every possible assistance to enable the Engineer to carry out his duty to see that the work is performed in accordance with the contract and to carry out any other duties and exercise any powers specially imposed or conferred on the Engineer under the contract.

GC15 COOPERATION WITH OTHER CONTRACTORS

15.1 Where, in the opinion of the Engineer, it is necessary that other contractors or workers with or without plant and material, be sent onto the work or its site, the Contractor shall, to the satisfaction of the Engineer, allow them access and cooperate with them in the carrying out of their duties and obligations.

15.2 The Owner shall pay the Contractor the cost calculated in accordance with GC46 to GC49, of the extra labour, plant and material that was necessarily incurred if:

15.2.1 the sending onto the work or its site of other contractors or workers pursuant to GC15.1 could not have been reasonably foreseen or anticipated by the Contractor when entering into the contract;

and

15.2.2 the Contractor incurs, in the opinion of the Engineer, extra expense in complying with GC15.1;

and

15.2.3 the Contractor has given the Engineer written notice of his claim for the extra expense referred to in GC15.2.2 within 10 days of the date that the other contractors or workers were sent onto the work or its site.

GC16 EXAMINATION OF WORK

16.1 If, at any time after the commencement of the work but prior to the expiry of the warranty period, the Engineer has reason to believe that the work or any part thereof has not been performed in accordance with the contract, the Engineer may have that work examined by an expert of his choice.

16.2 If, as a result of an examination of the work referred to in GC16.1, it is established that the work was not performed in accordance with the contract, then, in addition to and without limiting or otherwise affecting any of the Owner's rights and remedies under the contract either at law or in equity, the Contractor shall pay the Owner, on demand, all reasonable costs and expenses that were incurred by the Owner in having that examination performed.

GC17 CLEARING OF SITE

17.1 The Contractor shall maintain the work and its site in a tidy condition and free from the accumulation of waste material and debris, in accordance with any directions of the Engineer.

17.2 Before the issue of a Certificate of Substantial Completion referred to in GC43.2, the Contractor shall remove all the plant and material not required for the performance of the remaining work, and all waste material and other debris, and shall cause the work and its site to be clean and suitable for occupancy or use by the Owner's servants, unless otherwise stipulated in the contract. The Contractor shall, as directed by the owner, take down all signs erected during construction.

17.3 Before the issue of a final certificate referred to in GC43.1, the Contractor shall remove from the work and its site all of the surplus plant and material and any waste material and other debris.

17.4 The Contractor's obligations described in GC17.1 to GC17.3 do not extend to waste material and other debris caused by the Owner's servants or contractors and workers referred to in GC15.1.

GC18 CONTRACTOR'S SUPERINTENDENT

18.1 The Contractor shall, forthwith upon the award of the contract, designate a Superintendent.

18.2 The Contractor shall forthwith notify the Engineer of the name, address and telephone number of a superintendent designated pursuant to GC18.1.

18.3 A superintendent designated pursuant to GC18.1 shall be in full charge of the site of the work and the operations of the Contractor, his servants, agents, and subcontractors in the performance of the work and is authorized to accept any notice, consent, order, direction, decision or other communication on behalf of the Contractor that may be given to the superintendent under the contract.

18.4 The Contractor shall, until the work has been completed, keep a competent superintendent at the work site during working hours.

18.5 The Contractor shall, upon the request of the Engineer, remove any superintendent who, in the opinion of the Engineer, is incompetent or has been conducting himself improperly and shall forthwith designate another superintendent who is acceptable to the Engineer.

18.6 Subject to GC18.5, the Contractor shall not substitute a superintendent without the written consent of the Engineer.

18.7 A breach by the Contractor of GC18.6 entitles the Engineer to refuse to issue any certificate referred to in GC43 until the superintendent has returned to the work site or another superintendent who is acceptable to the Engineer has been substituted.

GC19 NATIONAL SECURITY

19.1 If the Owner is of the opinion that the work is of a class or kind that involves the national security, he may order the Contractor

19.1.1. to provide him with any information concerning persons employed or to be employed by him for purposes of the contract; and

19.1.2 to remove any person from the work and its site if, in the opinion of the Owner, that person may be a risk to the national security.

19.2 The Contractor shall, in all contracts with persons who are to be employed in the performance of the contract,

make provision for his performance of any obligation that may be imposed upon him under GC18 to GC20.

19.3 The Contractor shall comply with an order of the Owner under GC19.1.

GC20 UNSUITABLE WORKERS

20.1 The Contractor shall, upon the request of the Engineer, remove any person employed by him for purposes of the contract who, in the opinion of the Engineer, is incompetent or has conducted himself improperly, and the Contractor shall not permit a person who has been removed to return to the work site.

GC21 INCREASED OR DECREASED COSTS

21.1 The amount set out in the Articles of Agreement shall not be increased or decreased by reason of any increase or decrease in the cost of the work that is brought about by an increase or decrease in the cost of labour, plant or material or the wage rates set out in or prescribed pursuant to the Labour Conditions.

21.2 Notwithstanding GC21.1, and GC34, an amount set out in the Articles of Agreement shall be adjusted in the manner provided in GC21.3, if any change in a tax imposed under the Excise Act, the Excise Tax Act, the Old Age Security Act, the Customs Act or the Customs Tariff

21.2.1 occurs after the date of the submission by the Contractor of his tender for the contract.

21.2.2 applies to material, and

21.2.3 affects the cost to the Contractor of that material.

21.3 If a change referred to in GC21.2 occurs, the appropriate amount set out in the Articles of Agreement shall be increased or decreased by an amount equal to the amount that is established by an examination of the relevant records of the Contractor referred to in GC50 to be the increase or decrease in the cost incurred that is directly attributable to that change.

21.4 For the purpose of GC21.2, where a tax is changed after the date of submission of the tender but public notice of the change has been given by the Owner of Finance before that date, the change shall be deemed to have occurred before the date of submission of the tender.

GC22 LABOUR AND MATERIAL

22.1 The Contractor shall use Canadian labour and material in the performance of the work to the full extent to which they are procurable, consistent with proper economy and the expeditious carrying out of the work.

GC23 PROTECTION OF WORK AND DOCUMENTS

23.1 The Contractor shall guard or otherwise protect the work and its site, and protect the contract, specifications, plans, information, material, plant and real property, whether or not they are supplied by the Owner to the Contractor, against loss or damage from any cause, and he shall not use, issue, disclose or dispose of them without the written consent of the Owner, except as may be essential for the performance of the work.

23.2 If any document or information given or disclosed to the Contractor is assigned a security rating by the person who gave or disclosed it, the Contractor shall take all measures directed by the Engineer to be taken to ensure the maintenance of the degree of security that is ascribed to that rating.

23.3 The Contractor shall provide all facilities necessary for the purpose of maintaining security, and shall assist any person authorized by the Owner to inspect or to take security measures in respect of the work and its site.

23.4 The Engineer may direct the Contractor to do such things and to perform such additional work as the Engineer considers reasonable and necessary to ensure compliance with or to remedy a breach of GC23.1 to GC23.3.

GC24 PUBLIC CEREMONIES AND SIGNS

24.1 The Contractor shall not permit any public ceremony in connection with the work without the prior consent of the Owner.

24.2 The Contractor shall not erect or permit the erection of any sign or advertising on the work or its site without the prior consent of the Engineer.

GC25 PRECAUTIONS AGAINST DAMAGE, INFRINGEMENT OF RIGHTS, FIRE AND OTHER HAZARDS

25.1 The Contractor shall, at his own expense, do whatever is necessary to ensure that:

25.1.1 no person, property, right, easement or privilege is injured, damaged or infringed by reason of the Contractor's activities in performing the contract.

25.1.2 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 or plant;

25.1.3 fire hazards in or about the work or its site are eliminated and, subject to any direction that may be given by the Engineer, any fire is promptly extinguished.

25.1.4 the health and safety of all persons employed in the performance of the work is not endangered by the method or means of its performance;

25.1.5 adequate medical services are available to all persons employed on the work or its site at all times during the performance of the work;

25.1.6 adequate sanitation measures are taken in respect of the work and its site; and

25.1.7 all stakes, buoys and marks placed on the work or its site by or under the authority of the Engineer are protected and are not removed, defaced, altered or destroyed.

Without limiting any of the foregoing, the Contractor shall take all actions required or necessary to ensure compliance by all persons employed in the performance of the work or at the site of the work, including the employees of the Contractor and sub-contractors and their employees, with the *Consolidation of Safety Act,* R.S.N.W.T. 1988, c.S-1 and any regulations thereunder.

25.2 The Engineer may direct the Contractor to do such things and to perform such additional work as the Engineer considers reasonable and necessary to ensure compliance with or to remedy a breach of GC25.1.

25.3 The Contractor shall, at his own expense, comply with a direction of the Engineer made under GC25.2.

GC26 INSURANCE

26.1 The Contractor shall, at his own expense, maintain insurance contracts in respect of the work

26.1.1 with insurance companies approved by the Owner, companies must comply with the Insurance Act for Nunavut, and

26.1.2 that are in a form, of the nature, in the amounts, for the periods and containing the terms and conditions, if any, specified in GC58, GC59, GC60, GC61 and GC62.

GC27 INSURANCE PROCEEDS

27.1 If the work or any part thereof is lost, damaged or destroyed and monies are paid to the Owner in respect of that loss, damage or destruction under an insurance contract maintained by the Contractor pursuant to GC26, the monies shall be held by the Owner for the purposes of the contract.

27.2 The Owner may elect to retain the monies referred to in GC27.1 and in that event the monies belong to the Owner absolutely.

27.3 If an election is made pursuant to GC27.2, the Owner may cause an audit to be made of the accounts of the Contractor and of the Owner in respect of the part of the work that was lost, damaged or destroyed for the purpose of establishing the difference, if any, between

27.3.1 the aggregate of the amount of the loss or damage suffered or sustained by the Owner, including any costs incurred in respect of the clearing and cleaning of the work and its site and any other amount that is payable by the Contractor to the Owner under the contract, minus any monies retained pursuant to GC27.2 and

27.3.2 the aggregate of the amounts payable by the Owner to the Contractor pursuant to the contract up to the date of the loss or damage.

27.4 A difference that is established pursuant to GC27.3 shall be paid forthwith by the party who is determined by the audit to be the debtor to the party who is determined by the audit to be the creditor.

27.5 When payment of a deficiency has been made pursuant to GC27.4, all rights and obligations of the Owner and the Contractor under the contract shall, with respect only to the part of the work that was the subject of the audit referred to in GC27.3, be deemed to have been expended and discharged.

27.6 If an election is not made pursuant to GC27.2, the Contractor shall, subject to GC27.7, clear and clean the work and its site and restore and replace the part of the work that was lost, damaged or destroyed at his own expense as if that part of the work had not yet been performed.

27.7 When the Contractor clears and cleans the work and its site and restores and replaces the work referred to in GC27.6, the Owner shall pay him out of the monies referred to in GC27.1 so far as they will thereunto extend.

27.8 Subject to GC27.7, payment to the Owner pursuant to GC27.7 shall be made in accordance with the contract but the amount of each payment shall be 100% of the amount claimed notwithstanding TP4.4.1 and TP4.4.2.

GC28 CONTRACT SECURITY

28.1 The Contractor shall obtain and deliver contract security to the Engineer in accordance with the provisions of GC56 and GC57.

28.2 If the whole or a part of the contract security referred to in GC28.1 is in the form of a security deposit, it shall be held and disposed of in accordance with GC42 and GC44.

28.3 If a part of the contract security referred to in GC28.1 is in the form of a labour and material payment bond, the Contractor shall post a copy of that bond on the work site.

GC29 CHANGES IN THE WORK

29.1 Subject to GC5, the Engineer may, at any time before he issues his Final Certificate of Completion:

29.1.1 order work or material in addition to that provided for in the Plans and Specifications; and

29.1.2 dispense with or change the dimensions, character, quantity, quality, description, location or position of the whole or any part of the work or material provided for in the Plans and Specifications or in any order made pursuant to GC29.1.1, if that additional work or material dispensation, or change is, in his opinion, consistent with the general intent of the original contract.

29.2 The Contractor shall perform the work in accordance with such order, dispensations and changes that are made

by the Engineer pursuant to GC29.1 from time to time as if they had appeared in and been part of the Plans and Specifications.

29.3 The Engineer shall determine whether or not anything done or omitted by the Contractor pursuant to an order, dispensation or change referred to in GC29.1 increased or decreased the cost of the work to the Contractor.

29.4 If the Engineer determines pursuant to GC29.3 that the cost of the work to the Contractor has been increased, the Owner shall pay the Contractor the increased cost of the labour, plant and material that he necessarily incurred calculated in accordance with GC46 to GC49.

29.5 If the Engineer determines pursuant to GC29.3 that the cost of the work to the Contractor has been decreased, the Owner may reduce the amount payable to the Contractor under the contract by an amount equal to the decrease in the cost of the labour, plant and material that was incurred calculated in accordance with GC46 to GC49.

29.6 An order, dispensation or change referred to in GC29.1 shall be in writing, signed by the Engineer and given to the Contractor in accordance with GC10.

GC30 INTERPRETATION OF CONTRACT BY ENGINEER

30.1 If, at any time before the Engineer has issued a Final Certificate of Completion referred to in GC43.1, any question arises between the parties about whether anything has been done as required by the contract or about what the Contractor is required by the contract to do, and, in particular but without limiting the generality of the foregoing, about

30.1.1 the meaning of anything in the Plans and Specifications,

30.1.2 the meaning to be given to the Plans and Specifications in case of any error therein, omission therefrom, or obscurity or discrepancy in their wording or intention,

30.1.3 whether or not the quality or quantity of any material or workmanship supplied or proposed to be supplied by the Contractor meets the requirements of the contract,

30.1.4 whether or not the labour, plant or material provided by the Contractor for performing the work and carrying out the contract are adequate to ensure that the work will be performed in accordance with the contract and that the contract will be carried out in accordance with its terms,

30.1.5 what quantity of any kind of work has been completed by the Contractor, or

30.1.6 the timing and scheduling of the various phases of the performance of the work,

the question shall be decided by the Engineer whose decision shall be final and conclusive in respect of the work.

30.2 The Contractor shall perform the work in accordance with any decisions of the Engineer that are made under GC30.1 and in accordance with any consequential directions given by the Engineer.

GC31 WARRANTY AND RECTIFICATION OF DEFECTS IN WORK

31.1 Without restricting any warranty or guarantee implied or imposed by law or contained in the contract documents, the Contractor shall, at his own expense, rectify and make good any defect or fault that appears in the work or comes to the attention of the Owner within 12 months from the date of the Substantial Completion referred to in GC43.2.

31.2 The Engineer may direct the Contractor to rectify and make good any defect or fault referred to in GC31.1 or covered by any other expressed or implied warranty or guarantee.

31.3 A direction referred to in GC31.2 shall be in writing, may include a stipulation in respect of the time within

which a defect or fault is required to be rectified and made good by the Contractor, and shall be given to the Contractor in accordance with GC10.3.

31.4 The Contractor shall rectify and make good any defect or fault described in a direction given pursuant to GC31.2 within the time stipulated therein.

GC32 NON-COMPLIANCE BY CONTRACTOR

32.1 If the Contractor fails to comply with any decision or direction given by the Engineer pursuant to GC17, GC23, GC25, GC30 or GC31, the Engineer may employ such methods as he deems advisable to do that which the Contractor failed to do.

32.2 The Contractor shall, on demand, pay the Owner an amount that is equal to the aggregate of all costs, expenses and damage incurred or sustained by the Owner by reason of the Contractor's failure to comply with any decision or direction referred to in GC32.1, including the cost of any methods employed by the Engineer pursuant to GC32.1.

GC33 PROTESTING ENGINEER'S DECISIONS

33.1 The Contractor may, within ten (10) days after the communication to him of any decision or direction referred to in GC32.1, protest that decision or direction.

33.2 A protest referred to in GC33.1 shall be in writing, contain full reasons for the protest, be signed by the Contractor and be given to the Owner by delivery to the Engineer.

33.3 If the Contractor gives a protest pursuant to GC33.2, any compliance by the Contractor with the decision or direction that was protested shall not be construed as an admission by the Contractor of the correctness of that decision or direction or prevent the Contractor from taking whatever lawful action he considers appropriate in the circumstances.

33.4 The giving of a protest by the Contractor pursuant to GC33.2 shall not relieve him from complying with the decision or direction that is the subject of the protest.

33.5 Subject to GC33.6, the Contractor shall take any action referred to in GC33.3 within three months after the date that a Final Certificate of Completion is issued under GC43.1 and not afterwards.

33.6 The Contractor shall take any action referred to in GC33.3, resulting from a direction under GC31 within three months after the expiry of a warranty or guarantee period and not afterwards.

33.7 Subject to GC33.8, if the Owner determines that the Contractor's protest is justified, the Owner shall pay the Contractor the cost of the additional labour, plant and material necessarily incurred by the Contractor in carrying out the protested decision or direction.

33.8 Costs referred to in GC33.7 shall be calculated in accordance with GC47 to GC49.

GC34 CHANGES IN SOIL CONDITIONS AND NEGLECT OR DELAY BY THE OWNER

34.1 Subject to GC34.2 no payment, other than a payment that is expressly stipulated in the contract, shall be made by the Owner to the Contractor for any extra expense or any loss ore damage incurred or sustained by the Contractor.

34.2 If the Contractor incurs or sustains any extra expense or any loss or damage that is directly attributable to

34.2.1 a substantial difference between the information relating to soil conditions at the work site that is contained in the Plans and Specifications or other documents supplied to the Contractor for his use in preparing his tender or a reasonable assumption of fact based thereon made by the Contractor, and the

actual soil conditions encountered by the Contractor at the work site during the performance of the contract, or

34.2.2 any neglect or delay that occurs after the date of the contract on the part of the Owner in providing any information or in doing any act that the contract either expressly requires the Owner to do or that would ordinarily be done by an owner in accordance with the usage of the trade.

He shall, within ten days of the date that an event described in GC34.2.1 or GC34.2.2 occurred, give the Engineer written notice of the event and of his intention to claim for that extra expense or that loss or damage.

34.3 When the Contractor has given a notice referred to in GC34.2, he shall give the Engineer a written claim for extra expense or loss or damage within 30 days of the date that a Final Certificate of Completion referred to in GC43.1 is issued and not afterwards.

34.4 A written claim referred to in GC34.3 shall contain a sufficient description of the facts and circumstances of the occurrence that is the subject of the claim to enable the Engineer to determine whether or not the claim is justified and the Contractor shall supply such further and other information for that purpose as the Engineer requires from time to time.

34.5 If the Engineer determines that a claim referred to in GC34.3 is justified, the Owner may make an extra payment to the Contractor in an amount that is calculated in accordance with GC46 to GC49.

34.6 If, in the opinion of the Engineer, an occurrence described in GC34.2.1 results in a saving of expenditure by the Contractor in performing the contract, the amount set out in the Articles of Agreement shall, subject to the GC34.7, be reduced by an amount that is equal to the saving.

34.7 The amount of the saving referred to GC34.6 shall be determined in accordance with GC46 to GC49.

34.8 If the Contractor fails to give a notice referred to in GC34.2 and a claim referred to in GC34.3 within the times stipulated, an extra payment should not be made to him in respect of the occurrence.

GC35 EXTENSION OF TIME

35.1 Subject to GC35.2, the Engineer may, on the application of the Contractor made before the day fixed by the Articles of Agreement for completion of the work or before any other date previously fixed under this General Condition, extend the time for its completion by fixing a new date, if in his opinion, causes beyond the control of the Contractor have delayed its completion.

35.2 An application referred to in GC35.1 shall be accompanied by the written consent of the bonding company whose bond forms part of the contract security.

GC36 ASSESSMENTS AND DAMAGES FOR LATE COMPLETION

36.1 For the purposes of this General Condition

36.1.1 the work shall be deemed to be completed on the date that a Substantial Certificate of Completion referred to in GC43.2 is issued, and

36.1.2 "period of delay" means the number of days commencing on the day fixed by the Articles of Agreement for completion of the work and ending on the day immediately preceding the day on which the work is completed but does not include any day within a period of extension granted pursuant to GC35.1, and any other day on which, in the opinion of the Engineer, completion of the work was delayed for reasons beyond the control of the Contractor.

36.2 If the Contractor does not complete the work by the day fixed for its completion by the Articles of Agreement but completes it thereafter, the Contractor shall pay the Owner an amount equal to the aggregate of

36.2.1 all salaries, wages, and travelling expenses incurred by the Owner in respect of persons overseeing the performance of the work during the period of delay,

36.2.2 the cost incurred by the Owner as a result of the liability to use the completed work for the period of delay; and

36.2.3 all other expenses and damages incurred or sustained by the Owner during the period of delay as a result of the work not being completed by the day fixed for its completion.

36.3 The Owner may waive its right to the whole or any part of the amount payable by the Contractor pursuant to GC36.2 if, in the opinion of the Owner, it is in the public interest to do so.

GC37 TAKING THE WORK OUT OF THE CONTRACTOR'S HANDS

37.1 The Owner may, at its sole discretion, take all or any part of the work out of the Contractor's hands, and may employ such means as he sees fit to have the work completed if the Contractor

37.1.1 has not, within six days after receiving notice given by the Owner or the Engineer in accordance with GC10.1, remedied any delay in the commencement or any default in the diligent performance of the work to the satisfaction of the Engineer;

37.1.2 has defaulted in the completion of any part of the work within the time fixed for its completion by the contract;

37.1.3 has become insolvent;

37.1.4 has committed an act of bankruptcy;

37.1.5 has abandoned the work;

37.1.6 has made an assignment of the contract without the consent required by GC3.1; or

37.1.7 has otherwise failed to observe or perform any of the provisions of the contract.

37.2 If the whole or any part of the work is taken out of the Contractor's hands pursuant to GC37.1;

37.2.1 the Contractor's right to any further payment that is due or accruing due under the contract is, subject only to GC37.4, extinguished, and

37.2.2 the Contractor is liable to pay the Owner, upon demand, an amount that is equal to the amount of all loss and damage incurred or sustained by the Owner in respect of the Contractor's failure to complete the work.

37.3 If the whole or any part of the work that is taken out of the Contractor's hands pursuant to GC37.1 is completed by the Owner, the Engineer shall determine the amount, if any, of a holdback or a progress claim that had accrued and was due prior to the date on which the work was taken out of the Contractor's hands and that is not required for the purposes of having the work performed or of compensating the Owner for any other loss or damage incurred or sustained by reason of the Contractor's default.

37.4 The Owner may pay the Contractor the amount determined not to be required pursuant to GC37.3.

GC38 EFFECT OF TAKING THE WORK OUT OF THE CONTRACTOR'S HANDS

38.1 The taking of the work or any part thereof out of the Contractor's hands pursuant to GC37 does not operate so as to relieve or discharge him from any obligation under the contract or imposed upon him by law except the obligation to complete the performance of that part of the work that was taken out of his hands.

38.2 If the work or any part thereof is taken out of the Contractor's hands pursuant to GC37, all plant and material and the interest of the Contractor in all real property, licenses, powers and privileges acquired, used or provided by the Contractor under the contract shall continue to be the property of the Owner without compensation.

38.3 When the Engineer certifies that any plant, material, or any interest of the Contractor referred to in GC38.2 is no longer required for the purposes of the work, or that it is not in the interests of the Owner to retain that plant, material, or interest, it shall revert to the Contractor.

GC39 SUSPENSION OF WORK

39.1 The Owner may, when in his opinion it is in the public interest to do so, require the Contractor to suspend performance of the work either for a specified or an unspecified period by giving a notice of suspension to the Contractor in accordance with GC10.

39.2 When a notice referred to in GC39.1 is received by the Contractor in accordance with GC10 he shall suspend all operations in respect of the work except those that, in the opinion of the Engineer, are necessary for the care and preservation of the work, plant and material.

39.3 The Contractor shall not, during a period of suspension, remove any part of the work, plant or material from its site without the consent of the Engineer.

39.4 If a period of suspension is 30 days or less, the Contractor shall, upon the expiration of that period resume the performance of the work and he is entitled to be paid the extra cost, calculated in accordance with GC47 to GC49, of any labour, plant and material necessarily incurred by him as a result of the suspension.

39.5 If, upon the expiration of a period of suspension of more than 30 days, the Owner and the Contractor agree that the performance of the work will be continued by the Contractor, the Contractor shall resume performance of the work subject to any terms and conditions agreed upon by the Owner and the Contractor.

39.6 If, upon the expiration of a period of suspension of more than 30 days, the Owner and the Contractor do not agree that performance of the work will be continued by the Contractor or upon the terms and conditions under which the Contractor will continue the work, the notice of suspension shall be deemed to be a notice of termination pursuant to GC40.

GC40 TERMINATION OF CONTRACT

40.1 The Owner may terminate the contract at any time by giving a notice of termination to the Contractor in accordance with GC10.1.

40.2 When a notice referred to in GC40.1 is received by the Contractor in accordance with GC10, he shall, subject to any conditions stipulated in the notice, forthwith cease all operations in performance of the contract.

40.3 If the contract is terminated pursuant to GC40.1, the Owner shall pay the Contractor, subject to GC40.4, an amount equal to

40.3.1 the cost to the Contractor of all labour, plant and material supplied by him under the contract up to the date of termination in respect of a contract or part thereof for which a Unit Price Arrangement is stipulated, in the contract, or

40.3.2 the lesser **of**

40.3.2.1 an amount, calculated in accordance with the Terms of Payment, that would have been payable to the Contractor had he completed the work, and

40.3.2.2 an amount that is determined to be due to the Contractor pursuant to GC48 in respect of a contract or part thereof for which a Fixed Price Arrangement is stipulated in the contract

less the aggregate of all amounts that were paid to the Contractor by the Owner and all amounts that are due to the Owner from the Contractor pursuant to the contract.

40.4 If the Owner and the Contractor are unable to agree about an amount referred to in GC40.3 that amount shall be determined by the method referred to in GC49.

GC41 CLAIMS AGAINST AND OBLIGATIONS OF THE CONTRACTOR OR SUBCONTRACTOR

41.1 The Owner may, in order to discharge lawful obligations of and satisfy lawful claims against the Contractor or a subcontractor arising out of the performance of the contract, pay any amount that is due and payable to the Contractor pursuant to the contract directly to the obligees of and the claimants against the Contractor or subcontractor.

41.2 A payment made pursuant to GC41.1, is to the extent of the payment, a discharge of the Owner's liability to the Contractor under the contract and may be deducted from an amount payable to the Contractor under the contract.

41.3 To the extent that the circumstances of the work being performed for the Owner permit, the Contractor shall comply with all laws in force in Nunavut relating to payment periods, mandatory holdbacks, and creation and enforcement of mechanics' liens.

41.4 The Contractor shall discharge all his lawful obligations and shall satisfy all lawful claims against him arising out of the performance of the work at least as often as the contract requires the Owner to pay the Contractor.

41.5 The Contractor shall, whenever requested to do so by the Engineer, make a statutory declaration deposing to the existence and condition of any obligations and claims referred to in GC41.4.

41.6 GC41.1 shall only apply to claims and obligations that have been received by the Engineer in writing before payment to the Contractor pursuant to TP4.8 and within 120 days after a claimant

41.6.1 should have been paid in full under his contract with the Contractor or subcontractor where the claim is for money that was lawfully required to be held back from the claimant; or

41.6.2 performed the last of the service, work or labour, or furnished the last of the material pursuant to his contract with the Contractor or subcontractor, where the claim is not for money referred to in GC41.6.1.

41.7 No interest will be paid to the Contractor on any monies withheld pursuant to GC41 due to a Contractor or subcontractor's claim for non-payment.

GC42 SECURITY DEPOSIT - FORFEITURE OR RETURN

42.1 The Owner may convert the security deposit, if any, to its own use, if

42.1.1 the work is taken out of the Contractor's hands pursuant to GC37;

42.1.2 the contract is terminated pursuant to GC40; or

42.1.3 the Contractor is in breach of or in default under the contract.

42.2 If the Owner converts the contract security pursuant to GC42.1, the amount realized shall be deemed to be an amount due from the Owner to the Contractor under the contract.

42.3 Any balance of an amount referred to in GC42.2 that remains after payment of all losses, damage and claims of the Owner and other shall be paid by the Owner to the Contractor, if in the opinion of the Engineer, it is not required for the purposes of the contract.

GC43 ENGINEER'S CERTIFICATES

43.1 On the date that

43.1.1 the work has been completed, and

43.1.2 the Contractor has complied with the contract and all orders and directions made pursuant thereto,

both to the satisfaction of the Engineer, he shall issue a Certificate of Final Completion to the Contractor.

43.2 If the Engineer is satisfied that the work is sufficiently complete to be acceptable for use by the Owner, he may, at any time before he issues a certificate referred to in GC43.1, issue a Certificate of Substantial Completion to the Contractor.

43.3 A Certificate of Substantial Completion referred to in GC43.2 shall describe the parts of the work not completed to the satisfaction of the Engineer and all things that must be done by the Contractor before a certificate referred to in GC43.1 will be issued.

43.4 The Engineer may, in addition to the parts of the work described in a Certificate of Substantial Completion referred to in GC43.2, require the Contractor to rectify any other parts of the work not completed to his satisfaction and to do any other things that are necessary for the completion of the work.

43.5 If the contract or a part thereof is subject to a Unit Price Arrangement, the Engineer shall measure and record the quantities of labour, plant and material, performed, used and supplied by the Contractor in performing the work and shall, at the request of the Contractor, inform him of those measurements.

43.6 The Contractor shall assist and co-operate with the Engineer in the performance of his duties referred to in GC43.5 and shall be entitled to inspect any record made by the Engineer pursuant to GC43.5.

43.7 After the Engineer has issued a Certificate of Final Completion referred to in GC43.1, he shall, if GC43.5 applies, issue a Certificate of Final Measurement.

43.8 A Certificate of Final Measurement referred to in GC43.7 shall

43.8.1 contain the aggregate of all measurements of quantities referred to in GC43.5, and

43.8.2 be binding upon and conclusive between the Owner and the Contractor as to the quantities referred to therein.

GC44 RETURN OF SECURITY DEPOSIT

44.1 After a Certificate of Substantial Completion referred to in GC43.2 has been issued, the Owner shall, if the Contractor is not in breach of or in default under the contract, return to the Contractor all or any part of the security deposit that, in the opinion of the Engineer, is not required for the purposes of the contract.

44.2 After a Certificate of Final Completion referred to in GC43.1 has been issued, the Owner shall return to the Contractor the remainder of any security deposit unless the contract stipulates otherwise.

44.3 Interest shall not be paid on security deposits.

GC45 CLARIFICATION OF TERMS IN GC46 TO GC49

45.1 For the purposes of GC46 to GC49,

45.1.1 "Unit Price Table" means the table set out in the Tender, and

45.1.2 "plant" does not include tools customarily provided by a tradesman in practising his trade.

GC46 ADDITIONS OR AMENDMENTS TO UNIT PRICE TABLE

46.1 Where a Unit Price Arrangement applies to the contract or a part thereof the Engineer and the Contractor may, by an agreement in writing

46.1.1 add classes of labour, plant or material, and units of measurement, prices per unit and estimated quantities to the Unit Price Table if any labour, plant or material that is to be included in a Final Certificate of Measurement referred to in GC43.7 in not included in any class of labour, plant or material set out in the Unit Price Table; or

46.1.2 subject to GC46.2, amend a price per unit set out in the Unit Price Table for any class of labour, plant or material included therein if an estimated quantity is set out therein for that class of labour, plant or material and a Final Certificate of Measurement referred to in GC43.7 shows or is expected to show that the total quantity of that class of labour, plant or material actually performed, used or supplied by the Contractor in performing the work is

46.1.2.1 less than 85% of that estimated quantity; or

46.1.2.2 in excess of 115% of that estimated quantity.

46.2 An amendment that is made necessary by GC46.1.2.2 shall apply only to the quantities that are in excess of 115%.

46.3 If the Engineer and the Contractor do not agree as contemplated in GC46.1, the Engineer shall determine the class and the unit of measurement of the labour, plant or material and the price per unit therefore shall be determined in accordance with GC49.

GC47 DETERMINATION OF COST - UNIT PRICE TABLE

47.1 Whenever, for the purposes of the contract it is necessary to determine the cost of labour, plant or material, it shall be determined by multiplying the quantity of that labour, plant or material expressed in the unit set out in the Unit Price Table by the price of that unit set out in the Unit Price Table.

GC48 DETERMINATION OF COST - NEGOTIATION

48.1 If the method described in GC47 cannot be used because the labour, plant or material is of a kind or class that is not set out in the Unit Price Table, the cost of the labour, plant or material for the purposes of the contract shall be the amount agreed upon from time to time by the Contractor and the Engineer.

48.2 For the purpose of GC48.1, the Contractor, when requested by the Engineer, shall submit a detailed statement of the cost to him of the labour, plant and material referred to in GC48.1 to the Engineer.

GC49 DETERMINATION OF COST - FAILING NEGOTIATION

49.1 If the parties or the methods described in GC46, GC47 or GC48 fail for any reason to achieve a determination of the cost of labour, plant and material for the purposes referred to therein, that cost shall be equal to the aggregate of

49.1.1 all reasonable and proper amounts actually expended or legally payable by the Contractor in respect of the labour, plant or material that falls within one of the classes of expenditure described in GC49.2 that are directly attributable to the performance of the contract, and

49.1.2 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 but not including those referred to in GC49.1.1 or of a class referred to in GC49.2, in an amount that is equal to:

(a) 10% of the sum of the expenses referred to in GC49.2.1;

(b) 20% of the sum of the expenses referred to in GC49.2.2 through GC49.2.8

49.2 For purposes of GC49.1.1 the classes of expenditure that may be taken into account in determining the cost of

labour, plant and material are,

49.2.1 payments to subcontractors;

49.2.2 wages, salaries and travelling expenses of employees of the Contractor while they are actually and properly engaged on the work, other than wages, salaries, bonuses, living and travelling expenses of personnel of the Contractor generally employed at the head office or at a general office of the Contractor unless they are engaged at the work site with the approval of the Engineer;

49.2.3 assessments payable under any statutory authority relating to worker's compensation, unemployment insurance, pension plan or holidays with pay;

49.2.4 rent that is paid for plant or an allowance for depreciation of plant owned by the Contractor that is necessary for and used in the performance of the work, if that rent or allowance is reasonable and use of that plant has been approved by the Engineer;

49.2.5 payments for maintaining and operating plant is necessary for and used in the performance of the work, and payments for effecting such repairs thereto as, in the opinion of the Engineer, are necessary for the proper performance of the contract other than payments for any repairs to the plant arising out of defects existing before its allocation to the work;

49.2.6 payments for material that is necessary for and incorporated in the work, or that is necessary for and consumed in the performance of the contract;

49.2.7 payments for preparation, delivery, handling, erection, installation, inspection, protection and removal of the plant and material necessary for and used in the performance of the contract;

49.2.8 any other payments made by the Contractor with the approval of the Engineer that are necessary for the performance of the contract.

GC50 RECORDS TO BE KEPT BY CONTRACTOR

50.1 The Contractor shall

50.1.1 maintain full records of his estimated and actual costs of the work together with all tender calls, quotations, contracts, correspondence, invoices, receipts and vouchers relating thereto;

50.1.2 make all records and material referred to in GC50.1.1 available to audit and inspection by the Owner and the Comptroller General of the Government of the Nunavut or by persons acting on behalf of either or both of them when requested;

50.1.3 allow any of the persons referred to in GC50.1.2 to make copies of and to take extracts from any of the records and material referred to in GC50.1.1; and

50.1.4 furnish any person referred to in GC50.1.2 with information he may require from time to time in connection with such records and material.

50.2 The records maintained by the Contractor pursuant to GC50.1.1 shall be kept intact by the Contractor until the expiration of two years after the date that a Final Certificate of Completion referred to in GC43.1 was issued or until the expiration of such other period of time as the Owner may direct.

50.3 The Contractor shall cause all subcontractors and all other persons directly or indirectly having control of the Contractor to comply with GC50.1 and GC50.2 as if they were the Contractor.

GC51 LITIGATION

51.1 This contract shall be deemed to have been made in Nunavut and shall be governed by the laws of Nunavut as far as applicable.

51.2 In the event of any legal action arising out of this agreement, the Contractor, if originating such action, may sue the Government of Nunavut in the name and style of "The Government of Nunavut" and the Government of

Nunavut, if originating such action, may commence the action against the Contractor in his own behalf in the name and style of "The Government of Nunavut".

GC52 REQUIREMENTS FOR INUIT, LOCAL AND NUNAVUT CONTENT

52.1 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 "B-2" of the tender. Workers shall meet all levels of proficiency, qualification and expertise as dictated by the authorities having jurisdiction and/or as defined in the contract documents.

52.2 The Contractor shall provide 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 project.

52.3 For the Inuit Labour bonus or penalty, as set out in the Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy, the benchmark shall be the minimum prescribed level for Inuit Labour identified on page 4 of Appendix K of the tender.

GC53 REQUIREMENT FOR COMMUNITY MEETINGS

53.1 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 owner 3 to 5 days notice of all meetings called under GC53. The Contractor shall take reasonable steps to ensure that these meetings include the following representatives:

(a) A community representative who has been designated to speak on behalf of the community (if available),

(b) A community manpower representative (if available),

(c) The Contractor,

(d) The Owner's representative.

53.2 The Contractor shall arrange a Community Meeting prior to the start of construction and at that meeting shall:

(a) provide a schedule referred to in GC52.2 above to the community representative, or if no community representation is designated, shall provide a copy of this schedule to the Owner's representative,

(b) 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 GC53.2 (c) maintain a list of community manpower,

(c) request from the community manpower representative or from the Owner if no community manpower representative has been delegated, a list of workers available in the community,

53.3 The Owner shall attend all community meetings organized by the Contractor in accordance with GC53.3.2(c) and when requested by the Contractor shall:

(a) 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.

53.4 The Contractor shall arrange Community Meeting as required by GC53.1 and at those meetings shall:

(a) provide employment reports identifying workers used during the past month (to substantiate information provided on Appendix B-2),

(b) provide an amended schedule referred to in GC53.2, if necessary

(c) provide a consolidated report at the time of substantial completion, 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.

GC54 MONITORING THE LEVEL OF INUIT, LOCAL AND NUNAVUT LABOUR

54.1 The contractor is responsible to insure that every worker identified as Local or Nunavut meets the qualifying requirements of being ordinarily resident in Nunavut for the past 12 months, and for Local being a Nunavut resident ordinarily residing in the subject community for the past 4 months. The contractor may be required to provide proof of residency at any time throughout the project.

54.1.1 Reasonable proof of Nunavut and Local residency shall be any of the following:

a) is on the Nunavut Tunggavik Inc. (NTI) enrolment list and provides a physical address where residing,

or

b) has spent the last 12 months ordinarily resident in Nunavut and

i) has a valid Nunavut Health Care Card effective at least 9 months prior to start date of employment on the project;

and/or

ii) other 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;

and provides a physical address where residing.

or

c) is included on a list of approved Local or Nunavut residents verified by the municipality of their residence.

54.1.2 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.

54.2 If requested by the Owner to do so, the contractor shall obtain a signed consent form from a worker which verifies their residency and permits the Owner to obtain any and all information required to support the worker's claim of residency and/or Inuit status. A standard consent form is attached as page 4 of Appendix "B" of the tender. A worker does not need to comply with the requirements of this clause 54.2 if the worker meets the requirements of GC54.1.1 (c).

GC55 FAILURE TO COMPLY WITH PROPOSED INUIT, LOCAL AND NUNAVUT CONTENT

55.1 The parties to this agreement recognize the high cost of living in Nunavut, and the need to build capacity of Inuit Firms and Labour in Nunavut, which is compensated for by the Owner through the provision of bid adjustments for the use of Inuit, Local and Nunavut Labour and other Inuit, Local and Nunavut content, and the provision of bonuses under the Nunavummi Nangminiqaqtunik Ikajuuti (NNI) Policy. It is a priority of the Owner to maximize the opportunities for Inuit; Local and Nunavut workers and businesses to benefit from government contracts and the Owner may pay a premium in awarding its contracts to support this important objective.

Therefore, it is a fundamental requirement of this contract that the Contractor shall achieve, by the completion of the contract, at least the amounts tendered on Appendix B-2 of the tender, with the exception of decreasing Nunavut content with a corresponding equal or larger increase in Local content, specifically

(a) the amount of Inuit Labour,

AND

(b) (i) the amount of Local Labour and the amount of Nunavut Labour,

or

(ii) the amount of Local Labour and the total amount of Local and Nunavut Labour

which the Contractor has identified in Appendix B-2 of the Tender,

AND at least

(c) the amount of Inuit Content excluding the Labour of Inuit Firms,

AND

(d) (i) the amount of Local Content (excluding Local Labour) and the amount of Nunavut content (excluding Nunavut Labour),

or

(ii) the amount of Local Content (excluding Local Labour) and the total amount of Local and Nunavut content (excluding Local and Nunavut Labour),

which the Contractor has identified in Appendix B-2.

55.2 In the event that the amounts of Inuit, Local and Nunavut expenditures actually achieved by the Contractor are less than the amounts identified in clauses GC55.1 then the Owner MAY adopt one or more of the following remedies,

(a) withhold from any progress payment an amount equal to:

(i) the difference between the amounts identified in clause GC55.1 (a), (b)(i), or (b)(ii) and the amount identified in the Schedule referred to in GC52.2 and

(ii) the difference between the amounts identified in clause GC55.1 (c), (d)(i) or (d)(ii) and the amount identified the Schedule referred to in GC52.2.

This amount may be released to the contractor if at the date of a subsequent request the difference has been eliminated.

(b) deduct from the approved contract payment at the time of substantial or final completion an amount equal to:

(i) 25% of the difference between the amounts identified in clause GC55.1 (i), GC55.1. (ii), or GC55.1 (iii) and the amount identified in Appendix B-2 and

(ii) 25% of the difference between the amounts identified in clause GC55.1 (iv), GC55.1 (v), or GC55.1 (vi) and the amount identified in Appendix B-2 of the Tender.

(c) take the contract out of the Contractor's hands, in accordance with Clause 37 and GC38.

55.3 In the event that the amount of difference identified in GC55.2 is 15% or less of the amount proposed in Appendix B-2 of the tender, the Owner, at its sole discretion, may waive the provisions of clause 55.2.

55.4 **In the event that the minimum prescribed level of Inuit Labour set out in Appendix K of the tender is not met, then for future tenders where there are similar minimum prescribed levels for Inuit Labour, the Contractor may be deemed not "responsible" as defined in the Government Contract Regulations.**

GC56 OBLIGATION TO PROVIDE CONTRACT SECURITY

56.1 Where the contract amount referred to in the Articles of Agreement is

56.1.1 less than $100,000, the Engineer may require at the expense of the Owner the Contractor to provide contract security prescribed in GC57.

56.1.2 $100,000 or more, the Contractor shall, at his own expense, provide one or more of the forms of contract security prescribed in GC57.

56.2 If the Contractor is required to provide contract security pursuant to GC57, the security shall be delivered to the Engineer within 14 days after the date that the Contractor receives notice that his tender or offer was accepted by the Owner.

GC57 PRESCRIPTION OF ACCEPTABLE CONTRACT SECURITY

57.1 If the Contractor is required to provide contract security pursuant to GC56, the Owner shall accept from the Contractor one or more of the forms of security prescribed in GC57.2. to GC57.6.

57.2 A Contractor shall deliver to the Owner:

57.2.1 A performance bond and a labor and material payment bond each in an amount that is equal to not less than 50% of the contract amount referred to in the Articles of Agreement, or,

57.2.2 A security deposit in an amount that is equal to 10% of the contract amount referred to in the Articles of Agreement.

57.3 A performance bond and a labour and material payment bond referred to in GC57.2.1 shall be in a form as approved by the Federal Treasury Board (Federal Contracts) and be issued by a bonding or surety company that is approved by the Owner.

57.4 A security deposit referred to in GC57.2.2, shall be in the form of

57.4.1 "A letter of irrevocable guarantee" in the form authorized by the contract authority payable to the Owner that is drawn on a bank to which the Bank Act or the Quebec Savings Banks Act applies;

or

57.4.2 A certified cheque or bank draft from a bank acceptable to the Owner and made payable to the Owner.

57.5 The "letter(s) of irrevocable guarantee" referred to in GC57.4.1 shall be

57.5.1 Held uncashed until 14 days prior to their expiry date, unless the expiry date is extended for a further term, beyond the contract completion date stated in the Articles of Agreement.

57.6 The certified cheque as referred to in GC57.4.2 shall be deposited by the Owner into the Owner's bank account.

GC58 COMPREHENSIVE GENERAL LIABILITY INSURANCE REQUIRMENTS

58.1 Comprehensive General Liability Insurance with **limits of not less than five million dollars inclusive** per occurrence for bodily injury, death, and damage to property including loss of use thereof. This insurance shall be maintained continuously from commencement of the work until not less than twelve (12) months from the date of the Final Certification of Completion. The Owner is not to be added as an Insured under this policy. Such insurance shall include but is not limited to:

58.1.1 Premises, Property and Operations Liability;

58.1.2 Products and Completed Operations Liability;

58.1.3 Owners' and Contractors' Protective Liability;

58.1.4 Blanket Written Contractual Liability;

58.1.5 Non-Owned Automobile Liability;

58.1.6 Broad Form Property Damage Extension;

58.1.7 Use of explosives for blasting, shoring, excavating, underpinning, demolition, removal, pile driving and caisson work, work below ground surface, tunnelling and grading, as applicable;

58.1.8 Contingent Employer's Liability;

58.1.9 Person Injury Liability;

58.1.10 Employees As Additional Insureds;

58.1.11 Cross Liability With Respect To Additional Insureds;

58.1.12 Asbestos Abatement Liability, as applicable.

GC59 AUTOMOBILE LIABILITY INSURANCE REQUIREMENTS

59.1 Automobile Liability Insurance in respect of Contractor's owned and leased vehicles shall have limits of not less than two million dollars inclusive per occurrence for bodily injury, death, and damage to property. And when applicable:

- S.E.F. No. 4a Explosives Endorsement;
- S.E.F. No. 21b Blanket Fleet Endorsement.

GC60 AIRCRAFT AND WATER CRAFT LIABILITY INSURANCE REQUIREMENTS

60.1 Aircraft and Watercraft Liability Insurance with respect to owned or non-owned aircraft and watercraft if used directly in or indirectly in the performance of the Work, including use of airport premises, with limits of not less than one million dollars inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof and limits of not less than one million dollars for Aircraft Passenger Hazard. Such insurance shall be in a form acceptable to the Owner.

GC61 GENERAL INSURANCE CONDITIONS

61.1 **Deductible:** Amount of deductible on any insurance provided by Contractor shall be borne in its entirety by Contractor.

61.2 **Waiver of Recourse:** Contractor waives all rights of recourse against the Owner for damages to Contractor's property or property of others for which Contractor is responsible and Contractor's Insurers have no right of subrogation against the Owner.

61.3 **Notice of Cancellation:** All required insurance shall be endorsed to provide the Owner with 30 days advance written notice of material change, cancellation or termination. Such notices shall be addressed to: The Owner (as noted on the Contractor's Certificate of Insurance).

61.4 **Other Insurance:** Contractor shall provide, maintain and pay for any additional insurance which is required to be provided by the Contract Documents, or by law, or which he considers necessary to cover risks not otherwise covered by insurance specified in these conditions.

61.5 Contractor's Certificate of Insurance: The Contractor shall complete the attached form "Contractor's Certificate

of Insurance", and shall within 14 days after the acceptance of the tender deliver this completed certificate to the Owner. Substitute certificates will not be accepted; the Contractor must use this certificate.

GC62 PROPERTY INSURANCE (All "Risks" Course of Construction Insurance)

62.1 Insurance has been purchased by the Owner on a very broad basis, to protect as Insureds, all those who have direct participation in the construction project, for claims which may arise as a result of loss or damage during course of construction.

62.2 **Coverage:** "All Risks" of physical loss or damage or destruction while said project is in course of construction, site preparation, reconstruction, repair, erection, fabrication, testing, and including all materials, equipment machinery, structures, property, fitting, fixtures, betterment, and supplies of any nature whatsoever to enter into and form part of the finished project while at the site of operations or elsewhere in Canada or the Continental United States or America, all the property of the Insureds or the property of others for which the insureds have assumed responsibility, or for whom the Insured are required to carry insurance, including while on a river or lake crossing ferry in connection with land transportation..

62.3 **Exclusions:** This policy does not cover goods in transit to the site. This is the contractor's risk, which he may or may not wish to insure.

62.3.1 This policy does not cover the following types of construction and/or maintenance contracts:

a) Highways & Ferries;

b) Water & Sewer Contracts With No Buildings;

62.4 **Term:** From the commencement of work to the date of the Substantial Completion as certified by the Owner.

62.5 **Limit of Liability:** The limit of liability at the project site is the estimated full completed value of the project including, but not limited to, owner-supplied labour or materials, reasonable profit, insurance costs, overhead, taxes, labour, administrative fees and all other expenses which are incurred as additional costs as a result of a partial or total loss.

62.6 **Deductible:**

62.6.1 The Contractor shall be responsible for a deductible, which shall be equal to 5% of the considered insurable loss to a maximum of $10,000 per occurrence.

END OF GENERAL CONDITIONS

NNI Policy Appeals Process
For more information
NNI Policy Advisor
Government of Nunavut
(867) 975-5954

Nunavummi Nangminiqaqtunik Ikajuuti (NNI Policy) Appeals Process

Below is the new wording for section 18 of the NNI Policy which outlines the process to follow regarding appealing an award of a Tender or RFP.

18.1 Subject to 18.2, an independent Contracting Appeals Board shall be established consisting of three Commissioners and three Alternate Commissioners appointed by the Minister for a term of three years as follows:

(a) one Commissioner and one Alternate Commissioner from nominees put forward by NTI

(b) one Commissioner and one Alternate Commissioner from nominees put forward by the Nunavut regional Chambers of Commerce.

(c) one Commissioner and one Alternate Commissioner appointed by the Minister.

18.2 In order to provide for continuity, the Minister shall appoint the first members of the Board to staggered terms as follows:

(1) one Commissioner and one Alternate Commissioner for a term of 2 years;

(2) one Commissioner and one Alternate Commissioner for a term of 3 years; and

(3) one Commissioner and one Alternate Commissioner for a term of 4 years.

18.3 The Minister shall have regard to the importance of regional representation in making appointments to the Board.

18.4 If either NTI or the Chambers of Commerce do not submit nominations to the Minister within 45 days of the Minister's request for nominations, the Minister may make the necessary appointment.

18.5 (a) A Commissioner or Alternate Commissioner must be a Nunavut Resident as defined in the NNI Policy, that is a person who:

(i) is on the NTI Inuit Enrolment List or who has spent the last twelve months ordinarily resident in Nunavut; and

(ii) has a valid Nunavut healthcare card and/or other accepted proof of residency such as a Nunavut drivers license, a lease or rental receipt, and provides a physical address where residing.

(b) A Commissioner may not be an employee of, or contractor for:

i) The GN Department of Public Works and Services or the Contracting Authority of the disputed contract;

ii) NTI or a Regional Inuit Association;

iii) a Chamber of Commerce in Nunavut.

18.6 On appointment, a Commissioner shall certify in writing that he is not an employee as defined in paragraph 18.5 (b), and that to the best of his knowledge he is not in a conflict of interest and will not sit on any appeal if a conflict of interest comes to his attention.

18.7 No person may serve as a Commissioner until such person has accepted the position in writing and has executed a confidentiality agreement.

18.8 Each year one Commissioner shall be chosen by the Commissioners to serve as Chairperson. The role of the Chairperson is to preside over meetings of the Board and to supervise the operations of the Board.

18.9 If a Commissioner is unable to act in a particular appeal an Alternate Commissioner shall be selected by the Chairperson to hear the appeal.

18.10 The Minister shall appoint a person to act as Secretary of the Board.

18.11 (a) A contractor who wishes to challenge an award of a tender or RFP must do so in writing within five (5) business days of the award announcement. The appeal must be directed to the Contracting Authority and copied to the GN NNI Policy Advisor, and must set out the following information.

(i) the name, address, telephone and if available fax number and email address of the party challenging the award;
(ii) the tender or RFP number and/or title;
(iii) the issue(s) to be reviewed by the Contracting Authority; and
(iv) the remedy sought by the contractor.

(b) The Contracting Authority shall have five (5) business days to respond in writing and shall copy the response to the GN NNI Policy Advisor.

18.12 (a) If, after a further 5 business days have elapsed, a contractor is not satisfied with the response of the Contracting Authority, or if no response has been received from the Contracting Authority, the contractor may appeal the award to the Board.

(b) An appeal to the Board must be in writing and directed to the Contracting Authority within 15 business days of the award announcement.

(c) The appeal must set out the following:

(i) the name, address, telephone and if available fax number and email address of the party challenging the award;
(ii) the name of the Contracting Authority that issued the tender or RFP
(iii) the tender or RFP number and/or title
(iv) the issue(s) to be reviewed by the Board including the reasons why the Contractor believes the application of the NNI Policy is incorrect; and
(v) the remedy sought by the contractor.

18.13 (a) An appeal from an award by a contractor to the Contracting Appeals Board may be made on the ground that the Contracting Authority in making the award has erred in the application of the NNI Policy.

(b) For greater certainty, there shall be no appeal to the Board from an act or omission relating to the performance of a contract that has been awarded.

(c) Notwithstanding (a) and (b) above, the Board has jurisdiction to consider and make recommendations on any matter relating to the application of the NNI Policy that is referred to it in writing by GN and NTI jointly.

18.14 Where the appeal filed with the Board does not fall within the jurisdiction of the Board the appeal may be dismissed by order of the Board without holding a hearing.

18.15 The Secretary of the Board shall immediately give notice of an appeal to the Board to the successful bidder, to NTI and to the Contracting Authority.

18.16 In addition to the appellant, the Contracting Authority, the successful bidder and NTI have the right to participate in proceedings before the Board in a particular appeal. The Board may, in its discretion, permit any other person to participate in the proceedings.

18.17 The Board shall hear the appeal as soon as possible and, in any event, shall hold a hearing no later than 10 business days after the appeal has been filed with the Board.

18.18 The Board may receive representations and evidence from the parties in writing, by conference call or in person having regard to convenience and economy. If the Board holds a hearing by conference call or by personal appearance the proceedings shall be recorded by the Board.

18.19 The Board shall conduct its proceedings in an informal manner and is not required to receive evidence on oath.

18.20 Where required in a proceeding, the Board shall provide the services of an interpreter.

18.21 After hearing an appeal, the Board may:

(a) dismiss the appeal; or

(b) allow the appeal and recommend to the Contracting Authority that remedial action, consistent with sound procurement policy and practice, be taken by the Contracting Authority, which may include:

(i) requiring the contractor to undertaken additional measures,

(ii) providing the contractor with specific information as to Inuit or Inuit firms who are available and qualified,

(iii) paying compensation to an unsuccessful bidder,

(iv) putting the proposed contract in abeyance until the dispute is resolved, except in cases of urgency,

(v) changing any procedure or policy followed by contracting authorities,

(vi) in exceptional circumstances involving long term contracts, terminating a contract in whole or in part, and a reassessment or re-issue of tenders.

18.22 Decisions of the Board shall be by consensus and failing consensus by a majority vote. The Board shall make a decision as soon as possible after a hearing.

18.23 The Board shall give written reasons for its decisions signed by the Commissioners. If there is a majority decision, the dissenting Commissioner may give reasons for the dissent.

18.24 The Board shall distribute copies of the decision to all parties who participated in the appeal.

18.25 Notwithstanding that an appeal is pending, the Contracting Authority, in its discretion, may enter into a contract with the successful bidder.

18.26 If the Contracting Authority does not accept the recommendations of the Board for remedial action, in whole or in part, it shall issue reasons for its decision.

18.27 The Board shall be given access by the Contracting Authority to the response to an RFP or tender bid of the appealing contractor and of the successful contractor for the purposes of determining an Appeal.

18.28 The record of proceedings before the Board, including its decision, shall be placed on a public file.

18.29 The proceedings of the Board shall be conducted in accordance with the language policy of the Government of Nunavut.

18.30 An Annual Report, including financial statements, shall be prepared by the Board at the end of each fiscal year. The Annual Report shall include a summary of appeals heard and decisions rendered.

18.31 The Annual Report shall be submitted to the Government of Nunavut and to Nunavut Tunngavik Incorporated and made available to the public.

18.32 The Government of Nunavut shall be responsible for the costs of the Board in accordance with GN Policies.

Special Provisions

The following section will form part of the contract.

1. The contract will be based on stipulated price. Use Appendix C.
2. The contractor is required to obtain a quarry use permit for the supply of granular material for this project. The geotechnical report by AMEC is appended to Section 02 of the specifications for your review. The report clearly indicates that the in-situ material will require processing (screening) to produce acceptable material for the project.
3. The Government of Nunavut has approximately 36 rolls of Bentomat Panel granular clay liner located in the Community and Government Services warehouse yard in Iqaluit. The manufacturer's specifications for this material is attached. The rolls were purchased in 2002 by the GN for use in Pond Inlet. These rolls are surplus from the Pond Inlet Project. The GN will make the rolls available for inspection during the tender period. Should the contractor select to use the GN owned material, the contractor will take ownership of the material, and warrant both the material supply and the installation of the liner as per the contract specifications. The GN will provide the liner at no cost. The contractor will be responsible for all shipping costs and make all arrangements to ship the material from Iqaluit to the project site.
4. The GN has applied for the project Water Licence from the Nunavut Water Board. The GN will not award the project construction contract until the licence has been received from the Nunavut Water Board.
5. The contractor will provide a Site Sign to be located at the entrance gate. The sign will be installed at the completion of the final inspection. The sign will be 1.2 meters by 1.2 meters. The language and wording of the sign will be provided by the owner.

CETCO

COLLOID ENVIRONMENTAL TECHNOLOGIES COMPANY

TR-401bm
10-20-95

TECHNICAL DATA SHEET

BENTOMAT PANEL AND ROLL SPECIFICATIONS

STANDARD PANEL SPECIFICATIONS

PANEL DIMENSIONS*:	15 ft. (4.6 m) wide; 125 ft (38 m) long	
TOTAL PANEL AREA:	1,875 sq. ft. (174 sq m)	
EFFECTIVE AREA:	1,797 sq. ft. (167 sq m).	(Assumes 6-in. (150 mm) edge overlap and 1-ft. (300 mm) end overlap)

STANDARD ROLL SPECIFICATIONS

DIMENSIONS:	15.3 ft. (4.66 m) wide; 26 in. (660 mm) diameter
NOMINAL WEIGHT:	2400 lbs. (1089 kg)
CORE SIZE (I.D.):	4 in. (100 mm). Inner core plug measures 2.5 in. (63 mm)
PACKAGING:	6-mil (0.15 mm) U.V.-resistant polyethylene sleeve

STANDARD SHIPPING SPECIFICATIONS

SHIPMENT SIZE:	18 rolls per truckload or container load

GRANULAR BENTONITE: Provided as needed in 50-lb (23 kg) bags

UNLOADING AND HANDLING EQUIPMENT

CORE PIPE AND SPREADER BAR:	18 ft (5.5 m) long, 2.5 in. (63 mm) Nominal Pipe Size, XXH OR: Solid steel pipe OR: Stinger attachment for forklift
CHAINS OR STRAPS:	2 required; approximately 12 ft. (3.7 m) long each
EQUIPMENT:	Front end loader or forklift (typical)

*Custom widths/lengths available.

1350 W. Shure Drive • Arlington Heights, Illinois 60004-1440 • (708) 392-5300 • FAX (708) 506-5150
A wholly owned subsidiary of AMCOL International

The information and data contained herein are believed to be accurate and reliable. CETCO makes no warranty of any kind and accepts no responsibility for the results obtained through application of this information.

CONTENTS

Section 02379	Preservation of Water Courses	1
Section 02631	Manholes and Catch Basins	1 to 3
Section 02641	Pipe Culverts	1 to 4
Section 02661	Sewage Storage Lagoons	1 to 5
Section 02701	Aggregates: General	1 to 3
Section 02721	Granular Base	1 to 4
Section 02723	Granular Sub-Base	1 to 3
Section 02842	Steel Post Delineators	1 to 2
Section 02844	Steel W-Beam Guide Rail	1 to 2
Section 03302	Cast-in-place Concrete	1 to 2
Section 05500	Metal Fabrications	1 to 4
Section 06101	Rough Carpentry Short Form	1 to 2
Section 15011	High-Density Polyethylene Piping	1 to 2

SECTION 1 CONTENTS

PART 1 GENERAL

1.1 Section Includes

.1 Cape Dorset P-Lake Sewage Lagoon.

.2 Work Covered by Contract Documents.

.3 Contract Method.

.4 Work by Others.

.5 Contractor use of premises.

1.2 Work Covered by Contract Documents

.1 Work of this Contract comprises general construction, located at Cape Dorset, Nunavut Territory; and further identified as:

.1 Site Clearing;

.2 Road Works;

.3 Berm Construction;

.4 Culvert supply and Installation.

.5 Discharge flume supply and installation

.6 Discharge piping and control structure supply and installation

.7 Road guardrails and delineators, supply and installation

1.3 Contract Method

.1 Construct the Work under a single fixed price contract.

.2 Payment will only be made for actual work completed and on materials complete and delivered to site in Cape Dorset NU.

.3 Work to be completed prior to November 2006. Atmospheric temperatures in the winter months are expected to remain around minus forty degrees Celsius (-40°C).

1.4 Contractor Use of Premises

.1 Contractor has unrestricted use of site.

PART 2 PRODUCTS

2.1 Not Used

.1 Not used.

PART 3 EXECUTION

3.1 Not Used

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Product Installation Alternatives to Agreement.

1.2 Requirements

.1 Referenced specification Sections stipulate pertinent requirements for products and methods to achieve the Work stipulated under each Alternative.

.2 Coordinate affected related Work and modify surrounding Work to integrate the Work under each Alternative.

1.3 Award/Selection of Alternatives

.1 Indicate variation of Bid Price for Alternatives described below and listed in Bid Form. Note that this form requests a 'difference' in Bid Price by adding to or deducting from the base Bid price.

.2 Bids shall be evaluated on 'Base Bid' price. After determination of lowest Bidder, consideration will be given to Alternatives and Bid Price adjustments.

1.4 Alternatives

.1 Further to Clause 8 of the Instructions to Tenderers:

.1 No substitutions will be permitted without prior written approval of Engineer.

.2 Proposals for substitution may only be submitted after award of contract. Such request must include statements of respective costs of items originally specified and the proposed substitution.

.3 Proposals may be considered by Engineer if:

.1 materials selected by tenderer from those specified, are not available;

.2 delivery date of materials selected from those materials specified would unduly delay completion of contract, or

.3 alternative material to those specified, which are brought to the attention of and considered by Engineer as equivalent to the material specified and will result in a credit to the Contract amount.

.4 Should proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on project. Pay for design or drawing changes required as result of substitution.

.5 Amounts of all credits arising from approval of substitutions will be determined by Engineer and Contract Price will be reduced accordingly.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Coordination Work with other contractors.

.2 Scheduled preconstruction and progress meetings.

1.2 Related Sections

.1 Section 01110 - Summary of Work

.2 Section 01810 - Commissioning.

1.3 Description

.1 Coordination of progress schedules, submittals, use of site, temporary utilities, construction facilities, and construction Work, with progress of Work of other contractors under instructions of Engineer.

.2 The following persons have been designated by the Department of Community and Government Services: Mr. Anjan Joshi, Project Officer, Projects, Pond Inlet, Nunavut, Ph: (867) 899-7312.

1.4 Construction Organization and Start-up

.1 Within 15 days after award of Contract, attend a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.

.2 Senior representatives of the Owner, Engineer, Contractor, Consultant, major Subcontractors, field inspectors and supervisors will be in attendance.

.3 Meeting will be held in a location deemed suitable to all parties.

.4 Agenda to include following:

.1 Appointment of official representative of participants in Work.

.2 Schedule of Work, progress scheduling.

.3 Schedule of submission of shop drawings, samples.

.4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences.

.5 Delivery schedule of specified equipment.

.6 Site security in accordance with Section 01520 - Construction Facilities.

.7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements (GC).

.8 Record drawings in accordance with Section 01770 - Closeout Procedures.

.9 Maintenance in accordance with Section 01770 - Closeout Procedures.

.10 Take-over procedures, acceptance, and warranties in accordance with Section 01770 - Closeout Procedures.

.11 Monthly progress claims, administrative procedures, photographs, and holdbacks (GC).

.12 Appointment of inspection and testing agencies or firms in accordance with Section 01450 - Quality Control.

.13 Insurances and transcript of policies (GC).

.5 Comply with Engineer's allocation of mobilization areas of site; for field offices and sheds, for access, and parking facilities.

.6 During construction coordinate use of site and facilities through Engineer's procedures for intra-project communications: Submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.

.7 Comply with instructions of Engineer for use of temporary utilities and construction facilities.

.8 Coordinate field engineering and layout work with Engineer.

1.5 On-Site Documents

.1 Maintain at job site, one copy each of the following:

.1 Contract drawings.

.2 Specifications.

.3 Addenda.

.4 Reviewed shop drawings.

.5 Change orders.

.6 Other modifications to Contract.

.7 Field test reports.

.8 Copy of approved Work schedule.

.9 Manufacturers' installation and application instructions.

.10 Labour conditions and wage schedules.

.11 Approvals / Permits

1.6 Schedules

.1 Submit preliminary construction progress schedule to Engineer coordinated with Engineer's project schedule.

.2 After review, revise and resubmit schedule to comply with revised project schedule.

.3 During progress of Work revise and resubmit as directed by Engineer.

1.7 Construction Progress Meetings

.1 During course of Work, attend bi-weekly progress meetings.

.2 Owner, Engineer, Consultant, Contractor and major subcontractors involved in Work are to be in attendance.

.3 Notify parties a minimum of 5 days prior to meetings.

.4 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within 5 days after meeting.

.5 Agenda to include following:

.1 Review, approval of minutes of previous meeting.

.2 Review of Work progress since previous meeting.

.3 Field observations, problems, conflicts.

.4 Problems which impede construction schedule.

.5 Review of off-site fabrication delivery schedules.

.6 Corrective measures and procedures to regain projected schedule.

.7 Revision to construction schedule.

.8 Progress schedule, during succeeding work period.

.9 Review submittal schedules: expedite as required.

.10 Maintenance of quality standards.

.11 Review proposed changes for affect on construction schedule and on completion date.

.12 Other business.

1.8 Closeout Procedures

.1 Notify Engineer when Work is considered ready for Substantial Completion inspection.

.2 In the event the facility is not ready for inspection or cannot be successfully commissioned on the date set for commissioning and the Contractor has not notified the Engineer in sufficient time to prevent unnecessary travel, the Contractor shall pay for travel and accommodation costs for subsequent trips by the Engineer and Owner and all of their agents and representatives.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Schedule, form, content.

.2 Scheduled revisions.

.3 Critical path scheduling.

1.2 Related Sections

.1 Section 01770 - Closeout Procedures.

1.3 Schedules Required

.1 Submit schedules as follows:

.1 Construction Progress Schedule.

.2 Submittal Schedule for Shop Drawings and Product Data.

.3 Submittal Schedule for Samples.

.4 Submittal Schedule for timeliness of Owner furnished Products.

.5 Product Delivery Schedule.

.6 Cash Allowance Schedule for purchasing Products.

.7 Shutdown or closure activity.

.8 Within ten working days after each March 31 and September 30 occurring between commencement of Work and final completion, and within ten working days after final completion, provide to Engineer:

.1 Statement of total person days of labour used on site in performance of Contract, including labour provided under sub-contracts, as of dates identified in General Conditions 23.1.

.2 Estimate of total value in dollars of material delivered to site and installed, including material provided and installed under sub-contracts, as of dates identified in General Conditions 23.1.

1.4 Format

.1 Prepare schedule in form of a horizontal Gant bar chart.

.2 Provide a separate bar for each major item of work trade or operation.

.3 Split horizontally for projected and actual performance.

.4 Provide horizontal time scale identifying first work day of each week.

.5 Format for listings: chronological order of start of each item of work.

.6 Identification of listings: By Systems description.

1.5 Submission

.1 Submit initial format of schedules within 15 working days after award of Contract.

.2 Submit schedules in electronic format, forward through e-mail as pdf files.

.3 Submit 2 copies to be retained by Engineer.

.4 Engineer will review schedule and return review copy within 10 days after receipt.

.5 Resubmit finalized schedule within 7 days after return of review copy.

.6 Submit revised progress schedule with each application for payment.

.7 Distribute copies of revised schedule to:

- .1 Job site office.
- .2 Subcontractors.
- .3 Other concerned parties.

.8 Instruct recipients to report to Contractor within 10 days, any problems anticipated by timetable shown in schedule.

1.6 Critical Path Scheduling

.1 Include complete sequence of construction activities.

.2 Include dates for commencement and completion of each major element of construction as follows.

- .1 Site survey and layout
- .2 Granular source permitting and development
- .3 Site clearing.
- .4 Road Works.
- .5 Berm Construction.
- .6 Culvert supply and Installation.
- .7 Discharge flume supply and installation
- .8 Discharge piping and control structure supply and installation
- .9 Road guardrails and delineators, supply and installation
- .10 Training and commissioning

.3 Show projected percentage of completion of each item as of first day of month.

.4 Indicate progress of each activity to date of submission schedule.

.5 Show changes occurring since previous submission of schedule:

.1 Major changes in scope.

.2 Activities modified since previous submission.

.3 Revised projections of progress and completion.

.4 Other identifiable changes.

.6 Provide a narrative report to define:

.1 Problem areas, anticipated delays, and impact on schedule.

.2 Corrective action recommended and its effect.

.3 Effect of changes on schedules of other prime contractors.

1.7 Progress Photographs

.1 Sizes: Prints 100 x 150 mm.

.2 Type: semi-matt colour with binding margin at one end.

.3 Paper: single weight, mounted.

.4 Number of prints required: 2 sets.

.5 Identification: typewritten name and number of project and date of exposure on 25 x 50 mm white patch, reverse side.

.6 Viewpoints: interior and exterior locations: viewpoints determined by Engineer.

.7 Frequency: monthly with progress statement.

.8 Submit all negatives of before final acceptance.

.9 Insert negatives in envelopes and identify with name and number of project. Indicate exposure dates and view points of each frame of 35 mm film strips.

1.8 Submittals Schedule

.1 Include schedule for submitting shop drawings, product data, samples.

.2 Indicate dates for submitting, review time, resubmission time, last date for meeting fabrication schedule.

.3 Include dates when delivery will be required for Owner-furnished products.

.4 Include dates when reviewed submittals will be required from Consultant.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Shop drawings and product data.

.2 Samples.

.3 Certificates and transcripts.

1.2 Related Sections

.1 Section 01450 - Quality Control.

1.3 Administrative

.1 Submit to Engineer submittals listed for review. Submit with reasonable promptness and in 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 Engineer. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated 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 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.

1.4 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 5 working days for Engineer's review of each submission.

.4 Adjustments made on shop drawings by Engineer are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Engineer prior to proceeding with Work.

.5 Make changes in shop drawings as Engineer may require, consistent with Contract Documents. When resubmitting, notify 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 Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with 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 Wiring diagrams.

.9 Single line and schematic diagrams.

.10 Relationship to adjacent work.

.8 After Engineer's review, distribute copies.

.9 Submit 8 prints of shop drawings for each requirement requested in specification Sections and as consultant may reasonably request.

.10 Submit 8 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Engineer where shop drawings will not be prepared due to standardized manufacture of product.

.11 Delete information not applicable to project.

.12 Supplement standard information to provide details applicable to 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, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

.14 The review of shop drawings by the Engineer is for sole purpose of ascertaining conformance with general concept. This review shall not mean that the Engineer approves detail design inherent in shop drawings, responsibility for which shall remain with 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, 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.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Requirements and Procedures

.1 ..... This section specifies general requirements and procedures for contractor's submissions of shop drawings, product data, samples and mock-ups to Engineer for review. Additional specific requirements for submissions are specified in individual sections of Divisions 2 to 16.

.2 ..... Do not proceed with work until relevant submissions are reviewed by Engineer.

.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 ..... Contractor's responsibility for errors and omissions in submission is not relieved by Engineer's review of submissions.

.6 ..... Notify Engineer, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.7 ..... Make any changes in submissions, which Engineer may require, consistent with Contract Documents and resubmit as directed by Engineer.

1.2 Submission Requirements

.1 ..... Coordinate each submission with requirements of work and Contract Documents. Individual submissions will not be reviewed until all related information is available.

.2 ..... Allow 5 working days for Engineer's review of each submission.

.3 ..... Accompany submissions with transmittal letter, containing:

- .1 Date.
- .2 Project title and number.
- .3 Contractor's name and address, and subcontractor (if applicable)
- .4 Identification and quantity of each shop drawing, product data and sample.
- .5 Name, address and telephone numbers of supplier and manufacturer.
- .6 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.

1.3 Shop Drawings

.1 ..... The term "Shop Drawings" shall mean any of the following:

- .1 Original drawings or modified standard drawing prepared by the Contractor, or any of his subcontractors or equipment suppliers.

.2 Manufacturer's catalogue sheets, brochures, literature, performance charts and diagrams and similar documentation used to illustrate manufactured products.

.2 ..... Shop drawings shall clearly indicate details of construction of the work, including:

.1 Layout, showing dimensions, including identified field dimensions and clearances

.2 Setting or erection details

.3 Capacities

.4 Performance characteristics

.3 ..... Submit a minimum of eight (8) copies of all shop drawings. After review, Engineer will distribute:

.1 Two (2) copy to Engineer's files.

.2 Six (6) Copies to be returned to the Contractor for inclusion within O&M manuals.

.3 The submissions of Shop Drawings to the Contractor is intended to supplement the O&M Manual and are not the sole intent of the six (6) copies. O&M Manual data and information shall conform to the requirements of Section 1731 – Operations and Maintenance Manual.

PART 2 PRODUCTS

2.1 Not Used

.1 ..... Not used.

PART 3 EXECUTION

3.1 Not Used

.1 ..... Not used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 References and Codes.

1.2 References and Codes

.1 Perform Work in accordance with National Building Code of Canada (NBC) including all amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.

.2 Meet or exceed requirements of:

.1 Contract documents.

.2 NU Public Health Act.

.3 Municipal Bylaws.

.4 Canadian Standards Association (CSA).

.5 Cold Regions Utilities Monograph.

.6 Water Supply for Public Fire Protection (Fire Underwriter's Survey).

.7 Nunavut Water Board

.8 Department of Fisheries and Oceans Canada (DFO)

.9 Indian and Northern Affairs Canada (INAC)

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Inspection and testing, administrative and enforcement requirements.

1.2 Related Sections

.1 Section 01330 - Submittal Procedures.

1.3 Inspection

.1 Allow Engineer 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 tests, inspections or approvals by Engineer 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 Engineer may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents.

1.4 Access to Work

.1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.

.2 Co-operate to provide reasonable facilities for such access.

1.5 Procedures

.1 Notify appropriate agency and Engineer 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 labor 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 Engineer as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

.2 If in opinion of Engineer 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 Engineer.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Temporary utilities.

1.2 Related Sections

.1 Section 01520 - Construction Facilities.

.2 Section 01560 - Temporary Barriers and Enclosures.

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 Power and Light

.1 Provide and pay for temporary power during construction for temporary lighting and operating of power tools.

.2 Arrange for connection with appropriate utility company. Pay all costs for installation, maintenance and removal.

1.6 Fire Protection

.1 Provide and maintain temporary fire protection equipment during performance of Work required by federal/municipal/territorial regulators and insurance companies having jurisdiction.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Construction aids.

.2 Parking.

.3 Project identification.

1.2 Related Sections

.1 Section 01510 - Temporary Utilities.

.2 Section 01560 - Temporary Barriers and Enclosures.

1.3 Installation and Removal

.1 Provide construction facilities in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.4 Site Storage/Loading

.1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.

.2 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

1.5 Construction Parking

.1 Provide and maintain adequate access to project site.

.2 Build and maintain temporary roads where required and provide snow removal during period of Work.

.3 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.

1.6 Sanitary Facilities

.1 Provide 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.

1.7 Construction Signage

.1 If required, erect Owner supplied project sign in a location designated by Engineer.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Construction Safety Measures

.1 Observe construction safety measures of the National Building Code 1995 Part 8, Territorial Government, Nunavut Territory Workers' Compensation Board and Municipal authority provided that in any case of conflict or discrepancy more stringent requirements shall apply.

.2 Comply with the requirements of the Safety Act of the Nunavut Territory.

1.2 Overloading

.1 Ensure no part of Work is subjected to loading that will endanger its safety or will cause permanent deformation.

1.3 WHMIS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, and storage, of hazardous materials; and regarding labeling of containers and provision of Material Safety Data Sheets (MSDS) acceptable to Labour Canada and Health and Welfare Canada.

.2 Deliver copies of MSDS sheets to Engineer on delivery of materials.

1.4 Sheeting and Shoring

.1 Provide sheeting and shoring as required for installation of underground works to provide construction safety for workmen in accordance with National and Territorial regulations.

1.5 Propane Cylinders

.1 Propane cylinders shipped to site must be provided with a locked, tamper proof, closure cap for the operating valve.

.2 Propane to be stored in accordance with Territorial regulations.

.3 Propane cylinders and containers of other flammable materials to be stored in a locked and well ventilated area to prevent theft, vandalism etc.

PART 2 PRODUCTS

2.1 Not Used

.1 Not used.

PART 3 EXECUTION

3.1 Not Used

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Barriers.

.2 Environmental Controls.

1.2 Related Sections

.1 Section 01510 - Temporary Utilities.

.2 Section 01520 - Construction Facilities.

1.3 Installation and Removal

.1 Provide temporary controls in order to execute Work expeditiously.

.2 Remove from site all such work after use.

1.4 Guard Rails and Barricades

.1 Provide secure, rigid guard rails and barricades around excavations and open ice areas.

1.5 Access to Site

.1 Provide and maintain access roads as may be required for access to Work.

1.6 Protection for Off-Site and Public Property

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Fires

.1 Fires and burning of rubbish on site in not permitted.

1.2 Disposal of Wastes

.1 Do not bury rubbish and waste materials on site unless approved by Engineer.

.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

.3 All waste material is to be disposed of at the community landfill site. The Contractor is responsible to obtain all permits.

1.3 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 or drainage systems.

.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with municipal and territorial requirements.

1.4 Work Adjacent to Waterways

.1 Do not operate construction equipment in waterways without proper silt containment measures in place.

.2 Use borrow material from watercourse beds when approved by Engineer.

.3 Do not dump excavated fill, waste material or debris in waterways, except as authorized.

1.5 Pollution Control

.1 Maintain temporary erosion and pollution control features installed under this contract.

.2 Use of silt curtain is required when excavating in waterways.

.3 Control emissions from equipment and plant to municipal and Territorial emission requirements.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 General

.1 Use new material and equipment unless otherwise specified.

.2 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.

.3 Use products of one manufacturer for material and equipment of same type or classification unless otherwise specified.

1.2 Manufacturers Instructions

.1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.

.2 Notify Engineer in writing of any conflict between these specifications and manufacturers instructions. Engineer will designate which document is to be followed.

1.3 Delivery and Storage

.1 Deliver, store and maintain packaged material and equipment with manufacturer's seals and labels intact.

.2 Prevent damage, adulteration and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected material and equipment from site.

.3 Store material and equipment in accordance with supplier's instructions.

.4 Touch-up damaged factory finished surfaces to Engineer's satisfaction. Use primer or enamel to match original..

PART 2 PRODUCTS

2.1 Materials

.1 Quality:

.1 Refer to GC 22.

.2 Unless otherwise stipulated elsewhere in the Contract Documents, the Contractor shall provide and pay for labour, products, tools, construction machinery and equipment, water, heat, light, power, transportation and other facilities and services necessary for the performance of the work in accordance with the Contract.

.3 Products, materials, equipment and articles (referred to as Products throughout the specifications) incorporated in the work shall be new, not damaged or defective, and of the best quality (compatible with specifications) for the purpose intended. If requested, furnish evidence as to type, source and quality of products provided.

.4 Defective products, whenever identified prior to the completion of work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is a precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

.5 Should any dispute arise as to the quality or fitness of products, the decision rests strictly with the Engineer based upon the requirements of the Contract Documents.

.6 Unless otherwise indicated in the specifications, maintain uniformity of manufacture for any particular or like item.

.2 Availability:

.1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify the Engineer of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of work.

.2 In the event of failure to notify the Engineer at commencement of work and should it subsequently appear that work may be delayed for such reason, the Engineer reserves the right to substitute more readily available products of similar character, at no increase in Contract Price.

.3 Transportation:

.1 Pay costs of transportation and handling of products required in the performance of work.

PART 3 EXECUTION

3.1 Not Used

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 References

.1 Labour Standards Act of the Nunavut Territory, Canada Occupational Safety and Health Regulations.

.2 Canadian Standards Association (CSA)

.3 Nunavut Territory

.1 Safety Act, R.S.N.W.T. 2003.

1.2 Work Permit

.1 Obtain all permits related to project prior to commencement of Work.

1.3 Safety Assessment

.1 Perform site specific safety hazard assessment related to project.

1.4 Meetings

.1 Pre-construction meetings: attend health and safety pre-construction meeting.

1.5 Regulatory Requirements

.1 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.

1.6 Responsibility

.1 Be responsible for safety of persons and property on site and for protection of persons off site and environment to extent that they may be affected by conduct of Work.

.2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.7 Unforseen Hazards

.1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, immediately stop work and advise Engineer verbally and in writing.

1.8 Correction of Non-Compliance

.1 Immediately address health and safety non-compliance issues identified by Engineer.

.2 Provide Engineer with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Engineer may stop Work if non-compliance of health and safety regulations is not corrected.

1.9 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.

.2 Assign responsibility and obligation to Contractor's Health and Safety Officer to stop or start Work when, at Health and Safety Officer's discretion, it is necessary or advisable for reasons of health or safety. Engineer may also stop Work for health and safety considerations.

PART 2 PRODUCTS

2.1 Not Used

.1 Not used.

PART 3 EXECUTION

3.1 Not Used

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 Record Drawings

.1 Engineer will provide two (2) sets of white prints for record drawing purposes.

.2 Maintain project record drawings and record accurately deviations from Contract documents.

.3 Record changes in red. Mark on one set of prints and at completion and prior to final inspection, neatly transfer notations to second set and submit both sets to Engineer.

.4 Record following information:

.1 Depths of various elements of culvert installation in relation to project benchmark.

.2 Horizontal and vertical location of utilities and appurtenances referenced to project benchmark.

.3 Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.

.4 Field changes of dimension and detail.

.5 Changes made by Change Order or Field Instruction.

.5 Redlined drawings:

.1 Redlined drawings must be completed by the Contractor and submitted to Engineer. Engineer will update electronic copies of drawings.

.2 Provide reduced copies of as-built drawings received from Engineer for inclusion in Operations and Maintenance Manuals.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used

PART 3 EXECUTION

3.1 Not Used

.1 Not Used

END OF SECTION

PART 1 GENERAL

1.1 Operations and Maintenance Manual

.1 Operations and Maintenance Manuals for the project will be produced by the Contractor, as outlined in Section 2.1.2.

.2 Manuals are to cover all installed items requiring or likely to require operating, maintenance, or repairs.

.3 The Contractor's work includes: the complete authoring, organization, and supply of O&M manual material as detailed in this section.

.4 All work described in this section is the Contractor's work except where specifically indicated otherwise.

.5 The number of copies required is six (6).

.6 The draft Operation and Maintenance manual is to be submitted for review by the Engineer a minimum of four (4) weeks prior to requesting Substantial Completion.

.7 The final approved and completed Operation and Maintenance Manuals are to be delivered to the Engineer at least 14 days before the Substantial Completion inspection. The data is to be separated into individual manual sets, organized into applicable categories of work parallel to the specification sections and each chapter in order and identified.

1.2 Reference Standards

.1 The Contractor's Operation and Maintenance manual submissions are to conform to the current edition of "Specifications for Operations and Maintenance Manuals", Department of Public Works and Services, Government of Northwest Territories.

PART 2 FORMAT

2.1 Organization

.1 The provision of Binders and Dividers are the responsibility of the Contractor.

.2 The completed manual will contain 10 chapters. The responsibility for production of each chapter is indicated below:

.1 Introduction (by Consultant)

.2 Index (by Contractor)

.3 Background, Design Data (by Consultant)

.4 Schematic, Functional Data (by Consultant)

.5 Components Details (by Contractor)

.6 Operating Procedures (by Consultant and Contractor)

.7 Maintenance Procedures (by Contractor)

.8 Testing and Certification Data (part by Contractor)

.9 Manufacturer Data and Service Information (by Contractor)

.10 Appendices (by Contractor)

.3 Group information logically by system within chapters to the greatest possible extent. Organize the information on each system in the most logical fashion, for example, from supply point through to point of use.

2.2 Language

.1 English for all information.

2.3 Testing and Certification Data (Chapter 8)

.1 List all items that require periodic inspection by independent inspectors. List the frequency of inspection, the inspection agency to contact, including address and current phone number.

.2 Include a photocopy of each certificate issued by the independent inspectors who make inspections pursuant to health, safety, and other regulations of a similar nature. Indicate where the original of each such certificate is filed and where it is to remain displayed.

.3 Include the originals of manufacturer's warranties and certificates issued by the independent inspectors in Copy 1 of the manual.

.4 Include clear, legible photocopies of manufacturers' warranties and certificates issued by the independent inspectors in copies 2 through 6.

.5 Group warranties together to form a section in Chapter 8.

2.4 Manufacturer's Information (Chapter 9)

.1 This chapter of the Operation and Maintenance manual provides a collection of all manufacturer's service manuals, parts lists, operating and maintenance instructions, and other applicable data that may be required in future years.

.2 Include information needed for operation, maintenance and repair of every system component , and any other system requiring or likely to require operation or routine maintenance.

.3 Preface this section with an index. List in order each item by the manufacturer's name and the pieces of equipment to which it refers. Include supplier's name, address, and phone number.

.4 Include:

.1 Maintenance instructions for finished surface and materials.

.5 Include all service manuals, data sheets, and other manufacturer's information for each component.

.6 Manufacturer's information is to be original in all copies of the manual. Photocopies are not acceptable.

.7 On the first page of each inclusion, identify the piece of equipment to which it refers.

.8 Remove pages from manufacturer's information that are irrelevant to the equipment provided to this project.

.9 Where tables and curves are given for the full range of sizes, underline in red in all copies the data that refers to the installed equipment. If more than one size or type in the same table was used, add the identification for each in the margin to assist positive identification. Draw a thick diagonal black line across all data not applicable to equipment provided.

.10 If any warning instructions are included which, if ignored, could significantly affect the equipment, mark these with red arrows in all copies, to draw to the operator's attention.

.11 Service manuals must be the operating and maintenance type, which gives parts lists, preferably including an exposed or sectioned drawing for guidance in assembling, installation details, lubrication, and operations details. Sales types of brochures, which give only a very general description and few details, are not acceptable.

.12 Mount any items that are smaller than 8½"x 11", on a full page, for inclusion in the manual.

.13 Include all wiring diagrams complete with wire coding.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Administrative procedures preceding preliminary and final inspections of Work.

1.2 Related Sections

.1 Section 01810 - Commissioning.

1.3 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 Engineer in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.

.2 Request Engineer's Inspection.

.2 Engineer's Inspection: Engineer 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 balanced and are fully operational.

.4 Operation of systems have been demonstrated to Owner's personnel.

.5 Work is complete and ready for Final Inspection.

.4 Final Inspection: when items noted above are completed, request final inspection of Work by Owner, Engineer and Contractor. If Work is deemed incomplete by Owner and Engineer, complete outstanding items and request re-inspection.

.5 Declaration of Substantial Completion: when Owner and Engineer consider deficiencies and defects have been corrected and final Operations and Maintenance Manuals are ready for submission, make application for certificate of Substantial Completion by way of GN form.

.6 Commencement of Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance shall be dated for commencement for warranty period.

.7 Final Payment: When Owner and Engineer agree that final deficiencies and defects have been corrected and it appears requirements of Contract have been totally performed, Contractor shall apply for Final Inspection. If Work is deemed incomplete, complete outstanding items and request re-inspection.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

Approved: 2002-12-04

Part 1 General

1.1 SECTION INCLUDES

.1 Includes general requirements for commissioning facilities and facility systems.

1.2 RELATED SECTIONS

.1 Section 01210 - Allowances.

.2 Section 01450 - Quality Control.

1.3 QUALITY ASSURANCE

.1 Provide testing organization services under provisions specified in Section 01450 - Quality Control.

.2 Comply with applicable procedures and standards of the certification sponsoring association.

.3 Perform services under direction of supervisor qualified under certification requirements of sponsoring association.

1.4 SUBMITTALS

.1 Prior to start of Work, submit name of Contractor personnel proposed to perform services. Designate who has managerial responsibilities for coordination of entire testing, adjusting and balancing.

.2 Submit documentation to confirm personnel compliance with quality assurance provision.

.3 Submit 3 preliminary specimen copies of each of report forms proposed for use.

.4 Fifteen days prior to Substantial Performance, submit 3 copies of final reports on applicable forms.

.5 Submit reports of testing, adjusting, and balancing postponed due to seasonal, climatic, occupancy, or other reasons beyond Contractor's control, promptly after execution of those services.

1.5 PROCEDURES - GENERAL

.1 Comply with procedural standards of certifying association under whose standard services will be performed.

.2 Notify Engineer 7 days prior to beginning of operations.

.3 Accurately record data for each step.

.4 Report to Engineer any deficiencies or defects noted during performance of services.

1.6 FINAL REPORTS

.1 Organization having managerial responsibility shall make reports.

.2 Ensure each form bears signature of recorder, and that of supervisor of reporting organization.

.3 Identify each instrument used, and latest date of calibration of each.

1.7 CONTRACTOR RESPONSIBILITIES

.1 Prepare each system for testing and balancing.

.2 Cooperate with testing organization and provide access to equipment and systems.

.3 Provide personnel and operate systems at designated times, and under conditions required for proper testing, adjusting, and balancing.

.4 Notify testing organization 7 days prior to time project will be ready for testing, adjusting, and balancing.

1.8 PREPARATION

.1 Provide instruments required for testing, adjusting, and balancing operations.

.2 Make instruments available to Engineer to facilitate spot checks during testing.

.3 Retain possession of instruments and remove at completion of services.

.4 Verify systems installation is complete and in continuous operation.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 Section Includes

.1 Procedures for demonstration and instruction of equipment and systems to Owner's personnel.

1.2 Related Sections

.1 Section 01770 - Closeout Procedures

.2 Section 01810 - Commissioning.

1.3 Description

.1 Owner will provide list of personnel to receive instructions, and will coordinate their attendance at agreed-upon times.

1.4 Quality Control

.1 When specified in individual Sections, require manufacturer to provide authorized representative to demonstrate operation of equipment and systems, instruct Owner's personnel, and provide written report that demonstration and instructions have been completed.

1.5 Submittals

.1 Submit schedule of time and date for demonstration of each item of equipment and each system two weeks prior to designated dates, for Engineer's approval.

.2 Give time and date of each demonstration, with list of persons present.

1.6 Preparation

.1 Verify that conditions for demonstration and instructions comply with requirements.

.2 Verify that designated personnel are present.

1.7 Demonstration and Instructions

.1 Review contents of manual in detail to explain all aspects of operation and maintenance.

.2 Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instructions.

PART 2 PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 EXECUTION

3.1 Not Used

.1 Not Used.

END OF SECTION

SECTION 2 CONTENTS

PART 1 GENERAL

1.1 Related Work

.1 Section 01330 - Submittal Procedures.

.2 Section 02315 - Excavating, Trenching and Backfilling.

.3 Section 02317 - Roadway Excavation Embankment and Compaction.

.4 Section 02072 - Geotextiles.

1.2 References

.1 Construction Quality Assurance (CQA) Plan.

.2 American Society for Testing and Materials (ASTM):

.1 ASTM D 5084, Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter.

.2 ASTM D 5890, Standard Test Method for Water Absorption of Bentonite by the Porous Plate Method, Swell Index Test.

.3 ASTM D 4354, Standard Practice for Sampling of Geosynthetics for Testing.

.4 ASTM D 5993 Test Method for Measuring Mass per Unit Area of Geotextiles

.5 ASTM D 5891 Fluid Loss in Bentonite ClaysAmerican Society for Testing and Materials (ASTM)

1.3 Quality Control Certificates

.1 At least two (2) weeks prior to start of work, furnish CQA Consultant with copies of mill test data and certificate that GCL delivered to job site meets requirements of this Section.

The certificate shall include:

- Roll numbers and identification,
- Sampling procedures, and
- Results of quality control tests, including a description of test methods used.

.2 Remove and replace uncertified material and replace with new material at no cost to the Owner.

1.4 Material Warranty

.1 Provide the Owner with a written warranty against manufacturing defects for period of twenty (20) years from the date of installation.

1.5 Guarantee

.1 Provide the Owner with a written guarantee against defects in installation and workmanship for a period of five (5) years from the date of final acceptance, including the services of qualified technicians and materials necessary to make repairs, at no cost to the Owner.

PART 2 PRODUCTS

2.1 Material

.1 The geotextile component to be non-woven, needle punched polypropylene or polyester material with Minimum Average Roll Values meeting or exceeding the criteria specified Table 1523-3-1.

.2 Provide test results from the Manufacturer for the product, as well as a certification that the material properties meet or exceed the specified values, at the frequency indicated in Table 1523-3-2.

.3 Synthetic material to be manufactured from inert polymeric materials which retain their structure during handling, placement and long-term service, have satisfactory resistance to acid and alkali action, are indestructible by micro-organisms and insects and are ultra violet light resistant.

.4 GCL to be manufactured by either adhesive /glue bonding or the mechanical bonding of the needlepunch process. Bentonite to consist of montmorillonite (sodium bentonite).

.5 If manufactured by needle punch process, verify that the geotextile component has been inspected continuously for the presence of broken needles using an in-line metal detector. Employ a method acceptable to the CQA Consultant for removal of broken needles.

.6 Verify that the proper mass per unit area of bentonite has been added to the product as specified in Table 1523-3-1.

.7 Test all material in accordance with the Manufacturer's quality control program. Samples not satisfying the Manufacturer's specifications shall result in the rejection of the applicable rolls. At the Manufacturer's discretion and expense, additional testing of individual rolls may be performed to more closely identify the non-complying rolls and/or qualify individual rolls.

.8 GCL to be supplied in rolls of minimum 3.6 metre continuous width.

.9 Minimum roll length to equal Manufacturer's standard minimum length.

.10 During shipping and on-site storage, protect the GCL at all times against exposure from sun; moisture, contamination by mud, dust, dirt; puncture; tearing and any other damaging or deleterious conditions. Contaminated GCL may require removal as directed by Engineer.

2.2 Labeling

.1 Each GCL roll to have a waterproof label which contains the following information:

- Manufacturer's name
- Production Identification
- Lot Number
- Roll Number
- Roll Weight; and
- Roll Dimensions

PART 3 EXECUTION

3.1 Installation

.1 The installation of the liner shall be completed by a company with minimum five (5) years similar experience.

.2 PlaceHandle all GCL in such a manner as to ensure it is not damaged in any way.

.3 In the presence of wind, sufficiently weight all GCL's with sandbags or the equivalent. Install such sandbags during placement and maintain in place until replaced with cover material.

.4 Cut GCL using an utility blade in a manner recommended by the Manufacturer and exercise due care to prevent damage to any underlying or adjacent liner system components during cutting.

.5 Take care during placement not to entrap stones or moisture under the GCL and not to walk on or drag equipment across the exposed GCL.

.6 Replace or properly repair any GCL damaged by stones or other foreign objects, or installation activities at no additional cost to Owner.

.7 If white coloured geotextile is used to encapsulate the bentonite, take precautions against "snowblindness" of personnel.

.8 Do not install the GCL on standing water. Install the GCL in a way that reduces the potential for hydration of the mat prior to completion of construction of the overlying liner system.

.9 Do not install the GCL during precipitation, high winds or other conditions that may cause rapid hydration of or damage to the GCL.

.10 Install the GCL as indicated by the Manufacturer or Engineer.

.11 Place soil layers (clay liner, granular sub-liner sampler blanket) or geomembrane overlying the geosynthetic clay liner, immediately following the installation of the GCL. Remove the GCL and replace if it becomes hydrated before the overlying soil layer or geomembrane is placed, at Contractor's expense.

.12 Remove and replace all hydrated GCL with new material at no additional cost to Owner.

3.2 Overlaps

.1 Overlap all GCL panels. Along the length of the mat, the overlap shall be a minimum of 150 mm or as specified by the Manufacturer. Along the width of the mat, the overlap shall be a minimum of 0.3 m, as specified by the Manufacturer or Engineer. The edges of the GCL panels should be adjusted to smooth out any wrinkles, creases, or "fishmouths" in order to maximize contact with the underlying panel.

.2 Do not nail or staple the overlaps to the underlying materials.

.3 Place panels from the highest to the lowest elevation within the area to be lined. Up-slope panels to be shingled over down-slope panels in order that flow is over the seam and not into the seam.

.4 After panels are placed establish proper overlap orientation and pull back the edge of the panel to expose the overlap zone. Remove any soil or other deleterious material present in the overlap zone.

.5 Place or pour a fillet of granular bentonite, Volclay®, or other sealing material acceptable to the Engineer, in a continuous manner along the overlap zone at a rate of at least 1800 grams per lineal metre (0.25 pound per lineal foot) to seal the overlaps.

.6 No vehicles permitted directly on geotextile.

3.3 Repair

.1 Repair any holes or tears in the GCL by placing a GCL patch over the hole, overlapping the edges of the hole or tear by at least 0.3 m in all directions. The patch may be secured with a water-based adhesive approved by the Manufacturer.

.2 Take care to remove any soil or other material which may have penetrated the torn GCL.

.3 Make all repairs at no additional cost to Owner.

.4 Do not nail or staple patches.

3.4 Placement of Overlaying Materials

.1 Place materials above the GCL in such a manner as to ensure that the GCL is not damaged.

.2 Do not drive equipment used for placing other materials directly on the GCL. In areas of heavy vehicle traffic, such as access ramps, the soil thickness should be at least 1.0 m.

.3 Ensure that the GCL is not damaged while working around the appurtenances and ensure that connections of the GCL to appurtenances are properly sealed, including using bentonite if required.

3.5 Product Protection

.1 Protect all prior work and materials.

.2 In the event of damage, immediately make all repairs and replacements necessary, to the approval of Engineer and at no additional cost to the Owner.

END OF SECTION

PART 1 GENERAL

1.1 Related Sections

.1 Section 02701 - Aggregates: General.

1.2 References

.1 American Society for Testing and Materials (ASTM)

.1 ASTM C 117- 03, Test Method for Material Finer Than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing.

.2 ASTM C 136- 01, Test Method for Sieve Analysis of Fine and Coarse Aggregates.

.3 ASTM D 422- 63(2002), Test Method for Particle-Size Analysis of Soils.

.4 ASTM D 698- 00, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3) (600 kN-m/m^3).

.5 ASTM D 4318- 00, Test Method 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.

.3 Canadian Standards Association (CSA)

.1 CAN/CSA-A23.1- 94, Concrete Materials and Methods of Concrete Construction.

.4 Contractor is to complete his work in compliance with the Department of Fisheries Authorization. A letter of authorization has been applied for by the Owner. The Contractor shall be responsible to meet the terms and conditions of the letter of Authorization from DFO. The cost to provide a silt curtain around the excavation throughout the underwater section shall be included in the contract price.

1.3 Definitions

.1 Excavation classes: two classes of excavation will be recognized; common excavation and rock excavation.

.1 Rock : any solid material in excess of 0.25 m^3 and which cannot be removed by means of duty mechanical excavating equipment having a 0.95 to 1.15 m^3 bucket. Frozen material not classified as rock.

.2 Common excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation.

.2 Waste material: excavated material unsuitable for use in work or surplus to requirements.

.3 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of work.

.4 Unsuitable materials:

.1 Weak and compressible materials under excavated areas.

.2 Frost susceptible materials under excavated areas.

.3 Frost susceptible materials:

.1 Fine grained soils with plasticity index less than 10 when tested to ASTM D 4318, and gradation within limits specified when tested to ASTM D 422 : Sieve sizes to CAN/CGSB-8.1.

.2 Table

Sieve Designation	% Passing
2.00 mm	100
0.10 mm	45 - 100
0.02 mm	10 - 80
0.005 mm	0 - 45

.3 Coarse-grained soils containing more than 20 % by mass passing 0.075 mm sieve.

.5 Unshrinkable fill: very weak mixture of Portland cement, concrete aggregates and water that resists settlement when placed in utility trenches, and capable of being readily excavated.

1.4 Samples

.1 Submit samples in accordance with Section 01330 - Submittal Procedures.

.2 Inform Engineer at least four (4) weeks prior to commencing work, of proposed source of fill materials and provide access for sampling.

.3 Submit 70 kg samples of type of fill specified.

.4 Ship samples prepaid to Ottawa, in tightly closed containers to prevent contamination.

1.5 Protection of Existing Features

.1 Existing buried utilities and structures:

.1 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.

.2 Prior to commencing excavation work, notify applicable owner or authorities having jurisdiction, establish location and state of use of buried utilities and structures. Owners or authorities having jurisdiction to clearly mark such locations to prevent disturbance during work.

.3 Confirm locations of buried utilities by careful test excavations.

.4 .

.2 Existing buildings and surface features:

.1 Conduct, with Engineer, condition survey of existing buildings, service poles, wires, survey bench marks and monuments which may be affected by work.

.2 Protect existing buildings and surface features from damage while work is in progress. In event of damage, immediately make repair to approval of Engineer.

1.6 Shoring, Bracing and Underpinning

.1 Protect existing features in accordance with Section 01560 - Temporary Barriers and Enclosures and applicable local regulations.

.2 Engage services of qualified professional engineer who is registered or licensed in the Nunavut Territory, Canada in which work is to be carried out to design and inspect cofferdams, shoring, bracing and underpinning required for work.

.3 Submit design and supporting data at least two (2) weeks prior to commencing work.

.4 Design and supporting data submitted to bear stamp and signature of qualified professional engineer registered or licensed in Nunavut Territory, Canada.

PART 2 PRODUCTS

2.1 Materials

.1 Type 1 and Type 2 fill: properties to section 02701 - Aggregates: General and the following requirements:

.1 Crushed, pit run or screened stone, gravel or sand.

.2 Gradations to be within limits specified when tested to ASTM C 136 and ASTM C 117. Sieve sizes to CAN/CGSB-8.1.

.3 Table

Sieve Designation	% Passing	
	Type 1	Type 2
75 mm	-	100
50 mm	-	-
37.5 mm	-	-
25 mm	100	-
19 mm	75-100	-
12.5 mm	-	-
9.5 mm	50-100	-
4.75 mm	30-70	22-85
2.00 mm	20-45	-
0.425 mm	10-25	5-30
0.180 mm	-	-
0.075 mm	3-8	0-10

.2 Type 3 fill: selected material from excavation or other sources, approved by Engineer for use intended, unfrozen and free from rocks larger than 75 mm, cinders, ashes, sods, refuse or other deleterious materials.

.3 Unshrinkable fill: proportioned and mixed to provide:

.1 Maximum compressive strength of 0.4 MPa at 28 days.

.2 Maximum Portland cement content of 25 kg/m^3.

.3 Minimum strength of 0.07 MPa at 24 h.

.4 Concrete aggregates: to CAN/CSA-A23.1.

.5 Portland cement: Type 10.

.6 Slump: 160 to 200 mm.

.4 Silt Curtian

.1 The silt curtain to be constructed of a woven geo-texile. Standard of Acceptance: Typar 3401.

.2 Curtain to be weighted using standard heavy gage chain, or similar stable material. Weights to be free of all grease or other soluble materials.

PART 3 EXECUTION

3.1 Site Preparation

.1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.

.2 Install silt curtain prior to any excavation of riverbed materials below the water elevation. Silt curtain to extend from the top of the ice surface to the top of the riverbed. Gaps in the silt curtain are not permitted.

3.2 Stockpiling

.1 Stockpile fill materials in areas designated by Engineer. Stockpile granular materials in manner to prevent segregation.

.2 Protect fill materials from contamination.

3.3 Excavation

.1 Advise Engineer at least seven (7) days in advance of excavation operations for initial cross sections to be taken.

.2 Excavate to lines, grades, elevations and dimensions as indicated Engineer.

.3 For trench excavation, unless otherwise authorized by Engineer in writing, do not excavate more than 30 m of trench in advance of installation operations and do not leave open more than 15 m at end of day's operation.

.4 Dispose of surplus and unsuitable excavated material off site.

.5 Do not obstruct flow of surface drainage or natural watercourses.

.6 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.

.7 Notify Engineer when bottom of excavation is reached.

.8 Obtain Engineer approval of completed excavation.

.9 Remove unsuitable material from trench bottom to extent and depth as directed by Engineer.

.10 Correct unauthorized over-excavation as follows:

.1 Fill under bearing surfaces and footings with fill concrete.

.2 Fill under other areas with Type 2 fill compacted to not less than 95 % of corrected maximum dry density.

.11 Hand trim, make firm and remove loose material and debris from excavations. Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil. Clean out rock seams and fill with concrete mortar or grout to approval of Engineer.

3.4 Fill Types and Compaction

.1 Use fill of types as indicated or specified below. Compaction densities are percentages of maximum densities obtained from ASTMD698.

.1 Exterior side of perimeter walls: use Type 3 fill to subgrade level. Compact to 95%.

.2 Place bedding and surround material in unfrozen condition.

3.5 Backfilling

.1 ..... Do not proceed with backfilling operations until Engineer has inspected and approved installations.

.2 ..... Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.

.3 Do not use backfill material which is frozen or contains ice, snow or debris.

.4 Place unshrinkable fill in areas as indicated. Consolidate and level unshrinkable fill with internal vibrators.

.5 Vibratory compaction equipment: Use a hand compactor in trench.

.6 Shape bed true to grade to provide continuous uniform bearing surface for pipe using type I material.

.7 Shape transverse depressions in bedding as required to suit joints.

.8 Compact each layer full width of bed to at least 95% maximum density to ASTMD698.

.9 Place backfill material in uniform layers not exceeding 150 mm compacted thickness up to grades indicated. Compact each layer before placing succeeding layer.

3.6 Restoration

.1 Upon completion of work, remove waste materials and debris, trim slopes, and correct defects as directed by Engineer.

.2 Clean and reinstate areas affected by work as directed by Engineer.

END OF SECTION

Approved: 2001-12-04

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01330 - Submittal Procedure.

.2 Section 01560 - Temporary Barriers and Enclosures.

.3 Section 01705 - Health and Safety.

.4 Section 02315 - Excavating, Trenching and Backfilling.

1.2 MEASUREMENT PROCEDURES

.1 Quantities will be taken from cross section showing original rock surface and actual grade line set by Engineer, except that minimum depth of rock required to be excavated to be considered as 50 mm.

1.3 DEFINITION

.1 Rock: any solid material in excess of 0.25 m^3 and which cannot be removed by means of heavy duty mechanical excavating equipment with 0.95 to 1.15 m^3 bucket. Frozen material not classified as rock.

.2 PPV: peak particle velocity.

1.4 SUBMITTALS

.1 Blasting Operation

.1 Submit to Engineer and local authorities having jurisdiction for approval, written proposal of operations for removal of rock by blasting, in accordance with Section 01330 - Submittal Procedures.

.2 Indicate proposed method of carrying out work. Include details on protective measures, time of blasting and other pertinent details.

.3 Submit records to Engineer at end of each shift. Maintain complete and accurate record of drilling and blasting operations.

1.5 QUALIFICATIONS

.1 Retain licensed explosives expert to program and supervise blasting work, and to determine precautions, preparation and operations techniques.

1.6 BLASTING SURVEY AND MONITORING

.1 Engineer will visit property holders of adjacent buildings and structures to determine existing conditions and describe blasting and seismic recording operations.

1.7 BLASTING AND VIBRATION CONTROL

.1 Reduce ground vibrations to avoid damage to structures or remaining rock mass.

Part 2 Products

2.1 MATERIALS

.1 Not used.

Part 3 Execution

3.1 PROTECTION

.1 Prevent damage to surroundings and injury to persons in accordance with Section 01560 - Temporary Barriers and Enclosures. Erect fencing, post guards, sound warnings and display signs when blasting to take place.

3.2 ROCK REMOVAL

.1 Co-ordinate this Section with Section 01705 - Health and Safety.

.2 Remove rock to alignments, profiles, and cross sections as indicated.

.3 Use rock removal procedures to produce uniform and stable excavation surfaces. Minimize overbreak, and to avoid damage to adjacent structures.

.4 Excavate trenches to lines and grades to minimum of 50 mm below pipe invert indicated. Provide recesses for bell and spigot pipe to ensure bearing will occur uniformly along barrel of pipe.

.5 Cut trenches to widths as indicated.

.6 Use pre-shearing, cushion blasting or other smooth wall drilling and blasting techniques or directed by Engineer.

.7 Remove boulders and fragments which may slide or roll into excavated areas.

.8 Correct unauthorized rock removal at no extra cost, in accordance with Section 02315 - Excavating, Trenching and Backfilling.

3.3 ROCK DISPOSAL

.1 Dispose of surplus removed rock off site.

.2 Do not dispose removed rock into landfill. Material must be sent to appropriate location as approved by the Engineer.

END OF SECTION

Part 1 GENERAL

1.1 References

.1 ASTM D698-98, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,000 ft-lbf/ft3) (600 kN-m/m3).

1.2 Definitions

.1 Rock Excavation: excavation of:

- .1 Material from solid masses of igneous, sedimentary or metamorphic rock which, prior to removal, was integral with parent mass. Material that cannot be ripped with reasonable effort from Caterpilar D9L or equivalent to be considered integral with parent mass.
- .2 Boulder or rock fragments measuring in volume one (1) cubic meter or more.

.2 Common Excavation: excavation of materials that are not Rock Excavation or Stripping.

.3 Unclassified Excavation: excavation of whatever character other than stripping encountered in the work.

.4 Stripping: excavation of organic material covering original ground.

.5 Over Haul: authorized hauling in excess of free haul distance that excavated material is moved.

.6 Embankment: material derived from usable excavation and placed above original ground or stripped surface up to top of subgrade.

.7 Waste Material: material unsuitable for embankment, embankment foundation or material surplus to requirements.

.8 Borrow Material: material obtained from areas outside right-of-way and required for construction of embankments or for other portions of work.

1.3 Requirements of Regulatory Agencies

.1 Adhere to regulations of authority having jurisdiction if blasting is required.

.2 Adhere to Territorial and National Environmental requirements if potentially toxic materials are involved.

Part 2 PRODUCTS

2.1 Materials

.1 Embankment materials require approval by Engineer.

.2 Borrow material:

.1 Obtain from borrow pit to be approved by Engineer.

Part 3 EXECUTION

3.1 Compaction Equiomeent

.1 Compaction equipment must be capable of obtaining required densities in materials on project. Equipment that does not achieve specified densities must be replaced or supplemented.

.2 Operate minimum equivalent of one 12 tonne vibratory packer continuously in each embankment when placing material.

3.2 Excavating

.1 General:

.1 Notify Engineer whenever waste materials are encountered and remove to depth and extent directed.

.2 Subcut 500 mm below subgrade in cut sections unless otherwise directed. Compact top 150 mm below subcut to minimum 95% maximum dry density, ASTM D698 (AASHTO T99). Replace with approved embankment material and compact.

.3 Where subgrade is on transition from excavation to embankment treat ground slopes at grade points as directed by Engineer.

.2 Drainage:

.1 Maintain profiles, crowns and cross slopes to provide good surface drainage.

.2 Provide ditches as work progresses to provide drainage.

.3 Construct interceptor ditches as shown on plans or as directed before excavating or placing embankment in adjacent area.

.3 Rock excavation:

.1 If, during excavation, material appearing to conform to classification for rock is encountered, notify Engineer and provide sufficient time to enable measurements to be made to determine volume of rock.

.2 Shatter rock to 300 mm below subgrade elevation as indicated on plans.

.3 Reduce overbreak and increase stability of all rock faces by using smooth blasting techniques, such as pre-shearing, cushion blasting, buffer blasting, perimeter blasting and line drilling.

.4 Scale rock backslopes to achieve smooth, stable face, free of loose rock and overhangs to design backslope.

.5 Control blasting to minimize flying particles.

.4 Borrow Excavation:

.1 Completely use in embankments, suitable materials removed from right-of-way excavations before taking material from borrow areas.

.2 Obtain embankment materials in excess of what is available from cut areas from designated borrow areas.

.1 Engineer to designate extent of borrow areas and allowable depth of excavation.

.2 Remove waste and stripping material from borrow pits to designated locations.

.3 Slope edges of borrow areas to minimum 3:1 and provide drainage as directed.

.4 Trim and leave borrow pits in condition to permit accurate measurement of material removed.

3.3 Embankments

.1 When directed, scarify or bench existing slopes in side hill or sloping sections to ensure proper bond between new materials and existing surfaces. Method used to be subject to prior approval of Engineer.

.2 Break up or scarify existing road surface prior to placing embankment material.

.3 Do not place material which is frozen nor place material on frozen surfaces except in areas authorized.

.4 Maintain crowned surface during construction to ensure ready run-off of surface water.

.5 Drain low areas before placing materials.

.1 Place and compact to full width in layers not exceeding 200 mm loose thickness. Engineer may authorize thicker lifts if specified compaction can be achieved and if material contains more than 25% by volume stone and rock fragments larger than 100 mm.

.6 Where material consists of rock:

.1 Place to full width in layers of sufficient depth to contain maximum sized rocks, but in no case is layer thickness to exceed 1 m.

.2 Carefully distribute rock material to fill voids with smaller fragments to form compact mass.

.3 Fill surface voids at subgrade level with rock spalls or selected material to form an earth-tight surface.

.4 Do not place boulders and rock fragments with dimensions exceeding 150 mm within 300 mm of subgrade elevation.

.7 Deductions from excavation will be made for overbuild of embankments.

3.4 Subgrade Compaction

.1 Break material down to sizes suitable for compaction and mix for uniform moisture to full depth of layer.

.2 Compact each layer to minimum 95% maximum dry density, ASTM D698 (AASHTO T99) except top 150 mm of subgrade. Compact top 150 mm to 100% maximum dry density.

.3 Add water or dry as required to bring moisture content of materials to level required to achieve specified compaction.

3.5 Finishing

.1 Shape entire roadbed to within 50 mm of design elevations.

.2 Finish slopes, ditch bottoms and borrow pits to neat condition, true to lines, grades and drawings where applicable.

.3 Remove rocks over 150 mm in any dimension from slopes and ditch bottoms.

.4 Hand finish slopes that cannot be finished satisfactorily by machine.

.5 Round top of backslope 1.5 m both sides of top of slope.

.6 Trim between constructed slopes and edge of clearing to provide drainage and free of humps, sags and ruts.

3.6 Protection

.1 Maintain finished surfaces in condition conforming to this section until acceptance by Engineer.

END OF SECTION

PART 1 GENERAL

1.1 Related Work

.1 Not used

PART 2 PRODUCTS

2.1 Stone

.1 Hard, with relative density (formally specific gravity) not less than 2.65, durable quarry stone, free from seams, cracks or other structural defects, to meet following size distribution for use intended:

.1 Random rip-rap:

.1 Not more than 10% of total volume of stones with individual diameters less than 300 mm.

.2 Not less than 50% of total volume of stones with individual diameters of 600 mm or more.

.3 Remaining percentage of total volume to have uniform distribution of stones between 300 mm and 600 mm size.

PART 3 EXECUTION

3.1 Placing

.1 Grade areas above water line to be rip-rapped to uniform, even surface. Fill depressions with suitable material and compact to provide firm bed.

.2 Place rip-rap to thickness and details as indicated.

.3 Place stones in manner approved by Engineer to secure surface and create a stable mass. Place larger stones at bottom of slopes.

END OF SECTION

PART 1 GENERAL

1.1 Related Sections

.1 Section 01561 - Environmental Protection.

1.2 Environmental Requirements

.1 Operation of construction equipment in water is prohibited.

.2 Use borrow material from watercourse beds when approved by Engineer.

.3 Design and construct temporary crossings to minimize environmental impact to watercourse.

.4 Constructing temporary crossings of watercourses when spawning beds are indicated is prohibited.

.5 Placing material in watercourse is to be completed in accordance with the Department of Fisheries and Oceans requirements.

PART 2 PRODUCTS

2.1 Preparation

.1 Obtain work permits from governing Federal, Territorial and/or Municipal authorities.

PART 3 EXECUTION

3.1 Existing Conditions

.1 Maintain existing flow pattern in natural watercourse systems.

3.2 Site Clearing

.1 Maintain temporary erosion and pollution control features installed under this contract.

3.3 Drainage

.1 Pumping water containing suspended materials into watercourse is prohibited.

END OF SECTION

..... 1996-06-30

PART 1 GENERAL

1.1 Related Work

.1 Section 02701- Aggregates: General

.2 Section 02315 - Excavating, Trenching and Backfilling

1.2 References

.1 ASTM D1759 Standard Practice for Design of HDPE Manholes for Subsurface Applications.

.2 ASTM F894 Specification for Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe.

.3 ASTM F714 Standard Practice or Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter.

.4 ISO 9001:2000 Quality management systems - Requirements

1.3 Material Certification

.1 Submit manufacturer's test data and certification at least four (4) weeks prior to commencing work. Include manufacturer's drawings, information and shop drawings where pertinent.

PART 2 PRODUCTS

2.1 Materials

.1 The riser pipe shall only be manufactured from a closed profile high density polyethylene pipe that conforms to the requirements of section 5.1 'Base Materials' of ASTM F894, and that no materials other than the approved base materials shall be used to manufacture the pipe. When requested to do so, the manufacturer shall certify that the materials used to manufacture the riser pipe meets these requirements.

.2 All solid wall pipe used in the manhole fabrication shall meet the requirements of ASTM F714 and shall conform to the OD and DR requirements specified on the contract documents.

.3 The polyethylene raw material for riser pipe and solid wall pipe shall contain a minimum of 2%, well dispersed finely divided carbon black for UV stabilization. Additives that can be conclusively proven not to be detrimental to the pipe may also be used provided that the pipe produced meets or exceeds all of the requirements of this specification.

.4 The pipe shall contain no recycled compound except that generated in the manufacturers' own plant.

.5 The pipe manufacturers Quality System shall be certified as meeting the requirements of an ISO 9001:2000 Quality management system, by a qualified independent body.

.6 The riser pipe material and all solid wall pipe shall be resistant to corrosion resulting from the presence of Hydrogen Sulfide and to pH values between 2 and 13.

.7 The riser pipe shall be manufactured with dimensions and tolerances in accordance with the manufacturer's internal manufacturing standard. The pipe must meet the requirements of ASTM F894 when the pipe is marked as such. The nominal inside diameter of the pipe shall be true to the specified pipe size. The pipe shall be manufactured by the continuous winding of a closed profile onto suitably sized mandrels. It shall be produced to constant internal diameters.

.8 When more than 1 length of riser pipe is used to fabricate the riser, the termination of the helically wound profile that forms the pipe shall be manufactured with a 30° plated end cut.

.9 The pipe shall be manufactured in such a manner that the pipe is available in lengths from 3-60 feet. A variety of lengths are available to accommodate installation, storage or varying ground conditions. Unless otherwise stated, the standard laying length shall be 50 feet (15 meters). Each standard and random length of pipe in compliance with ASTM F894 shall be clearly marked as such as required by the standard.

.10 The pipe shall be homogenous throughout and free from visible cracks, holes, foreign inclusions or other injurious defects. The pipe shall be as uniform as commercially practical in color, opacity, density and other physical properties.

.11 Manholes shall be designed in accordance with the requirements of ASTM D1759. The design shall be based on the site conditions identified on the project drawings and / or as identified by the owner.

PART 3 EXECUTION

3.1 Excavation and Backfill

.1 Excavate and backfill in accordance with Section 02315 - Excavating Trenching and Backfilling and as indicated.

.2 Obtain approval of Engineer before installing outfall structures and manhole.

3.2 Installation

.1 Construct units in accordance with details indicated, plumb and true to alignment and grade.

.2 Dewater excavation to approval of Engineer and remove soft and foreign material before placing base.

.3 Set manhole base on 150 mm minimum of granular bedding compacted to 100% maximum density to ASTM D 698.

.4 Compact granular backfill to [95]% maximum density to ASTM D 698.

.5 Place unshrinkable backfill in accordance with Section 02315 - Excavating, Trenching and Backfill.

.6 Place frame and cover on top section to elevation as indicated. If adjustment required use mandhole riser ring.

.7 Clean units of debris and foreign materials. Remove fins and sharp projections. Prevent debris from entering system.

.8 Install safety platforms in manholes having depth of five (5) m or greater, as indicated.

.9 Manholes shall be factory fabricated to ensure consistency in product assembly.

.10 All joints in riser pipe sections shall be formed by extrusion welding along the helical 'profile cut' joints. Unless otherwise specifically noted on the contract documents, the profile winding shall be cut and sealed at a 30 ° angle, prior to extrusion welding of adjacent sections, to prevent flow along the pipe wall helix.

.11 All joints in solid wall pipe shall be by fusion welding unless specifically stated otherwise on the contract documents.

.12 All joints between the HDPE base plate, manhole base slope sections, manhole riser pipe, and mainline pipe extensions, shall be by extrusion welding. All extrusion welds shall conform to the requirements of the contract documents and WPS KWH01 (or equivalent).

.13 Connection of solid wall (ASTM F714) manhole stub extensions to HPDE mainline pipe meeting the same specification may be by mechanical connection, or by fusion welding.

.14 All fusion welds must be made following the fusion equipment manufacturers recommendations or the pipe manufacturers' butt fusion procedures.

3.3 Leakage Test

.1 Install watertight plugs or seals on inlets and outlets of each new manhole and fill manhole with water. Leakage not to exceed 0.3% per hour of volume of manhole.

.2 If permissible leakage is exceeded, correct defects. Repeat until acceptable to Engineer.

.3 Engineer will issue Test Certificate for each manhole passing test.

.4 Leak Testing: Installed sections of the fabricated HDPE manhole shall be examined for leaks by in-filtration where the ground water is 'high', or by ex-filtration where the ground water is 'low'.

.5 In-filtration Testing: The ground water table around the manhole must be at least 1 foot above the highest fabrication weld elevation of the section being examined. The joints may be examined visually for leaks. **No leaks should be observed.** If a leak is observed, it will be necessary to lower the water table below the area of the leak, and to completely dry and clean the area prior to undertaking a repair weld.

.6 Ex-filtration Testing: Establish a water level within the manhole that is at least 1 foot above the highest fabrication weld. Allow to stand for a minimum of 12 hours. *(The profile wall PE pipe will 'relax' due to the imposed internal pressure by minor deflection of the inside surface of the profile wall, increasing the volume inside the pipe.)* Add additional water as required to return the height of water to the original level. Let stand for 1 hour and measure the amount of water required to return the standing head to the initial level. Repeat three (3) times. The volume of 'make-up' water required in each subsequent step should be less than the preceding step. The values of 'make-up' water over time should trend to zero (0).

END OF SECTION

.....1999-12-16

PART 1 GENERAL

1.1 Related Sections

.1 Section 02315 - Excavating, Trenching and Backfilling.

.2 Section 02317 - Roadway Excavation, Embankment and Compaction.

.3 Section 02701- Aggregates: General

.4 Section 01330 - Submittal Procedures

.5 Section 01355 - Waste Management and Disposal

.6 Section 01610 - Basic Product Requirements

1.2 References

.1 American Society for Testing and Materials (ASTM)

.1 ASTM C 117-95, Standard Test Method for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.

.2 ASTM C 136-96a, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

.3 ASTM D 698-91(1998), Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (600 kN-m/m3).

.4 ASTM D 1248-98, Standard Specification for Polyethylene Plastics Molding and Extrusion Materials for Wire and Cable.

.5 ASTM F 667-97, Standard Specification for 8, 10, 12, and 15 inch Corrugated Polyethylene Tubing and Fittings.

.2 Canadian Standards Association (CSA)

.1 CAN3-G401-93, Corrugated Steel Pipe Products.

.3 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-8.1-88, Sieves Testing, Woven Wire.

.2 CAN/CGSB-8.2-M88, Sieves Testing, Woven Wire, Metric.

1.3 Samples

.1 Submit samples in accordance with Section 01330 - Submittal Procedures.

.2 Inform Engineer at least four (4) weeks prior to commencing work, of proposed source of bedding materials and provide access for sampling.

1.4 Material Certification

.1 Submit manufacturer's test data and certification at least four (4) weeks prior to commencing work.

.2 Certification to be marked on pipe.

1.5 Delivery, Storage and Handling

.1 Deliver, store and handle materials in accordance with Section 01610 - Basic Product Requirements.

PART 2 PRODUCTS

2.1 Corrugated Steel Pipe

.1 Corrugated steel pipe: to CAN3-G401.

.2 Water-tight cut-off collars: as indicated.

.3 Prefabricated end sections: as indicated.

.4 Corrugated fluming: to CAN3-G401.

2.2 Granular Bedding and Backfill

.1 Granular bedding and backfill material to Section 02701- Aggregates: General and following requirements:

.1 Crushed pit run or screened stone, gravel or sand.

PART 3 EXECUTION

3.1 Trenching

.1 Do trenching work in accordance with Section 02315- Excavating Trenching and Backfilling.

.2 Obtain Engineer's approval of trench line and depth prior to placing bedding material or pipe.

3.2 Bedding

.1 Dewater excavation, as necessary, to allow placement of culvert bedding in the dry.

.2 Place minimum thickness of 200 mm of approved granular material on bottom of excavation and compact to minimum 95% maximum density to ASTM D 698.

.3 Shape bedding to fit lower segment of pipe exterior so that width of at least 50% of pipe diameter is in close contact with bedding and to camber as indicated or as directed by Engineer, free from sags or high points.

.4 Place bedding in unfrozen condition.

3.3 Laying Corrugated Steel Pipe Culverts

.1 Commence pipe placing at downstream end.

.2 Ensure bottom of pipe is in contact with shaped bed or compacted fill throughout its length.

.3 Lay pipe with outside circumferential laps facing upstream and longitudinal laps or seams at side or quarter points.

.4 Lay paved invert or partially lined pipe with longitudinal centre line of paved segment coinciding with flow line.

.5 Do not allow water to flow through pipes during construction except as permitted by Engineer.

3.4 Joints: Corrugated Steel Culverts

.1 Corrugated steel pipe:

.1 Match corrugations or indentations of coupler with pipe sections before tightening.

.2 Tap couplers firmly as they are being tightened, to take up slack and ensure snug fit.

.3 Insert and tighten bolts.

.4 Repair spots where damage has occurred to spelter coating by applying two coats of asphalt paint approved by Engineer or two coats of zinc rich epoxy paint.

.2 Structural plate:

.1 Erect in final position by connecting plates with bolts at longitudinal and circumferential seams.

.2 Drift pins may be used to facilitate matching of holes.

.3 Place plates in sequence recommended by manufacturer with joints staggered so that not more than three plates come together at any one point.

.4 Draw bolts up tight, without overstress, before beginning backfill.

.5 Repair spots where damage has occurred to spelter coating by applying two coats of asphalt paint or two coats of zinc rich epoxy paint approved by Engineer.

3.5 Backfilling

.1 Backfill around and over culverts as indicated or as directed by Engineer.

.2 Place granular backfill material, in 150 mm layers to full width, alternately on each side of culvert, so as not to displace it laterally or vertically.

.3 Compact each layer to 95% maximum density to ASTM D 698 taking special care to obtain required density under haunches.

.4 Protect installed culvert with minimum 500 mm cover of compacted fill before heavy equipment is permitted to cross. During construction, width of fill, at its top, to be at least twice diameter or span of pipe and with slopes not steeper than 1:2.

.5 Place backfill in unfrozen condition.

3.6 Fluming

.1 Assemble and install fluming as indicated.

.2 Set top edges of fluming flush with side slope.

END OF SECTION

.....1996-06-30

PART 1 GENERAL

1.1 Related Work

.1 Section 01330 - Submittal Procedures

.2 Section 02231- Clearing and Grubbing

.3 Section 02371- Rip-Rap

.4 Section 02631- Manholes and Catch Basins.

.5 Section 02701- Aggregates: General

1.2 References

.1 ASTMC117-90, Test Method for Material Finer Than 0.075mm Sieve in Mineral Aggregates by Washing.

.2 ASTMC136-84a, Method for Sieve Analysis of Fine and Coarse Aggregates.

.3 ASTMD698-91, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (600kN-m/m3).

.4 CAN/CGSB-8.1-88, Sieves Testing, Woven Wire.

.5 CAN/CGSB-8.2-M88, Sieves Testing, Woven Wire, Metric.

1.3 Samples

.1 Submit samples in accordance with Section 01330 - Submittal Procedures.

.2 Submit to Engineer for testing, samples of following materials at least four (4) weeks prior to commencing work:

.1 Two samples 3600mm square of flexible lining including joint or intersecting joints if included in work.

.2 Two samples 600mm long of flexible lining including joint or intersecting joints if included in work.

1.4 Shop Drawings

.1 Submit shop drawings in accordance with Section 01330 - Submittal Procedures.

.2 Indicate following items:

.1 Liner panels, details of anchoring panels, material, thickness and reinforcement.

.2 Projections through liner and method of sealing.

.3 Piping.

.4 Sluice or slide gates.

.5 Valves.

1.5 Classification of Excavation

.1 General: excavation of rock, common and unclassified materials shall include placing of suitable excavated materials in embankment fills or dikes, and disposal of unsuitable material.

.2 Rock excavation: excavation of material from solid masses of igneous, sedimentary or metamorphic rock which, prior to its removal, was integral with its parent mass, and boulders or rock fragments having individual volume in excess of]m^3.

.3 Common excavation: excavation of all materials of whatever nature, which are not included under definition of rock excavation, including dense tills, hardpan and frozen materials.

.4 Unclassified excavation: excavation of deposits of whatever character encountered in work.

1.6 Measurement for Payment

.1 Construction of sewage lagoon: lump sum payment.

PART 2 PRODUCTS

2.1 Materials

.1 Rip-rap: to Section 02371- Rip-Rap.

.2 Granular material to Section 02701- Aggregates: General and following requirements:

.1 Stone, gravel or sand.

.2 Gradations to be within limits specified when tested to ASTMC136 and ASTMC117. Sieve sizes to CAN/CGSB-8.1.

.3 Table

PART 3 EXECUTION

3.1 Stripping of Topsoil

.1 Commence topsoil stripping of area as directed by Engineer after area has been cleared and grubbed.

.2 Strip topsoil to depths as directed by Engineer. Avoid mixing topsoil with subsoil.

.3 Stockpile in locations as directed by Engineer.

.4 Dispose of unused topsoil as directed by Engineer.

3.2 Excavation

.1 Excavate effluent ditches, by-pass ditches or re-routed surface drainage ditches as indicated.

.2 Remove unsuitable materials from dike foundation to depth as indicated.

.3 Excavate basin for lagoon to lines and elevations indicated.

3.3 Dike Construction

.1 Construct dikes as indicated.

.2 Place dike material in unfrozen condition.

.3 Place dike materials in layers of 150mm compacted thickness. Compact each layer to 95% maximum density to ASTM D 698.

.4 Hand finish or grade slopes and top of completed dike to remove stones over 25 mm in size and other debris.

.5 Finish slopes and top of dike as indicated.

.6 Rip-rap areas indicated in accordance with Section 02454- Rip-Rap.

3.4 Installation of Sewers

.1 Construct and install required manholes in accordance with Section 02631- Manholes and Catch Basins.

.2 Install valves, sluice gates, and slide gates in accordance with manufacturer's recommendations.

3.5 Flexible Lining

.1 Place compacted layer of granular material in unfrozen condition on bottom and sides of lagoon as indicated.

.2 Check surface on which flexible liner is to be placed and remove projections that may puncture lining.

.3 Place liner panels as directed by Engineer or as indicated. Anchor panels temporarily using sand bags or other weights that will not damage liner.

.4 Excavate anchor trenches at locations as indicated.

.5 Place and secure liner in anchor trenches.

.6 Backfill and compact anchor trenches.

.7 Clean edges of panels to be spliced and join as outlined in manufacturer's recommendations.

.8 Complete anchoring of panels at base of slope.

.9 Cut liner sheets to fit accurately around inlets, outlets, sleeves, concrete structures and other projections through lining.

.10 Complete flashing and sealing of penetrations as indicated.

.11 Place cover blanket as indicated.

3.6 Rip-Rap

.1 Place rip-rap in accordance with Section 02371- Rip-Rap and as indicated.

3.7 Clean Up

.1 Remove surplus material and debris from site.

END OF SECTION

Part 1 GENERAL

1.1 Related Sections

.1 Section 02315 – Excavating, Trenching and Backfilling

.2 Section 03302 – Cast-In-Place Concrete.

.3 Section 01330 - Submittal Procedures.

1.2 References

.1 American Society for Testing and Materials (ASTM)

.1 ASTM D4791-99, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.

1.3 Samples

.1 Submit samples in accordance with Section 01330 - Submittal Procedures.

.2 Allow continual sampling by Engineer during production.

.3 Provide Engineer with access to source and processed material for sampling.

.4 Install sampling facilities at discharge end of production conveyor, to allow Engineer to obtain representative samples of items being produced.

.5 Pay cost of sampling and testing of aggregates which fail to meet specified requirements.

Part 2 PRODUCTS

2.1 Materials

.1 Aggregate quality: sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material, clay lumps or minerals, or other substances that would act in deleterious manner for use intended.

.2 Flat and elongated particles of coarse aggregate: to ASTM D4791.

.1 Greatest dimension to exceed five times least dimension.

.3 Fine aggregates satisfying requirements of applicable section to be one, or 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 to be one of or blend of following:

.1 Crushed rock.

.2 Gravel and crushed gravel composed of naturally formed particles of stone.

.3 Light weight aggregate, including slag and expanded shale.

2.2 Source Quality Control

.1 Inform Engineer of proposed source of aggregates and provide access for sampling at least 4 weeks prior to commencing production.

.2 If, in opinion of Engineer, materials from proposed source do not meet, or cannot reasonably be processed to meet, specified requirements, locate an alternative source or demonstrate that material from source in question can be processed to meet specified requirements.

.3 Advise Engineer 4 weeks in advance of proposed change of material source.

.4 Acceptance of material at source does not preclude future rejection if it fails to conform to requirements specified, lacks uniformity, or if its field performance is found to be unsatisfactory.

Part 3 EXECUTION

3.1 Preparation

.1 Aggregate source preparation

.1 Prior to excavating materials for aggregate production, clear area to be worked, and strip unsuitable surface materials. Dispose of cleared and unsuitable materials as directed by Engineer.

.2 When excavation is completed dress sides of excavation to nominal [1.5:1] slope, and provide drains or ditches as required to prevent surface standing water.

.3 Trim off and dress slopes of waste material piles and leave site in neat condition.

.2 Processing

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

.2 Blend aggregates, if required, to obtain gradation requirements, percentage of crushed particles, or particle shapes, as specified. Use methods and equipment approved by Engineer.

.3 Wash aggregates, if required to meet specifications. Use only equipment approved by Engineer.

.4 When operating in stratified deposits use excavation equipment and methods that produce uniform, homogeneous aggregate.

.3 Handling

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

.4 Stockpiling

.1 Stockpile aggregates on site in locations as indicated unless directed otherwise by Engineer.

.2 Stockpile aggregates in sufficient quantities to meet Project schedules.

.3 Stockpiling sites to be level, well drained, and of adequate bearing capacity and stability to support stockpiled materials and handling equipment.

.4 Except where stockpiled on acceptably stabilized areas, provide compacted sand base not less than 300 mm in depth to prevent contamination of aggregate. Stockpile aggregates on ground but do not incorporate bottom 300 mm of pile into Work.

.5 Separate different aggregates by strong, full depth bulkheads, or stockpile far enough apart to prevent intermixing.

.6 Do not use intermixed or contaminated materials. Remove and dispose of rejected materials as directed by Engineer within 48 h of rejection.

.7 Stockpile materials in uniform layers of thickness as follows:

.1 Max 1.5 m for coarse aggregate and base course materials.

.2 Max 1.5 m for fine aggregate and sub-base materials.

.3 Max 1.5 m for other materials.

.8 Uniformly spot-dump aggregates delivered to stockpile in trucks and build up stockpile as specified.

.9 Do not cone piles or spill material over edges of piles.

.10 Do not use conveying stackers.

.11 During winter operations, prevent ice and snow from becoming mixed into stockpile or in material being removed from stockpile.

3.2 CLEANING

.1 Leave aggregate stockpile site in tidy, well drained condition, free of standing surface water.

.2 Leave any unused aggregates in neat compact stockpiles as directed by Engineer.

.3 For temporary or permanent abandonment of aggregate source, restore source to condition meeting requirements of authority having jurisdiction.

END OF SECTION

.....1996-06-30

PART 1 GENERAL

1.1 Related Sections

.1 Section 02317 - Roadway Excavation, Embankment and Compaction.

.2 Section 02701- Aggregates General

.3 Section 02722- Granular Sub-base

1.2 References

.1 ASTMC117-90, Test Method for Material Finer Than 0.075mm Sieve in Mineral Aggregates by Washing.

.2 ASTMC131-89, Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

.3 ASTMC136-92, Method for Sieve Analysis of Fine and Coarse Aggregates.

.4 ASTMD698-91, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft3) (600kN-m/m3).

.5 ASTMD1557-91, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000ft-lbf/ft3) (2,700kN-m/m3).

.6 ASTMD1883-92, Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.

.7 ASTMD4318-84, Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.

.8 CAN/CGSB-8.1-88, Sieves Testing, Woven Wire, Inch Series.

.9 CAN/CGSB-8.2-M88, Sieves Testing, Woven Wire, Metric.

1.3 Delivery, Storage, and Handling

.1 Deliver and stockpile aggregates in accordance with Section 02701- Aggregates General. Stockpile minimum 50% of total aggregate required prior to commencing operation.

.2 Store cement in weathertight bins or silos that provide protection from dampness and easy access for inspection and identification of each shipment.

PART 2 PRODUCTS

2.1 Materials

.1 Granular base: material to Section 02701- Aggregates: General and following requirements:

.1 Crushed stone or gravel.

.2 Gradations to be within limits specified when tested to ASTMC136. Sieve sizes to CAN/CGSB-8.1.

.1 Gradation to:

Sieve Designation	% Passing		
	1	2	3
100 mm	-	-	-
75 mm	-	-	-
50 mm	100	-	-
37.5 mm	70-100	-	-
25 mm	-	100	-
19 mm	50-75	-	100
12.5 mm	-	65-100	70-100
9.5 mm	40-65	-	-
4.75 mm	30-50	35-60	40-70
2.00 mm	-	22-45	23-50
0.425 mm	10-30	10-25	7-25
0.180 mm	-	-	-
0.075 mm	3-8	3-8	3-8

.2 Material to level surface depressions to meet gradation (2) limits in accordance with 2.1.1.2.1.

.3 Liquid limit: to ASTMD4318, maximum25

.4 Plasticity index: to ASTMD4318, maximum6

.5 Los Angeles degradation: to ASTMC131. Max. % loss by weight: 45

.6 Crushed particles: at least 60% of particles by mass within each of following sieve designation ranges to have at least 1 freshly fractured face. Material to be divided into ranges using methods of ASTMC136.

Passing		Retained on
50 mm	to	25 mm
25 mm	to	19.0 mm
19.0 mm	to	4.75 mm

.7 Soaked CBR: to ASTMD1883, min 80, when compacted to 100% of ASTMD1557.

PART 3 EXECUTION

3.1 Sequence of Operation

.1 Place granular base after sub-base surface is inspected and approved by Engineer.

.2 Placing

.1 Construct granular base to depth and grade in areas indicated.

.2 Ensure no frozen material is placed.

.3 Place material only on clean unfrozen surface, free from snow and ice.

.4 Begin spreading base material on crown line or on high side of one-way slope.

.5 Place material using methods which do not lead to segregation or degradation of aggregate.

.6 For spreading and shaping material, use spreader boxes having adjustable templates or screeds which will place material in uniform layers of required thickness.

.7 Place material to full width in uniform layers not exceeding 150mm compacted thickness. Engineer may authorize thicker lifts (layers) if specified compaction can be achieved.

.8 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.

.9 Remove and replace that portion of layer in which material becomes segregated during spreading.

.3 Compaction Equipment

.1 Compaction equipment to be capable of obtaining required material densities.

.2 Efficiency of equipment not specified to be proved at least as efficient as specified equipment at no extra cost and written approval must be received from Engineer before use.

.3 Equipped with device that records hours of actual work, not motor running hours.

.4 Compacting

.1 Compact to density not less than 100% maximum dry density in accordance with ASTMD1557.

.2 Shape and roll alternately to obtain smooth, even and uniformly compacted base.

.3 Apply water as necessary during compacting to obtain specified density.

.4 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by Engineer.

.5 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

.5 Proof rolling

.1 For proof rolling use standard roller of 45400kg gross mass with four pneumatic tires each carrying 11350kg and inflated to 620kPa. Four tires arranged abreast with centre to centre spacing of 730mm.

.2 Obtain approval from Engineer to use non standard proof rolling equipment.

.3 Proof roll at level in granular base as indicated. If use of non standard proof rolling equipment is approved, Engineer to determine level of proof rolling.

.4 Make sufficient passes with proof roller to subject every point on surface to three separate passes of loaded tire.

.5 Where proof rolling reveals areas of defective subgrade:

.1 Remove base, sub-base and subgrade material to depth and extent as directed by Engineer.

.2 Backfill excavated subgrade with common material and compact in accordance with Section 02317 - Roadway Excavation, Embankment and Compaction.

.3 Replace sub-base material and compact in accordance with Section 02317 - Roadway Excavation, Embankment and Compaction.

.4 Replace base material and compact in accordance with this section.

.6 Where proof rolling reveals defective base or sub-base, remove defective materials to depth and extent as directed by Engineer and replace with new materials in accordance with Section 02722- Granular Sub-base and this section at no extra cost.

3.2 Site Tolerances

.1 Finished base surface to be within plus or minus 10mm of established grade and cross section but not uniformly high or low.

3.3 Protection

.1 Maintain finished base in condition conforming to this section until succeeding material is applied or until acceptance by Engineer.

END OF SECTION

Approved: 2002-12-04

Part 1 General

1.1 RELATED SECTIONS

.1 Section 01355 - Waste Management and Disposal.

.2 Section 02701 - Aggregates: General.

1.2 REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM C117-95, Standard Test Methods for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.

.2 ASTM C136-96a, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

.3 ASTM D422-63(1998), Standard Test Method for Particle-Size Analysis of Soils.

.4 ASTM D698-00a, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft^3) (600kN-m/m^3).

.5 ASTM D1557-00, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000ft-lbf/ft^3) (2,700kN-m/m^3).

.6 ASTM D4318-00, 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 Granular sub-base material: in accordance with Section 02701 - Aggregates: General and following requirements:

.1 Crushed, pit run or screened stone, gravel or sand.

.2 Gradations to be within limits specified when tested to ASTM C136 and ASTM C117. Sieve sizes to CAN/CGSB-8.2.

.3 Table

Sieve Designation	% Passing			
100 mm	-	-	-	-
75 mm	100	100	100	-
50 mm	-	-	-	100
37.5 mm	-	-	-	-
25 mm	55-100	-	-	60-100

Sieve Designation	% Passing			
19 mm	-	-	-	-
12.5 mm	-	-	-	38-70
9.5 mm	-	-	-	-
4.75 mm	25-100	25-85	-	22-55
2.00 mm	15-80	-	-	13-42
0.425 mm	4-50	5-30	0-30	5-28
0.180 mm	-	-	-	-
0.075 mm	0-8	0-10	0-8	2-10

.4 Other Properties as follows:

.1 Liquid Limit: to ASTM D4318, Maximum 25.

.2 Plasticity Index: to ASTM D4318, Maximum 6.

.3 Particles smaller than 0.02 mm: to ASTM D422, Maximum 3%.

.4 Soaked CBR: to ASTM D1883, Min 40 when compacted to 100% of ASTM D1557.

Part 3 Execution

3.1 PLACING

.1 Place granular sub-base after subgrade is inspected and approved by Engineer.

.2 Construct granular sub-base to depth and grade in areas indicated.

.3 Ensure no frozen material is placed.

.4 Place material only on clean unfrozen surface, free from snow or ice.

.5 Begin spreading sub-base material on crown line or high side of one-way slope.

.6 Place granular sub-base materials using methods which do not lead to segregation or degradation.

.7 For spreading and shaping material, use spreader boxes having adjustable templates or screeds which will place material in uniform layers of required thickness.

.8 Place material to full width in uniform layers not exceeding 150 mm compacted thickness. Engineer may authorize thicker lifts (layers) if specified compaction can be achieved.

.9 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.

.10 Remove and replace portion of layer in which material has become segregated during spreading.

3.2 COMPACTION

.1 Compaction equipment to be capable of obtaining required material densities.

.2 Compact to density of not less than 98% maximum dry density in accordance with ASTM D698.

.3 Shape and roll alternately to obtain smooth, even and uniformly compacted sub-base.

.4 Apply water as necessary during compaction to obtain specified density.

.5 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by Engineer.

.6 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

3.3 SITE TOLERANCES

.1 Finished sub-base surface to be within 10 mm of elevation as indicated but not uniformly high or low.

3.4 PROTECTION

.1 Maintain finished sub-base in condition conforming to this section until succeeding base is constructed, or until granular sub-base is accepted by Engineer.

END OF SECTION

.....2000-12-05

PART 1 GENERAL

1.1 Related Sections

.1 Section 01330 - Submittal Procedures.

1.2 References

.1 American Society for Testing and Materials (ASTM)

.1 ASTM B209-96, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

.2 Canadian General Standards Board (CGSB)

.1 CGSB 62-GP-11M-78, Marking Material, Retroreflective, Enclosed Lens, Adhesive Backing.

.3 Manual of Uniform Traffic Control Devices for Canada

1.3 Samples

.1 Submit samples in accordance with Section 01330 - Submittal Procedures.

.2 Submit to Engineer at least four (4) weeks prior to commencing work, following samples of materials proposed for use:

.1 Reflective markers.

.2 Galvanized steel posts.

PART 2 PRODUCTS

2.1 Reflective Markers

.1 200 x 100 mm with 20 mm radius corners aluminum base panel with permanently attached reflective sheeting:

.1 Aluminum base panel: to ASTM B209M, 1.6 mm thick, degreased and etched or treated with light amorphous chromate type coating.

.2 Reflective sheeting: to CGSB62-GP-11M, type I, class I, reflectivity level I. Colour: yellow.

2.2 Steel Posts

.1 Steel posts: galvanized steel sign standards 3.2 m long, flanged, "U" shaped in cross section, measuring 65 mm wide by 30 mm deep. Metal thickness: 4.5 mm. Pre-drill bolt holes in locations as indicated.

.2 Bolts: 65 mm long galvanized steel, 9 mm minimum diameter. Each bolt to be complete with two nylon washers, cast block spacer and galvanized steel nut.

PART 3 EXECUTION

3.1 Assembly

.1 Fasten reflective markers to steel posts using bolts, washers, spacers and nuts. Use two bolts for each delineator unit, centered and spaced at 150 mm.

.2 Fasten two reflective markers back to back to each steel post for delineator units installed on two-way roads. Attach single reflective marker to each post for delineator units installed on one-way roads.

3.2 Installation

.1 Do work in accordance with "Manual of Uniform Traffic Control Devices for Canada", (MUTCDC) except where specified otherwise.

.2 Install posts vertically and as indicated and in no case more than 4.0 m nor less than 1.2 m from edge of pavement.

.3 Locate centre of reflective marker 2.4 m above elevation of outside edge of adjacent lane in accordance with MUTCDC and at right angles to road centreline.

.4 On straight alignment, space delineator units at 60 m.

.5 On curves, space delineator units as follows:

Radius of Curve in Metres	Spacing in Metres on Curve	Spacing in Metres in Advance and Beyond		
		First Space	Second Space	Third Space
1500	42	60	60	60
1000	35	60	60	60
500	24	45	60	60
350	20	38	60	60
250	17	32	52	60
200	15	29	46	60
150	13	25	40	60
100	11	20	33	60
75	9	18	28	57
60	8	16	25	51
40	7	13	21	42

.6 Five markers to be always visible to the right of the road on approaches to and throughout horizontal curves.

END OF SECTION

.....1996-06-30

PART 1 GENERAL

1.1 Related Work

.1 Section 01330 - Submittal Procedures

1.2 References

.1 ASTMA307-91, Specification for Carbon Steel Bolts and Studs, 60,000psi Tensile.

.2 CAN/CSA-O80 Series-M89, Wood Preservation.

.3 CAN/CSA-G164-M92, Hot Dip Galvanizing of Irregularly Shaped Articles.

.4 CAN/CGSB-1.40-M89, Primer, Structural Steel, Oil Alkyd Type.

.5 CAN/CGSB-1.181-92, Ready Mixed Organic Zinc-RichCoating.

.6 CGSB31-GP-107Ma-90, Non-inhibited, PhosphoricAcid Base Metal Conditioner and Rust Remover.

.7 AASHTOM180-79, Corrugated Sheet Steel Beams forHighway Guardrails.

1.3 Samples

.1 Submit samples in accordance with Section 01330 - Submittal Procedures.

.2 Inform Engineer at least four (4) weeks prior to commencing work, of proposed sources of guide rail and components.

PART 2 PRODUCTS

2.1 Materials

.1 Steel W-beam guide rail as indicated and to following requirements:

.1 Steel rail and terminal sections: to AASHTOM180, classA Type1 zinc coated.

.2 Bolts, nuts and washers: to ASTMA307, hot dip galvanized to CSAG164.

.2 Organic zinc-rich coating: to CAN/CGSB-1.181.

.3 Metal conditioner, and paints:

.1 Metal conditioner: to CGSB31-GP-107Ma.

.2 Primer paint for galvanized steel: to CAN/CGSB-1.40.

.4 Sawn timber posts and offset blocks:

.1 Species: SPF

.2 Type: pressure treated in accordance withCAN/CSA-O80 Series.

.3 Grade: 1.

.4 Dimensions: as indicated.

PART 3 EXECUTION

3.1 Erection

.1 Set posts by instrument for alignment, and locations as indicated and as directed by Engineer.

.2 Excavate post holes to depths as indicated and to diameter of 360mm plus or minus 20mm. Compact bottom to provide firm foundation. Set post plumb and square in hole.

.3 Backfill around posts using excavated material and compact in uniform layers not exceeding 150mm compacted thickness.

.4 Leave or make depression approximately 150mm deep around posts until painting is completed, then fill and compact to ground elevation.

.5 Cut off tops of posts as indicated, with tops parallel to grade of pavement edge.

.6 Treat cut tops with two coats of wood preservative.

.7 Construct anchorages to details as indicated. Place and compact backfill for anchors as directed by Engineer.

.8 Erect steel W-beam components to details as indicated. Lap joints in direction of traffic. Tighten nuts to 100N.m torque. Maximum protrusion of bolt 12mm beyond nut.

3.2 Painting Touch up

.1 Galvanized steel-touch up:

.1 Clean damaged surfaces with wire brush removing loose and cracked coatings. Apply two coats of organic zinc-rich paint to damaged areas. Pre-treat damaged surfaces according to manufacturer's instructions for zinc-rich paint.

END OF SECTION

13 October 2005
YX00748

Dillon Consulting Limited
P.O. Box 1409,
4920 47th Street
Yellowknife, NT X1A 2P1

Attention: **Mr. Gary Strong, P.Eng.**
Project Manager.

Dear Mr. Strong:

Re: **Geotechnical Investigation for P- Lake Sewage Lagoon, Cape Dorset, NU**

At the request of Mr. Gary Strong, on behalf of Dillon Consulting Limited (DCL), AMEC Earth & Environmental (AMEC), a division of AMEC Americas Limited conducted a geotechnical investigation and geothermal modeling for the proposed sewage treatment system in Cape Dorset, NU. Authorization to proceed with the investigation was received by signing Dillon's Short Form Agreement for Sub-Consultant Service dated June 3, 2005 for the above noted project.

1.0 BACKGROUND INFORMATION AND SCOPE OF WORK

The community of Cape Dorset is located on the Dorset Island (southwest of Baffin Island) and occupies two river valleys that extend inland and then end abruptly against precipitous bluffs of the Kingnait Hills.

The sewage lagoon is to be located about 1.9 km south of the airport and 800 m southeast of the community. It is understood that the proposed sewage lagoon will have a footprint area in the order of 2.4 ha. It is also understood that the lagoon berm is to be designed on the basis of a frozen-core, low permeability material, or synthetic liner concept.

Based on AMEC's proposal dated April 11, 2005 and subsequent discussions with DCL the objective of the investigation was to:

- Conduct a review of available aerial photographs and relevant geotechnical information.
- Conduct a review of the climatic and permafrost historical data,
- Conduct a site reconnaissance and hand auger drilling program across the proposed lagoon site.

AMEC Earth & Environmental
a Division of AMEC Americas Limited
Suite #6, 5102 – 50th Avenue
P.O. Box 2245
Yellowknife, NT X1A 2P7
Tel: +1 (867) 920-4140
Fax: +1 (867) 920-4402
www.amec.com

- Conduct a hand auger drilling program at select local borrow sources.
- Conduct a laboratory analysis on select samples obtained during the drilling program.
- Conduct a geothermal analysis of the proposed berm configuration to assess the potential effectiveness of a frozen core liner concept.
- Prepare this geotechnical report that summarizes the results of the geotechnical investigation that includes:

    - Discussion of subsurface conditions encountered at the borehole locations,
    - Recommendations for the development of low permeability lagoon walls, including a geothermal analysis of the berm structures,
    - Development of design requirements for lagoon wall stability,
    - Discussions of borrow source materials, and,
    - Recommendations for site grading and drainage, if required.

2.0 CLIMATE, TERRAIN AND GEOLOGY

Cape Dorset is located geographically at approximately 64°14' N latitude and 76°32' W longitude. Climate records for Cape Dorset were reviewed for the period from 1971 to 2000. The average annual mean temperature is reported to be –8.9 °C. The average thawing and freezing indices for Cape Dorset are calculated to be about 507 °C-days and 3675 °C-days, respectively.

The topography of the Cape Dorset region is very rugged with elevations varying in excess of 300 m. The primary processes that created the regional landscape, are solifluction and frost wedging. These processes produce large talus slopes at the base of many bedrock outcrops. The talus slopes are created when weathered material is transported downslope due to gravity and accumulates in a fan like pile at the base of the hill.

Bedrock in the Cape Dorset area generally consists of extremely old Precambrian gneiss and marble with granite intrusions of Aphebian era. The bedrock is fairly closely jointed with numerous small faults. The impact of these faults on the dyke design is expected to me minimal as Cape Dorset Island is located within a Seismic Zone (Z_a/Z_v) of 0 to 1 (Canadian Foundation Engineering Manual, 1992). The close jointing typically results in blocky and broken ground surface and facilitates rapid accumulation of talus.

The surficial materials include glacial till, talus and marine beach deposits. Isolated deposits of glacial silty sand and gravel (till) overlay bedrock in the uplands. Talus is the most common surficial material in the area. A granular composition of this material varies from silt to gravel sizes. The thickness of the deposits would be up to several meters. Beach deposits may be encountered at elevations below 180 m and become more common and increase in particle size with decreasing elevation. The beach soils comprise sand and gravel with numerous inclusions of cobbles and boulders. The thickness of the deposits is unknown.

3.0 PERMAFROST

Cape Dorset Island lies within the continuous permafrost zone. The depth of the seasonal thaw varies from about 1.0 m to 2.0 m, depending on ground vegetative cover and surface disturbance. The mean annual permafrost temperature within the study area would be about -5 °C to –7°C at a depth of 10 m to 12 m.

4.0 REVIEW OF EXISTING INFORMATION

AMEC has reviewed the following information for this investigation:

- **Aerial Photographs Interpretation and Terrain Analysis,** Cape Dorset, N.W.T, June 1979, Submitted to Town Planning and Lands Division, Department of Local Government, Government of the Northwest Territories, submitted by Thurber Consultants Ltd.
  - aerial photographs, scale 1:60 000 were interpreted and review of published geological information was undertaken. As a result, surficial geology and bedrock conditions were marked on the photographs and subsequently transferred to the completed aerial photograph mosaic. Unfortunately, the mosaic was not available for AMEC.
- **Report of Subsurface Investigation Land Evaluation Study**, Cape Dorset, N.W.T., August 1985, Submitted to the Oliver, Mangione, McCalla & Associate Limited, submitted by John D. Paterson & Associates Ltd.
  - five boreholes were drilled at various locations, recommendations on spread footing and pile foundations are provided.
- **Granular Material Sources Investigation,** Cape Dorset, N.W.T, May, 1990, Submitted to the Municipality of Cape Dorset, submitted by Engineering Division, Department of Public Works and Highways, Government of Northwest Territories.
  - location of existing and potential sources of granular materials and quarries sites in the Cape Dorset area are provided.

5.0 SUMMARY OF FIELD INVESTIGATION

A geotechnical investigation (field reconnaissance) was conducted by Mr. Robert Verrall of AMEC's Yellowknife office. The field program consisted of advancing a hand-auger borehole at the proposed lagoon site and sampling of prospective borrow sources near the community landfill and airport.

The lagoon site during the field investigation was noted to be fully covered with shattered granite, 8 cm to 15 cm in size. Due to the fractured rock, only one location was able to be drilled with the hand-auger. The borehole was drilled to a depth of about 0.15 m.

Disturbed soil samples were recovered from the prospective borrow sources near the community landfill and airport. Results of the material testing from the borrow site is presented in Appendix C.

6.0 INFERRED SUBSURFACE CONDITIONS

An examination of the aerial photograph (Figure 1, Appendix A) and field reconnaissance undertaken by AMEC in August 9 and 10, 2005 suggests that majority of the proposed lagoon site is swamp and covered with a thin organic layer (Photographs 1 and 2, Appendix B). The ground surface is strewn with rounded and subrounded boulders and rock fragments (Photograph 3, Appendix B).

Based on the rounded shape of the boulders, it is expected that the lagoon site stratigraphy consist of glacial deposits (till), including sand, gravel and boulders. These deposits overlay bedrock of metamorphic or igneous origin. It is also expected that the overburden material (till) is about 1 m to 2 m thick.

Bedrock outcrops, as shown at Photograph 4 (Appendix B) surround the proposed lagoon impoundment. It can be seen at the photograph that the bedrock is moderately weathered and fractured.

The mean annual permafrost temperature at the site is expected to be in a range of -5 to –7°C at a depth of 10 m to 12 m. The thickness of the active layer is expected to be about 1.5 m. These values correspond to sandy/gravelly soil of a moisture content in the range of 10 to 20 percent with a thin moss cover.

7.0 ENGINEERING RECOMMENDATIONS

This section provides recommendations on borrow materials, design and construction of the dyke and results of the dyke temperature modelling.

7.1 Borrow Sources

Review of the data collected during the site investigations, the existing information and aerial photographs (scale 1: 20000) interpretation allowed the identification of several prospective borrow sources. Borrow Sources 1 through 3 are deemed as potential sources of finer grained soils, while Borrow Sources 4 and 5 are existing borrow pits for sand and gravel. The location of the potential and existing borrow sources are shown on Figure 1, Appendix A.

Based on data provided in the John D. Paterson report, it appears that boreholes were advanced within borrow source 1 and 5. Boreholes were also drilled immediately north from borrow source 3. Based on the borehole data, borrow material likely comprises of silty sand and sand with various amount of gravel and inclusions of cobbles and boulders.

Results of the field reconnaissance have shown that a clayey material may be found in the vicinity of the community landfill and airport. Photograph 5 (Appendix B) illustrates that the clayey material near the dump could contain numerous inclusions of cobbles and boulders while the clayey soil near the airport is mainly uniform and containing lesser amounts of the coarse material (Photograph 6, Appendix B). Grain size distribution analyses confirm the above

conclusions. The borrow material near the landfill contains about 35% gravel sizes and about 30% fines; the borrow material near the airport does not contains gravel while the fines contain is about 50% (Appendix C).

In general, the local silty/sandy materials will require moderate to significant processing to render them suitable for dyke construction.

7.2 Sewage Lagoon Dyke Design

Figure 2 provides a proposed cross section of the sewage dyke as it is designed by DCL. The upstream and downstream slopes of the dyke are 1V:2 H, corresponding to a slope steepness of about 26.5 degrees. The proposed dyke is 5 m high and 4 m wide at the crest.

Silty sand, sand and gravel may be used for the dyke construction. This material should be screened and cobbles and boulders removed. The material, used for the construction, should be unfrozen in time of the placement and should be spread by lifts of 250 mm thick (compacted thickness). The compaction can be undertaken by bulldozers, D-6 or heavier. At least three bulldozer passes per lift should be applied. The upper layer, 0.5 m thick (Figure 2), may contain cobbles, up to 200 mm in size, protecting the dyke slopes against water erosion. All soils used in the dyke construction should be saturated after placement and compaction.

An appropriate synthetic liner should be installed in a near vertical position to an assumed elevation of 98 m, 2 m below existing ground surface, near the upstream slope (Figure 2, Appendix A). The liner should extend into a 2 m deep excavation below the base of the dyke. The excavation should be backfilled with compacted clayey material or grouted. The liner curtain then goes straight up to the top of the dyke as shown at Figure 2, Appendix A. An alternative liner option is shown at Figure 3, Appendix A. It is understood that the constructability of the alternative option is more favourable however the liner is about twice as long.

The use of a synthetic liner system, extending from a cut-off trench below the dyke to the crest of the dyke appears warranted as the primary containment system. Alternatively, a low-permeability soil cut-off wall within the dyke, designed for unfrozen performance may also be considered.

8.0 SEWAGE DYKE GEOTHERMAL ANALYSIS

A detailed geothermal analysis has been carried out to assess the present and future thermal regime within the Cape Dorset sewage lagoon dykes and the dyke foundation soils. The analysis considered the following dyke details and geometry:

- Height of dyke is 5 m.
- Width of crest is 4 m.
- Upstream and Downstream slope of dyke are 1V:2H.
- Local soil (silty sand, sand and grave) is proposed for the dyke core construction.

- A waterproof liner is proposed to be placed as shown at Figures 2 or 3, Appendix A.
- The dyke core will be protected with coarse rockfill, about 0.5 m thick.

The geothermal modeling program SIMPTEMP, 2D version, (developed in-house by AMEC) was used to analyze geothermal regimes for the dyke. The simulator uses the finite element method to compute a numerical solution of the heat transfer problem. Physical/mathematical algorithms used in the SIMTEMP model have been published, and the simulation process has been verified: both against well-known analytical solutions of the heat transfer problem, and as compared with numerical solutions produced by other commercial/non-commercial geothermal software. AMEC has successfully used the SIMPTEMP program for a variety of geothermal applications over a ten years period.

The following section briefly describes the initial geothermal conditions assumed for dyke subgrade, the model setup, input parameters and the result of the SIMPTEMP analysis.

8.1 Boundary Conditions for Dyke

The air temperature data and snow depth used for the present analysis were based on the Climate Normals for Cape Dorset weather station for period from 1970 to 2000. The mean monthly air temperatures and snow thicknesses used for the SIMPTEMP model are presented in Table 1.

Table 1: Mean Monthly Air Temperatures and Snow Thicknesses

Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temp., °C	-25.0	-26.0	-21.6	-14.1	-5.5	2.3	7.4	5.7	1.5	-3.9	-11.7	-20.2
Snow, m	0.48	0.47	0.55	0.58	0.41	---	---	---	---	0.13	0.25	0.40

Mean monthly surface temperatures were applied over exposed dyke surface, ground surface beyond downstream slope of the dyke and over water surfaces beyond upstream slope of the dyke. To obtain the mean monthly surface temperatures, various n-factor coefficients were used over the dyke, downstream ground surface beyond the dyke and water surface.

Dyke Slopes and Crest. It was assumed that practically no snow would accumulate on the dyke slopes and crest. Therefore, an n-factor of 0.9 was applied to the mean monthly air temperatures to obtain the mean monthly winter temperatures on the dyke surface. An n-factor of 1.2 was applied to the mean monthly air temperatures to obtain the dyke surface temperature in summertime. An n-factor of 1.2 corresponds to bare rockfill surface (meaning that the rockfill surface is warmer than the corresponding air temperature).

Downstream Terrain Beyond Dyke. It was assumed that snow could accumulate beyond the toe of the dyke. Based on 1D geothermal analysis, it was estimated that n-factors for the terrain type, shown at Photographs 1 and 2 (Appendix B) would be 0.65 and 0.83 for the winter and summer air temperatures, respectively. These n-factors represent the insulating/warming effect of snow cover in the winter, and the cooling effect of the moss/lichen vegetation in the summer.

Water (Upstream Beyond Dyke). It was assumed that snow would accumulate on the lagoon surface in the winter. Similar to the downstream terrain area, an n-factor of 0.65 was applied to the mean monthly air temperatures for the winter months (October through May). From June through September, it was assumed that the water temperature over the entire depth of the water column was the same as the mean monthly air temperatures. Table 2 provides data on the mean monthly surface temperatures that were applied over the upper boundary of the geothermal models.

Table 2: Mean Monthly Surface Temperatures on Model Mesh

Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Dyke Crest and Slopes	-22.5	-23.4	-19.4	-12.7	-5.0	2.8	8.9	6.8	1.8	-3.5	-10.5	-18.2
Downstream Surface	-16.2	-16.9	-14.0	-9.2	-3.6	1.9	6.1	4.7	1.2	-2.5	-7.6	-13.1
Water	-16.2	-16.9	-14.0	-9.2	-3.6	Water temperature equals air temperature.				-2.5	-7.6	-13.1

8.2 Physical and Thermal Soil Properties

Estimates of physical properties for various typical soils expected to be encountered within the dyke and dyke foundation were based on published information (see Section 4.0) and the field reconnaissance. Thermal properties of the materials (thermal conductivity and heat capacity) were selected based on available published data, and on previous experience with similar materials. Table 3 summarizes the material physical and thermal properties applied for the geothermal analyses.

Table 3: Physical and Thermal Soil Properties

Soil Type	Dry Density, kN/m^3	Moisture Content, %	Thermal Conductivity, W/m/°C		Heat Capacity, $MJ/m^3/°C$	
			Frozen	Unfrozen	Frozen	Unfrozen
Bedrock	28	2	2.90	2.90	2.58	2.58
Unsaturated overburden and dyke sand and gravel	20	7	2.90	2.73	2.26	2.68
Saturated rockfill, overburden and dyke sand and gravel	19.6	15	2.61	2.26	2.26	2.51
Unsaturated rockfill	20	5	2.9	2.73	2.09	2.26
Water	10	---	2.20	0.58	1.95	4.19

8.3 Grid and Soil Layers Description

The following soils/materials were identified within the sewage dyke cross-section:

- Unsaturated Rockfill
- Saturated Rockfill
- Unsaturated dyke core and overburden
- Saturated dyke core and overburden
- Bedrock
- Water

Dimensions of each of the individual layers are shown at Figures 3 through 7, which also present the results of the modeling at the end of summer (September 30). Physical and thermal properties of the constituent soils/materials identified are provided in Section 7.2.

The geothermal modeling grid extended about 104 m below the crest of the dyke and contained 9350 finite elements and 4816 nodes Don't you normally have more nodes than elements???. The dyke and active layer initial temperatures were taken as +2 °C, corresponding to the assumed dyke material temperature and active layer temperature at the end of summer. The initial water temperature also was taken as +2 °C. The initial soil temperature from the base of the active layer and to a depth of 12 m was taken to decrease gradually from 0 °C to -5 °C; the soil temperature then was warmed gradually down to the bottom of the grid with the geothermal gradient of 0.02 °C/m.

Zero heat flux was applied at lateral boundaries of the grid, while the heat flux at the mesh bottom corresponded to the geothermal gradient of 0.02 °C/m.

8.4 Results of Geothermal Modelling

Figure 4, Appendix A shows that after the first year of the dyke operation, the active layer at the dyke crest is about 2 m. The majority of the dyke core has a temperature in a range from 0 °C to -1 °C while the ground temperature under the dyke is about -2 °C. One can see that due to a warming effect of the lagoon water, the ground temperature beyond the upstream slope of the dyke is at about 1 degree warmer than the ground temperature beyond the downstream slope of the dyke.

Figures 5 through 8 show that no considerable changes of the dyke temperature regime are observed from the fifth to thirtieth year of the dyke operation (dyke temperature remains in a range from 0 °C to -2 °C). It can be observed that a thickness of the unfrozen zone under the lagoon is increased, while the ground temperature under the dyke is decreased down to -5 °C.

The analyses did not include any component of climate warming over the expected life of the lagoon and following decommissioning. Typical climate warming values could be in the range of 0.1 °C/year (1 °C/decade). Applying a climate warming scenario to the analysis would result in warmer dyke temperatures.

The following conclusions may be drawn from the investigations and thermal analyses:

- The concept of a frozen core dyke to provide the primary containment of lagoon waters is considered to technically tenuous at best, and likely not technical feasible, given the applied input conditions.
- No assessment of seepage under or through the cut-off curtain below the dyke has been made. Further, AMEC has not assess whether the proposed 2 m deep cut-off system under the dyke is sufficient, although thermal modelling suggests that the subgrade will remain frozen (see Figures 4 to 8, Appendix A).

9.0 CLOSURE

The engineering recommendations presented herein are based on the results of the field reconnaissance, aerial photograph interpretation and reviewing of the available information. No drilling was undertaken at the prospective borrow source locations to estimate soil composition.

Results of the geothermal modeling have shown that the dyke temperature will remain relatively warm (range from 0 °C to -2 °C) during the operation years. Thus, it is essential to install a reliable liner as shown at Figures 2 or 3, Appendix A. An alternative option would be to construction a clayey cut-off core of the dyke. However, an implementation of this option depends on quality and quantity of the available clayey material within the Cape Dorset area.

It should be stated that the results of modelling are valid for boundary conditions and soil properties described in Sections 7.1 and 7.2. If actual boundary conditions (soil properties) differ considerably from the assumed parameters, then the actual temperatures of the dyke could vary from the predicted temperatures.

This report has been prepared for the exclusive use of Dillon Consulting Limited and its agents for the specific application described in this report. The use of this report by third parties is done so at the sole risk of those parties. It has been prepared in accordance with generally accepted permafrost and foundation engineering practices. No other warranty, expressed or implied, is made.

Respectfully submitted,

AMEC Earth & Environmental

REGISTERED PROFESSIONAL ENGINEER
K.G. BARNES
LICENSEE
NWT/NU

REGISTERED PROFESSIONAL ENGINEER
A. TCHEKHOVSKI
LICENSEE
NWT/NU

Keith Barnes, P.Eng.
Geotechnical/Permafrost Engineer

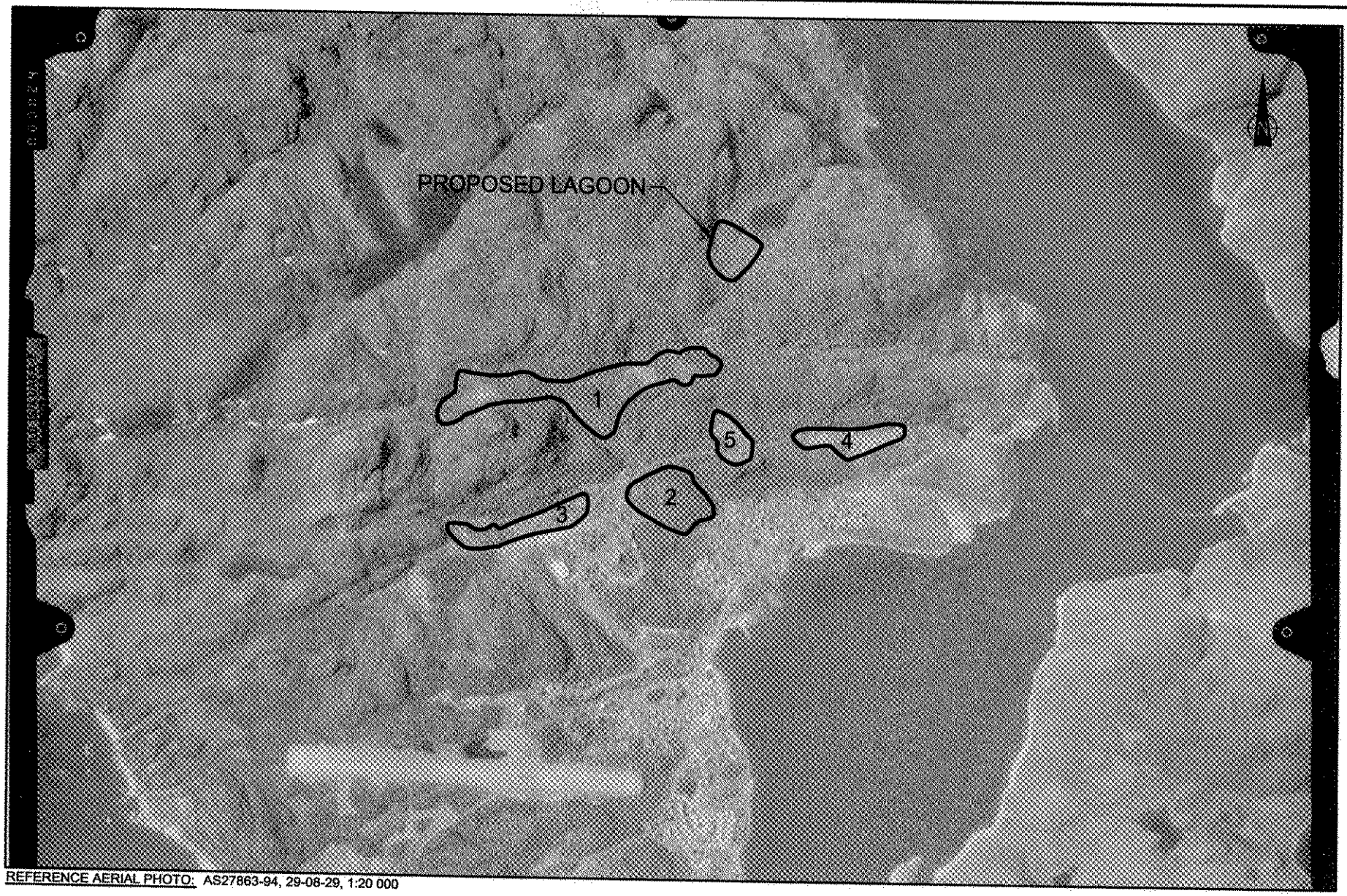
Alexandre Tchekhovski, Ph.D., P. Eng.,
Senior Permafrost Engineer

Reviewed by: Jim Oswell, Ph.D., P.Eng
Senior Permafrost Engineer

PERMIT TO PRACTICE
AMEC Earth & Environmental, a Division of AMEC Americas Limited
Signature _____
Date _____
PERMIT NUMBER: P 047
The Association of Professional Engineers, Geologists and Geophysicists of the NWT / NU

Appendix A

Figure 1: Location of Prospective Borrow Sources
Figure 2: Proposed Dyke Cross Section
Figure 3: Alternative Dyke Cross Section
Figure 4: Dyke Temperatures after 1 Year of Operation
Figure 5: Dyke Temperatures after 5 Years of Operation
Figure 6: Dyke Temperatures after 10 Years of Operation
Figure 7: Dyke Temperatures after 20 Years of Operation
Figure 8: Dyke Temperatures after 30 Years of Operation



REFERENCE AERIAL PHOTO: AS27863-94, 29-08-29, 1:20 000

SCALE
1: 20 000
0 200 400 m

amec Earth & Environmental

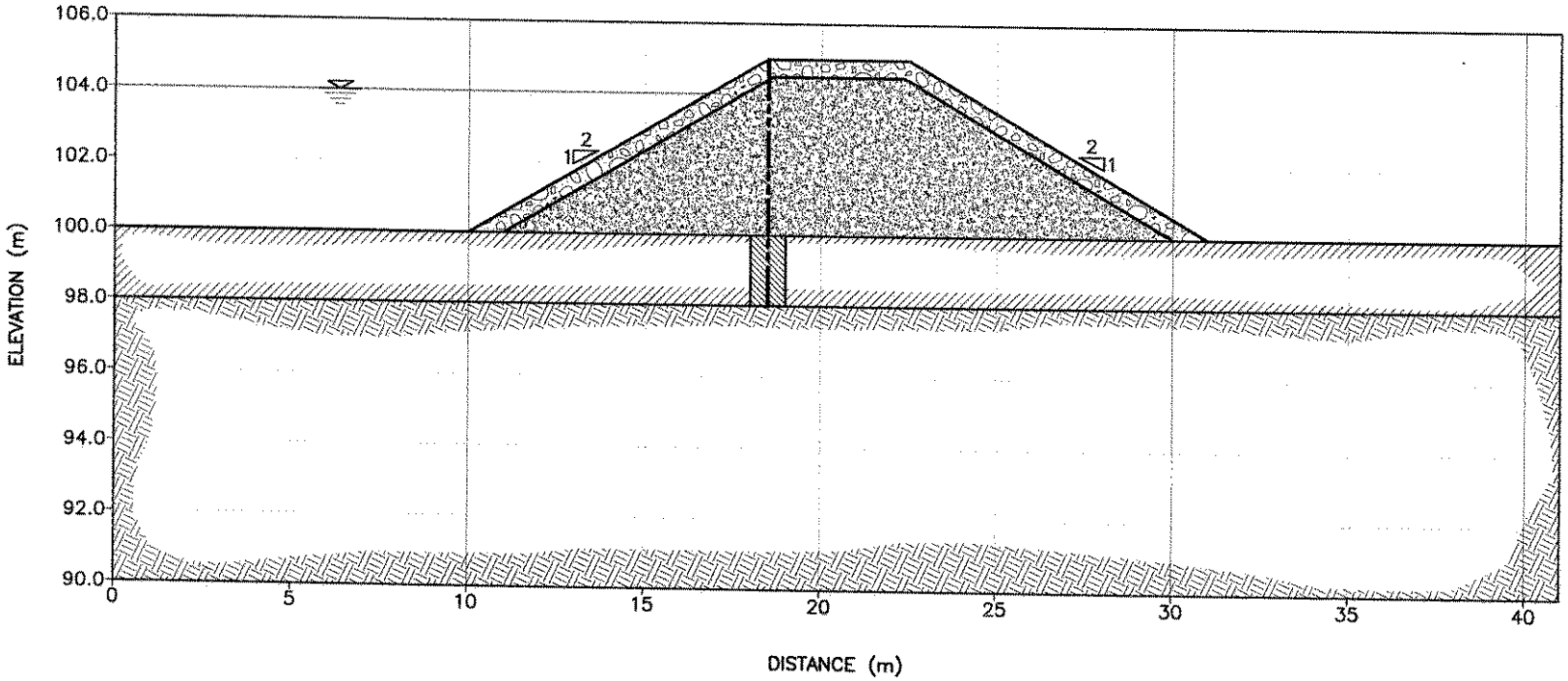
CLIENT: DILLON CONSULTING LIMITED

PROJECT: GEOTECHNICAL INVESTIGATION FOR P-LAKE SEWAGE LAGOON, CAPE DORSET

TITLE: LOCATION OF PROSPECTIVE BORROW SOURCES

DATE:	JOB No.:	CAD FILE:	FIGURE No.:	REV.
SEPTEMBER 2005	YX00748	00748S01.dwg	FIGURE 1	A

PLOT 1:1=A (L)
I:\YX\00748\00748S01.dwg -- FIGURE 1 -- Sep. 21, 2005 1:11pm -- scott.schaly



LEGEND:

- ROCKFILL
- SAND AND GRAVEL
- OVERBURDEN
- BEDROCK
- HDPE LINER
- CLAY OR GROUT

SCALE

1:200

0 1 2 3 4 m

amec Earth & Environmental

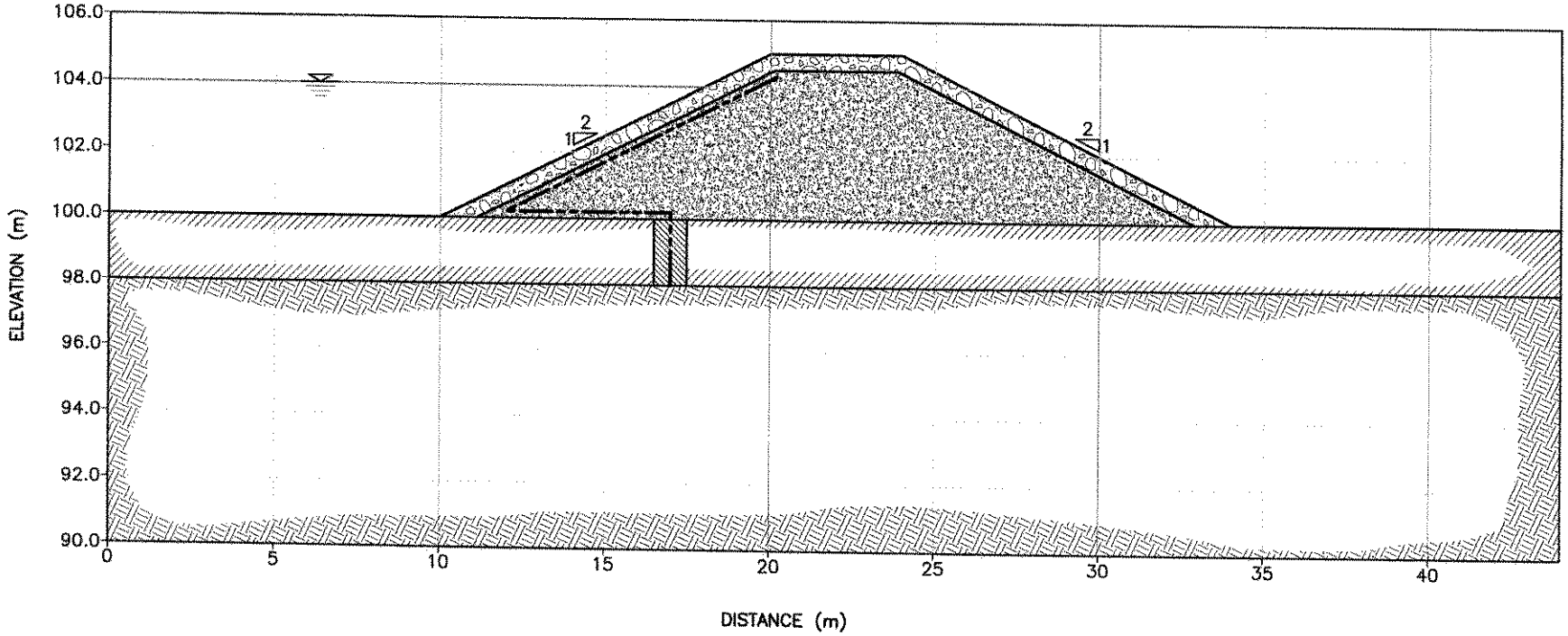
CLIENT: DILLON CONSULTING LIMITED

PROJECT: GEOTECHNICAL INVESTIGATION FOR P-LAKE SEWAGE LAGOON, CAPE DORSET

TITLE: PROPOSED DYKE CROSS SECTION

DATE:	JOB No.:	CAD FILE:	FIGURE No.:	REV.
OCTOBER 2005	YX00748	00748B00.dwg	FIGURE 2	A

*PLOT 1:1=A (L)
I:\YX\00748\00748B00.dwg -- FIGURE 2 -- Oct. 13, 2005 11:43am -- shelley.brown



LEGEND:

- ROCKFILL
- SAND AND GRAVEL
- OVERBURDEN
- BEDROCK
- HDPE LINER
- CLAY OR GROUT

SCALE

1: 200

0 1 2 3 4 m

amec Earth & Environmental

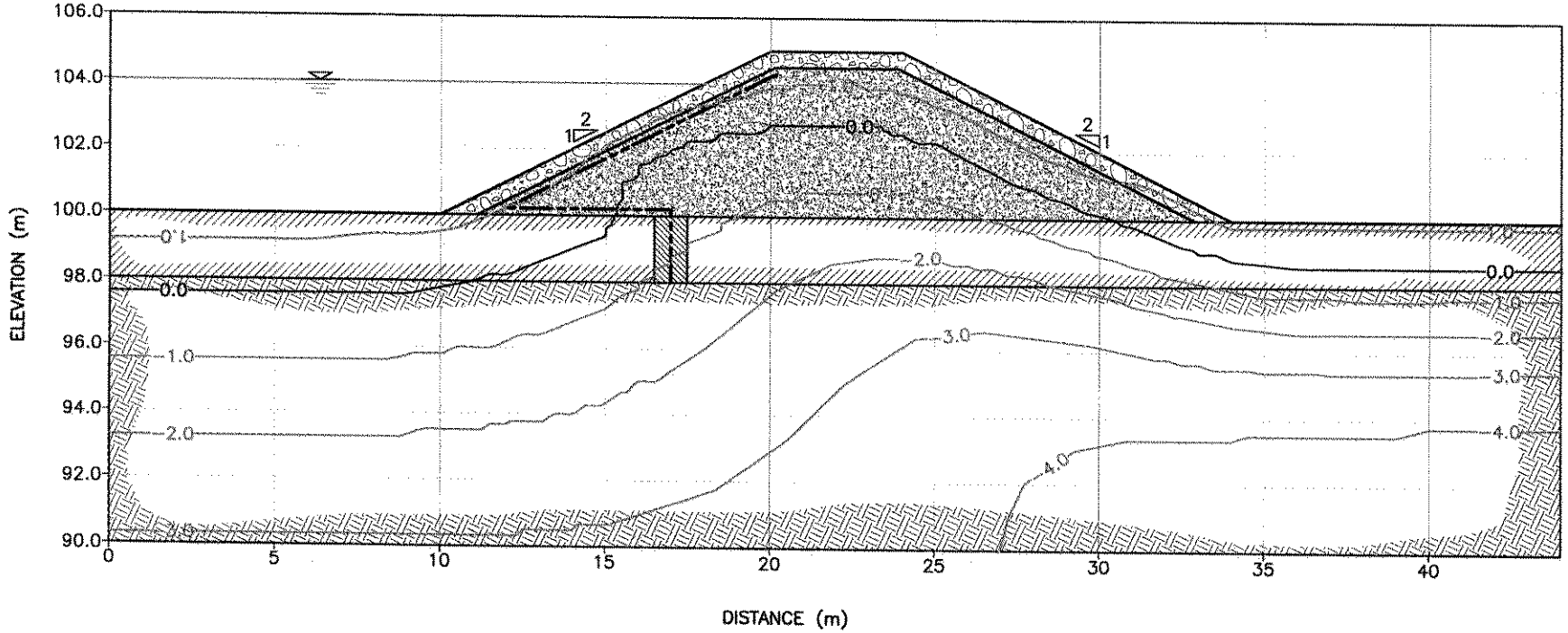
CLIENT: DILLON CONSULTING LIMITED

PROJECT: GEOTECHNICAL INVESTIGATION FOR P-LAKE SEWAGE LAGOON, CAPE DORSET

TITLE: ALTERNATIVE DYKE CROSS SECTION

DATE:	JOB No.:	CAD FILE:	FIGURE No.:	REV.
OCTOBER 2005	YX00748	00748B00.dwg	FIGURE 3	A

*PLOT 1:1=A (L)
I:\YX\00748\00748B00.dwg - FIGURE 3 - Oct. 13, 2005 11:44am - shelley.brown



LEGEND:

- ROCKFILL
- SAND AND GRAVEL
- OVERBURDEN
- BEDROCK
- HDPE LINER
- CLAY OR GROUT

SCALE
1: 200
0 1 2 3 4 m

amec Earth & Environmental

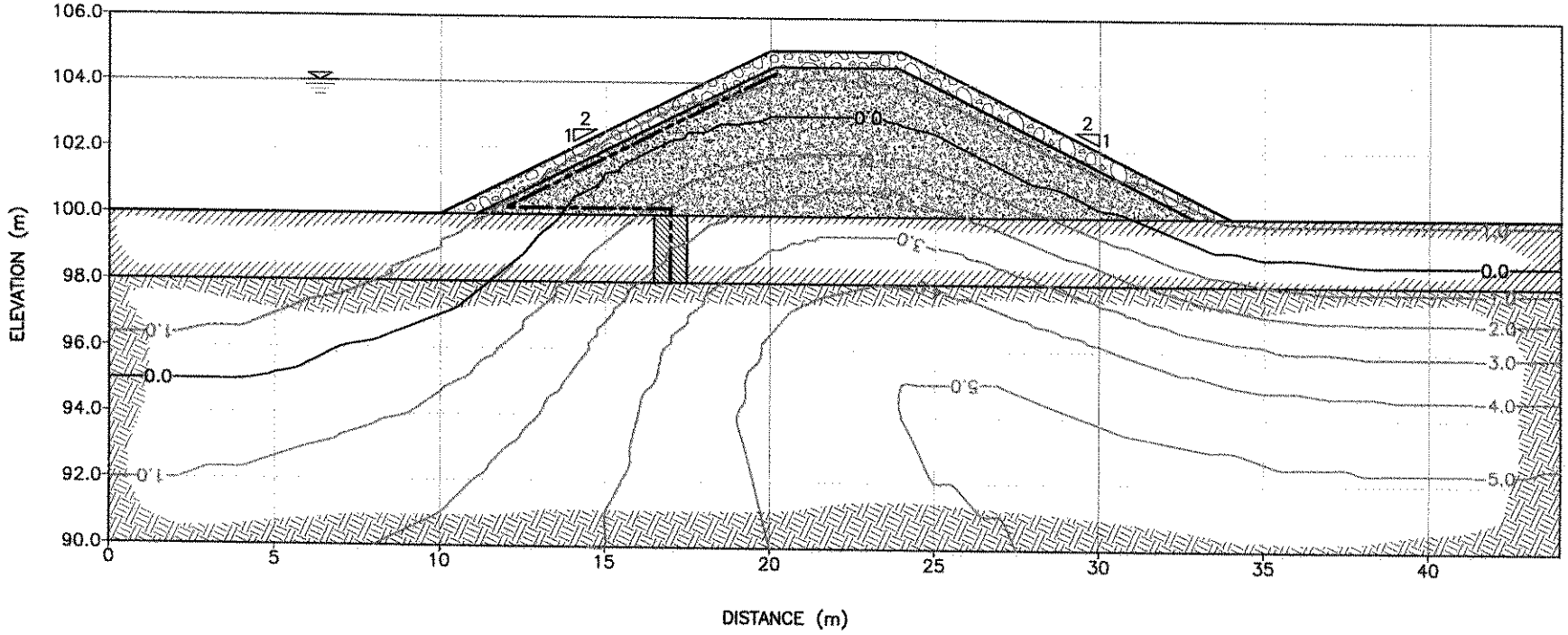
CLIENT: **DILLON CONSULTING LIMITED**

PROJECT: **GEOTECHNICAL INVESTIGATION FOR P-LAKE SEWAGE LAGOON, CAPE DORSET**

TITLE: **DYKE TEMPERATURES AFTER 1 YEAR OF OPERATION**

DATE:	JOB No.:	CAD FILE:	FIGURE No.:	REV.
OCTOBER 2005	YX00748	00748B00.dwg	FIGURE 4	A

*PLOT 1:1=A (L)
K:\YX\00748\00748B00.dwg — FIGURE 4 — Oct. 13, 2005 11:44am — shelley.brown



LEGEND:

- ROCKFILL
- SAND AND GRAVEL
- OVERBURDEN
- BEDROCK
- HDPE LINER
- CLAY OR GROUT

SCALE

1:200

0 1 2 3 4 m

amec Earth & Environmental

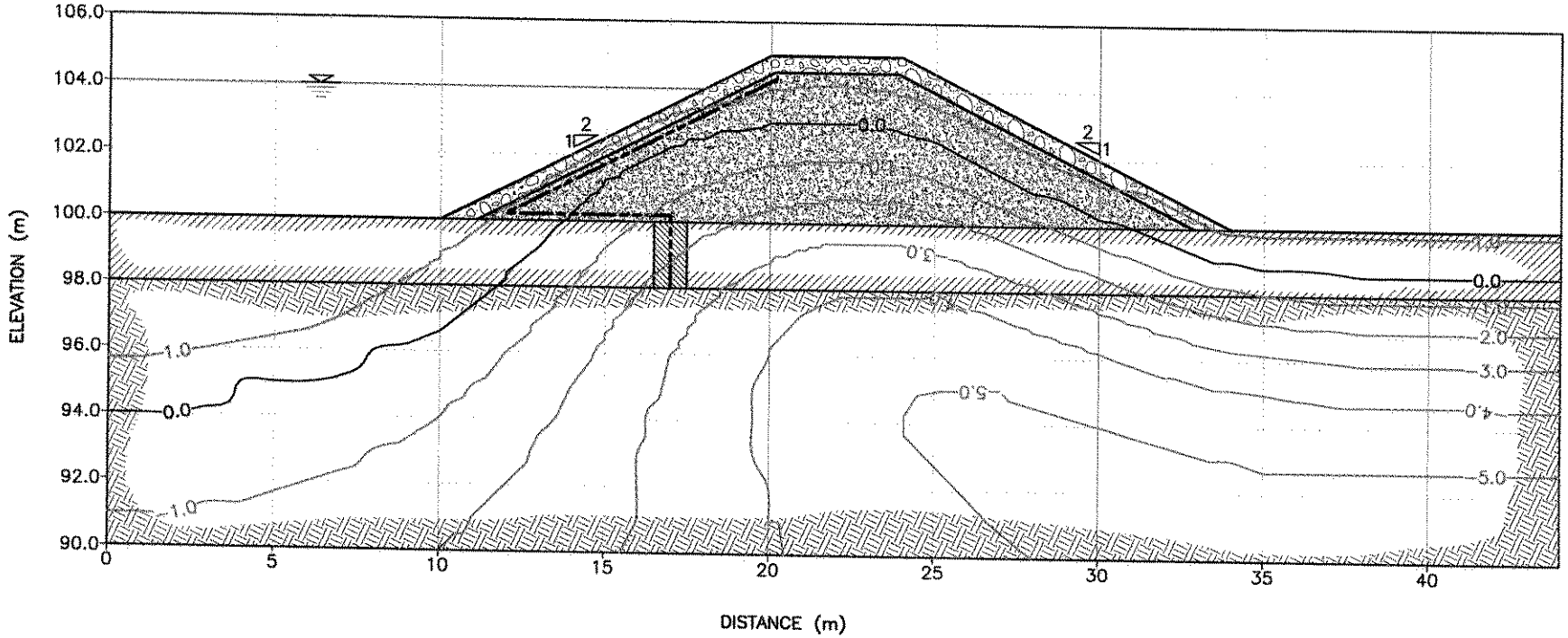
CLIENT: DILLON CONSULTING LIMITED

PROJECT: GEOTECHNICAL INVESTIGATION FOR P-LAKE SEWAGE LAGOON, CAPE DORSET

TITLE: DYKE TEMPERATURES AFTER 5 YEARS OF OPERATION

DATE:	JOB No.:	CAD FILE:	FIGURE No.:	REV.
OCTOBER 2005	YX00748	00748B00.dwg	FIGURE 5	A

*PLOT 1:1=A (L)
I:\YX\00748\00748B00.dwg - FIGURE 5 - Oct. 13, 2005 11:44am - shelley.brown



LEGEND:

- ROCKFILL
- SAND AND GRAVEL
- OVERBURDEN
- BEDROCK
- HDPE LINER
- CLAY OR GROUT

SCALE
1:200
0 1 2 3 4 m

amec Earth & Environmental

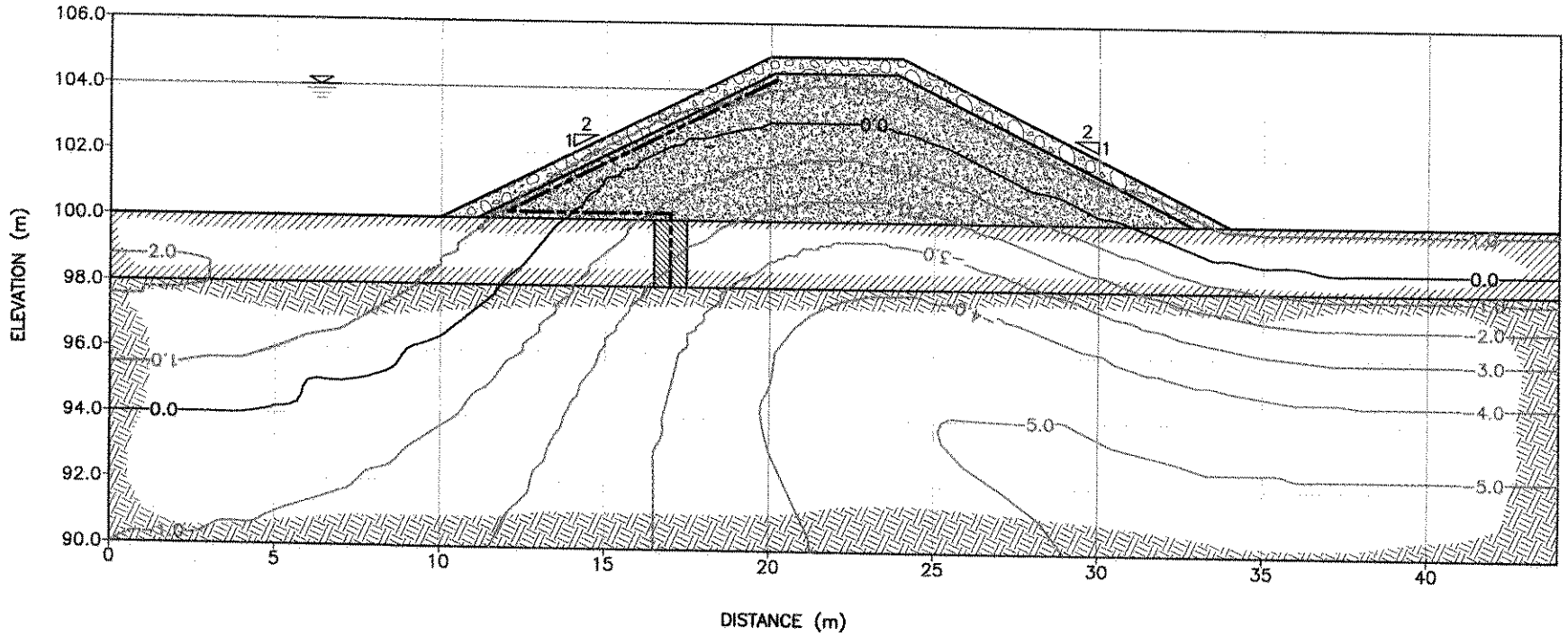
CLIENT: DILLON CONSULTING LIMITED

PROJECT: GEOTECHNICAL INVESTIGATION FOR P-LAKE SEWAGE LAGOON, CAPE DORSET

TITLE: DYKE TEMPERATURES AFTER 10 YEARS OF OPERATION

DATE:	JOB No.:	CAD FILE:	FIGURE No.:	REV.
OCTOBER 2005	YX00748	00748B00.dwg	FIGURE 6	A

*PLOT 1:1 mA (L)
I:\YX\00748\00748B00.dwg - FIGURE 6 - Oct. 13, 2005 11:44am - shelley.brown



LEGEND:

- ROCKFILL
- SAND AND GRAVEL
- OVERBURDEN
- BEDROCK
- HDPE LINER
- CLAY OR GROUT

SCALE
1: 200
0 1 2 3 4 m

amec Earth & Environmental

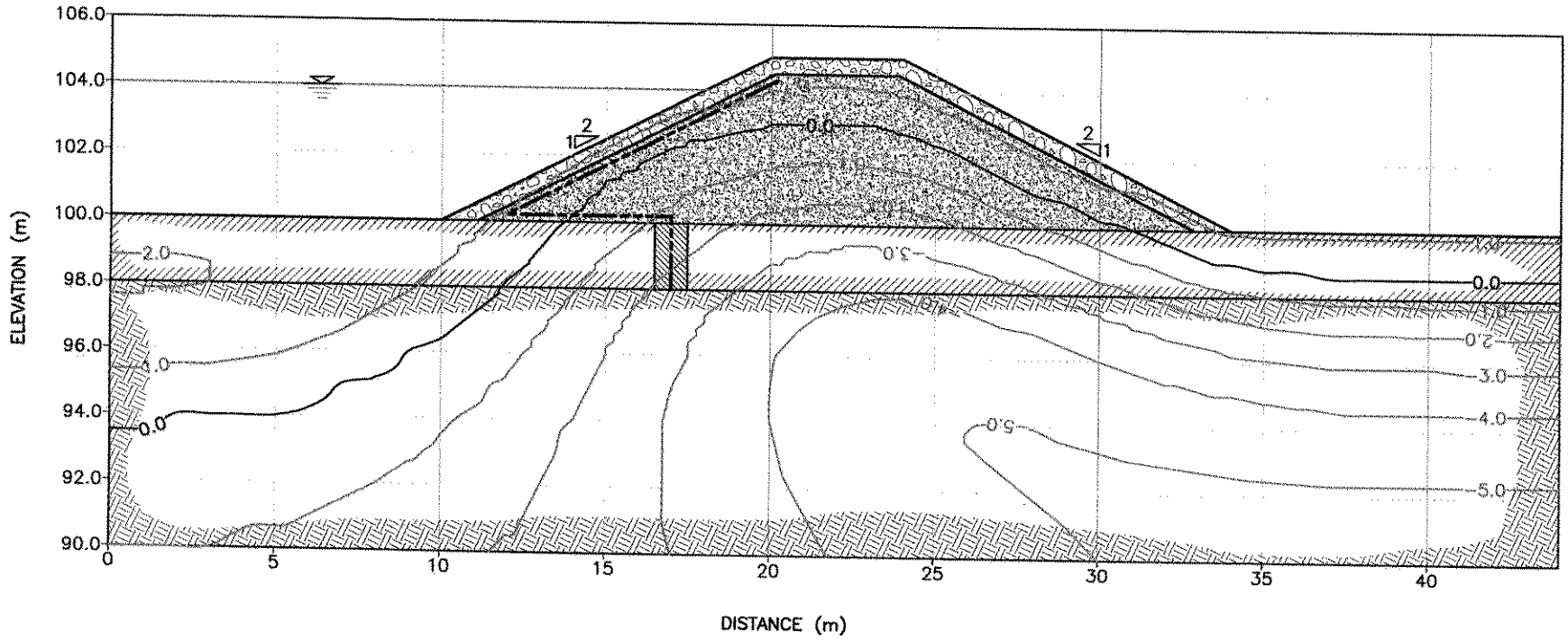
CLIENT: DILLON CONSULTING LIMITED

PROJECT: GEOTECHNICAL INVESTIGATION FOR P-LAKE SEWAGE LAGOON, CAPE DORSET

TITLE: DYKE TEMPERATURES AFTER 20 YEARS OF OPERATION

DATE:	JOB No.:	CAD FILE:	FIGURE No.:	REV.
OCTOBER 2005	YX00748	00748B00.dwg	FIGURE 7	A

*PLOT 1:1=A (L)
I:\YX\00748\00748B00.dwg -- FIGURE 7 -- Oct. 13, 2005 11:45am -- shelley.brown



LEGEND:

- ROCKFILL
- SAND AND GRAVEL
- OVERBURDEN
- BEDROCK
- HDPE LINER
- CLAY OR GROUT

SCALE
1: 200
0 1 2 3 4 m

amec Earth & Environmental

CLIENT: DILLON CONSULTING LIMITED

PROJECT: GEOTECHNICAL INVESTIGATION FOR P-LAKE SEWAGE LAGOON, CAPE DORSET

TITLE: DYKE TEMPERATURES AFTER 30 YEARS OF OPERATION

DATE:	JOB No.:	CAD FILE:	FIGURE No.:	REV.
OCTOBER 2005	YX00748	00748B00.dwg	FIGURE 8	A

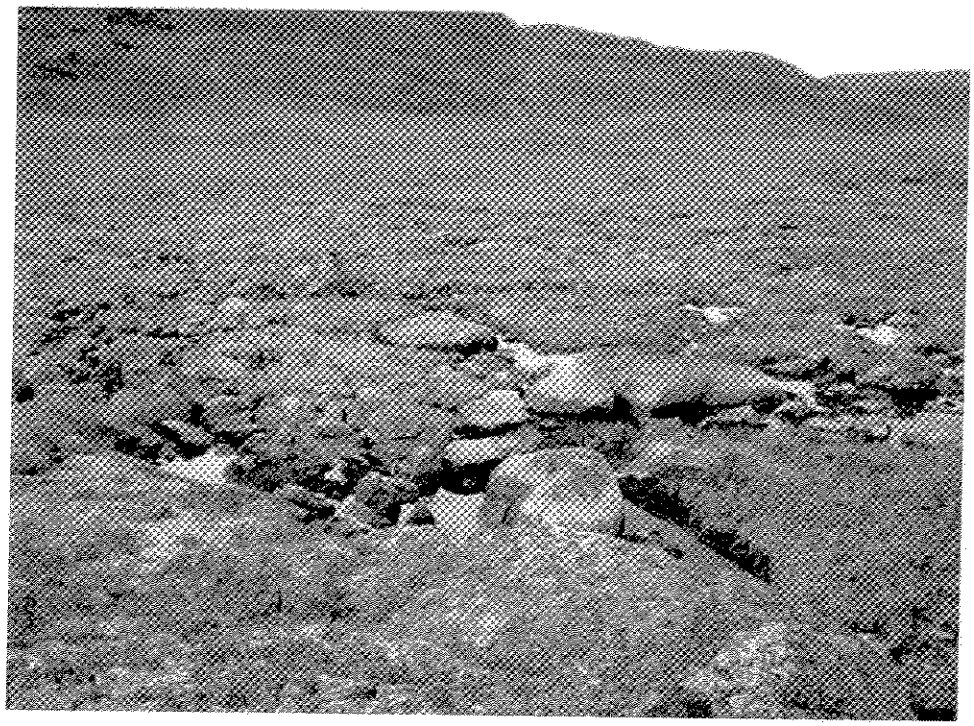
PLOT 1:1=A (L)
I:\YX\00748\00748B00.dwg - FIGURE 8 - Oct. 13, 2005 11:45am - shelley.brown

Appendix B

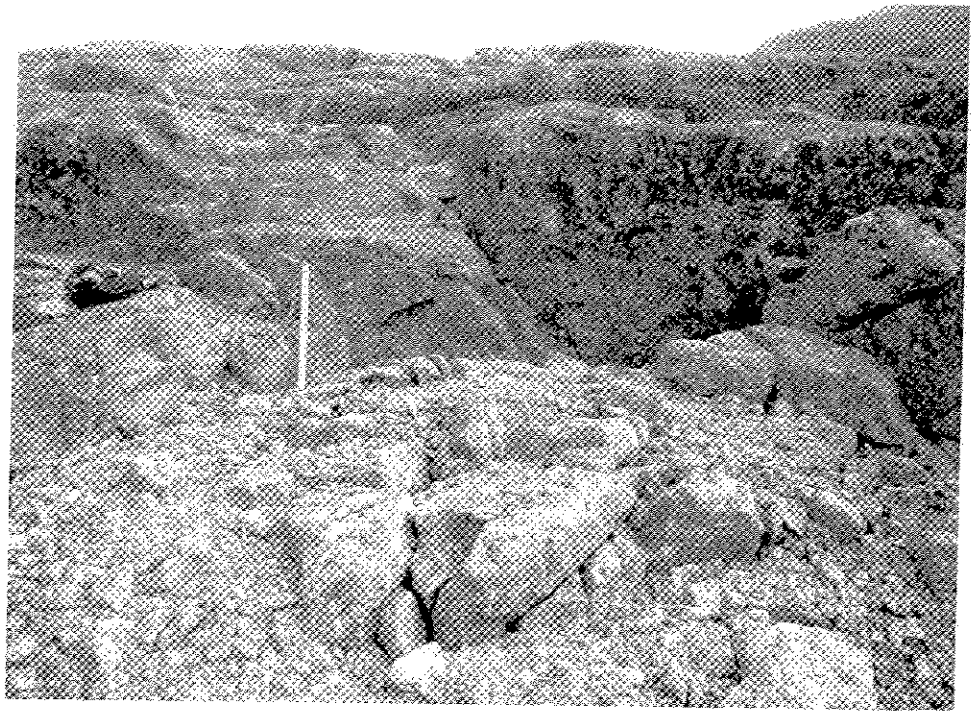
Plates: Select Photographs

Photograph 1: Lagoon Impoundment, looking west.

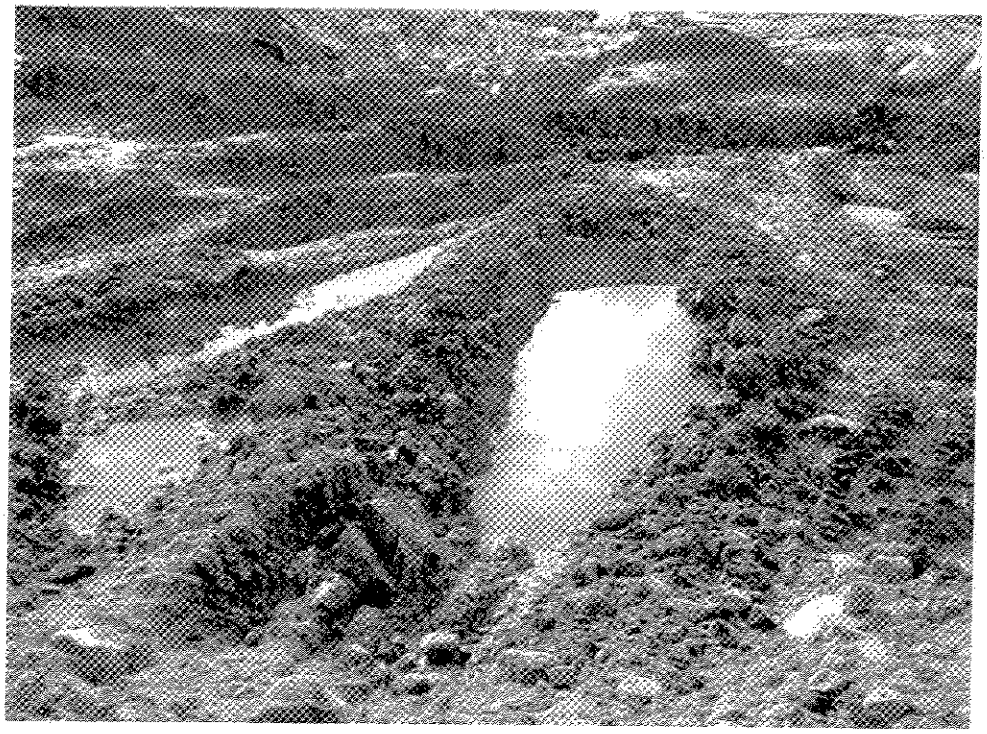
Photograph 2: Lagoon Impoundment, looking northwest from southeast corner



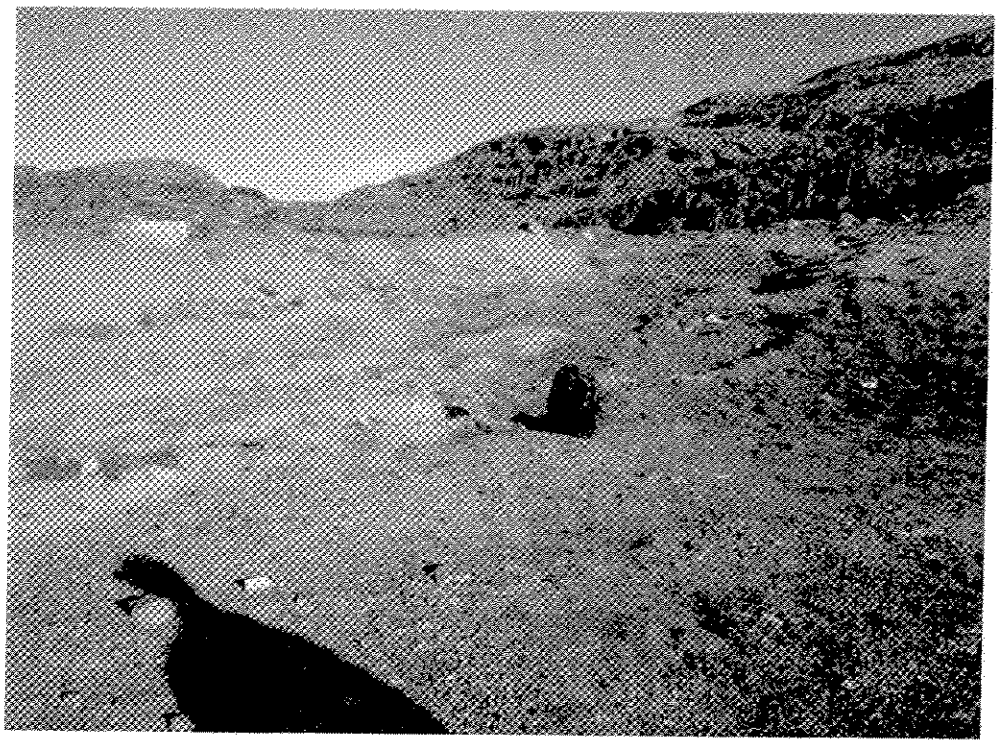
Photograph 3: Lagoon Impoundment, looking north from center.



Photograph 4: Southeast corner of Lagoon Impoundment



Photograph 5: Potential clay borrow material near community dump.



Photograph 6: Potential clay borrow material near airport.

Appendix C

Sieve Analysis Reports

SIEVE ANALYSIS REPORT

AMEC Earth & Environmental Limited

To: Dillon Consulting Limited
303 4920 47 Street
Goga Cho Building
Yellowknife, Northwest Territories

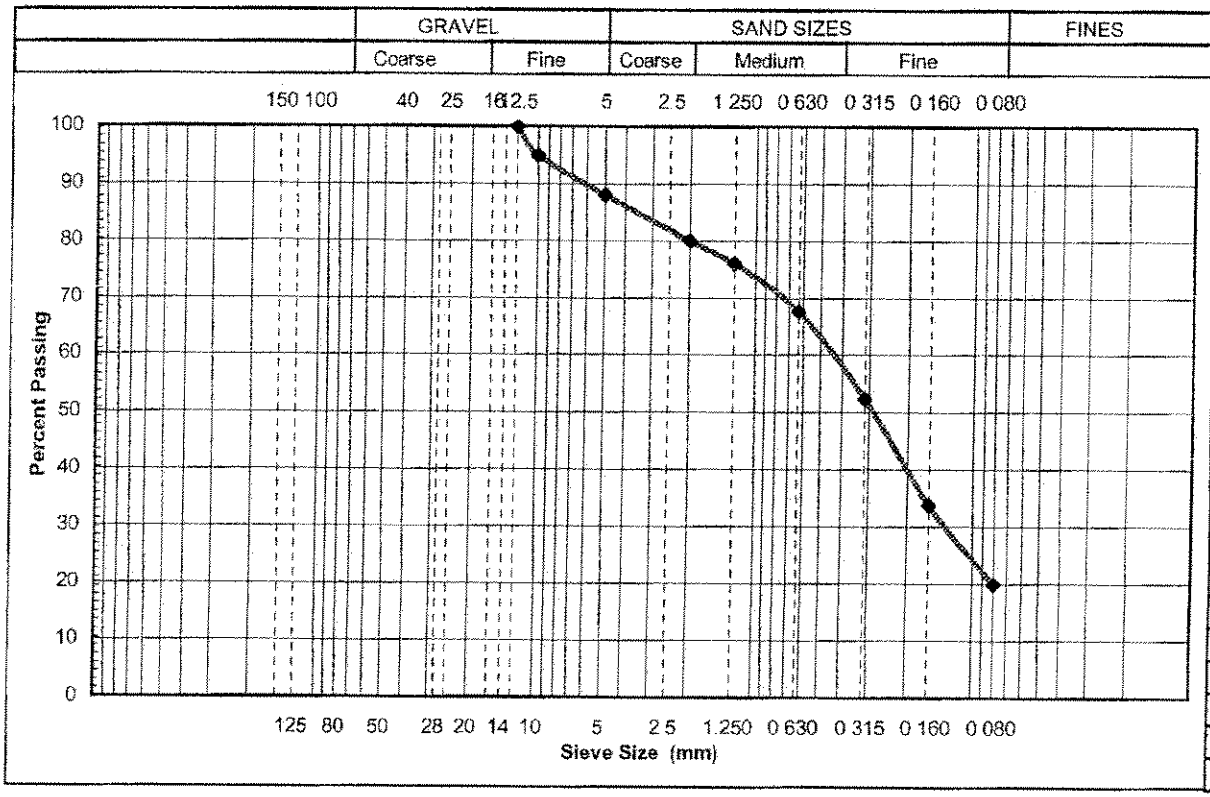
Office : Yellowknife
Project No: YX00748
Client : Dillon Consulting Limited
Copies to :

Attn: Mr. Gary Strong

Project: Investigation of borrow material

Sample ID: 748-02 **Sample Type:** Sandy Silty Clay **Sampled By:** AMEC

Date Sampled: Aug 10 2005 **Date Received:** Aug 15 2005 **Date Tested:** Aug 18 2005



Sieve Size	% Passing
150.0	
125.0	
100.0	
80.0	
50.0	
40.0	
28.0	
25.0	
20.0	
16.0	
14.0	
12.5	100
9.5	95
4.75	88
2.00	80
1.250	76
0.630	68
0.425	52
0.160	34
0.080	19.9

Source: Borrow Pit Cape Dorset, Near CG&S Building , near the airport
Sample Description: Sandy Silty Clay 18W 0425 451 N7 122 814
Comments : Moisture content 14.4%

AMEC Earth & Environmental Limited

Per: _____

Reporting of these test results constitutes a testing service only Engineering interpretation or evaluation of the test results is provided only on written request.

SIEVE ANALYSIS REPORT

AMEC Earth & Environmental Limited

To: Dillon Consulting Limited
303 4920 47 Street
Goga Cho Building
Yellowknife, Northwest Territories

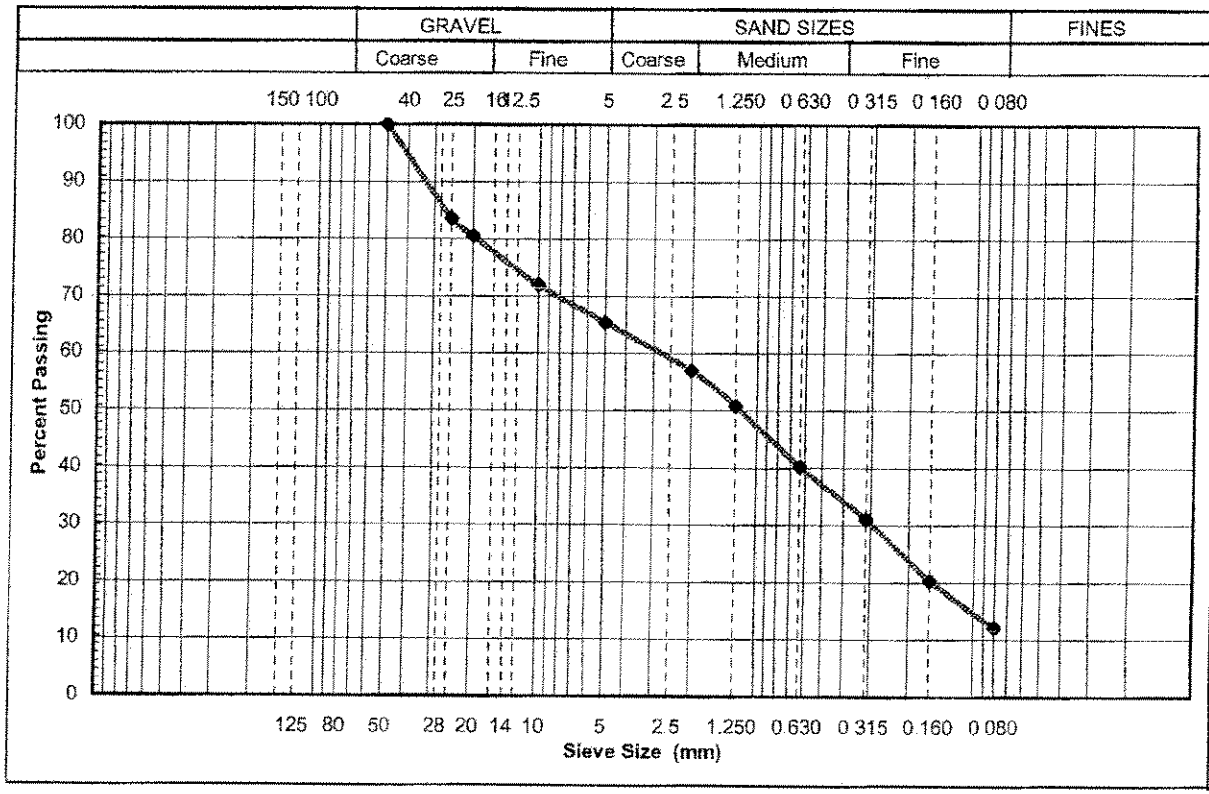
Office : Yellowknife
Project No: YX00748
Client : Dillon Consulting Limited
Copies to :

Attn: Mr. Gary Strong

Project: Investigation of borrow material

Sample ID: 748-01 **Sample Type:** Sandy Silty Clay **Sampled By:** AMEC

Date Sampled: Aug 10 2005 **Date Received:** Aug 15 2005 **Date Tested:** Aug 18 2005



Sieve Size	% Passing
150.0	
125.0	
100.0	
80.0	
50.0	100
40.0	
28.0	
25.0	84
20.0	80
16.0	
14.0	
12.5	
9.5	72
4.75	65
2.00	57
1.250	51
0.630	40
0.425	31
0.160	20
0.080	12.1

Source: Borrow Pit Cape Dorset, Near Landfill 18W 0423 046 N7 122 801
Sample Description: Sandy Silty Clay
Comments : Moisture content 8.8%

AMEC Earth & Environmental Limited

Per: _____

Reporting of these test results constitutes a testing service only Engineering interpretation or evaluation of the test results is provided only on written request.

SECTION 3 CONTENTS

1.0 General

.1 STANDARD

.1 Concrete materials and methods of construction: to CAN/CSA-A23.1 unless otherwise specified.

.2 INSPECTION

.1 Concrete testing: to CAN/CSA-A23.2 by testing laboratory designated and paid for by Engineer, including on site storage and shipping. Contractor to provide access to the site. Engineer will complete at least 1 set of 3 cylinders for each pour that they inspect. Cost associated with production of the concrete for testing will be the responsibility of the contractor.

.2 Give Engineer minimum 48 hours notice before each concrete pour.

.3 TESTING

.1 The contractor to complete 1 set of 3 cylinders for all concrete pours on the reservoir. This testing is in addition to the testing completed by the engineer.

.2 Concrete testing: to CAN/CSA-A23.2 by testing laboratory designated and paid for by contractor, including on site storage and shipping.

2.0 Products

.1 MATERIALS

.1 Portland cement: to CAN/CSA-A5, Type 50.

.2 Reinforcing bars: to CAN/CSA-G30.18, Grade 400.

.3 Waterstops: extruded ribbed PVC strips, 12 MPa tensile strength, minimum 350% elongation, minus 45 C to plus 80 C working temperature, sizes as indicated. Contractor to provide shop drawings for waterstop.

.4 All other concrete materials: to CAN/CSA-A23.1.

.5 Crystallization concrete waterproofing: Xypex Concentrate C-Series Admixture.

.2 MIX PROPORTIONS

.1 Method: Alternative (1) of CAN/CSA-A23.1, Table 11.

.2 Cement type: as specified under 2.1.

.3 Minimum 28 day compressive strength shall be 32 MPa and exposure classification S-2.

.4 Nominal size of coarse aggregate: Clause 14 of CAN/CSA-A23.1.

.5 Slump: to Table 6 of CAN/CSA-A23.1. Slump to be 80 mm +/- 20 mm

.6 Air content: all concrete to contain purposely entrained air in accordance with category 2, Table 9 of CAN/CSA-A23.1. Air Content to be 5 to 8 %

.7 Admixtures: to Clause 6 of CAN/CSA-A23.1.

3.0 Execution

.1 INSERTS

.1 Cast in sleeves, anchors, reinforcement, frames, conduit, bolts and other inserts required to be built-in.

.2 FINISHES

.1 Formed surfaces shall receive a rough-form finish in accordance with CAN/CSA-A23.1.

.3 CURING

.1 Cure and protect concrete in accordance with CAN/CSA-A23.1, except that curing compounds shall not be used.

END OF SECTION

SECTION 5 CONTENTS

.....2000-12-05

PART 1 GENERAL

1.1 Related Sections

.1 ..... Section 01330 - Submittal Procedures

.2 ..... Section 01610 - Basic Product Requirements

.3 ..... Section 03300 - Cast-in-Place Concrete: Installation of anchors.

1.2 References

.1 ..... American Society for Testing and Materials (ASTM)

- .1 ASTM A53/A53M-99b, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Steamless.
- .2 ASTM A269-98, Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
- .3 ASTM A307-97, Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

.2 ..... Canadian General Standards Board (CGSB)

- .1 CAN/CGSB-1.40-97, Anti-corrosive Structural Steel Alkyd Primer.
- .2 CAN/CGSB-1.108-M89, Bituminous Solvent Type Paint.
- .3 CAN/CGSB-1.181-92, Ready-Mixed, Organic Zinc-Rich Coating.

.3 ..... Canadian Standards Association (CSA)

- .1 CAN/CSA-G164-M92(R1998), Hot Dip Galvanizing of Irregularly Shaped Articles.
- .2 CSA W59-M1998, Welded Steel Construction (Metal Arc Welding).

1.3 Shop Drawings

.1 ..... Submit shop drawings in accordance with Section 01330 - Submittal Procedures.

.2 ..... Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

1.4 Protection

.1 ..... Deliver, store, handle and protect materials in accordance with Section 01610 - Basic Product Requirements.

.2 ..... Cover exposed stainless steel surfaces with pressure sensitive heavy protection paper or apply strippable plastic coating, before shipping to job site.

.3 ..... Leave protective covering in place until final cleaning of building. Provide instructions for removal of protective covering.

PART 2 PRODUCTS

2.1 Materials

.1 ..... Steel sections and plates: to CAN/CSA-G40.20/G40.21, Grade[300W] [350W].

.2 ..... Steel pipe: to ASTM A53/A53M [standard weight] [extra strong] [double extra strong], black, galvanized finish.

.3 ..... Bolts and anchorbolts: to ASTM A307.

.4 ..... Stainless steel tubing: to ASTM A269, Type [302] [Commercial grade] [Seamless welded with AISI No[4] finish].

.5 ..... Grout: non-shrink, non-metallic, flowable, 15 MPa at 24 hours.

2.2 Fabrication

.1 ..... Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.

.2 ..... Use self-tapping shake-proof round headed screws on items requiring assembly by screws or as indicated.

.3 ..... Where possible, fit and shop assemble work, ready for erection.

.4 ..... Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

2.3 Finishes

.1 ..... Galvanizing: hot dipped galvanizing with zinc coating 600 g/m2to CAN/CSA-G164.

.2 ..... Chromium plating: chrome on steel with plating sequence of 0.009 mm thickness of copper 0.010 mm thickness of nickel and 0.0025 mm thickness of chromium.

.3 ..... Shop coat primer: to CAN/CGSB-1.40.

.4 ..... Zinc primer: zinc rich, ready mix to CAN/CGSB-1.181.

.5 ..... Bituminous paint: to CAN/CGSB-1.108.

2.4 Isolation Coating

.1 ..... Isolate aluminum from following components, by means of bituminous paint:

.1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.

.2 Concrete, mortar and masonry.

.3 Wood.

2.5 Shop Painting

.1 ..... Apply one shop coat of primer to metal items, with exception of galvanized or concrete encased items.

.2 ..... Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7°C.

.3 ..... Clean surfaces to be field welded; do not paint.

2.6 Access Ladders

.1 ..... Stringers: 75 x 75 x 4 mm thick, angle.

.2 ..... Steel Rungs: 50x 50 x 4 mm thick, angle, welded to stringers at 300 mm oc.

.3 ..... Brackets: sizes and shapes as indicated, weld to stringers at 1000 mm o.c., complete with fixing anchors.

.4 ..... Galvanize finish for exterior, prime paint for interior.

.5 ..... Galvanize exterior ladders after fabrication.

2.7 Trench Covers and Frames

.1 ..... Steel fabricate from 6 mm thick raised pattern plate set in L 55 x 55 x 6 frame. Include anchors at 1200 mm oc for embedding in concrete. Supply trench covers in 1200 mm removable lengths.

.2 ..... Finish: galvanized.

PART 3 EXECUTION

3.1 Erection

.1 ..... Do welding work in accordance with CSA W59 unless specified otherwise.

.2 ..... Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.

.3 ..... Provide suitable means of anchorage acceptable to Engineer such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.

.4 ..... Exposed fastening devices to match finish and be compatible with material through which they pass.

.5 ..... Provide components for building by other sections in accordance with shop drawings and schedule.

.6 ..... Hand items over for casting into concrete or building into masonry to appropriate trades together with setting templates.

.7 ..... Touch-up rivets, field welds, bolts and burnt or scratched surfaces after completion of erection with primer.

.8 ..... Touch-up galvanized surfaces with zinc rich primer where burned by field welding.

3.2 Access Ladders

.1 ..... Install access ladders in locations as indicated.

3.3 Trench Covers

.1 ..... Install trench covers in locations as indicated.

END OF SECTION

SECTION 6 CONTENTS

.....1997-11-07

PART 1 GENERAL

1.1 References

.1 Canadian Standards Association (CSA)

- .1 CSA B111-1974, Wire Nails, Spikes and Staples.
- .2 CAN/CSA-G164-M92, Hot Dip Galvanizing of Irregularly Shaped Articles.
- .3 CSA O121-M1978, Douglas Fir Plywood.
- .4 CAN/CSA-O141-91, Softwood Lumber.
- .5 CSA O151-M1978, Canadian Softwood Plywood.

.2 National Lumber Grades Authority (NLGA)

- .1 Standard Grading Rules for Canadian Lumber 1991.

1.2 Quality Assurance

.1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

.2 Plywood identification: by grade mark in accordance with applicable CSA standards.

.3 Plywood, OSB and wood based composite panel construction sheathing identification: by grademark in accordance with applicable CSA standards.

PART 2 PRODUCTS

2.1 Lumber Material

.1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:

- .1 CAN/CSA-O141.
- .2 NLGA Standard Grading Rules for Canadian Lumber.

2.2 Accessories

.1 Nails, spikes and staples: to CSA B111.

.2 Bolts: [12.5] mm diameter unless indicated otherwise, complete with nuts and washers.

.3 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, [explosive actuated fastening devices], recommended for purpose by manufacturer.

2.3 Wood Preservative

.1 Surface-applied wood preservative: coloured or copper napthenate or 5% pentachlorophenol solution, water repellent preservative.

.2 Pentachlorophenol use is restricted to building components that are in ground contact and subject to decay or insect attack only. Where used, pentachlorophenol-treated wood must be covered with two coats of an appropriate sealer.

.3 .

PART 3 EXECUTION

3.1 Preparation

.1 Treat surfaces of material with wood preservative, before installation.

.2 Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface for minimum 3 minute soak on lumber and one minute soak on plywood.

.3 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.

END OF SECTION

SECTION 15 CONTENTS

PART 1 GENERAL

1.1 Related Work

Section 02315 Excavating, Trenching and Backfilling

1.2 References

.1 ASTMC518- 91, Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

.2 ASTMD638M- 89, (D638-90), Test Method for Tensile Properties of Plastics.

.3 ASTMD1248- 84(1989), Specification for Polyethylene Plastics Molding and Extrusion Materials.

.4 ASTMD1505- 90, Test Method for Density of Plastics by the Density-Gradient Technique.

.5 ASTMD1621- 73(1979), Test Method for Compressive Properties of Rigid Cellular Plastics.

.6 ASTMD1622- 88, Test Method for Apparent Density of Rigid Cellular Plastics.

.7 ASTMD2657- 90, Practice for Heat Joining of Polyolefin Pipe and Fittings.

.8 ASTMD2837- 90, Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials.

.9 ASTMD2856- 87, Test Method for Open Cell Content of Rigid Cellular Plastics by the air Pycnometer.

.10 ASTMF714- 90, Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter.

.11 ASTMG14- 83, Test Method for Impact Resistance of Pipeline Coatings (Falling Weight Test).

.12 CAN/CSA-B137.1- M89, Polyethylene Pipe, Tubing and Fittings for Cold Water Pressure Services.

1.3 Product Data

.1 Submit product data in accordance with Section 01330 - Submittal Procedures.

1.4 Material Certification

.1 At least 4 weeks prior to commencing work submit manufacturer's test data and certification that materials meet requirements of this section.

.2 Record Drawings

.3 Provide data necessary to produce record drawings on project completion in accordance with the following requirements:

.1 Give details of pipe material, location of fittings, maintenance and operating instructions.

PART 2 PRODUCTS

2.1 Carrier Core Pipe

.1 Polyethylene pressure pipes to CSAB137.1 ASTMF714:

.1 Type PE3408 for ASTMF714, DR 17.

.2 Pressure rating:

.1 DR 17 for ASTMF714.

.2 Polyethylene to polyethylene joints: thermal butt fusion joined to ASTMD2657.

.3 Polyethylene fittings: to AWWA C906 for pipe sizes NPS4 to NPS63.

2.2 Factory Applied Insulation

.1 Pipes to be cleaned of surface dust or dirt and treated if necessary to ensure positive bond of foam to entire pipe surface.

.2 Material: rigid polyurethane foam factory applied.

.3 Insulation thickness: 50 mm.

.4 Density: to ASTMD1622, 0.032 to 0.048g/cm^3.

.5 Closed cell content: to ASTMD2856, 90 % minimum.

.6 Water absorption: to ASTMD2842, 4.0 g/1000 cm^3, maximum 4.25% by volume.

.7 Compressive strength: to ASTMD1621, up to 240 kPa.

.8 Thermal conductivity: to ASTMC518, 0.022 to 4 W/m C°.

.9 Service Temperature: minus 45°C to plus 120°C.

.10 Centering of pipe within insulation: no more than plus or minus 6mm off center.

.11 Protect insulation on both ends of pipe from moisture and sunlight by 3mm thick continuous concentration of black asphalt mastic compound.

2.3 Outer Jacket for Buried Applications

.1 Material: factory applied high-density polyethylene jacket, black in colour (UV inhibited).

.2 Density of HDPE jacket: to ASTMD1505, 0.940 g/cm^3 minimum.

.3 Sealant: synthetic polymers or modified rubber mastic.

.4 Jacket thickness: 1.14 mm minimum.

.5 Elongation: to ASTMD638, 400 % maximum 6 month test.

.6 Service temperature: minus 45 °C to plus 120 °C maximum.

.7 Water vapour transmission rate: 3 g/m^2/24 h average.

.8 Tensile strength: 25 kg/cm width minimum.

.9 Impact strength: to ASTMG14, 7.79 N/m at minus 40 °C minimum.

2.4 Pipe Bedding and Surround Materials

.1 granular material to following requirements:

.1 Crushed or screened stone or sand consisting of hard, durable, particles, free from clay lumps, cementation, organic material and other deleterious materials to Section 02315.

.2 ASTMC136 and ASTMC117. Sieve sizes to CAN/CGSB-8.1.

2.5 Backfill Materials

.1 Backfill material in accordance with Section 02315 Excavating, Trenching and Backfilling.

PART 3 EXECUTION

3.1 Unloading and Handling of Polyethylene Pipe

.1 Unload from trucks or containers by hand or by lifting apparatus with fabric slings. Do not use cables or chains.

.2 Once removed, store on smooth surface. Lay pipes flat. Where sleepers are desired use several lengths of wide planks to provide broad bearing surface.

.3 Lift, do not drag, insulated pipes from storage area to job site.

.4 Follow manufacturer's recommendations.

3.2 Repairing Damaged Pipe

.1 Repair any damage to outer jacket by applying heat shrink sleeve to approval of Engineer or cover using heated HDPE UV resistant adhesive backed tape.

3.3 Trenching

.1 Do trenching work in accordance with Section 02315 - Excavating, Trenching and Backfilling.

.2 Trench depth to provide cover over pipe of not less than 1 m from finished grade.

.3 Trench alignment and depth require Engineer's approval prior to placing bedding material or pipe.

3.4 Granular Bedding and Surround

.1 Place bedding and surround material in unfrozen condition.

.2 Place materials in uniform layers not exceeding 150 mm compacted thickness up to 300 mm above top of pipe. Compact each layer before placing succeeding layer. Avoid compaction directly over pipe with less than 300 mm of cover.

.3 Shape bed true to grade to provide continuous uniform bearing surface for pipe exterior. Do not use blocks when bedding pipe.

.4 Shape transverse depressions in bedding as required to make joints.

.5 Compact each layer full width of bed to at least 90 % maximum density to ASTMD698.

.6 Fill authorized excavation or unauthorized over excavation below design elevation of bottom of specified bedding with compacted bedding material.

3.5 Pipe Installation

.1 On dry ground, assemble shipping lengths of pipe into suitable installation lengths by heat butt-fusion.

.2 Provide trained personnel and jointing machine approved by pipe manufacturer for butt-fusion jointing of polyethylene pipe. Obtain services of trained technician from pipe manufacturer to certify and/or train Contractor's personnel on jointing procedures and inspect jointing machine. Obtain letter from manufacturer certifying that Contractor's representative(s) who will perform jointing, is/are qualified and that jointing equipment has been inspected and is suitable for pipe supplied.

.3 Follow manufacturer's instructions in butt-fusion of joints.

.4 Join pipes at flanged ends in accordance with manufacturer's recommendations.

.5 Recheck pipe joints assembled above ground after placing in trench to ensure no movement of joints has taken place.

.6 Complete installation of rigid polyurethane halves on joints after laying pipe in trench and after successful pressure testing of pipe.

.7 Install heat shrink sleeves using large broad flame propane torch to produce 600 mm flame.

.1 Peel back release liner 12 cm from end, centre sleeve over joint and press firmly down. Wrap sleeve around pipe, removing release liner as it is wrapped. If corner on underlap is not precut, then cut off about 25 mm from each corner.

.2 Before completing overlap wrapping, warm underlap area approximately 12 cm until adhesive starts to appear at edge. Smooth out any wrinkles with gloved hand.

.3 Remove remaining release liner and complete wrapping.

.4 Remove release paper from closure seal, prewarm adhesive slightly, centre seal over overlap and press down until well bonded. Heat closure seal, and press down with gloved hand to remove any bubbles and wrinkles.

.5 With torch, start at centre of sleeve and shrink it all around joint. Keep torch moving using broad circumferential strokes to avoid burning. continue shrinking sleeve toward one end until about 50mm is left. Then aim torch inward towards centre and shrink edges. Repeat this operation on other end of sleeve. Finish off by applying long horizontal strokes of torch all around sleeve.

.6 Pay special attention to sleeve overlap area, ensuring no void remains along underlap edge. Use roller, or gloved hand to firmly and thoroughly press down along underlap edge. Start in centre and work outwards.

.7 Allow joint and sleeve to cool for at least 30 min before lowering pipe into trench.

.8 Lay pipes on prepared bed, true to line and grade as indicated. No deviations to be made without written approval of Engineer. Ensure barrel of each pipe is in contact with shaped bed throughout its full length. Take out and replace defective pipe. Correct pipe that is not in true alignment or grade, or pipe that shows undue settlement after installation. Change method or equipment for setting alignment or grade if requested by Engineer.

.9 Do not lay pipe on frozen bedding.

.10 Do not let rocks or other foreign material, which might damage insulation jacket, fall on pipe.

.11 Keep jointing materials and installed pipe free of dirt and water and other foreign materials. Install removable watertight bulkhead at open end of pipe to prevent entry of foreign materials.

3.6 Pipe Backfilling

.1 Do backfilling work in accordance with Section 02315 - Excavating Trenching and Backfilling.

.2 Lay continuous runs of warning tape on top of surround material 300 mm directly above water mains.

.3 Upon completion of pipe laying and after Engineer has inspected work in place, surround and cover pipes between joints.

.4 Protect pipe from freezing if temperatures lower than minus 5°C.

.5 When Engineer accepts testing results, surround and cover joints and fittings with surround material placed and compacted as specified.

.6 Place backfill material above pipe surround, in uniform layers not exceeding 150 mm compacted thickness.

.7 Mechanically compact each layer to at least 90 % maximum density to ASTMD698.

3.9 Testing

1. Give five (5) days written notice of date for tests.
2. Insulted or conceal work only after testing and approval by Engineer.
3. Engineer reserves the right to be present during testing.
4. Bear costs including retesting and making good.
5. Prior to tests, isolate all equipment or other parts which are not designed to withstand test pressures or test medium.
6. Hydrostatically test the high density polyethelene piping systems prior to installation in accordance with the following procedures, as recommended by the pipe manufacturer:

   .1 Over a period of three (3) hours, slowly raise the pressure in the pipe to 1.5 times the rated pressure of the pipe.

   .2 During the next 1 hour, maintain the required test pressure.

   .3 Start the test after the above described initial "pipe stretch" period.

   .4 Observe and record the hydrostatic pressure in the pipe over the next 3 hour period at ½ hour intervals.

   .5 At the end of the 3 hour test period, measure the amount of makeup water required to be added to the system to return the pipe to the test pressure.

   .6 An acceptable test is one for which the amount of makeup water does not exceed the following:

Nominal Pipe Size	Maximum Allowable Makeup Water @ 23°C.
100	5.0
250	7.8
300	12.6

Correction (Multiplication) factor to be applied to make up water.

Pipe Testing Temperature	Allowance in Table Above
23°C	1.0
22°C	0.875
20°C	0.75
18°C	0.66
16°C	0.60
14°C	0.53
12°C	0.47
10°C	0.42
8°C	0.36
6°C	0.325

For pipe testing temperatures between those listed above, interpolate correction factor.

For pipe testing temperatures above or below limits tabulated, contact Engineer.

.7 Allow a minimum of 8 hours between successive polyethelene pipe tests to allow pipe to "relax".

.8 Hydrostatically test steel piping system by pressurizing with water to 860kPa, and maintaining this pressure for a period of 4 hours without leakage.

.9 Flush out all new piping with fresh, clean water for a period of one (1) hour following final pressure test.

.10 Provide written documentation of all test results, for acknowledgement by Engineer.

3.10 Flushing and Disinfecting Water Lines

.1 Flushing and disinfection operations shall be carried out by the Contractor and must be witnessed by the Public Works Representative, or Engineer. Notify the Engineer at least five (5) days in advance of the proposed date when disinfecting operation will commence.

.2 Complete all leakage procedures, standards and tests before flushing and disinfection.

.3 Before being placed into service, all new process piping shall be flushed and disinfected.

.4 Flush all piping through available outlets with a sufficient flow to produce a velocity of 1.5 m/s, within the pipe for thirty (30) minutes, or until all foreign materials have been removed and the flushed water is clear. This includes the intake casings and is to be completed prior to final installation.

.5 Supply materials and test kits to carry out disinfection tests for total and fecal coliforms; and total and residual chlorine at no additional cost to the Owner.

.6 Disinfect immediately after flushing. Disinfect all potable water pipes. Use either Method A or B as indicated:

Method A

.1 Fill piping system with chlorine/water solution with a strength of at least 50mg/L. Ensure pipe is full and no air pockets remain.

.2 Leave solution in piping system for 24 hours, while maintaining a pressure of 175 kPa.

.3 After 24 hours sample and test the chlorine solution for total and fecal coliform (FC) levels. If the chlorine residual is at least 25 mg/L and the FC levels are within acceptable limits, the disinfection will be considered successful. Flush chlorine solution from the piping system. Protect against contamination of the disinfected system.

.4 If the chlorine residual is less than 25 mg/L or the total and FC levels are unacceptable, flush the piping system, clean any deleterious material, reflush and disinfect again. Repeat until satisfactory.

Method B

.1 Introduce chlorine solution into the intake casing to achieve a chlorine residual of 50 mg/L in the discharge pipe, which is to be recirculated back to the pump.

.2 Operate the pump and allow the chlorine solution in the intake casing. Operate continuously for 2 hours.

.3 After 2 hours sample and test the chlorine solution and the total and fecal coliform (FC) levels. If the chlorine residual is at least 25mg/L and the total and FC levels are within acceptable limits, the disinfection will be considered successful. Flush chlorine solution from the piping system. Protect against contamination of the disinfected system.

.4 If the chlorine residual is less than 25mg/L or the total and FC levels are unacceptable, flush the piping system, clean any deleterious material, reflush and disinfect again. Repeat until satisfactory.

.7 The Contractor shall collect two (2) samples of disinfectant solution for bacteriological testing. The Contractor is responsible for submitting the samples to an accredited laboratory for total and fecal coliform testing for verification of field tests. The results are to be sent to the Engineer for confirmation.

.8 If, in the opinion of the Engineer, any component of the potable water system becomes contaminated after disinfection, it shall be flushed and disinfected again at no additional cost to the Owner.

.9 Flush water is to be disposed of at the community sewage lagoon.

END OF SECTION