

CONSTRUCTION OF A SANITARY SEWAGE FORCEMAIN
FOR THE FENWICK COMMUNITY
IN THE TOWN OF PELHAM AND
CITY OF WELLAND

Contract 2
Project
E.O. 81490

October 1981

ADDENDUM NO. 3

(October 27th, 1981)

This addendum shall form part of the contract documents. The tenderer shall insert the addendum in front of the cover page of the contract documents.

1). SECTION: FORM OF TENDER

FT.07 SCHEDULE OF TENDER PRICES - Page 3

Contract 2 - Sanitary Forcemain

Item 1 All Series 60 Polyethylene sanitary sewer forcemain
shall be as manufactured by DuPont of Canada Ltd.

CONSTRUCTION OF A SANITARY SEWAGE FORCEMAIN
FOR THE FENWICK COMMUNITY
IN THE TOWN OF PELHAM AND
CITY OF WELLAND

Contract 2
Project
E.O. 81490

October 1981

ADDENDUM NO. 2

October 21st, 1981

This addendum shall form part of the contract documents. The tenderer shall insert the addendum in front of the cover page of the contract documents.

1. SECTION 02550 - CLEARING, EXCAVATION, RESTORATION - Page 2

Part 2.01 MATERIALS

A. Granular Materials - (Change Paragraph 2 to read as follows:)

2. Granular bedding material shall meet the Granular 'A' specification in accordance with M.T.C. Form 1010.

CONSTRUCTION OF A SANITARY SEWAGE FORCEMAIN
FOR THE FENWICK COMMUNITY
IN THE TOWN OF PELHAM AND
CITY OF WELLAND

Contract 2
Project
E.O. 81490

October 1981

ADDENDUM NO. 1

October 15th, 1981

This addendum shall form part of the contract documents. The tenderer shall insert the addendum in front of the cover page of the contract documents.

SECTION 00100 - TENDERING INFORMATION

Clause TI.01 Delivery and Opening of Tenders

- A. Sealed tenders, marked with the name of the project, will be received by:

Mr. M. Hackett, Clerk
Town of Pelham
P.O. Box 400
FONTHILL, Ontario
LOS 1EO

up to 3:00 p.m., Local time:

THURSDAY, OCTOBER 29th, 1981

instead of Thursday, October 22nd, 1981.

CONTRACT DOCUMENTS

CONSTRUCTION OF A SANITARY SEWAGE FORCEMAIN
FOR THE FENWICK COMMUNITY
IN THE TOWN OF PELHAM AND
CITY OF WELLAND

Contract 2
Project
E.O. 81490

October 1981

PROCTOR AND REDFERN LIMITED
Consulting Engineers and Planners
110 James Street, St. Catharines, Ontario
L2R 7E8

GKS:WD
/tp

PROCTOR & REDFERN LIMITED
TENDERER'S CHECK LIST

Before submitting your tender, check the following points:

1. Has your tender been signed, sealed and witnessed? ☐
2. Have you enclosed the Tender Deposit, i.e. certified cheque or bid bond? (whichever is required by the Contract Documents) ☐
3. Have you enclosed the Agreement to Bond, signed and sealed by your proposed Surety? ☐
4. Have you completed all schedules and prices in the Form of Tender? ☐
5. Have you indicated and included the Contingency Allowance in the Form of Tender? (if you are required to do so) ☐
6. Have you indicated the number of addenda included in the tender price? ☐
7. Have you shown the time for completion of the work? (if applicable) ☐
8. Have you listed your Sub-Contractors? (if applicable) ☐
9. Have you listed your Experience in Similar Work? (if applicable) ☐
10. Have you listed your Senior Staff? (if applicable) ☐
11. Have you listed the Tenderer's Plant? (if applicable) ☐
12. Are the documents complete? ☐

Note: Items 13 and 14 are for Ministry of Transportation and Communication projects only.

13. Have you completed the Qualification Rating and forwarded to the Ministry of the Transportation and Communications? (if applicable) ☐
14. Have you enclosed the Form of Tender stamped "For Tendering Purposes Only" (if applicable) ☐

Note: 1. Your tender will be informal and may be disqualified if ANY of the foregoing points (if applicable) have not been complied with.

MAKE SURE THAT YOU SEAL THE TENDER IN AN ENVELOPE AND MARK THEREON THE CONTRACT NAME AND E.O. NUMBER.

LIST OF CONTRACT DOCUMENTS

The following shall form the Contract Documents:

| | <u>Paper Colour</u> | <u>Pages</u> |
|---|---------------------|--------------|
| Addenda Numbered <u>1</u> to <u>3</u> inclusive | Green | |
| Tenderer's Check List | Orange | 1 |
| List of Contract Documents | Pink | 1 |
| Tendering Information | Blue | 3 |
| Form of Tender | Yellow | 4 |
| Tendering Statements: | | |
| Agreement | White | 1 |
| Agreement to Bond (CD-22) | White | 1 |
| Bid Bond (CCA Document (S)20) | White | 1 |
| Performance Bond (CCA Document (S)21) | White | 1 |
| Labour and Materials Payment Bond (CCA Document (S)22) | White | 2 |
| List of Sub-Contractors (CD-3) | White | 1 |
| Tenderer's Experience (CD-4) | White | 1 |
| Tenderer's Senior Staff (CD-5) | White | 1 |
| Tenderer's Plant (CD-6) | White | 1 |
| Supplementary General Conditions | Blue | 2 |
| General Conditions of the Contract (CD-1) | Blue | 8 |
| Project Specifications: | | |
| Section 01010 - General | White | 5 |
| Section 02550 - Site Clearing, Excavation, Backfilling and Restoration of Trenches | White | 8 |
| Section 02580 - Forcemains | White | 5 |

LIST OF DRAWINGS

| <u>Drawing No.</u> | |
|--------------------|--------------------------------------|
| Al-81490-P1 | Foss Road (Sta. 0+425 to Sta. 0+775) |
| Al-81490-P18 | Foss Road (Sta. 0+775 to Sta. 1+125) |
| Al-81490-P19 | Foss Road (Sta. 1+125 to Sta. 1+475) |
| Al-81490-P20 | Foss Road (Sta. 1+475 to Sta. 1+825) |
| Al-81490-P21 | Foss Road (Sta. 1+825 to Sta. 2+175) |
| Al-81490-P22 | Foss Road (Sta. 2+175 to Sta. 2+525) |
| Al-81490-P23 | Foss Road (Sta. 2+525 to Sta. 2+875) |
| Al-81490-P24 | Foss Road (Sta. 2+875 to Sta. 3+225) |
| Al-81490-P25 | Foss Road (Sta. 3+225 to Sta. 3+575) |
| Al-81490-P26 | Foss Road (Sta. 3+575 to Sta. 3+925) |
| Al-81490-P27 | Foss Road (Sta. 3+925 to Sta. 4+275) |
| Al-81490-P28 | Foss Road (Sta. 4+275 to Sta. 4+625) |
| Al-81490-P29 | Foss Road (Sta. 4+625 to Sta. 4+975) |
| Al-81490-P30 | Foss Road (Sta. 4+975 to Sta. 5+325) |
| Al-81490-P31 | Foss Road (Sta. 5+325 to Sta. 5+675) |
| Al-81490-P32 | Foss Road (Sta. 5+675 to Sta. 6+025) |
| Al-81490-P33 | Foss Road (Sta. 6+025 to Sta. 6+278) |

LIST OF STANDARDS

| | |
|--------------|--|
| E-81490-L15M | Removal and Treatment of Tree Roots and Branches |
| E-81490-L16M | Bedding for Sanitary Sewage Forcemain |
| E-81490-L17M | Typical Details for Supporting Utilities |
| E-81490-L18M | Typical Detail for Supporting Utilities Larger than 300 mm |

SECTION 00100 - TENDERING INFORMATION

TI.01 DELIVERY AND OPENING OF TENDERS

- A. Sealed tenders, marked with the name of the project, will be received by -
Mr. M. Hackett, Clerk- Treasurer, Town of Pelham, P.O. Box 400, Fonthill,
Ontario. L0S 1E0
up to 3:00 p.m., local time -
Thursday, October 22nd, 1981.
- B. The tenders will be opened publicly as soon after the closing time as possible.
- C. Tenders shall be completed on the detachable Form of Tender included in the Contract Documents.

TI.02 DISCREPANCIES

- A. If a Tenderer finds discrepancies in, or omissions from the Contract Documents, or if he is in doubt as to their meaning, he shall notify the Engineer, who may issue a written addendum. Neither the Owner nor the Engineer will make oral interpretations of the meaning of the Contract Documents.
- B. Should the Tenderer not agree that the materials and methods specified, or designed on the Drawings, will provide an installation to meet the requirements of the project, he shall notify the Engineer in writing, stating his reason for objection and may submit a suggested alternative. In such an event, the Engineer may choose to issue an addendum.
- C. Addenda issued during the tendering period shall be allowed for by the Tenderer.

TI.03 EXAMINATION OF SITE

- A. The Tenderer shall visit the site of the Work before submitting his tender and shall by personal examination satisfy himself as to the local conditions that may be encountered during construction of the Work. He shall make his own estimate of the facilities and difficulties that may be encountered and the nature of the subsurface materials and conditions.
- B. He shall not claim at any time after submission of his tender that there was any misunderstanding of the terms and conditions of the Contract relating to site conditions.

TI.04 SALES TAX

- A. The Tenderer shall include or exclude sales tax in accordance with current sales tax legislation taking into account any changes that have been made known by the Government and that will occur during the life of the Contract.
- B. If sales taxes are increased or decreased, or other amendments are made in the legislation, during the course of the Contract, that alter tax amounts carried in the Contract price, an adjustment will be made accordingly.
- C. The Contractor shall keep records and invoices of accounts subject to Federal and Provincial Sales Tax for the purpose of establishing taxes paid and for substantiation in the event of changes to the tax legislation during the course of the Contract.

TI.04 SALES TAX (Cont'd)

- D. The Tenderer shall contact the Sales Tax authorities and determine what the applicable taxes are and the procedures for tax exemption and/or refunding and include related administrative costs in the tender.

TI.05 PROOF OF ABILITY

- A. The Tenderer shall be competent and capable of performing the various items of Work. The Tenderer shall complete the following statement sheets, which shall form a part of the Contract Documents -
1. Tenderer's Experience on Similar Work (CD-4) with list of specific examples completed within the last 5 yrs., with appropriate references
 2. Sub-contractor's Experience in Similar Work (CD-4a)
 3. Tenderer's Senior Staff to be employed (CD-5)
 4. Tenderer's Plant to be used (CD-6)
- B. The Tenderer may be required to furnish additional statements covering other matters, including financial resources.

TI.06 TENDER DEPOSIT

- A. The tender shall be accompanied either by a tender deposit or by a Bid Bond.

Tender deposit shall be a Certified Cheque payable to the Owner in the amount of \$30,000.00

Bid Bond shall be in an amount equal to 30,000.00 and shall be on C.C.A. Document (S)20.

The Tenderer shall keep his tender open for acceptance for 60 days after the closing date. Withdrawal during this period will result in forfeiture or enforcement of the tender deposit or Bid Bond.

Upon being notified that his tender has been accepted, the Contractor shall execute copies of the Agreement, supply bonds and insurance documents as specified, and start Work as specified.

Failure to execute the copies of the agreement, or to supply bonds and insurance documents, within 2 weeks of the date of acceptance of the tender, or to start Work as specified, will automatically mean the forfeiture or enforcement of the tender deposit or Bid Bond.

Tender deposits of unsuccessful Tenderers will be returned not later than 2 weeks following Contract award.

The tender deposit of the successful Tenderer will be returned with the first progress certificate.

TI.07 AGREEMENT TO BOND

- A. Every tender shall be accompanied by an 'Agreement to Bond' in the form attached, and shall be completed by a surety company lawfully doing business in the Province.

TI.08 SUB-CONTRACTORS

- A. The Tenderer shall submit with his tender the names and addresses of Sub-contractors he proposes to use and the value for the subtrades listed in Form CD-3 'List of Sub-contractors'.

TI.09 ACCEPTANCE OF TENDERS

- A. The lowest or any tender need not necessarily be accepted by the Owner.

TI.10 EQUIVALENTS

- A. When an article is specified by its trade or other name (whether such name is followed by the phrase 'or approved equal' or not), the Tenderer shall base his tender price on the supply of the named article and no other.

The Tenderer may submit with his tender suggested equivalents to those articles specified by trade or other names. Such submissions shall be made on Form CD-7 attached and shall show the name of the article specified, the name and description of the suggested equivalent, and the total revision to the tender price that would result if the equivalent were accepted.

TI.11 TEST BORINGS

- A. Test borings have been made at the site of the Work and a copy of the report is available for viewing at the Engineer's office.
- B. The borings were made to determine the character of the subsoil for design purposes. No responsibility is assumed for the accuracy or completeness of the information so presented.
- C. Tenderers shall make such additional examination of the soil as they may feel necessary to satisfy themselves as to the conditions that may be encountered.

FORM OF TENDER

FT.01 TENDER PRICE

1. Offer by - Name - HUGH COLE CONSTRUCTION LIMITED
Address - 151 Main Street East, Grimsby, Ontario
Date - October 29th, 1981
2. To The Corporation of the Town of Pelham.

- A. We, the undersigned, having examined the site of the Work, having carefully investigated the conditions pertaining to the Work and having secured all the information necessary to enable us to submit a bona fide tender, and having inspected all the Contract Documents, hereby agree to enter into a contract and to perform all the Work in a good and Workmanlike manner in accordance with the Contract Documents to the satisfaction of the Engineer for the total tender price of THREE HUNDRED AND FORTY THOUSAND, FIVE HUNDRED AND FORTY-FIVE -- dollars (\$ 340,545.00)

FT.02 CONTINGENCIES AND ALLOWANCES

- A. We agree that the tender price includes the contingency sum of \$10,000.00 and that no part of this sum shall be expended without the written direction of the Engineer, and any part not so expended shall be deducted from the tender price.

FT.03 QUANTITIES

- A. The tender price is compiled from the Schedule Of Tender Prices included hereinafter. The quantities in the schedule being approximate, we agree that the final valuation will be made on the basis of actual quantities measured during and on completion of the Work at the prices in the schedule.

FT.04 ADDITIONS AND DEDUCTIONS

- A. We agree that the valuation of additions to, and deductions from, the contract shall be made as follows -
1. The prices in the Schedule Of Tender Prices shall apply where appropriate.
 2. If the prices in the Schedule Of Tender Prices are not appropriate, the prices in the Table of Prices shall apply where appropriate.
 3. If the prices in subsections 1 and 2 are not appropriate, valuation will be made by one of the following methods -
 - (A) The Engineer may ask the Contractor for a quotation for the proposed Work.
 - (B) If the quotation referred to in (A) above is not accepted by the Engineer, the actual cost of the Work will be determined as the total of only the following -
 - (1) Actual cost of labour, including such items as Workmen's Compensation and Unemployment Insurance.
 - (2) Actual cost of materials to be incorporated into the Work, including such items as freight and taxes.

FT.04 ADDITIONS AND DEDUCTIONS (Cont'd)

A. (Cont'd)

3. (B) (Cont'd)

- (3) For Work done by the Contractor, an amount equal to 15 percent of the totals from subsections (1) and (2) above, which shall constitute overhead and profit of the Contractor.
 - (4) For Work done by Sub-contractors, an amount equal to 20 percent of the totals from subsections (1) and (2) above, which shall constitute overhead and profit of the Contractor and Sub-contractors.
 - (5) Rental of equipment and plant having a new value greater than \$300. Rental rates shall be as set out in the current edition of MTC form 527.
4. Whenever extra Work is being performed under subsection 3(B) above, we agree to submit daily reports in writing, indicating the total chargeable costs incurred for the day. Valuation of the extra Work being so performed will be made only on the basis of the approved daily reports.

FT.05 ADDENDA

- A. We agree that we have received addenda 1 to 3 inclusive, and the tender price includes the provisions set out in such addenda.

FT.06 COMPLETION

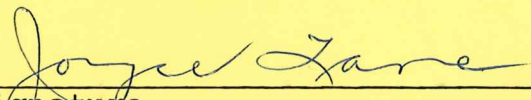
- A. We agree to commence Work as specified, to proceed continuously to the completion and to complete all Work in 20 weeks.

FT.07 SCHEDULE OF TENDER PRICES

| Item No. | Description | Unit | Quantity | Unit Price | T O T A L |
|--|--|----------------|----------|------------|----------------------|
| <u>CONTRACT 2 - SANITARY FORCEMAIN</u> | | | | | |
| 1. | Supply and install 200 mm D Series 60 polyethylene sanitary sewage forcemain | | | | |
| 1a. | Pumping station to Sta. 0+850 | m | 300 | \$ 46.75 | \$ 14,025.00 |
| 1b. | Sta. 0+850 to Sta. 1+700 | m | 850 | \$ 53.50 | \$ 45,475.00 |
| 1c. | Sta. 1+700 to Sta. 2+500 | m | 800 | \$ 51.25 | \$ 41,000.00 |
| 1d. | Sta. 2+500 to Sta. 4+200 | m | 1700 | \$ 53.50 | \$ 90,950.00 |
| 1e. | Sta. 4+200 to Sta. 5+450 | m | 1250 | \$ 53.50 | \$ 66,875.00 |
| 1f. | Sta. 5+450 to Sta. 6+280 | m | 830 | \$ 46.50 | \$ 38,595.00 |
| 2. | Connection of 200 mm D sewage forcemain to existing sanitary sewer as detailed on Detail Dwg. E-81490-L15M | | | Lump Sum | \$ 675.00 |
| 3. | Connection of 200 mm D sewage forcemain to proposed sewage pumping station | | | Lump Sum | \$ 300.00 |
| 4. | Supply and place calcium chloride | tonnes | 5 | \$ 50.00 | \$ 250.00 |
| 5. | Supply and place imported granular 'A' for trench backfill | m ³ | 2000 | \$ 10.00 | \$ 20,000.00 |
| 6. | Supply and place 50 mm crusher run for bedding in trenches including excavation and disposal of excavated material | m ³ | 800 | \$ 13.00 | \$ 10,400.00 |
| 7. | Timber left on written order of the Engineer | m ³ | 40 | \$ 50.00 | \$ 2,000.00 |
| 8. | Contingency allowance | | | Lump Sum | \$ 10,000.00 |
| TOTAL CONTRACT VALUE - CONTRACT 2 | | | | | <u>\$ 340,545.00</u> |

OFFERED ON BEHALF
OF THE CONTRACTOR


Signature HUGH COLE; PRESIDENT

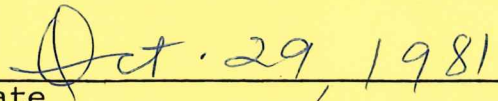

Signature JOYCE LANE; SEC. TREAS.

Contractor's Seal

HUGH COLE CONSTRUCTION LIMITED
Company Name


Witness

151 Main Street East, P.O. Box 220
Grimsby, Ontario
Address


Date

Proctor & Redfern Limited
Project EO

AGREEMENT

This Agreement made in triplicate this
19 81 , between

1974

day of DECEMBER
November

HUGH COLE CONSTRUCTION LIMITED

hereinafter called "The Contractor",

AND

THE TOWN OF PELHAM

hereinafter called "The Owner".

WITNESSETH, that the Contractor agrees with the Owner to perform all the Work in accordance with the Contract Documents referred to in the tender of the Contractor dated the Twenty-Ninth day of October , 19 81 , (which shall be deemed to form part of this Contract) to the satisfaction of the Engineer for the total contract price of \$340,545.00 which Contract Documents are attached hereto and which are hereby expressly made part of this Contract.

The Owner hereby agrees with the Contractor, that in consideration of the Work being performed by the Contractor as specified, the Owner shall pay the Contractor for said Work in accordance with the prices set out in the Form of Tender attached hereto, and in accordance with the provisions set out in the attached Contract Documents.

Time shall be deemed the essence of this Contract.

IN WITNESS WHEREOF the parties hereto have executed this Agreement under their respective corporate seals and by the hands of their proper officers thereunto duly authorized.

SIGNED, SEALED AND DELIVERED
in the presence of:

OWNER

TOWN OF PELHAM

Name

Signed

ERIC G. BERGENSTEIN - MAYOR
Name and Title

Signed

MURRAY HACKETT - CLERK
Name and Title

Witness

Name and Title

CONTRACTOR

HUGH COLE CONSTRUCTION LIMITED

Name

151 MAIN ST. E., GRIMSBY, ONT.

Signed

HUGH COLE; PRESIDENT
Name and Title

Signed

JOYCE LANE; SEC. TREAS.
Name and Title

Witness

TRENE E. KURPE RECEPTIONIST.
Name and Title

N.B. Where legal jurisdiction, local practice or Owner or Contractor requirement calls for proof of authority to execute this document, proof of such authority in the form of a certified copy of a resolution naming the person or persons in question as authorized to sign the Agreement for and on behalf of the Corporation or Partnership, parties to this Agreement, should be attached.

AGREEMENT TO BOND

Date _____ 19__

Proctor and Redfern Limited

Project E.O. 81490

*

Gentlemen:

Construction of a Sanitary Sewage Forcemain for
the Fenwick Community in the Town of Pelham,
Ontario and City of Welland, Ontario

In consideration of the Owner accepting the tender of
and executing an Agreement with

(hereinafter referred to as 'the Tenderer') for the
construction of a sanitary sewage forcemain for the
Fenwick Community in the Town of Pelham, Ontario and
City of Welland, Ontario subject to the express
condition that the Owner receive the Performance Bond
and the Payment Bond in accordance with the said tender,
we the undersigned hereby agree with the Owner, to
become bound to the Owner as surety for the Tenderer in
a performance bond and a payment bond each in an amount
equal to 100 percent of the tender price, in the standard
forms of the Canadian Construction Association and in
accordance with the said tender, and we agree to furnish
the Owner with the said bonds within 7 days after
notification of the acceptance of the tender has been
mailed to us.

Yours very truly

Note: This Agreement must be executed on behalf of the
surety company by its authorized officers under
the company's corporate seal.

*Enter name and address of surety company at the top of
the page.

PERFORMANCE BOND

C.C.A. Document No. (S) 21

No. \$

KNOW ALL MEN BY THESE PRESENTS THAT

.....as Principal,
hereinafter called the Principal, and

a corporation created and existing under the laws of

and duly authorized to transact the business of Suretyship in

as Surety, hereinafter called the Surety, are held and firmly bound unto

..... as Obligee,
hereinafter called the Obligee, in the amount of

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

WHEREAS, the Principal has entered into a written contract with the Obligee, dated the
day of 19 , for

In accordance with the Specifications and Drawings submitted therefor which contract, Specifications and Drawings, are
by reference made part hereof and are hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall promptly and
faithfully perform the Contract then this obligation shall be null and void; otherwise it shall remain in full force and
effect.

Whenever the Principal shall be, and declared by the Obligee to be, in default under the Contract, the Obligee having
performed the Obligee's obligations thereunder, the Surety may promptly remedy the default, or shall promptly

- (1) complete the Contract in accordance with its terms and conditions or
- (2) obtain a bid or bids for submission to the Obligee for completing the Contract in accordance with its terms and
conditions, and upon determination by the Obligee and the Surety of the lowest responsible bidder, arrange for
a contract between such bidder and the Obligee and make available as work progresses (even though there
should be a default, or a succession of defaults, under the contract or contracts of completion, arranged under
this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract price; but not
exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set
forth in the first paragraph hereof. The term "balance of the Contract price," as used in this paragraph, shall
mean the total amount payable by the Obligee to the Principal under the Contract, less the amount properly
paid by the Obligee to the Principal.

Any suit under this Bond must be instituted before the expiration of two (2) years from the date on which final
payment under the Contract falls due.

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

No right of action shall accrue on this Bond, to or for the use of, any person or corporation other than the Obligee
named herein, or the heirs, executors, administrators or successors of the Obligee.

IN WITNESS WHEREOF, the Principal and the Surety have Signed and Sealed this Bond this
day of 19

SIGNED and SEALED
In the presence of:

(
(
(
(..... (Seal)
(Principal
(
(
(..... (Seal)
(Surety

**LABOUR AND MATERIAL PAYMENT BOND
(TRUSTEE FORM)**

No.

\$

Note: This Bond is issued simultaneously with another Bond in favour of the Obligeé conditioned for the full and faithful performance of the Contract.

KNOW ALL MEN BY THESE PRESENTS-THAT

..... as Principal,
hereinafter called the Principal, and

a corporation created and existing under the laws of

and duly authorized to transact the business of Suretyship in

as Surety, hereinafter called the Surety are, subject to the conditions hereinafter contained, held and firmly bound unto

..... as Trustee,

hereinafter called the Obligeé, for the use and benefit of the Claimants, their and each of their heirs, executors,

administrators, successors and assigns, in the amount of

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

WHEREAS, the Principal has entered into a written contract with the Obligeé, dated the

day of 19, for

.....

.....

.....

which contract, Specifications & Drawings are by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Principal shall make payment to all Claimants for all labour and material used or reasonably required for use in the performance of the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A Claimant for the purpose of this Bond is defined as one having a direct contract with the Principal for labour, material, or both, used or reasonably required for use in the performance of the Contract, labour and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment directly applicable to the Contract provided that a person, firm or corporation who rents equipment to the Principal to be used in the performance of the Contract under a contract which provides that all or any part of the rent is to be applied towards the purchase price thereof, shall only be a Claimant to the extent of the prevailing industrial rental value of such equipment for the period during which the equipment was used in the performance of the Contract. The prevailing industrial value of equipment shall be determined, insofar as it is practical to do so, in accordance with and in the manner provided for in the latest revised edition of the publication of the Canadian Construction Association titled "Rental Rates on Contractors Equipment" published prior to the period during which the equipment was used in the performance of the Contract.

2. The Principal and the Surety, hereby jointly and severally agree with the Oblige, as Trustee, that every Claimant who has not been paid as provided for under the terms of his contract with the Principal, before the expiration of a period of ninety (90) days after the date on which the last of such Claimant's work or labour was done or performed or materials were furnished by such Claimant, may as a beneficiary of the trust herein provided for, sue on this Bond, prosecute the suit to final judgment for such sum or sums as may be justly due to such Claimant under the terms of his contract with the Principal and have execution thereon. Provided that the Oblige is not obliged to do or take any act, action or proceeding against the Surety on behalf of the Claimants, or any of them, to enforce the provisions of this Bond. If any act, action or proceeding is taken either in the name of the Oblige or by joining the Oblige as a party to such proceeding, then such act, action or proceeding, shall be taken on the understanding and basis that the Claimants; or any of them, who take such act, action or proceeding shall indemnify and save harmless the Oblige against all costs, charges and expenses or liabilities incurred thereon and any loss or damage resulting to the Oblige by reason thereof. Provided still further that, subject to the foregoing terms and conditions, the Claimants, or any of them, may use the name of the Oblige to sue on and enforce the provisions of this Bond.
3. No suit or action shall be commenced hereunder by any Claimant:
 - (a) unless such Claimant shall have given written notice within the time limits hereinafter set forth to each of the Principal, the Surety and the Oblige, stating with substantial accuracy the amount claimed. Such notice shall be served by mailing the same by registered mail to the Principal, the Surety and the Oblige, at any place where an office is regularly maintained for the transaction of business by such persons or served in any manner in which legal process may be served in the Province or other part of Canada in which the subject matter of the Contract is located. Such notice shall be given
 - (1) in respect of any claim for the amount or any portion thereof, required to be held back from the Claimant by the Principal, under either the terms of the Claimant's contract with the Principal, or under the Mechanics' Liens Legislation applicable to the Claimant's contract with the Principal, whichever is the greater, within one hundred and twenty (120) days after such Claimant should have been paid in full under the Claimant's contract with the Principal;
 - (2) in respect of any claim other than for the holdback, or portion thereof, referred to above, within one hundred and twenty (120) days after the date upon which such Claimant did, or performed, the last of the work or labour or furnished the last of the materials for which such claim is made, under the Claimant's contract with the Principal;
 - (b) after the expiration of one (1) year following the date on which the Principal ceased work on the Contract, including work performed under the guarantees provided in the Contract;
 - (c) other than in a Court of competent jurisdiction in the Province or District of Canada in which the subject matter of the Contract, or any part thereof, is situated and not elsewhere, and the parties hereto agree to submit to the jurisdiction of such Court.
4. The Surety agrees not to take advantage of Article 1959 of the Civil Code of the Province of Quebec in the event that, by an act or an omission of a Claimant, the Surety can no longer be subrogated in the rights, hypothecs and privileges of Said Claimant.
5. The amount of this Bond shall be reduced by, and to the extent of any payment or payments made in good faith, and in accordance with the provisions hereof, inclusive of the payment by the Surety of Mechanics' Liens which may be filed of record against the subject matter of the Contract, whether or not claim for the amount of such lien be presented under and against this Bond.
6. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

IN WITNESS WHEREOF, the Principal and the Surety have Signed and Sealed this Bond this

day of 19

SIGNED and SEALED
In the presence of

(
(
(
(..... (Seal)
(Principal
(
(
(..... (Seal)
(Surety

LIST OF SUB-CONTRACTORS

| SUB-TRADE | NAME OF SUB-CONTRACTOR | ADDRESS OF SUB-CONTRACTOR | VALUE OF SUB-CONTRACT |
|---|---------------------------|------------------------------|--------------------------|
| N I L | | | |
| <p>Note to Tenderer - Refer to Articles 3 of the General Conditions and TI.08 of Tendering Information. - Names and addresses must be filled in and submitted with the tender. If a sub-contractor is not to be used for any work listed then show "by own forces."</p> | | | |

TENDERER'S EXPERIENCE IN SIMILAR WORK

| YEAR COMPLETED | DESCRIPTION OF CONTRACT | FOR WHOM WORK PERFORMED | NAME OF CONSULTANT ENGINEER | VALUE |
|--|----------------------------|--|-----------------------------|------------|
| 1980 | Sanitary Sewers Contract 5 | Ministry of The Environment (Town of Grimsby) | Wm. L. Sears and Associates | \$614,444. |
| Note to Tenderer - Refer to article TI.05 of Tendering Information | | | | |

TENDERER'S SENIOR STAFF

| NAME | APPOINTMENT | QUALIFICATIONS AND EXPERIENCE |
|---------------|-------------------------------|----------------------------------|
| <u>Office</u> | | |
| Hugh Cole | President and General Manager | 29 years |
| I. McKie | P. Engineer | 6 years |
| <u>Field</u> | | |
| P. Pilkington | Superintendent | 11 years |
| J. Misener | Foreman | 7 years |

TENDERER'S PLANT

The Tenderer shall list the plant, machinery and equipment he proposes to use on the work.

PLANT OWNED:

All machinery and equipment necessary to complete project to the specifications of the contract. All machinery, equipment and plant are owned by Hugh Cole, President, Hugh Cole Construction Limite

PLANT TO BE RENTED OR LEASED:

None

PLANT TO BE PURCHASED:

None

SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

SC.01 GUARANTEE PERIOD

- A. The guarantee period for the Contract shall be twelve months, unless an extended guarantee period is called for in any specific Section.

SC.02 DEFINITION

- A. 'Department of Highways' and 'DHO' means 'The Ministry of Transportation and Communications' and 'MTC'.
- B. 'The Department of Transportation and Communications' and 'DTC' means 'The Ministry of Transportation and Communications' and 'MTC'.
- C. The word 'provide' shall mean - supply labour, materials, equipment, handling and cartage required for complete installation of the item concerned.
- D. The words 'work' or 'works' have the same meaning as for 'Work' as defined in the General Conditions.

SC.03 INSURANCE

- A. Damage insurance
 - 1. Notwithstanding the provisions of clause 28 of the General Conditions, no 'Damage Insurance' will be required on this Contract.

SC.04 LIQUIDATED DAMAGES

- A. Should the Contractor fail to complete the Work in accordance with the Contract and to the satisfaction of the Engineer, within the time specified in the Form of Tender, or as amended on the written authority of the Engineer, the Contractor shall pay to the Owner the sum of \$200.00 for each calendar day that the Work shall remain unfinished after such time.
- B. Such payments are agreed upon and fixed as liquidated damages that the Owner will suffer by reason of delay and default, and not as a penalty. The Owner may deduct and retain the amounts of such liquidated damages out of the monies which may be due or become due to the Contractor under the Contract.

SC.05 HOLDBACK FOR RECTIFICATION AFTER ACCEPTANCE OF THE WORK

- A. To cover rectification costs during the guarantee period, the Owner will retain 3 percent of the value of Work done, such amount being held back in each progress certificate. This holdback will be retained for a period of 1 year from the 'Acceptance Date' which is described in article 35 of the General Conditions. Additional monies will be held back as required by provincial statutes.

SC.06 PAYMENT BOND

- A. The Contractor, together with a surety company approved by the Owner and authorized by law to carry on business in the Province shall furnish a 100 percent labour and materials payment bond to the Owner using C.C.A. Document (S) 22. The bond shall remain in effect until the issue by the Engineer of the final payment certificate.

SC.07 PERFORMANCE BOND

- A. The provisions of the General Conditions shall apply except that C.C.A. Document (S) 21 shall be used.

SC.08 RELEASE OF HOLDBACK

- A. Holdbacks held under the provisions of the Mechanics' Lien Act will be released upon application by the Contractor, and will be subject to the requirements of the Act.
- B. The statutory 15 percent holdback will apply to the Contract.

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PROCTOR & REDFERN LIMITED
CONSULTING ENGINEERS

75 EGLINTON AVENUE EAST, TORONTO, ONT. M4P 1H3

GENERAL CONDITIONS OF THE CONTRACT**1. Wherever used in the Contract Documents, or other documents forming part of the Contract:**

- (a) the word "Contract" means: the Contract to do the Work, the Bonds or Securities, the Addenda (if any), the Specifications, the General and Supplementary General Conditions, the Tendering Information, the List of Contract Documents, the Drawings, and other documents referred to or connected with the Agreement.
- (b) the word "Owner" means the person or corporation accepting the Tender.
- (c) the word "Contractor" means the person or corporation to whom the Contract for the Work has been awarded.
- (d) the word "Subcontractor" means the person or corporation having a contract with the Contractor (or with another subcontractor) for the execution of a part or parts of the Work included in the Contract, or for the supplying of material for the Contract and worked to a special design according to the Drawings and Specifications.
- (e) the word "Engineer" means Proctor & Redfern Limited, Consulting Engineers, and their duly authorized agents.
- (f) the word "Work" means labour, materials and other things required to be done, that are shown, described or implied in the Contract Documents, and includes extra and additional Work that may be ordered by the Engineer.

1. DEFINITIONS**2. (a) The Contract Documents shall be signed and sealed, in triplicate, by the Owner and the Contractor.**

- (b) The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. The intention of the Documents is to include plant, labour and materials (except as specifically excepted) necessary for the complete and proper execution of the Work.
- (c) Drawings and Specifications shall be read and interpreted together. Work not specifically described, but obviously necessary for the satisfactory completion of the Work for the purpose intended shall be supplied and performed by the Contractor as though it had been described and shown in the Drawings and Specifications.
- (d) Reference to published standard specifications shall be to the edition current at the time of the signing of the Contract Documents.

2. DOCUMENTS**3. (a) Without the written approval of the Engineer, the Contractor shall not change the Subcontractors named in the Contract.**

- (b) The Contractor shall be held as fully responsible to the Owner for the acts and omissions of his Subcontractors (and of persons directly and indirectly employed by them) as for the acts and omissions of persons directly employed by the Contractor.
- (c) The Contractor shall bind every Subcontractor to the terms of the Contract Documents, as far as applicable to the Subcontractor's Work.
- (d) Nothing in the Contract Documents shall create any contractual relation between Subcontractors and the Owner.
- (e) Division of the Specifications into sections or subsections shall be only for clarity of reading and reference, and shall not be taken to be a division into trades, subtrades or sections of Work of any kind.

**3. SUB-
CONTRACTORS****4. (a) Any notice or communication to the Contractor shall be deemed to be legally well and sufficiently given and served, if:**

- (i) handed to the Contractor or his authorized representatives, or
- (ii) posted or sent to the address given in the Tender, or,
- (iii) posted or sent to the Contractor's domicile or usual place of business, or
- (iv) posted or sent to the place where the Work is, or is to be, carried on, or
- (v) posted to or left at his last known address.

4. NOTICES

- (b) In notices to the Contractor with respect to Work and repairs required to be done under the Contract (or with respect to other matters), it shall not be obligatory for the Engineer to specify minutely and in detail everything required, nor to specify by measurement the exact extent or place where the Work and repairs are to be carried out.

Reference may be made in such a notice to the clauses in the Contract bearing upon the matter, the general location, and the general description of the Work and repair to be done.

**5.
COMMENCE-
MENT AND
COMPLETION**

- (a) The Contractor shall obtain materials and start Work when the Contract Documents have been signed by the Owner and the Contractor, and when the Engineer has issued a written instruction to commence.
- (b) No progress certificate shall release the Contractor from responsibilities under the Contract, nor be taken as evidence of acceptance of Work or material, nor as a waiver of provisions of the Contract.
- (c) The Contractor shall protect the Work from damage from every cause, and shall, on completion, leave the Work in a good and satisfactory condition. The Work shall be finished in all respects and shall comply with the Contract in every particular.
- (d) On completion, surplus materials and rubbish shall be removed, damages to adjacent property caused by the Contractor shall be made good, and the site shall be made clean and neat.

**6.
USE OF
PREMISES**

- (a) The Contractor shall confine his plant, labour and materials within limits specified in the Contract or as otherwise indicated by law or as directed by the Engineer. The Contractor shall not unreasonably encumber the site with plant and materials.
- (b) The Contractor shall not load, or permit to be loaded, the structure with a weight that may endanger its safety.
- (c) The Contractor shall comply with the Engineer's directions regarding signs and advertisements.
- (d) The Contractor shall use the premises only for the construction of the Work forming the Contract.

**7.
RESTORATION**

- (a) Unless otherwise specified, the Contractor shall restore lands and other property to their original condition.
- (b) The Contractor shall not trespass on private property. If it is necessary for the Contractor to enter private lands, the Contractor shall first obtain the landowner's written permission and shall assume responsibility for claims that may result.
- (c) The Contractor shall maintain the flow of water in ditches, culverts and watercourses. At the conclusion of construction, ditches, culverts and watercourses shall be restored in a neat and workmanlike manner to a condition at least equal to the original.

**8.
UTILITIES**

Unless otherwise specified, the Contractor shall provide utility services, such as water, electricity, heat and gas, needed for the execution of the Work.

**9.
STATUTES**

- (a) In matters affecting the performance of the Work, the Contractor shall comply with relevant statutes, by-laws and ordinances of Federal and Provincial Governments and of Municipal Corporations. The Contractor shall also comply with relevant regulations made under such statutes, by-laws and ordinances.
- (b) Unless otherwise specified, the Contractor shall pay fees, procure licenses and certificates, deposit Contract Documents and give notices required by the foregoing statutes, by-laws, ordinances and regulations.

**10.
PUBLIC SAFETY**

- (a) During the progress of the Work, the Contractor shall keep the site and the Work in as tidy a condition as practicable. The Contractor shall not deposit materials on a street, sidewalk, boulevard or other public or private property without the approval of the representative of the Municipality or the authority having jurisdiction over such public or private property. Material so deposited shall be removed without delay as soon as possible and when directed.

- (b) If the Work is closed, suspended or stopped for the winter (or for other approved reasons), the Contractor shall remove material from streets, sidewalks, boulevards and other public property.
 - (c) The Contractor shall ensure that the charges of explosives used, and the time at which they are exploded, shall be such as not to cause suffering, inconvenience or injury to persons nor damage to property.
 - (d) Explosives shall be properly housed and protected, and no explosives that have deteriorated shall be used. Approved methods of handling and thawing frozen explosives shall be followed. In blasting operations, the Contractor shall exercise the greatest care at all times.
 - (e) The Contractor shall provide, erect and maintain necessary barriers, fences and other proper protection, and shall provide and maintain watchmen and lights as may be necessary to ensure the safety of the public and others. Unless otherwise specified, the Contractor shall keep streets and sidewalks open for use by the public. The Contractor shall provide, erect and maintain a sufficient number of detour signs, and other proper notices, wherever the use of streets or sidewalks is dangerous due to the Contractor's operations.
 - (f) When Work is carried on at night, the Contractor shall provide, erect and operate a sufficient number of lights to enable the Work to be performed satisfactorily.
11. (a) The Contractor shall complete the Work in accordance with a schedule set down in co-operation with the Engineer at the time of the award of the Contract. Amendments to this schedule may be made by the Engineer, on application by the Contractor.
- (b) Should the Engineer be of the opinion that the quantity or quality of labour or plant supplied by the Contractor is not sufficient, or that the methods being employed are not such as will ensure that the Work will be completed within the specified time, the Contractor shall forthwith improve the quality and increase the number of men employed, shall make revisions to the plant, and shall employ Work methods satisfactory to the Engineer.
12. (a) Damage, loss, expense and delay incurred or experienced by the Contractor in the prosecution of the Work, by reason of unanticipated difficulties, bad weather, strikes, wars, acts of God, or other mischances, shall be borne by the Contractor and shall not be the subject of a claim for additional compensation.
- (b) The position of pole lines, conduits, watermains, sewers and other underground and over-ground utilities and structures is not necessarily shown on the Contract Drawings, and, where shown, the accuracy of the position of such utilities and structures is not guaranteed. Before starting Work, the Contractor shall inform himself of the exact location of such utilities and structures, and shall assume liability for damage to them. Unless otherwise specified, the Contractor shall support such utilities and structures, or temporarily remove them, and restore them, to the satisfaction of the owners of the utilities and structures.
13. (a) Workmanship shall be first-class and material new and of best quality. The Contractor shall pay due regard to the neat and attractive appearance of the finished Work.
- (b) If ordered by the Engineer, the Contractor shall make such openings in the Work as are needed to re-examine the Work, and shall forthwith make the Work good again. Should the Engineer find the Work so opened up to be faulty, the whole of the expense of opening, checking and making good shall be borne by the Contractor. Should the Engineer find the Work opened up to be in an acceptable condition, such expense will be borne by the Owner.
- (c) The Contractor shall remove and make good defective Work, and the entire cost of such removal and making good shall be borne by the Contractor.
14. When Work is permitted or ordered by the Engineer to be done in cold weather, the Contractor shall provide suitable means for heating and protection, and the materials shall be heated and protected. All Work that may be injured by frost, and which cannot be satisfactorily completed, shall be put in a proper and satisfactory condition, and shall be protected from damage by frost. Unless otherwise specified, the cost of such protection shall be borne by the Contractor.

11. PROSECUTION OF THE WORK

12. OPERATIONAL RISKS

13. WORKMANSHIP AND MATERIALS

14. COLD WEATHER

15.
OWNERSHIP
OF PLANT
AND
MATERIAL

- (a) The Contractor's plant, and materials to be incorporated into the Work, shall, at the option of the Owner, become and continue to be under the control of the Owner from the time of arrival on the site until the completion of the Work.
- (b) The Contractor shall not remove such plant or approved material from the site without the Owner's approval. No payment of money will be made by the Owner with respect to such plant.

16.
SUPPLY OF
MATERIAL

Unless otherwise specified, the Contractor shall supply materials, and when requested shall furnish for approval representative samples of materials. Substitution of materials specified shall be made only on the written approval of the Engineer.

17.
DETAILS AND
INSTRUCTIONS

- (a) The Contractor shall not deviate from or alter the Work required by the Contract Documents without the written authority of the Engineer. Ambiguities, omissions or discrepancies that may arise will be explained and adjusted by the Engineer, who may issue to the Contractor instructions directing the manner of performing the Work.
- (b) If necessary for the proper execution of the Work, the Engineer may issue additional instructions, as drawings or otherwise, and such instructions shall become parts of the Contract. The Work shall be executed in conformity with such instructions, and the Contractor shall do no additional Work without such instructions.
- (c) The Contractor shall perform and observe the provisions of the Contract and carry out the written directions of the Engineer. Should the Contractor refuse or neglect to carry out the written instructions of the Engineer within seven (7) days, the Engineer may
 - (i) take such steps (including the procuring of plant, labour and material) and arrange for such Work as he may consider advisable, or
 - (ii) at the option of the Owner, exercise the powers given in Clause 39.
 The cost so incurred may be deducted or collected under the provisions of the Contract, and such action taken by the Engineer shall not relieve the Contractor from liability under the Contract.

18.
CHANGES IN
THE WORK

- (a) Without invalidating the Contract, the Owner or the Engineer may make changes by altering, adding to, or deducting from the Work, the value of the Contract being adjusted accordingly. Such Work shall be performed under the conditions of the original Contract.

Unless otherwise specified, the value of such alterations, additions and deductions shall be determined by agreement between the Contractor and the Owner before the Work is performed. Adjustment of time will be determined by the Engineer at the time of ordering alterations, additions and deductions, and such adjustments shall not affect the validity of the Contract.

- (b) The Owner shall not be liable for the cost of additional Work or material which are supplied by the Contractor but which are not provided for in the Contract Documents, and are not required by the written instructions of the Engineer.

19.
REJECTION OF
WORK AND
MATERIALS

The Engineer may condemn and reject Work which, in his opinion, is not in accordance with the Contract Documents or the Engineer's instructions, and the Engineer will require the substitution of proper materials. Rejected materials shall be promptly removed from the site.

20.
THE ENGINEER

- (a) The Engineer will make such decisions as are necessary with respect to:
 - (i) Discrepancies in the Contract Documents, or
 - (ii) Differences of opinion or misunderstanding that may arise as to the meaning of the Contract, or
 - (iii) Omissions or misstatements in the Contract Documents, or
 - (iv) Quality, dimensions and sufficiency of plant, materials or Work, or
 - (v) The due and proper execution of the Work, or
 - (vi) The measurement, quantity or valuation of the work, including additional Work and deductions, or
 - (vii) Other questions or matters arising out of the Contract.

The Engineer's decision as to matters referred to in this clause shall be binding upon the parties concerned.

- (b) When the Engineer makes a decision under this clause, the Contractor shall immediately proceed with Work affected by the decision. Additions to or deductions from the Contract price shall be made only as provided for in the Contract, and no revisions to the completion time shall be made, unless approved by the Engineer.
- (c) The Engineer may at reasonable times visit, enter and check at buildings, factories, workshops, works or sites wherever materials are being prepared, made or treated, or where other Work is being done in connection with the Contract. The Engineer may also take such samples as he may consider necessary.

21. (a) Shop Drawings will be reviewed only to check general arrangement and conformance with the design concept of the project and compliance with the Contract Documents.

**21.
SHOP
DRAWINGS**

- (b) Where the Engineer requires Shop and Setting Drawings, the Contractor shall submit them in sufficient time to allow for examination by the Engineer and for any corrections that he may require to be made. The Contractor shall not commence Work on items covered by Shop Drawings (where such drawings have been requested) before the Engineer's review.
- (c) The Contractor shall make changes in Shop and Setting Drawings as the Engineer requires consistent with the Contract and shall submit revised prints to the Engineer. When submitting Shop and Setting Drawings, the Contractor shall notify the Engineer of every change made from the Contract Documents.
- (d) Review of Shop Drawings by the Engineer shall not relieve the Contractor from compliance with requirements of the Contract Documents, nor relieve him of responsibility for errors made in the Shop Drawings.
- (e) The Contractor shall be responsible for confirming and correlating quantities and dimensions; selecting fabrication processes and techniques of construction; and coordinating the Work of Subcontractors.
- (f) Prior to submission to the Engineer the Contractor shall review Shop Drawings. By this review the Contractor represents that he has determined and verified field measurements, field construction criteria, materials, catalogue numbers and similar data or will do so and that he has checked and co-ordinated each Shop Drawing with the requirements of the Work and of the Contract Documents. The Contractor's review of each Shop Drawing shall be indicated by stamp, date and signature of a responsible person.
- (g) Shop Drawings shall be properly identified by the name of the project, the E.O. number, the item and the area in which the item is to be used. Where options occur on the Shop Drawing, the option proposed to be used shall be marked. If applicable, the related Specification Section shall be indicated.

22. Contract Documents, including Drawings, Specifications, models and similar items supplied by the Engineer are his property. Such Documents are not to be used on other work and, with the exception of the signed Contract Documents, shall be returned by the Contractor to the Engineer on the completion of the Work.

**22.
OWNERSHIP OF
DOCUMENTS**

23. The Contractor shall assume the defence of and shall indemnify and save harmless the Owner from claims:

**23.
LIABILITY**

- (a) resulting from the prosecution of the Work, or
- (b) resulting from any of the Contractor's operations, or
- (c) caused by reason of the existence, location or condition of the Work, or
- (d) caused by reason of any material, plant or labour used in the Work, or
- (e) arising from an act of commission or omission on the part of the Contractor, or
- (f) relating to inventions, copyrights, trademarks, patents (and rights to them) used in doing the Work, or in the use and operation of Work on completion, unless otherwise specified.

**24.
LIABILITY
INSURANCE**

The Contractor shall insure and maintain insurance against liability for bodily injury and property damage that may arise with respect to the Work being performed under the Contract. Such insurance shall:

- (a) be in the joint names of the Owner, the Contractor, the Subcontractors and the Engineer, and
- (b) include coverage for:
 - (i) Contractual liability, and
 - (ii) Cross liability, and
 - (iii) Contingent Employer's liability, and
 - (iv) Completed Operations liability, and
 - (v) Non-owned automobile liability, and
- (c) have an inclusive limit at least equal to \$1,000,000, unless otherwise specified, and
- (d) remain in force until the issue by the Engineer of the Final Certificate, except that Completed Operations liability shall remain in force for the duration of the Guarantee period.

**25.
AUTOMOBILE
INSURANCE**

The Contractor shall insure and maintain insurance against liability for bodily injury and property damage caused by automobiles owned by the Contractor and used on the Work. Such insurance shall have an inclusive limit at least equal to \$1,000,000. An automobile shall be as defined in the Highway Traffic Act.

**26.
WORKMEN'S
COMPENSATION**

The Contractor shall pay such assessments as will protect him and the Owner from claims under the Workmen's Compensation Act.

**27.
LOSS OR
DAMAGE**

The Owner shall not be answerable or accountable for loss or damage by fire or otherwise of the Work, or part of the Work, or for material, equipment, or similar items to be incorporated into the Work.

The Contractor shall properly guard the Work and make good loss or damage of whatever nature or origin that may arise out of the Contract, until the Work is complete as indicated by the issue by the Engineer of the Total Completion Certificate.

**28.
DAMAGE
INSURANCE**

The Contractor shall insure the Work and maintain such insurance against "all risks," which shall, unless otherwise specified, include flood and earthquake. Such insurance shall:

- (a) be in the joint names of the Owner, the Contractor and the Subcontractors, and the Engineer,
- (b) be for an amount equal to 100% of the total contract price and cover labour, materials, equipment and similar items to be incorporated into the Work, and that are on the site of the Work, or in transit to such site, and
- (c) remain in force until the issue by the Engineer of the Total Completion Certificate.

**29.
INSURANCE
POLICIES AND
CERTIFICATES**

- (a) When the successful Tenderer is notified that his Tender has been accepted, he shall deposit with the Owner
 - (i) a copy of damage insurance policy as required in Clause 28, and
 - (ii) copies of liability and automobile insurance policies indicating compliance with Clauses 24 and 25.
- (b) Insurance policies shall stay in force and not be amended, cancelled or allowed to lapse without thirty (30) days' prior notice.
- (c) The Contractor shall deposit certificates with the Owner indicating that the Contractor has paid assessments under the Workmen's Compensation Act as provided in Clause 26. Such certificates shall be deposited:
 - (i) at the time of award of the Contract, and
 - (ii) at intervals of six months during the course of the Contract, and
 - (iii) before issue of the Holdback Certificate after substantial completion, and
 - (iv) before issue of the Final Certificate.

30. (a) Claims or alleged claims received by the Contractor shall be dealt with immediately by the Contractor. If a claim is settled to the satisfaction of the claimant, the Contractor shall submit to the Engineer a copy of the claimant's release.
- (b) If a claim or alleged claim is rejected by the Contractor and/or his insurance company, the Contractor shall report this fact in writing to the Engineer.
- (c) Should 30 days elapse after the claim or alleged claim has been received by the Contractor, and the Contractor is not able to report settlement or rejection of the claim, he shall report to the Engineer the steps being taken with respect to the claim.
31. The Engineer may prohibit the Contractor from carrying on operations during hours of the day in which the Engineer, in his judgment, deems such operations to be a disturbance or nuisance to the public.
- Such prohibition may be made notwithstanding prior consent, order, agreement or requirement in the Contract that stipulates maximum or minimum hours of Work.
32. (a) At monthly intervals, the Contractor and the Engineer shall make a valuation of the Work and materials supplied under the Contract. Should the Engineer wish to measure the Work or materials supplied, the Contractor shall assist in such measurements and furnish particulars required.
- (b) The monthly valuations described in subsection (a) above shall not bind the Owner, the Contractor or the Engineer to final valuation of the Work to be done under the Contract, but shall be construed as approximations only for the purpose of Progress Certificates.
- (c) The final valuation of the Work shall be prepared as soon as possible after the whole of the Work has been completed.
33. The Contractor shall be entitled to receive partial payments upon the certificate of the Engineer of the value of Work done and materials supplied.
- Unless otherwise specified, eighty-five per cent (85%) of the estimated value of the completed Work and material supplied will be certified, less amounts retained under Clause 36.
- For Progress Certificates, the Engineer's decision as to the estimated value of completed Work and material supplied shall be final, but shall not be binding on him, the Contractor or the Owner in the establishing of the final value of the Work, nor shall it be taken as evidence as to ownership of, or payment for the Work.
34. Holdbacks held under the provision of the Mechanics' Lien Act will be released upon application by the Contractor, and will be subject to the requirements of the Act. The Contractor's applications shall be made in the forms included as Appendices 1 and 2 to these General Conditions. When the Engineer is satisfied that the Work meets the requirements of Substantial Completion in the Mechanics' Lien Act he will issue a Substantial Completion Certificate to establish a date for commencement of the holdback period.
35. (a) When the Work required to be done under the Contract has been completed in every respect and is acceptable to the Engineer, a final valuation of the Contract will be prepared by the Contractor and the Engineer.
- (b) The Contractor shall submit to the Engineer a statement indicating the Contractor's valuation of the Work according to records available to the Contractor. The Engineer will review this statement and either approve it or submit detail reasons for revisions that, in his opinion, should be made.
- (c) Should the Engineer consider it advisable, the Engineer will prepare a final valuation of the Work and submit it to the Contractor who shall either approve it or submit detail reasons for revisions that, in his opinion, should be made.
- (d) When the Engineer and Contractor have reached agreement as to the final value of the Work, the Engineer will issue a Total Completion Certificate, detailing the valuation of the Contract, and certifying its acceptance at a certain specific date, referred to as the "acceptance date."
- (e) Should the Engineer and Contractor be unable to reach agreement as to the final value of the Work within a reasonable period, the Engineer will issue his Total Completion Certificate detailing his valuation of the Contract and certifying acceptance of the Work at a certain specific date, referred to as the "acceptance date."

30.
INSURANCE
CLAIMS

31.
HOURS
OF WORK

32.
VALUATION

33.
PROGRESS
CERTIFICATES

34.
SUBSTANTIAL
COMPLETION
AND HOLDBACK
RELEASE

35.
TOTAL
COMPLETION
CERTIFICATE

36.
PAYMENTS

As well as monies held back as required by Provincial Statutes, the owner may retain a percentage of the value of the completed Work under terms set out in the Supplementary General Conditions of Contract.

37.
FINAL
CERTIFICATE

Provided the provisions of the Contract have been fully met, the Engineer will issue a Final Certificate one year after the acceptance date, unless otherwise specified.

38.
GUARANTEE

- (a) The Contractor shall guarantee that the Work shall for a specified period from the acceptance date remain in such condition as will meet with the Engineer's approval, and that he will make good in a permanent manner, satisfactory to the Engineer, imperfections due to materials or workmanship used in the construction, and damages caused by such imperfections. The decision of the Engineer shall be final as to the nature and cause of such imperfections and the necessity for remedying them.

Should the Contractor fail to comply with the directions of the Engineer, the Engineer may, after giving the Contractor forty-eight (48) hours' written notice, make arrangements for performance of the necessary Work, and the cost may be deducted or collected by the Owner as provided in the Contract.

- (b) Notwithstanding the provisions of subsection (a) of this clause, the Engineer may, in cases of danger or public safety, make such immediate arrangements for repair as he sees fit, and the Engineer will inform the Contractor of such action. The cost of such emergency Work shall be borne by the Contractor.
- (c) If the Engineer notifies the Contractor, in writing, of imperfections prior to the termination of the guarantee period, the Contractor shall make good the imperfections as required in subsection (a) above, notwithstanding that such Work of making good may commence after or extend beyond the end of the guarantee period.

39.
TERMINATE
EMPLOYMENT
OF
CONTRACTOR

- (a) The Owner may terminate the employment of the Contractor, if the Engineer certifies that sufficient cause exists to justify such action. Such termination of employment may be made:
- (i) if the Contractor should be adjudged a bankrupt, or
 - (ii) if he should make a general assignment for the benefit of his creditors, or
 - (iii) if a receiver should be appointed on account of his insolvency, or
 - (iv) if he should take the benefit of any Act relating to insolvent debtors, or
 - (v) if a winding up order be made against the Contractor, or
 - (vi) if he should refuse or fail to supply enough plant, properly skilled labour or proper materials after having received seven (7) days notice in writing from the Engineer so to do, or
 - (vii) if he should fail to make prompt payment to Subcontractors and suppliers, or
 - (viii) if he should persistently disregard laws, ordinances or the instructions of the Engineer, or,
 - (ix) if he should otherwise be guilty of a substantial violation of the provisions of the Contract.
- (b) Should the Owner terminate the employment of the Contractor, as provided in subsection (a) above, he shall give the Contractor seven (7) days' written notice of such termination of employment.
- (c) Should the Owner terminate the employment of the Contractor, as provided in Subsection (a) above, he may take possession of the premises and of materials and plant on the premises, and may finish the Work by methods he may deem expedient, but without undue delay or expense. In such case, the Contractor shall not receive further payment until the Work is complete.
- (d) If the unpaid balance of the contract price exceeds the expense of finishing the Work (including compensation to the Engineer for his additional services), such excess shall be paid to the Contractor. If such expense exceeds the unpaid balance, the Contractor shall pay the difference to the Owner. The additional expense incurred by the Owner due to the Contractor's default shall be certified by the Engineer.

40.
PERFORMANCE
BOND

The Contractor, together with a Surety Company approved by the Owner and authorized by law to carry on business in the Province in which the Work is to be performed, shall furnish a Performance Bond to the Owner in the form attached in the amount of 100% of the Contract price. The Bond shall unconditionally guarantee the performance of the Contract, shall be at the expense of the Contractor, and shall remain in effect until the issue by the Engineer of the Final Certificate.

41. The Contractor shall not assign the Contract, or any part of it without the written consent of the Owner, nor shall the Contractor assign monies due, or to become due, to him without the written consent of the Owner.

41.
ASSIGNMENT

42. The Contractor shall employ a competent supervisor and necessary assistants who shall at all times, be in attendance at the place of the Work while Work is being performed.

42.
SUPERINTENDENCE

The supervisor shall be satisfactory to the Engineer and shall not be changed except for good reason and only then after consultation with the Engineer.

The supervisor shall represent the Contractor at the place of the Work and directives given to him by the Engineer shall be held to have been given to the Contractor.

The Contractor shall provide the Engineer with the name, address and phone number of the supervisor and other responsible person(s) who may be contacted for emergency or other reasons.

APPENDIX 1 OF THE GENERAL CONDITIONS OF THE CONTRACT

APPLICATION FOR RELEASE OF SUBCONTRACTOR'S HOLDBACK

Owner:

Project:

EO:

Contractor:

Subcontract:

Subcontractor:

1. We, _____ the said Subcontractor
hereby confirm that the Work under the said subcontract was completed on _____
, that the subcontract price was \$ _____, and hereby
request the issue of a certificate that such subcontract Work has been completed.

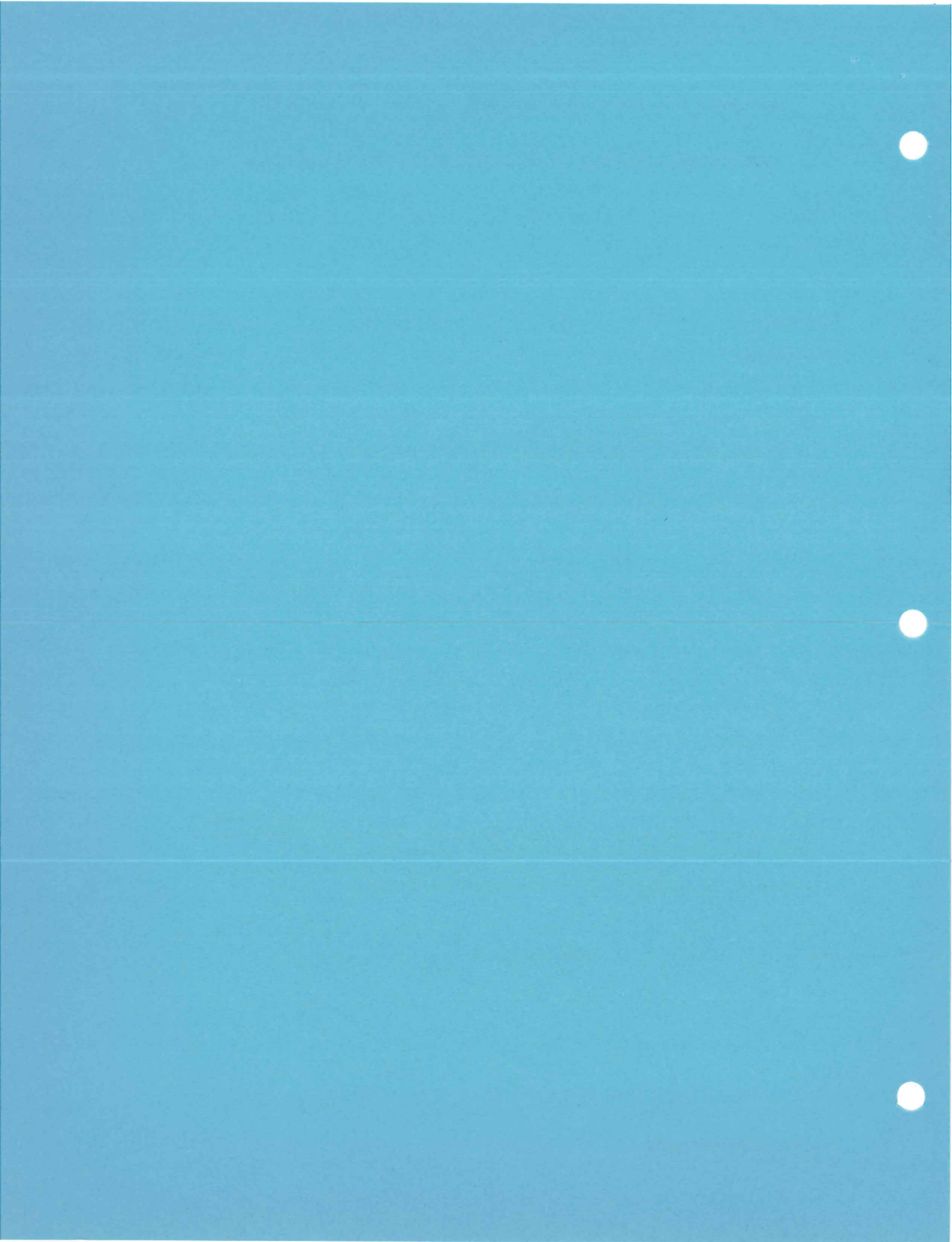
Date: _____ Signature: _____

SEAL:

2. We, _____ the said Contractor
hereby confirm that Work of the above subcontract has been complete in accord-
dance with the Contract Documents and that the subcontract price was \$ _____
, and hereby apply for a reduction in holdback with respect to the
subcontract, in accordance with the provisions of the Mechanics' Lien Act.

Date: _____ Signature: _____

SEAL:



APPENDIX 2 OF THE GENERAL CONDITIONS OF THE CONTRACT

APPLICATION FOR RELEASE OF CONTRACTOR'S HOLDBACK

Owner:

Project:

EO:

Contractor:

We, _____ the said Contractor,
hereby confirm:

- (i) that the Work under the above Contract is "substantially complete" as defined in the Mechanics' Lien Act, and
- (ii) that there are no outstanding liens, garnishees, attachments or other charges affecting the Work, and
- (iii) that the value of Work done to the date of substantial completion is \$ _____ and
- (iv) that the value of Work remaining to be done is \$ _____

and hereby apply for release of holdback monies in accordance with the provisions of the Mechanics' Lien Act.

Date: _____ Signature: _____

SEAL:

SECTION 01010 - GENERAL

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. The supply of all necessary labour, equipment and material for the installation of approximately:

5700 m of 200 mm diameter polyethylene sanitary sewage forcemain related to the Fenwick Sanitary Sewer Project in the Town of Pelham and the City of Welland, Ontario.

1.02 LIMITS OF SITE

- A. The limits of the site are -

1. The road or street allowances on which Work is to be performed.

1.03 SITE OFFICE

- A. Provide an insulated field office for the use of the Engineer, and incorporating the following -

1. A minimum floor area of 18 sq. metre (200 sq. ft.)
2. Vinyl-asbestos floor tile.
3. Four opening windows (with screens).
4. A lockable door and screen door.
5. A plan table of 1.4 sq. metre (15 sq. ft.) min. area.
6. A desk and chair.
7. A lockable 4 drawer insulated filing cabinet.
8. A private sanitary facility.
9. A first-aid box as required by the Workmens Compensation Board for 6 to 15 Workmen.

- B. Light the site office with fluorescent fixtures to a 650 lux (60 ft. candle) level and maintain a temperature above 21 degrees C. and below 30 degrees C.

PART 1 GENERAL (Cont'd)
1.03 SITE OFFICE (Cont'd)

- C. Service, maintain and carry insurance on the site office and contents. Provide evidence of insurance to the Engineer before Work commences.

1.04 PROJECT SIGNBOARD

- A. Supply a project signboard having dimensions of 1.8 m x 1.2 m (6 ft. x 4 ft.) with portable and sufficient framework to support the sign. Prominently display the sign in an approved location.
- B. Before construction of the sign, obtain approval of the wording.
- C. Provide the sign complete and in place within 2 weeks of the start of the Work.

1.05 SETTING OUT OF THE WORK

- A. The Engineer will set such stakes as are necessary to mark the location, alignment, elevation and grade of the Work. Give adequate notice of the need for such setting out.

Carefully protect and preserve stakes, lot pins, marks and reference points and replace if destroyed or removed.

Provide grade stakes, masts, scaffolds, batter boards, straight edges, templates and other equipment necessary for laying out, and inspecting the Work.

Wherever necessary suspend Work temporarily to permit the Engineer to inspect and check the line and grade of any portion of the Work.

1.06 MEASUREMENT FOR PAYMENT

- A. Unless otherwise specified, measurements will be taken in the horizontal plane.

1.07 CONSTRUCTION SCHEDULE

- A. Within 2 weeks after being awarded the Contract, submit proposed construction schedule to the Engineer for approval. In the schedule show proposed progress in weekly stages for the main sections and subsections of the Work.

PART 2 PRODUCTS

2.01 TESTS

- A. Where required by the Engineer, supply for testing, samples of materials to be used in the construction of the Work. Do not use materials until they have been so approved.

2.02 CANADIAN MATERIALS

- A. Unless otherwise specifically approved, use materials and equipment of Canadian manufacture in constructing the Work.

PART 3 EXECUTION

3.01 TRAFFIC

- A. Do not perform Work on public right-of-ways without approval of the road authorities.
- B. Perform traffic control on streets in accordance with the rules of the appropriate road authority. Ensure that flagmen wear fluorescent red or orange safety vests, arm bands and hats.
- C. Streets may be closed to through traffic only with the written permission of the Road Authority. Adequately mark detours on adjacent streets. Erect and maintain barricades on the closed streets and light at night. Inform the Road Authority when a road is re-opened to traffic.
- D. On streets that are not officially closed, always maintain one lane of traffic in each direction. Should temporary detours be constructed, comply with the requirements of the road authority as to location, dimensions, strength, road markings, signing and other relevant details. Remove detours when no longer needed, and restore surfaces to the original condition.
- E. Whether streets are officially closed or not, maintain reasonable access to adjacent properties for pedestrians and vehicles.
- F. Maintain traffic signs in their original positions. Be sure that the signs are not obscured.

3.02 NOTIFICATIONS

- A. When streets are to be closed, or traffic restricted, notify the appropriate fire and police departments, giving at least 7 days notice of the closing or restriction.
- B. If bus routes are affected, notify the bus company, giving at least 7 days notice.
- C. When streets are to be re-opened, or restrictions removed, notify the fire, police and bus authorities.

3.03 MUNICIPAL INSPECTORS

- A. Municipal inspectors may be present during the construction of the Work. They have the power to order the Contractor to stop Work if the Work, in their opinion, is not being done in accordance with the set lines and grades or to the Drawings and Specifications.

Unless otherwise specified, the cost of municipal inspectors will not be charged to the Contractor.

PART 3 EXECUTION (Cont'd)

3.04 USE OF HYDRANTS

- A. Keep fire hydrants accessible and free of obstructions.
- B. Fire hydrants may be used as a source of water only with the approval of the water authority, and subject to its rules and conditions.

3.05 INCLEMENT WEATHER

- A. Make adequate protection and take precautions at times of inclement weather.
- B. Inclement weather or extra Work caused by such weather will not be accepted as reason for additional payment.

3.06 MUD AND DUST

- A. Keep streets and other construction areas clean. If it is necessary to haul wet material, use suitable watertight trucks.
- B. Control dust by the use of water or calcium chloride, or both.

3.07 OTHER CONSTRUCTION

- A. Other construction may be proceeding at the same time near the Work of this Contract. Extend cooperation and free access to other companies and employees who may be Working in the area.

3.08 RAILWAYS

- A. Carry out Work on or near railway property to the satisfaction and requirements of the railway authority and conform to the regulations of the Canadian Transport Commission. Pay railway costs and charges except that inspection and flagmen provided by the Railway Authority will be paid for by the Owner.

3.09 EXISTING UTILITIES

- A. Contact the various utility companies prior to commencing Work and become informed of the exact location of utilities and protect them during construction and assume liability for damage to utilities.
- B. Utilities that require relocation will be the responsibility of the Utility Company concerned at no expense to the Contractor. Cooperate with the utility companies concerned and always provide them free access to their plant.
- C. Support existing pipes, ducts, or other underground services that intersect the pipe trench, or support the pipe trench in a manner acceptable to the Engineer and the Utility Company.
- D. Where existing overhead pole lines are adjacent to the excavation, temporarily support them to the approval of the Engineer and the Utility Company concerned.

3.10 TEMPORARY ACCESS

- A. Where necessary for access, provide and maintain suitable safe, temporary roads, walkways and bridges. Remove temporary access facilities and restore

PART 3 EXECUTION (Cont'd)

3.10 TEMPORARY ACCESS (Cont'd)

A. (Cont'd)

disturbed areas, after the Work of the Contract has been completed.

3.11 CLEAN-UP AND TIDY CONDITION

- A. On a daily basis as the Work progresses and on completion of the Work, clean-up and remove the rubbish and debris from the site. Remove excess material that is not required to be left on the site by the conditions of the Contract.
- B. Keep the site and the Work as tidy as practicable at all times.

SECTION 02550 - SITE CLEARING, EXCAVATING, BACKFILLING AND RESTORATION OF TRENCHES

PART 1 GENERAL

1.01 INTENT

- A. This Section covers the Work for site clearing, excavating, backfilling and restoration for forcemains, from 600 mm beyond the exterior wall of structures.
- B. Work included is as follows -
 - 1. Existing utilities
 - 2. Site clearing
 - 3. Stripping topsoil
 - 4. Excavating
 - 5. Sheathing and shoring
 - 6. Backfilling
 - 7. Restoration
- C. Related Work specified elsewhere is as follows -
 - 1. Section 02580 - Forcemains

1.02 EXISTING UTILITIES

- A. Contact the various utility companies prior to commencing Work and become informed of the exact location of utilities and protect them during construction and assume liability for damage to utilities.
- B. Utilities that require relocation will be the responsibility of the Utility Company concerned at no expense to the Contractor. Cooperate with the utility companies and always provide them free access to their plant.
- C. Where existing pipes, ducts, or other underground services intersect the pipe trench support the pipe trench to the approval of the Engineer and the Utility Company.
- D. Where existing overhead pole lines are adjacent to the excavation, temporarily support them to the approval of the Engineer and the Utility Company concerned.

1.03 EXISTING DRAINAGE

- A. Maintain temporary and permanent flow in sewers, drains, gutters, ditches, watercourses, house and inlet connections.

1.04 MEASUREMENT FOR PAYMENT

- A. The Engineer will -
 - 1. Measure in place timber sheathing left in the trench on the written order of the Engineer prior to backfilling of the trench. The Engineer will

PART 1 GENERAL (Cont'd)
1.04 MEASUREMENT FOR PAYMENT (Cont'd)
A. 1. (Cont'd)

not measure sheathing specified on the Drawings to be left in place.

2. Measure excavation for additional bedding on a cubic metre basis.

1.05 BASIS FOR PAYMENT

A. Conditions

1. Unless otherwise specified, include temporary access, site clearing, earth excavating, shoring, sheathing, support of existing utilities, dewatering, testing of material, backfilling, removal of surplus excavation, restoration and other labour, equipment and materials necessary for the complete installation of the Work, in unit prices for forcemains.
2. Where additional depth of bedding is ordered by the Engineer, additional payment will be made based on the unit prices in the Form of Tender for additional excavation and for the additional bedding material requested. Payments will be based on the actual additional depth requested and the maximum width of trench as specified in PART 3.03 of this Section.

B. Items

1. Sheathing left in the trench upon the written order of the Engineer will be paid for at the unit price contained in the Form of Tender. No additional payment will be made for sheathing shown on the Contract Drawings to be left in place or for cut off portion of the sheathing.
2. Where the excavated material is not suitable for backfill and there is no surplus suitable excavated material from other sections of the Work, the Engineer may order that the trench be wholly or partially backfilled with imported material for which payment will be made by theoretical vertical trench wall calculation.

PART 2 PRODUCTS

2.01 MATERIALS -

- Conform to latest edition of reference standards.
- Where MTC specifications are referred to comply also with supplements to those specifications.

A. Granular Materials

1. Granular 'A', 'B' and 'D' in accordance with MTC Form 1010.
2. Granular Bedding Material - Meet with the following gradation requirements.

| (A) Sieve Designation | Percent Passing by |
|------------------------------|--------------------|
| (Conforming to CGSB 8-GP-1d) | Weight |
| 150 mm | - |
| 100 mm | - |
| 26.5 mm | - |
| 22.4 mm | 100 |
| 16 mm | - |
| 13.2 mm | - |
| 9.5 mm | - |
| 4.75 mm | 25-100 |

PART 2 PRODUCTS (Cont'd)
2.01 MATERIALS - (Cont'd)
 A. 2. (A) (Cont'd)

| | |
|---------|-------|
| 1.18 mm | 10-85 |
| 300 um | 5-40 |
| 150 um | - |
| 75 um | 0-8 |
| 53 um | - |

um= 1 micron= 1/1000 millimetre (mm)

B. Hot Mix Asphalt

1. Hot mix asphaltic concrete - MTC Form 310.

C. Topsoil

1. Use existing topsoil wherever suitable and as approved by the Engineer. Before re-using the topsoil clean out foreign matter and stones over 50 mm in size.
2. Imported Topsoil - Medium loam from a meadow or farm area known to be free from weeds.
3. Notify the Engineer at least 3 days before starting topsoil stripping operations. Sources of supply will require the Engineer's approval before being brought on the job.

D. Fertilizer

1. Use complete commercial fertilizers, in compliance with the Canadian Fertilizer Act, not less than 60 percent urea-formaldehyde and the following percentages by weight -

| Nitrogen | Phosphoric Acid | Potash |
|----------|-----------------|--------|
| 10 | 10 | 10 or |
| 0 | 20 | 10 |

2. Superphosphate

Commercial superphosphate finely ground with a minimum analysis of 20 percent P_2O_5 .

E. Sod

1. Use No.1 nursery grown, 50 percent Kentucky blue, 50 percent Merion blue sod, fully root permeated in a close mat, uniform in texture.
2. Cut sod by approved methods in accordance with the Nursery Sod Growers Association of Ontario. Cut pieces 1 sq. metre in area with a minimum of 20 mm soil portion.

F. Seed

1. Use certified seed meeting the requirements of the Seeds Act for Canada, No. 1 seed.

(A) A mixture of -

55 percent creeping red fescue
 25 percent Canada blue
 12 percent perennial ryegrass
 5 percent red top
 3 percent white Dutch clover.

PART 3 EXECUTION

3.01 SITE CLEARING

- A. Remove trees, shrubs, roots, vegetation, loose surface rock, fences, and other obstructions on the line of the Work.
- B. Carefully protect trees, fences, shrubs and other vegetation designated by the Engineer and save from injury during the construction operation.
- C. Import topsoil to satisfy thickness of topsoil required under Restoration in this Section.

3.02 EXCAVATING

- A. Dig the trench to the alignment and depth required and only so far in advance of pipe laying as the Engineer will permit.
- B. Minimum and maximum trench widths up to a point 300 mm above top of pipe, for single pipe -
 - 1. Minimum
 - (A) 300 mm greater than the external diameter of pipe or 750 mm for earth excavation or 1 m for rock excavation whichever is greater, excluding an allowance for shoring.
 - 2. Maximum
 - (A) Not more than 400 mm greater than the external diameter of pipe or 750 mm whichever is greater for pipe up to and including 850 mm dia., excluding an allowance for shoring.
 - (B) Not more than 600 mm greater than the external diameter of pipe for 900 mm dia. pipe and larger, excluding an allowance for shoring required to a point 300 mm above top of pipe.
- C. The width of the trench at ground level is not to be less than the width at any depth in the trench. Fill overbreak and slides that have occurred during excavation with approved materials.
- D. Where trench excavations are not kept within the design limits of the pipe, the Engineer may order sheathing and shoring, and/or a heavier class of pipe, and/or use of a higher class of bedding.
- E. Grade and shape the pipe trench and the specified bedding to give uniform and even bearing for the length of the pipe. Dig bell holes at each joint. Make corrections in the grade with compacted granular material acceptable to the Engineer, or with fill concrete.
- F. Where pipes are to be laid in filled ground, construct the fill first, to at least 600 mm above the elevation of the top of the pipes before trenching for the pipes. Place fill in 300 mm lifts and compacted to 95 percent Standard Proctor Density.
- G. Where the subgrade in its natural state is inadequate to support the pipe, the Engineer will give instructions as to the proper procedure, and such additional Work as ordered will be paid for as described in the Form of Tender.
- H. Remove the subgrade where it has been adversely changed by construction operations and is not adequate to support the pipe. Replace with crushed stone or other approved material as directed by the Engineer.
- I. Trench in existing roadways in a manner to prevent overbreak. Saw cut pavement in clean straight lines prior to the start of excavation.

PART 3 EXECUTION (Cont'd)
3.02 EXCAVATING (Cont'd)

J. Intersecting Services

1. Where two pipes cross and there is more than 3 ft. (clear) between them, continue the bedding material for the lower pipe upward to form a support for the upper pipe. Extend the bedding material the full width of the trench, 2 ft. wider than the outside diameter of the upper pipe at the top and sloped at 1:1 down to the top of the bedding of the lower pipe. In addition, support the upper pipe by timber as directed by the Engineer.
2. Where two pipes cross and there is less than 3 ft. (clear) between them, encase the lower one in 2000 p.s.i. (15 MPa in metric) concrete, and extend the concrete up to the centreline of the upper pipe and with a length along the lower pipe equal to its outside diameter plus 2 ft. Have the concrete support the upper pipe across the full width of the trench.
3. Include the costs of these supports in the unit prices for the various pipe lines.

3.03 SHEATHING AND SHORING

- A. Supply, install and remove temporary sheathing and shoring where directed by the Engineer and in accordance with applicable safety regulations.
- B. Drive sheathing to a sufficient penetration to effectively cut off any seepage of water into the base of the excavation which could create an upward flow of water or a 'quick' condition at the base of the excavation. Leave sheathing in place until the trench has been backfilled to a minimum depth of 600 mm above the pipe. If there is danger of cave-in completely backfill the trench before removing sheathing.
- C. Take special care to ensure that voids left by the sheathing and shoring are refilled with approved material.
- D. Withdraw sheathing and shoring as the trenches are being backfilled, except where the Contractor, at his own request and expense, is permitted to leave the same in place. Sheathing left in place on written order of the Engineer will be an addition to the Contract.
- E. Cut off sheathing left in place at least 1 m below the surface of the ground.

3.04 DEWATERING

- A. Always maintain the excavation free of water.
- B. Do not use sanitary sewers for the discharge of water from the trenches.

3.05 BACKFILLING

- A. Backfill trenches from the top of the pipe bedding to the underside of surface restoration with site selected excavated material. Provide backfill free of roots, organic material and stone larger than 250 mm. Place backfill material in lifts not exceeding 150 mm. Compact to 95 percent Standard Proctor Density. Place backfill to 600 mm above top of pipe by hand.
- B. If the Engineer decides that the site selected excavation material either wholly or partially, is not suitable for backfill, then provide imported material of a type approved by the Engineer. Compact to 95 percent Standard Proctor Density.

3.05 DEWATERING

- A. Always maintain the excavation free of water.
- B. Do not use sanitary sewers for the discharge of water from the trenches.
- C. The method of dewatering on Canboro Road shall be reviewed by the Engineer prior to construction.

3.06 BACKFILLING

- A. Backfill trenches from the top of the pipe bedding to the underside of surface restoration with site selected excavated material. Provide backfill free of roots, organic material and stone larger than 250 mm. Place backfill material in lifts not exceeding 150 mm. Compact to 95 percent Standard Proctor Density. Place backfill to 600 mm above top of pipe by hand.
- B. If the Engineer decides that the site selected excavation material either wholly or partially, is not suitable for backfill, then provide imported material of a type approved by the Engineer. Compact to 95 percent Standard Proctor Density.

3.07 COMPACTION TESTS

- A. Where compaction of backfill is called for, the Engineer may order compaction tests by an independent testing company. Tests will be arranged for by the Engineer and paid for by the Owner.
 1. Where tests show that the compaction does not meet the specified requirement, carry out further compaction in a manner directed by the Engineer, and pay for further testing to establish proof of the specified compaction.
 2. For backfill compaction, tests will be made at every 0.5 m max. depth, after each three 150 mm lifts have been placed.
 3. Co-operate with the Engineer and Testing Company by scheduling the placing and compaction of backfill so that tests can be progressively taken.

3.08 DISPOSAL OF SURPLUS EXCAVATED MATERIAL

- A. Surplus excavated material will be the property of the Owner. Haul, dump and uniformly spread the surplus material at the Centennial Park site, as directed by the Engineer.

3.09 RESTORATION

A. Roadways, Driveways and Parking Lots

1. Restore roadways, driveways and parking lots as follows unless shown otherwise on the Drawings -

(A) Paved roadways, driveways and parking lots

| | Roadways (thickness) | Parking Lots and Driveways (thickness) |
|------------------|-------------------------|---|
| (1) H.L. 2A | 40 mm | 50 mm |
| (2) H.L. 8 | 50 mm | |
| (3) Granular 'A' | 300 mm | 300 mm |

(B) Gravel Roadways, Driveways and Parking Lots

- (1) Granular 'A' 300 mm

2. If weather conditions delay the placing of the permanent asphalt restoration on paved areas, and the Engineer considers that it is not practical to satisfactorily maintain the gravel surface, then carry out temporary restoration using 50 mm cold mix cold laid asphalt.

PART 3 EXECUTION (Cont'd)
3.08 RESTORATION (Cont'd)
A. (Cont'd)

5. Carry out surface treatment work in accordance with MTC specification Form 303.
- B. Sidewalks, Curbs and Gutter.
1. Restore existing sidewalks, curbs and gutters as directed by the Engineer.
 2. Remove concrete sidewalks, curbs and gutters back to an existing expansion or contraction joint where practical or saw cut prior to restoration as directed by the Engineer. Provide 20 MPa concrete air-entrained and cured as directed by the Engineer.
 3. Restore asphalt sidewalks using 40 mm hot-mix asphalt surface course on top of 150 mm Granular 'A' compacted to 95 percent Standard Proctor Density.
 4. Restore gravel sidewalks using 150 mm Granular 'A' compacted to 95 percent Standard Proctor Density.
- C. Preparation of Subgrade for Seeding and Sodding
1. Verify the subgrade and if required make adjustments to allow for topsoil and seeding or sodding to finish level with adjacent surfaces.
 2. Scarify the backfill and disturbed areas to a minimum depth of 75 mm to produce an even, loose textured surface, free of stones, roots, branches larger than 75 mm in dia., and live weeds.
 3. Have the finished subgrade approved by the Engineer prior to placing the topsoil.
- D. Preparation of Finish Grade
1. Spread the topsoil evenly over the approved subgrade to a minimum of 100 mm. Compact to 80-85 percent Standard Proctor Density.
 2. Work the fertilizer into the top 25 mm of the topsoil by discing, raking or harrowing to provide a smooth, fine textured finish surface, and firm against footprints.
 3. Base quantities of fertilizer on the following minimum rates -
(A) 10 - 10 - 10 at 11 kg/100 sq. m. or
0 - 20 - 10 at 6.5 kg/100 sq. m.
 4. Lay sod or spread seed within 48 hours of working the fertilizer into the topsoil.
- E. Laying sod (sod all lawn areas)
1. Lay sod as soon as possible after delivery.
 2. Lay sods together so that there are no open joints or pieces overlapping. Lay sod smooth and flush with existing grade.
 3. Immediately after laying sod spread sufficient water to saturate the sod and the upper 100 mm of topsoil.
 4. After sod and soil has dried sufficiently to prevent damage, roll the area with a roller providing 72 kPa pressure to ensure a good bond between sod and soil and to remove minor depressions and irregularities.
 5. Water with sufficient amounts to ensure continued healthy and vigorous growth.

PART 3 EXECUTION (Cont'd)
3.08 RESTORATION (Cont'd)

F. Seeding (seed all grassed areas other than lawns)

1. Spread seed by means of a mechanical dry seeder, at a rate of 11.4 kg/ha.
2. Work seed into the top 50 mm of the topsoil by raking or harrowing and compact so that the surface is smooth and firm.
3. After working the seed into the topsoil and compacting, water with sufficient amounts to ensure germination and continued healthy growth.

SECTION 02580 - FORCEMAINS

PART 1 GENERAL

1.01 INTENT

- A. This Section covers forcemain Work from 0.6 m beyond the exterior wall of structures.
- B. This Section covers forcemain Work including -
 - 1. Pipe
 - 2. Fittings, specials and joints
 - 3. Line and grade
 - 4. Bedding
 - 5. Testing
- C. Related Work specified elsewhere is as follows -
 - 1. Section 02550 - Site Clearing, Excavating, Backfilling and Restoration of Trenches.

1.02 CERTIFICATES OF TESTING

- A. Provide test certificates in accordance with the appropriate specification for the following materials -
 - 1. Pipe

1.03 AFFIDAVIT OF COMPLIANCE

- A. Provide the Owner with an affidavit stating that the following material is in accordance with the appropriate specification. Provide this affidavit prior to the delivery of the material to the site.
 - 1. Pipe

1.04 DELIVERY, STORAGE AND HANDLING

- A. Delivery
 - 1. Replace materials found to be defective in manufacture or damaged in handling after delivery including the furnishing of material and labour required for the replacement of installed material found to be defective.
- B. Handling
 - 1. Load and unload materials so as to avoid shock or damage.
 - 2. Handle pipe and fittings so that the coating and lining will not be damaged. If, however, the coating or lining is damaged, then repair in a satisfactory manner.

PART 1 GENERAL (Cont'd)

1.04 DELIVERY, STORAGE AND HANDLING (Cont'd)

C. Storage

1. Place materials in safe storage. Keep interiors of pipes, fittings, and other accessories clean. Store valves so as to protect them from damage by freezing.

1.05 MEASUREMENT FOR PAYMENT

A. The Engineer will -

1. Measure forcemains along the centreline of construction, straight through bends, fittings, specials, throughout the limits of the contract as shown on the Drawings.
2. Count complete connections to existing pipes, pumping station, manhole outlet or structures.

1.06 BASIS FOR PAYMENT

A. Conditions

1. Unless otherwise specified, include testing of materials, thrust blocks, anchor blocks, bedding, insulation and testing the pipes after installation and the requirements of Section 02550 - Site Clearing, Excavating, Backfilling and Restoration of Trenches.
2. The Engineer will measure the Work when completed and the Contract price will be increased or decreased in accordance with the final measurement.

B. Items

1. Include in the unit price per lineal metre for forcemains the complete installation of the pipe and necessary fittings.
2. Include in the unit price for connection to existing pipes, pumping station or manholes, the locating of and connection to the existing facility.

PART 2 PRODUCTS

2.01 GENERAL

- A. Tender on the basis of the type of pipe specified in the Form of Tender.

2.02 MATERIAL - Conform to latest edition of reference standards.

A. Conversion Table

Refer to reference specifications for actual I.D. and O.D. sizes.

| Nominal Imperial Diameter | Actual Conversion to Metric | Nominal Metric Diameter |
|---------------------------------|-----------------------------------|-------------------------------|
| Inches | mm. | mm. |
| 4 | 102 | 100 |
| 6 | 152 | 150 |
| 8 | 203 | 200 |

PART 2 PRODUCTS (Cont'd)

2.02 MATERIAL - Conform to latest edition of reference standards. (Cont'd)

A. (Cont'd)

| | | |
|-----|------|------|
| 10 | 254 | 250 |
| 12 | 305 | 300 |
| 14 | 357 | 350 |
| 15 | 381 | 375 |
| 16 | 406 | 400 |
| 18 | 457 | 450 |
| 20 | 508 | 500 |
| 21 | 533 | 525 |
| 24 | 610 | 600 |
| 27 | 686 | 675 |
| 30 | 762 | 750 |
| 33 | 838 | 825 |
| 36 | 914 | 900 |
| 39 | 991 | 975 |
| 42 | 1067 | 1050 |
| 48 | 1219 | 1200 |
| 54 | 1372 | 1350 |
| 60 | 1524 | 1500 |
| 66 | 1676 | 1650 |
| 72 | 1829 | 1800 |
| 78 | 1981 | 1950 |
| 84 | 2134 | 2100 |
| 90 | 2286 | 2250 |
| 96 | 2438 | 2400 |
| 102 | 2591 | 2550 |
| 108 | 2743 | 2700 |
| 114 | 2896 | 2850 |
| 120 | 3048 | 3000 |
| 132 | 3353 | 3300 |
| 144 | 3660 | 3600 |

B. Polyethylene Pipe

1. Conform to the following standards -

- (A) Use polyethylene resin compound designated as P-34, ASTM D1248.
- (B) Have the pipe manufactured to CGSB. 41-GP-25M for 90 mm dia. and larger, and to CSA B137-1 for sizes smaller than 90 mm.
- (C) Provide certification of compliance with the above requirements, in writing by the pipe supplier.
- (D) Base the pressure class of pipe selected on a pipe design stress of 5.0 MPa for 90 mm dia. and larger, and 4.3 MPa for sizes smaller than 90 mm.

2. Design

- (A) Ensure that in both cases the relationship between design strength and dimensions is according to I.S.O. formula.

$$\frac{2S \times 10^3}{P} = \frac{D_o}{t} - 1$$

where

S - design stress (MPa)

t - min. wall thickness (mm)

P - pressure (kPa)

PART 2 PRODUCTS (Cont'd)

2.02 MATERIAL - Conform to latest edition of reference standards. (Cont'd)

B. 2. (A) (Cont'd)

Do - outside diameter¹ (mm)

3. Pipe Diameter - 200 mm D Class Series 60

4. Jointing Methods

(A) Thermal Butt Fusion

- (1) Assemble shipped lengths of pipe into suitable installation lengths by butt fusion process unless specifically stated otherwise.
- (2) Make pipe so joined from same class and type of raw material made by a single raw material manufacturer.
- (3) Obtain further information from the pipe manufacturer's literature.

(B) Mechanical Connections

- (1) Where required to connect flanged valves or fittings use a flange adapter.
- (2) Provide the adapter with a polyethylene stub end and a metal back-up ring in accordance with the manufacturer's recommendations.
- (3) Make gaskets from 1/8 in. (3.2 mm) thick red rubber sheet or compressed asbestos with rubber compound bonding.
- (4) Use - bolts with regular heavy hex head
 - nuts with semi-finished hex
 - length as specified by pipe manufacturer
 - material compatible with metal back-up ring material

PART 3 EXECUTION

3.01 LINE AND GRADE

- A. Supply, erect and maintain batter boards and site rails to ensure accurate line and grade of pipes. Always have at least three batter boards in use, placed not more than 15 m apart. Obtain Engineer's approval for alternative methods.

3.02 FROZEN GROUND

- A. Do not place Work on frozen ground. Should the bottom of the trench become frozen, remove and replace the frozen material with bedding material compacted to 95 percent Standard Proctor Density.

3.03 BEDDING

- A. Forcemain Bedding - as specified on the Drawings.
- B. Granular Material - "A" Conform to Section 02550.

PART 3 EXECUTION (Cont'd)

3.03 BEDDING (Cont'd)

- C. Compact granular bedding material to 95 percent Standard Proctor Density.
- D. Compact the material around the pipe with hand tampers properly shaped to ensure full compaction below the haunches. Do not use mechanical tampers over the top of pipe where cover is less than 0.3 m.

3.04 CONNECTION TO EXISTING FACILITIES

- A. Connect forcemains to existing facilities as shown on the Drawings.
- B. Obtain permission from the Engineer and the authority responsible for the existing facilities prior to making connections.

3.05 PIPE LAYING

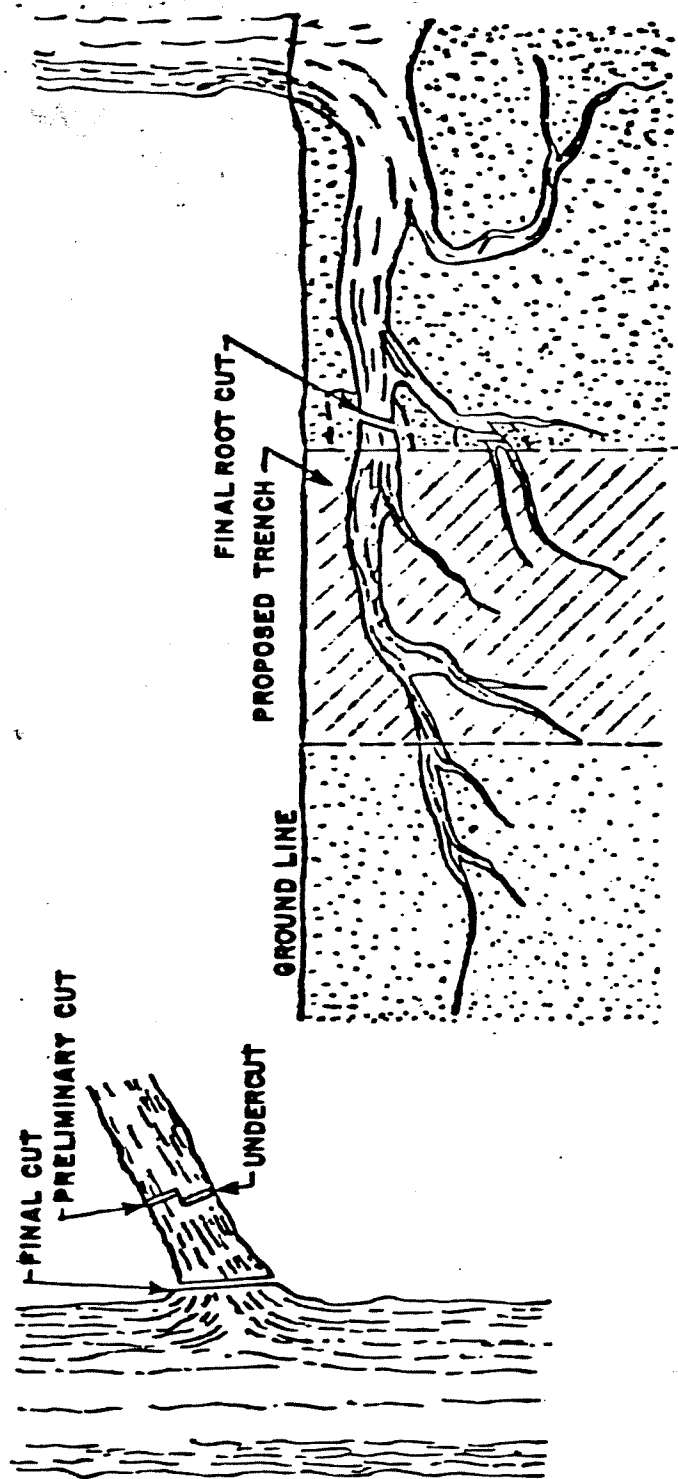
- A. Lay, joint and test pipes and accessories in accordance with the manufacturers instructions and in the manner hereinafter specified, in the presence of and subject to the Engineer's approval.
- B. Use temporary water tight bulkheads to prevent the flow of trench water, storm water, silt and sand within the pipe.
- C. Carefully lower into the trench. Before lowering and while suspended, inspect the pipe for defects. Remove foreign material from the inside of the pipe.
- D. Support bends, tees and dead ends by 20 MPa concrete thrust blocks to undisturbed ground. Arrange thrust blocks to transfer the full thrust of the deflection at test pressure without exceeding the bearing capacity of the ground.
- E. For details of pipe laying requirements for polyethylene pipe refer to the manufacturer's 'recommended standards for the handling and underground installation of polyethylene pressure pipe'. Comply fully with these requirements.

3.06 TESTING

- A. Clean out each Section of pressure pipe or part thereof by flushing prior to testing.
- B. Pressure test polyethylene pipe to 0.4 MPa measured at the lowest point on the line. No leakage will be allowed with fused and flanged joints. Conduct testing in strict accordance with the standards specified in clause 3.05 I.

3.07 CLEANING AND INSPECTION OF FORCEMAINS

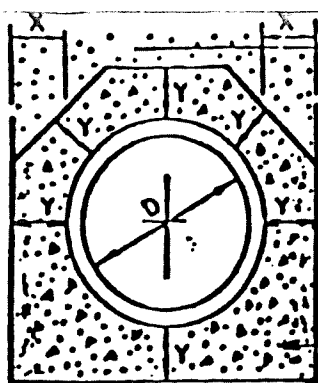
- A. Flush and clean forcemain prior to acceptance.



1. ALL FINAL CUTS SHALL BE MADE FLUSH WITH THE REMAINING LIMB OR TRUNK.
2. ALL CUTS SHALL BE PAINTED WITH A SUITABLE WOUND DRESSING.
3. FINAL CUTS ON LIMBS WHICH ARE TOO LARGE TO HOLD WITH THE HAND SHALL BE PRECEDED BY PRELIMINARY CUT FROM 300 mm TO 600 mm BEYOND THE FINAL CUT SUCH PRELIMINARY CUTS SHALL INCLUDE AN UNDERCUT TO PREVENT STRIPPING OF THE BARK.
4. ALL ROOTS 40 mm AND OVER SHOULD HAVE ANY SHATTERED ENDS CUT BACK TO SOUND WOOD AND TREE WOUND DRESSING APPLIED TO THE WOUND.

ALL DIMENSIONS ARE IN MILLIMETRES

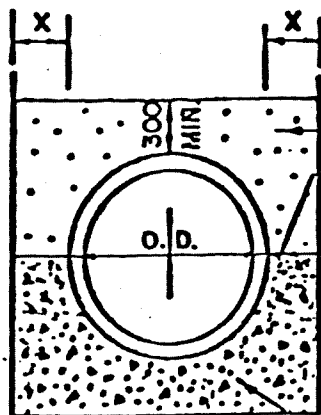
REMOVAL AND TREATMENT OF TREE BRANCHES AND ROOTS.



REMAINDER OF BACKFILL PLACED
IN LAYERS AND THOROUGHLY
CONSOLIDATED.

CONCRETE 20 MPa

CONCRETE ENCASEMENT



DENSELY COMPACTED GRANULAR MATERIAL

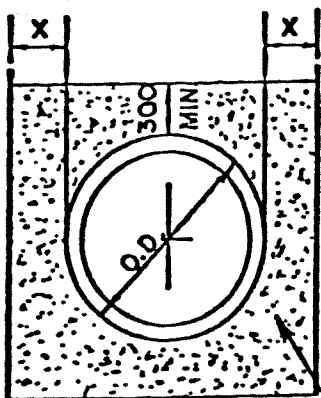
O.D./8 (150 mm MIN.)

O.D./2

O.D./4 (150 mm MIN., 300 mm MAX.)

CONCRETE 15 MPa

CONCRETE CRADLE (CLASS 'A')



O.D./2

O.D./4 (150 mm MIN., 300 mm MAX.)

COMPACTED GRANULAR 'A' MATERIAL

GRANULAR BEDDING (CLASS 'B')

| D | X | | Y |
|--------------------|--------|--------|--------|
| | MIN. | MAX. | |
| UP TO 900 mm | 150 mm | 300 mm | 150 mm |
| 1000 mm TO 3000 mm | 200 mm | 300 mm | 200 mm |

NOTES: 1 BACKFILL HANDPLACED TO 600 mm ABOVE TOP OF PIPE & CAREFULLY TAMPED IN 150 mm LAYERS, REMAINING TO BE PLACED IN LAYERS & THOROUGHLY CONSOLIDATED ACCORDING TO SPECIFICATION.

2. COMPACTION - 95% PROCTOR DENSITY MINIMUM
BOND BREAKER IF SPECIFIED

3. WHERE SHEATHING IS USED A BOND
BREAKING MATERIAL IS REQUIRED BETWEEN
CONCRETE BEDDING AND SHEATHING.

DIMENSIONS IN mm EXCEPT AS NOTED

REVISIONS

APPROVED BY

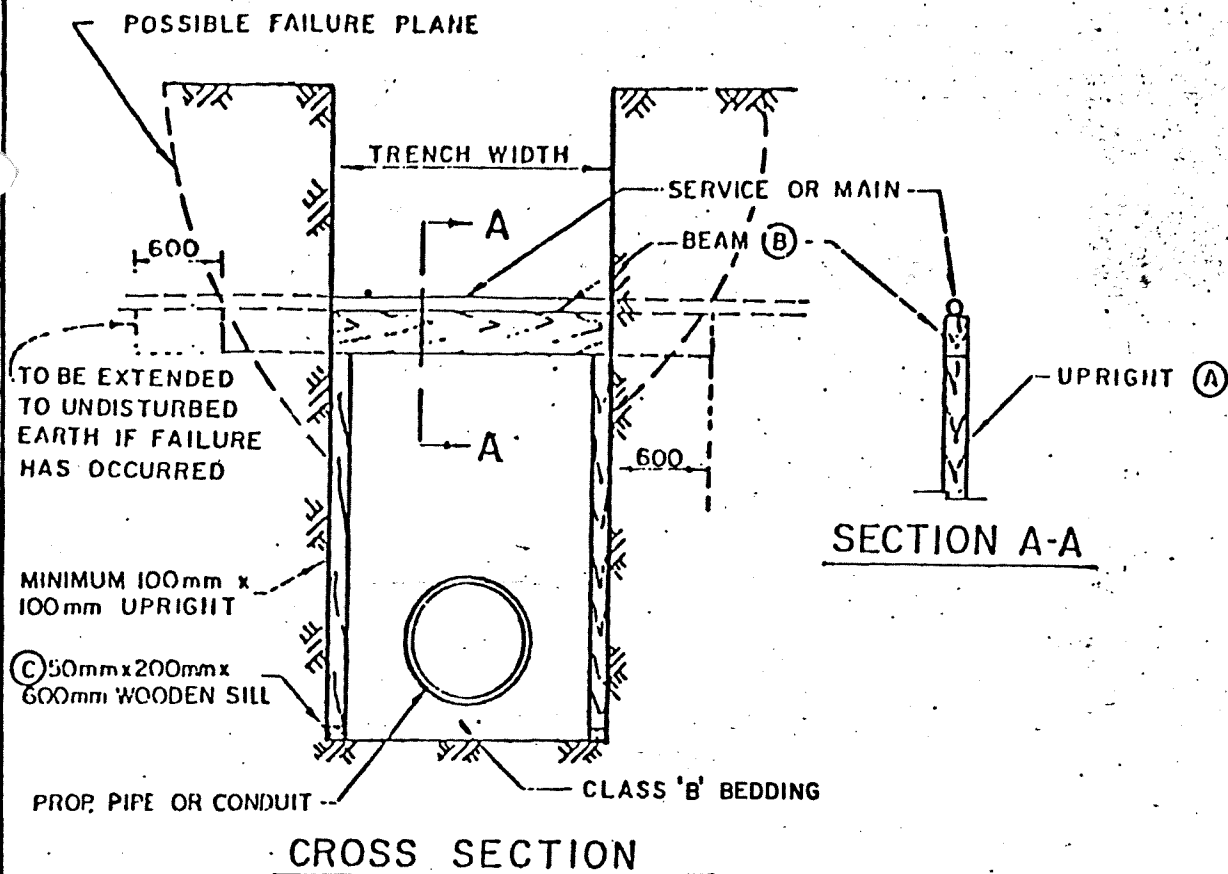
BEDDING FOR
SANITARY SEWAGE FORCEMAIN



Proctor & Redfern Limited
Consulting Engineers and Planners
Toronto St. Catharines

DRAWING NO E - 81490 - L 16 M

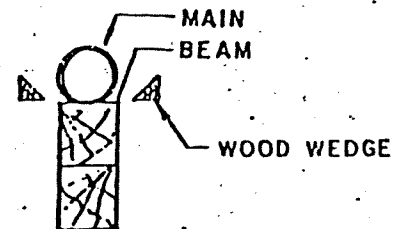
REV 3



15 MPa CONCRETE ENCASEMENT
50mm AT BELL AND 100mm AT BARREL



DRAIN
CONC. ENCASED
WHERE REQUIRED



SERVICES & MAINS

| SIZE OF PIPE SUPPORTED | (A) UPRIGHT | (B) BEAM | (C) SILL |
|------------------------|-------------|-------------|----------------|
| 38, 50 & 75 | 100 x 100 | 1/150 x 150 | 50 x 200 x 600 |
| 100 & 125 | 150 x 150 | 2/150 x 150 | 50 x 200 x 600 |
| 150 & 200 | 200 x 200 | 2/200 x 200 | 50 x 200 x 600 |
| 250 & 300 | 300 x 300 | 2/300 x 300 | 50 x 200 x 600 |

NOTES:

- WHERE THE WIDTH OF TRENCH EXCEEDS 2 m METHOD OF CONSTRUCTION IS TO BE SPECIFIED BY THE SUPERVISING ENGINEER.
- THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL SERVICES & MAINS ENCOUNTERED DURING CONSTRUCTION AND SUPPORT THEM AFTER CONSTRUCTION OF THE PIPE.

DIMENSIONS IN mm EXCEPT AS NOTED

REVISIONS

APPROVED BY

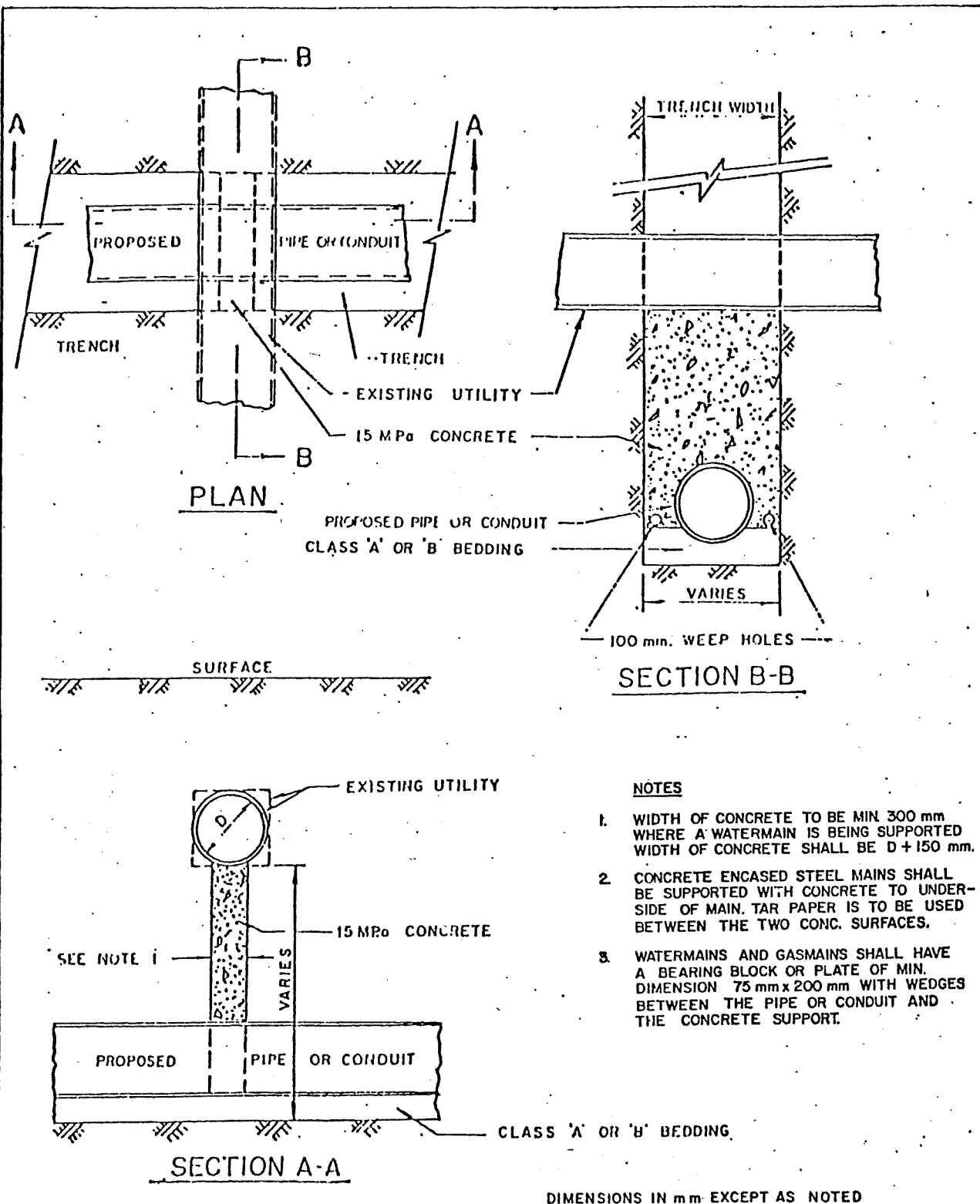
TYPICAL DETAILS FOR
SUPPORTING UTILITIES




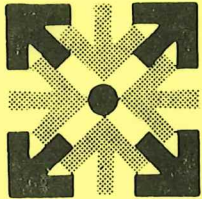
Proctor & Redfern Limited
Consulting Engineers and Planners
Toronto St. Catharines

DRAWING NO. E-81490-L17 M

REVO



| | | | |
|-------------|--|--------------------------|---|
| REVISIONS | | | |
| APPROVED BY | TYPICAL DETAIL FOR SUPPORTING UTILITIES LARGER THAN 300 mm | |  Proctor & Redfern Limited Consulting Engineers and Planners Toronto St. Catharines |
| | | DRAWING NO. E-81490-L18M | REV. 0 |



The Proctor & Redfern Group

Proctor & Redfern Limited
Consulting Engineers and Planners
110 James Street
St. Catharines, Ontario L2R 7E8
Telephone (416) 688-4272

TRANSMITTAL FORM

To: Town of Pelham Date: December 9th, 1981
P.O. Box 400 Project: Fenwick Sewage Works
FONTHILL, Ontario LOS 1E0 Contract No. 2, Sewage Forcemain
Attention: Mr. M. Hackett, Clerk Coordinator Project No: EO 81490

The following Documents, Prints or Shop Drawings as listed below are:

Enclosed (x) Forwarded under separate cover ()
Delivered () Picked up ()

| NO. OF COPIES | NUMBER | DESCRIPTION |
|---------------|--------|--------------------|
| 3 | | Contract Documents |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Remarks: The enclosed have been executed by the Contractor.
Please have all three copies executed by the Town Officials. Return
one copy to this office, one copy to Hugh Cole Construction Limited, and
retain the third copy for Town of Pelham files. Thank you

Copies to: _____

Proctor & Redfern

Per: _____

Frank Koch, C.E.T.