

THE CONSTRUCTION OF WATER MAINS
ON FORT ROBINSON ROAD
IN THE TOWN OF PELHAM, ONTARIO

EO / 3548

October 1973

APPENDUM No. 1

(October 26th, 1973)

This Addendum shall form part of the Contract Documents. The Tenderer shall insert the Addendum behind the cover page of the Contract Documents. The Tenderer shall include in his bid price all extra costs incurred to do this Addendum.

1. TENDERING INFORMATION - Page 3

Add the following clause:

PART 11 - AGREEMENT TO BOND

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.

2. SUPPLEMENTARY CONDITIONS - Page 3

Add the following clauses:

PART 9 - PAYMENT BOND

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 labour and materials payment bond to the Owner in the form attached. The bond shall remain in effect until the issue, by the Engineer, of the Final Payment Certificate.

PART 10 - 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 percent 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 cancelled by the issuance of the Final Payment Certificate.

AGREEMENT TO BOND

Date _____ 1973

Project E.O. 73310B

*

Gentlemen

Construction of Watermains on Port Robinson Road
in the Town of Pelham, 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 the watermains on Port Robinson Road in the Town of Pelham Ontario, subject to the express condition that the Owner receive the Performance Bond and Payment Bond in accordance with the said tender, we the under-signed hereby agree with the Owner to become bound to the Owner as surety for the Tenderer in the performance bond and a payment bond in an amount equal to 100% and 50% (respectively) of the tender price, in the forms of Performance Bond and Payment Bond bound herein and in accordance with the said tender; and we agree to furnish the Owner with the said bonds within seven (7) days after notification of the acceptance of the said tender and execution of the said Agreement by the Owner 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

No.

KNOW ALL MEN BY THESE PRESENTS THAT

as Principal,
hereinafter called the Principal, and
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 plans and specifications submitted therefor which contract, plans and specifications and amendments thereto, to the extent herein provided for, 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 Principal shall promptly and faithfully perform said Contract then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Whenever Principal shall be, and declared by Obligee to be, in default under the Contract, the Obligee having performed 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 Obligee for completing the Contract in accordance with its terms and conditions, and upon determination by Obligee and Surety of the lowest responsible bidder, arrange for a contract between such bidder and 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 Obligee to Principal under the Contract, less the amount properly paid by Obligee to Principal.

Any suit under this Bond must be instituted before the expiration of one (1) year from 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 Obligee.

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its Attorney-in-fact, this day of 19 .

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

KNOW ALL MEN BY THESE PRESENTS THAT

hereinafter called the Principal, and

as Principal,

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

as Surety,

hereinafter called the Obligees, for the use and benefit of the Claimants, their and each of their heirs, executors, administrators, successors and assigns in the amount of

as Trustee,

(\$) 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.

Dollars,

SIGNED AND SEALED this

day of

19

the

day of

WHEREAS the Principal has entered into a written contract with the Obligees dated 19 , for

which contract is 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 rental 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 entitled "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 Obligees 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 judgement for such sum or sums as may be justly due to such Claimant under the terms of his said contract with the Principal and have execution thereon. Provided that the Obligees are 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 Obligees or by joining the Obligees as a party to such proceedings 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 Obligees against all costs, charges and expenses or liabilities incurred thereon and any loss or damage resulting to the Obligees 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 Obligees 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 with the time limits hereinafter set forth to each of the Principal, surety and Obligees, stating with substantial accuracy the amount claimed. Such notice shall be served by mailing the same by registered mail to the Principal,

Surety and Obligor 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 (i) 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; (ii) 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 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 hereof is situated and not elsewhere, and the parties hereto agree to submit to the jurisdiction of such court.
- (4) 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.
- (5) The Surety shall not be liable for a greater sum than the specified penalty of this Bond.

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its Attorney-in-fact the day and year first above written.

C O N T R A C T D O C U M E N T S

THE CONSTRUCTION OF WATERMAINS

ON PORT ROBINSON ROAD

IN THE TOWN OF PELHAM, ONTARIO

E.O. 73310B

October 1973

PROCTOR & REDFERN LIMITED
Consulting Engineers and Planners

75 Eglinton Avenue, East
TORONTO, Ontario
M4P 1H3

39 Queen Street
ST. CATHARINES, Ontario
L2R 5G6

LIST OF CONTRACT DOCUMENTS

The following shall form the Contract Documents

	<u>Paper Colour</u>	<u>No. of Pages</u>
Addenda Numbered <u>1</u> to <u>1</u>	Green	5
List of Contract Documents	Pink	1
Tendering Information	Blue	3
Form of Tender	Yellow	5
Agreement (CD-20)	White	1
Tenderer's Experience in Similar Works (CD-4)	White	1
Tenderer's Senior Staff (CD-5)	White	1
Tenderer's Plant (CD-6)	White	1
Supplementary Conditions	Blue	3
General Conditions of the Contract (CD-1)	Blue	8
Project Specifications		
Section 1A - General	White	1
Section 2A - Watermains	White	6

DRAWINGS

LIST OF CONTRACT DRAWINGS

B-73310-P2	Port Robinson Road from Sta. 3+00 to Sta. 15+00
B-73310-P3	Port Robinson Road from Sta. 15+00 to Sta. 27+00

TOWN OF PELHAM STANDARD DRAWINGS

W-2	Standard Bedding and Backfilling of Watermains
W-3	Standard Water Service Connection
W-4	Concrete Thrust Blocks to Fittings
W-5	Details of Hydrant and Lead

PART 1 DELIVERY AND OPENING OF TENDERS

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

Mr. L.C. Hunt,
Clerk-Treasurer
Town of Pelham
P.O. Box 400
Fonthill, Ontario
L0S 1E0

Up to Noon, Local Time - NOVEMBER 1 , 1973

- B. The Tenders will be opened publicly as soon after closing time as possible.
- C. Tenders shall be made on the Form of Tender which shall not be detached from the other documents.

PART 2 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. Addenda issued during the Tendering period shall be allowed for by the tenderer.

PART 3 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.

PART 4 PROVINCIAL SALES TAX

- A. All prices shall exclude Provincial Sales Tax on all building materials

PART 4 - PROVINCIAL SALES TAX (cont'd)

to be incorporated into the work, except for ready-mix concrete, asphaltic concrete, all machinery and such items as furniture, office equipment and window blinds.

Except as noted above, the Contractor will be required to obtain a special permit from the Retail Sales Tax Branch and may purchase materials exempt from Provincial Sales Tax by supplying with his orders, a purchase exemption certificate. This procedure shall comply with Ruling 21 of the Retail Sales Tax Branch.

The Contractor may be required to submit to the Owner, statements certifying quantities and strengths of ready-mix and asphaltic concretes, so that the Owner may apply for refund of taxes.

PART 5 FEDERAL SALES TAX

- A. All prices shall include Federal Sales Tax on taxable items. No refunds will be obtainable for materials supplied under this contract.

PART 6 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:

Tenderer's Experience

Tenderer's Senior Staff

Machinery and Plant to be used.

The Tenderer may be required to furnish additional statements covering other matters, including financial resources.

PART 7 TENDER DEPOSIT

- A. The tender shall be accompanied by a certified cheque payable to the Owner in the amount of \$ 1,000.00.

Cheques of unsuccessful tenderers will be returned not later than two weeks following the contract award.

PART 7 - TENDER DEPOSIT (cont'd)

The tender deposit of the successful tenderer will be returned with the first Progress Certificate.

- B. The Tenderer shall keep his tender open for acceptance for sixty (60) days after the closing date. Withdrawal during this period will result in enforcement of the tender deposit.

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.

PART 8 ACCEPTANCE OF TENDERS

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

PART 9 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.

After award of the contract, the Contractor may submit requests to the Engineer for substitution of equivalent material. Such submissions shall be accompanied by complete information on the material proposed for use, together with revisions of cost that would result.

The Contractor shall submit requests for substitution within three (3) weeks of the award of the Contract.

PART 10 AWARD OF CONTRACT

- A. The award of this Contract is subject to O.M.B. approval.

FORM OF TENDER

PART 1 - TENDER PRICE

1. Offer by: NAME - Provincial Construction (Niagara Falls)
Limited

ADDRESS - 4382 Montrose Road,
Niagara Falls, Ontario

DATE - November 1st, 1973

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

Eighteen Thousand, Two Hundred and Six Dollars,
Twenty-Five Cents

Dollars (\$ 18,206.25)

PART 2 - CONTINGENCIES AND ALLOWANCES

- A. We agree that the tender price includes the contingency sum of \$ 2,000. 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.

PART 3 - 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.

PART 4 - ADDITIONS AND DEDUCTIONS

- A. We agree that the valuation of additions to, and deductions from the Contract shall be made as follows:

PART 4 - ADDITIONS (cont'd)

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.
 - (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 \$300.00. Rental rates shall be as set out in the current edition of D.H.O. 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.

PART 5 - ADDENDA

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

PART 6 - COMPLETION

- A. We agree to commence work as specified, to proceed continuously to the completion and to complete all work by

PART 7 - SCHEDULE OF TENDER PRICES

- A. This Schedule is referred to above in PART 3.

Item No.	Description	Unit	Quantity	Unit Price	TOTAL
1.	Supply and install 6-inch asbestos cement water-main including connection to existing main and all necessary excavation, fittings, plugs, concrete thrust blocks and encasement, Class 'B' bedding, specified backfill and restoration).	Lin.Ft.	1,675	\$ 5.75	\$ 9,631.25
2.	Supply and install Hydrants including tee off main, secondary valves, bedding and thrust blocks as shown on standard drawing	Each	3	\$ 850.00	\$ 2,550.00
3.	Supply and install 6-inch gate valve including cast iron valve box complete	Each	1	\$ 275.00	\$ 275.00
4.	Supply and install 3/4 inch Type K Copper Service (including connection to main, curb stop and extension box) to the north side of Port Robinson Road	Each	11	\$ 75.00	\$ 825.00
Sub-Total Forward					\$ 13,281.25

Item No.	Description	Unit	Quantity	Unit Price	TOTAL
				FORWARD	\$ 13,281.25
5.	Supply and install 3/4 inch Type K Copper ser- vices (including connection to main, curb stop and extension box to south side of Port Robinson Road). Service to be bored under travelled portion of Port Robinson Road	Each	9	\$ 325.00	\$ 2,925.00
6.	Contingency Allowance			Lump Sum	\$ 2,000.00
TOTAL CONTRACT BID PRICE					<u>\$ 18,206.25</u>

OFFERED ON BEHALF
OF THE CONTRACTOR

Anthony D. Santis
Signature

Signature

Contractor's Seal

Provincial Construction (Niagara Falls) Ltd.
Company Name

4382 Montrose Rd., Niagara Falls, Ont.
Address

Mr. P. Sparkman
Witness

November 1st, 1973
Date

PART 8 -TABLE OF ADDITIONAL UNIT PRICES

A. This Table is referred to above in PART 4 - A - 2.

Item No.	Description	Unit	Unit Price
1.	Excavation and backfill to 10 feet deep	Cu.Yd.	\$ 4.50
2.	Granular 'A' (compacted) for trench backfill	Cu.Yd.	\$ 3.50
3.	Supply and place 3000 p.s.i. concrete	Cu.Yd.	\$ 35.00
4.	Supply and place calcium chloride	Ton	\$ 150.00
5.	Working Foreman	Hour	\$ 7.00
6.	Labourers	Hour	\$ 5.00
7.	Rock Excavation	Cu.Yd.	\$ 35.00
8.	Supply and install 12-inch CMP Culverts	LIn.Ft.	\$ 5.50

THE CONSTRUCTION OF WATERMAINS
ALONG PORT ROBINSON ROAD
IN THE TOWN OF PELHAM, ONTARIO

AGREEMENT

This Agreement made in triplicate this
between

1st day of Nov. , 1973 ,

Provincial Construction (Niagara
Falls) Limited

hereinafter called "The Contractor",

AND

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 20th day of Nov. 1973 (which shall be deemed to form part of this Contract) to the satisfaction of the Engineer for the total contract price of \$ 18,206.25 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.

IN WITNESS WHEREOF the parties hereto have set their hands and seals the day and year first written above.

EXECUTION BY OWNER -

EXECUTION BY CONTRACTOR -

Name Town of Pelham

Company Name Provincial Constr.
(Nia. Falls) Ltd.

Officers *[Signature]*

Signatures *Antony De Santis*

Date FEBRUARY 5, 1974

Date November 26 - 1973

Seal

Seal

Form CD-20 June 1970

Form
CD-4

TENDERER'S EXPERIENCE IN SIMILAR WORK

YEAR COMPLETED	DESCRIPTION OF CONTRACT	FOR WHOM WORK PERFORMED	VALUE

Proctor & Redfern Limited
Consulting Engineers
April, 1969
AS:bes

TENDERER'S SENIOR STAFF

NAME	APPOINTMENT	QUALIFICATIONS AND EXPERIENCE

Proctor & Redfern Limited
Consulting Engineers
June 11, 1969
AS:hs

TENDERER'S PLANT

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

PLANT UNDER TENDERER'S CONTROL:

PLANT TO BE RENTED:

PLANT TO BE PURCHASED:

SUPPLEMENTARY CONDITIONS

PART 1 - DEFINITIONS

- A. 'Owner' means the person or corporation accepting the tender.
- B. 'Engineer' means Proctor and Redfern Limited.
- C. 'Department of Highways' and 'D.H.O.' means 'The Ministry of Transportation and Communications.'

PART 2 - GUARANTEE

- A. The Contractor shall guarantee that the material and work shall for a period of twelve (12) months 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, any imperfections due to materials or workmanship used in the construction, and any damage 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, perform 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 or making good may commence after or extend beyond the end of the guarantee period.

PART 3 - 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

PART 3 - INSURANCE (cont'd)

- A. Be in the joint names of the Owner, the Contractor, and the Sub-contractors, and the Engineer, and
- B. Include coverage for:
 - 1. Contractual liability, and
 - 2. Cross liability, and
 - 3. Contingent employer's liability, and
 - 4. Completed operations liability, and
 - 5. Non-owned automobile liability, and
- C. Have an inclusive limit at least equal to \$500,000.00 unless otherwise specified, and
- D. Remain in force until the issue by the Engineer of the final payment certificate, except that completed operations liability shall remain in force for the duration of the guarantee period.

PART 4 - AUTOMOBILE INSURANCE

- A. 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 \$500,000.00. An automobile shall be as defined in the Highway Traffic Act.

PART 5 - INSURANCE POLICIES

- A. When the successful tenderer is notified that his tender has been accepted, he shall deposit with the Owner, either copies of liability and automobile insurances, or insurance certificates.
- 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.

PART 6 - INSURANCE CLAIMS

- 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 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.

PART 7 - PAYMENTS

- A. As well as monies held back as required by Provincial Statutes, the Owner will retain five percent (5%) of the value of the work done for a period of one year from the acceptance date.

PART 8 - LOCAL INCENTIVES PROGRAM

- A. The Contract may be eligible for grants under the 1974 L.I.P. All grants will become the property of the Owner.

The Contractor shall comply with all regulations required to obtain the Local Incentives Program grant, including the keeping of records, the registration with the Canada Manpower Centre, the hiring of workers and the paying of prevailing rates of wages.

GENERAL CONDITIONS OF 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 these General Conditions, contract documents, drawings, or any other document forming part of the Contract:

1. DEFINITIONS

- (a) the word "CONTRACT" means: the Contract to do the work, the Bonds or Securities, the Addenda (if any), the Specifications, the General and Special Conditions, the Tendering Information, the List of Contract Documents, the Drawings, and all 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 plans and specifications.
- (e) the word "ENGINEER" means PROCTOR & REDFERN or PROCTOR & REDFERN LIMITED, Consulting Engineers, and their duly authorized agents.
- (f) the word "WORK" means all labour, materials and other things required to be done, that are shown, described or implied in the contract documents, and includes all extra and additional work and material that may be ordered by the Engineer.

2. (a) The Contract documents shall be signed and sealed, in triplicate, by the Owner and the Contractor.

2. DOCUMENTS

- (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 all plant, labour and materials (except as specifically excepted) necessary for the complete and proper execution of the work.
- (c) Plans and specifications shall be read and interpreted together. Work and materials 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 plans and specifications.
- (d) Reference to published standard specifications shall be to the edition current at the time of the signing of the Contract documents.

3. (a) Without the written approval of the Engineer, the Contractor shall not change the subcontractors named in the Contract.

3. SUB-CONTRACTORS

- (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 any subcontractor and the Owner.
- (e) Any 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, sub-trades or sections of work of any kind.

4. (a) Any notice or communication to the Contractor shall be deemed to be legally well and sufficiently given and served if:

4. NOTICE

- (i) handed to the Contractor or any of his clerks or agents, 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.

- (b) If the work is closed, suspended or stopped for the winter (or for any other approved reason), the Contractor shall remove all 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 all 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 all streets and sidewalks open for use by the public, for such width as the Engineer may direct. The Contractor shall provide, erect and maintain a sufficient number of detour signs, and other proper notices, wherever the use of any street or sidewalk 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. PROSECUTION OF THE WORK

- 11. (a) The Contractor shall complete all 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.
- (c) Should the Contractor leave the site of the work (either permanently or temporarily), he shall provide and leave a competent and reliable agent or superintendent in charge. Such person shall act in place of the Contractor.

12. OPERATIONAL RULES

- 12. (a) All 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, watermain, sewers and other underground and overhead 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 all such utilities and structures, and shall assume all liability for damage to them. Unless otherwise provided, the Contractor shall support all such utilities and structures, or temporarily remove them, and restore them to the satisfaction of the owner of the utilities and structures.

13. WORKMANSHIP AND MATERIALS

- 13. (a) All workmanship shall be first class and material new and of best quality, all to the approval of the Engineer. 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 opened up to be faulty in any respect, the whole of the expense of opening, inspecting 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 all defective work and materials, and the entire cost of such removal and making good shall be borne by the Contractor.

20. THE ENGINEER

20. (i) 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) Any other questions or matters arising out of the Contract.

The Engineer's decision as to any matter 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 all 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 all reasonable times visit, enter and make inspections at any building, factory, workshop, work or site 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. SHOP DRAWINGS

21. (a) Shop drawings will be examined only to check conformance with the design concept of the project and compliance with the Contract Documents.
- (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 approval.
 - (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) Approval of shop drawings by the Engineer shall not relieve the Contractor from compliance with requirements of the Contract Drawings and Specifications, 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 all trades.

22. OWNERSHIP OF DOCUMENTS

22. All 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.

23. LIABILITY

23. The Contractor shall assume the liability of and shall indemnify and save harmless the Owner from all claims:
- (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 any 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.

20. HOURS OF WORK

20. The Engineer may prohibit the Contractor from carrying on operations during any hour or 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 any prior consent, order, agreement or requirement in the Contract that stipulates maximum or minimum hours of work.

21. VALUATION

21. (a) At monthly intervals, the Contractor and the Engineer shall make a valuation of the work constructed and material supplied under the Contract. Should the Engineer wish to measure any of the work or material, the Contractor shall assist in such measurements and furnish all particulars required.
- (b) The monthly valuations described in subsection (a) above shall not bind the Owner, the Contractor or the Engineer to any 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 works has been completed.

22. PROGRESS CERTIFICATE

22. 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 any amounts retained under Clause 35.

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.

23. ACCEPTANCE CERTIFICATE

23. (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 an Acceptance 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 Acceptance Certificate detailing his valuation of the Contract, and certifying acceptance of the work at a certain specific date, referred to as the "acceptance date".

24. SUBSTANTIAL COMPLETION AND RELEASE RETAIN

24. 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 Appendixes 1 and 2 to these General Conditions.

25. PAYMENTS

25. 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 Special Conditions of Contract.

26. FINAL PAYMENT CERTIFICATE

26. Provided all the provisions of the Contract have been fully met, the Engineer will issue a Final Payment Certificate one year after the acceptance date, unless otherwise specified. The Final Payment Certificate will entitle the Contractor to receive the full amount due under the Contract.

APPENDIX 1 OF THE GENERAL CONDITIONS OF THE CONTRACT

APPLICATION FOR RELEASE OF SUBCONTRACTOR'S HOLDBACK

Owner:

Project:

BO:

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 the work of the above subcontract has been completed in accordance
with the specifications and that the subcontract price was \$ _____ and
hereby apply for a reduction in holdback with respect to the subcontract, all in accordance
with the provision of the Vancouver 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,
hereby confirm)

the said Contractor,

- (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: _____

REAL:

PART 1 - GENERAL

Part 1.01 DESCRIPTION OF WORK

1. This contract is for the construction of approximately 1,675 feet of watermains and related appurtenances on Port Robinson Road in the Town of Pelham.

Part 1.02 LIMITS OF SITE

1. The limits of site are:
 - A. The road or street allowances on which work is to be performed.
 - B. Such areas or private property adjacent to road or street allowances on which the Contractor is directed, in writing, to enter to carry out work.

Part 1.03 SETTING OUT OF THE WORK

1. The Engineer will set such stakes as are necessary to mark the location, alignment, elevation and grade of the work. Adequate notice shall be given by the Contractor of the need for such setting out.

All stakes, lot pins, marks and reference points shall be carefully protected and preserved, and, if destroyed or removed by the Contractor, shall be replaced at his expense.

The Contractor shall provide grade stakes, masts, scaffolds, batter boards, straight edges, templates and other equipment as may be necessary for laying out and inspecting the work.

Wherever necessary, work shall be suspended temporarily to permit the Engineer to inspect and check the line and grade of any portion of the work.

Part 1.04 CONSTRUCTION SCHEDULE

1. The Contractor shall within two (2) weeks after being awarded the Contract, submit his proposed construction schedule to the Engineer for approval. The schedule shall show proposed progress in weekly stages for the main sections and sub-sections of the work.

PART 2 - PRODUCTS

Part 2.01 TESTS

1. Where required by the Engineer, the Contractor shall supply certified copies of all tests upon all materials to be used in the construction of the works, indicating that the materials comply with an approved testing laboratory and shall be at the Contractor's expense.

Part 2.02 CANADIAN MATERIALS

1. Unless otherwise specifically approved, the Contractor shall use materials and equipment of Canadian manufacture in constructing the works.

PART 3 - EXECUTION

Part 3.01 WORK ON ROADS

1. No work shall be performed on public rights-of-way without the approval of the road authority.

Part 3.02 TRAFFIC

1. Traffic control on streets shall be performed in accordance with the rules of the appropriate road authority. Flagmen shall wear fluorescent red or orange safety vests, arm bands and hats.
2. One lane of traffic shall be maintained at all times.
3. Reasonable access to adjacent properties shall be maintained for pedestrians and vehicles.
4. All traffic signs shall be maintained in their original positions, and shall not be obscured.

Part 3.03 NOTIFICATIONS

1. When traffic is restricted, the appropriate fire and police departments shall be notified, giving at least seven days notice of the restriction.
2. When restrictions are removed, the fire, police and bus authorities shall again be notified.

Part 3.04 USE OF HYDRANTS

1. Fire hydrants shall be kept accessible and free of obstructions.
2. 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.

Part 3.05 INCLEMENT WEATHER

1. Adequate protection shall be made and precautions taken at times of inclement weather.
2. Inclement weather or extra work caused by such weather will not be accepted as reason for additional payment.

Part 3.06 MUD AND DUST

1. Streets and other construction areas shall be kept clean.
2. Dust shall be laid by the use of water or calcium chloride, or both.

Part 3.07 ADJACENT STRUCTURES AND UTILITIES

1. Temporary and permanent support and temporary relocation and replacement of underground or overhead utilities shall be performed as part of the contract and as detailed in the General Conditions.
2. Permanent relocation of underground or overhead utilities will be carried out by others, if necessitated by coincidence of lines or grades, or both.

Part 3.08 INSPECTORS

1. 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.

PART 1 - GENERAL

Part 1.01 Measurement for Payment

1. Watermains will be measured straight through specials, valves and other appurtenances in the line.
2. An hydrant set shall include the hydrant, 6-inch secondary valve, valve box, lead from main, and tee off main, all as shown on the standard drawing.
3. All special fittings shall be included in the unit price of the watermain.
4. A service set shall include the connection to the watermain, the main stop, service pipe, curb stop and service box all as shown on Drawing W-3.

Part 1.02 Basis for Payment

1. Payment for watermain and appurtenances will be made at the unit or lump sum prices in the Schedule of Tender Prices.
2. The unit rates in the Form of Tender for watermain shall include the connection to existing watermains.
3. The rates in the Form of Tender for watermain and appurtenances shall include the cost of restoration.

PART 2 - PRODUCTS

Part 2.01 Watermains

1. Asbestos cement water pipe shall be Class 200 furnished with Ring-Tite or Fluid-Tite couplings and manufactured to the latest revision of A.W.W.A. Specification C-400.

Part 2.02 Hydrants

1. Fire hydrants shall be Canada Valve Limited 'Century' B-50-B-18 or equal complying with A.W.W.A. Specification C502 and C.S.A. nozzle threads. Shut-off shall be compression, gate type inlet connection with 6" mechanical joints. There shall be two 2-1/2" dia. hose nozzles. Depth of bury shall be 6'0". Hydrants shall open counter-clockwise, operating and cap nuts shall be Province of Ontario standard, and hydrants shall be painted red.

PART 2 - PRODUCTS (Cont'd)

Part 2.03 Valves and Valve Boxes

1. Valves shall be iron body bronze mounted gate valves with inside screw, non-rising spindle, opening counter-clockwise with 2" square operating nut. Stem packing shall be 'O' ring and joints shall be mechanical joints. Valves shall be Canada Valve No. 55, Jenkins Bros. Fig. 398, McAvity No. 20075-O or equal.
2. Valve boxes shall be cast iron, auger type similar to Fergusson No. 101 and adjustable to 5'6" of bury.

Part 2.04 Concrete

1. All concrete work shall be carried out in accordance with C.S.A. A23 'Standard for Concrete and Reinforced Concrete' using normal Portland cement.
2. Unless otherwise noted, all concrete shall be 3000 p.s.i. with air entrainment according to C.S.A. A23, Table 6.

Part 2.05 Granular Materials

1. Granular 'A' and 'B' materials for pipe bedding and/or backfill shall comply with D.H.O. Form 314.
2. Sand Cushion for pipe bedding material shall comply with D.H.O. Form 316.

PART 3 - EXECUTION

Part 3.01 Line and Grade

1. The Contractor shall supply, erect and maintain approved batter boards and site rails to ensure accurate line and grade of all pipes. At least three batter boards shall be in use at all times, placed not more than 50 feet apart.
2. No deviations from the established line and grade will be tolerated, except where laying of pipe along a curve is limited by the pipe manufacturer's tolerances for joint deflections.

PART 3 - EXECUTION (cont'd)

Part 3.02 Trench Excavation

1. All excavations for watermains and appurtenances shall be of sufficient extent to allow the installation of the work, and shall extend no more than 30 feet in advance of the installation of the work, or as the Engineer shall permit.
2. The minimum width of trench shall be one foot greater than the outside diameter of the pipe plus an allowance for shoring where required, and the maximum width of trench shall be two feet greater than the outside diameter of the pipe.
3. 'Rock' whenever used as the name of an excavation material shall only mean boulders or masonry exceeding $1/3$ cubic yard in volume or solid ledge rock, which, in the opinion of the Engineer requires drilling and blasting, wedging, sledging or barring for its removal. Only the above-described materials will be measured and paid for as rock excavation. All other material will be classed as earth excavation. Rock shall be removed to a point 6 inches below and one foot on any side of a watermain or appurtenant structure.
4. Areas in the bottom of trenches which have been over-excavated by the Contractor, without being ordered to do so by the Engineer, shall be brought up to proper grade with material as directed by the Engineer, compacted and levelled to receive the pipe, all at the Contractor's expense.
5. Where, in the opinion of the Engineer, the sub-grade is unsatisfactory to support the pipe, the Engineer will instruct the Contractor as to the required procedure, which will include excavation to solid material, placing 2" crusher run by hand below bedding grade and compacting to 95 percent Standard Proctor Density.
6. All slides and caves shall be repaired at the Contractor's expense and in a manner satisfactory to the Engineer.

PART 3.02- Trench Excavation (cont'd)

7. Any shoring required and support for utilities shall be included in the unit price for the pipe. All trench work including sheeting and shoring if required, shall be installed in strict accordance with the Trench Excavator's Protection Act, and local requirements.
8. Excess excavated material shall be placed on the site by the Contractor to a disposal area approved by the Engineer.
9. De-Watering
 - (a) Excavations shall be maintained free of water and protected from the action of surface water at all times and, where necessary, pumps of sufficient capacity shall be maintained. The Contractor shall provide for the disposal of the water removed in such a manner as shall not injure the public health, private property, public streets, sewers or the works under construction, as may be directed by the Engineer.
 - (b) Where inconvenience or blockage occurs because of these operations, the Contractor shall provide relief at his own expense.
 - (c) The Contractor shall, at his own expense permanently and temporarily provide for and maintain the flow, where required of all sewers, drains, ditches, house or inlet connections and all water courses which may be met with during the progress of the work.
 - (d) The ditches shall be kept open at all times for surface drainage. Damming or impounding of water in ditches or other waterways will not be permitted except where the Engineer shall consider it necessary.
 - (e) The Contractor shall not direct any flow of water across or over pavements, except through approved pipes or properly constructed troughs, and he shall when required by the Engineer, provide pipes or troughs of such sizes and lengths as may be required, and place the same as may be directed, at his own cost and expense.

PART 3 - EXECUTION (cont'd)

Part 3.03 Installation of Pipe

1. All pipe shall be laid in Class 'B' bedding using Granular 'B' material compacted to a minimum of 95 percent Standard Proctor Density.
2. Installation of pipe shall be in accordance with the manufacturer's specifications. Deflections in joints shall only be made after the pipe has been jointed and shall not exceed the manufacturer's recommendations.
3. All foreign material shall be removed from the inside of the pipe before it is joined.
4. Concrete thrust blocks shall be installed at all bends, tees and plugs along the watermain.

Part 3.04 Backfill of Trenches

1. Watermain trenches shall be backfilled with select native soil to 12 inches below final grade. All backfill will be compacted to 95% Standard Proctor Density.
2. Refer to Part 3.06 concerning the top 12 inches.
3. The backfill shall be free from brush, large stones or frozen material.

Part 3.05 Cleaning, Testing and Disinfection of Watermain

1. After the watermain has been partially backfilled, the pipe line shall be flushed clean with potable water until turbidity-free water is obtained at all ends.
2. Following cleaning of the main, the Contractor shall apply a hydrostatic pressure test on the length of main to be tested. The main shall be tested at 150 p.s.i. for a duration of not less than one hour. Before applying pressure to the main, the Contractor shall ensure that all air has been expelled from the pipe line.
3. The Contractor shall repair all leaks and defective material at his own expense and shall supply all labour and equipment necessary to perform the pressure tests.

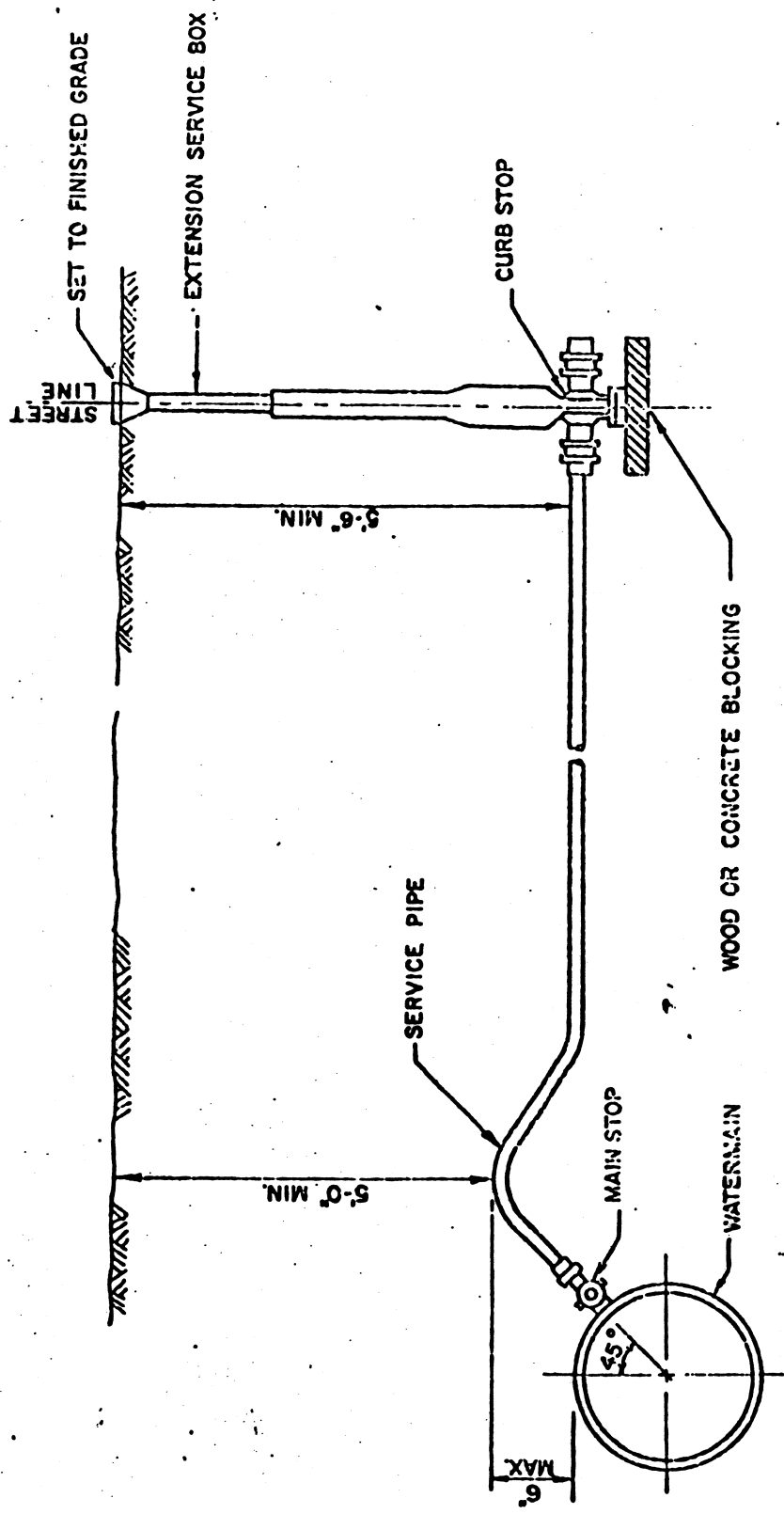
4. The acceptable rate of leakage under 150 p.s.i. test pressure shall not exceed 25 Imperial gallons per inch diameter per 24 hours per mile of pipe.
5. Following testing of the works, the watermain shall be disinfected using a continuous feed method hypochlorite solution that will produce an initial free chlorine residual of 50 p.p.m. and a 24-hour residual of 25 p.p.m.
6. The chlorine solution shall then be flushed from the system with potable water.
7. The Contractor shall make an allowance in his price bid for installing watermain for providing sufficient water for flushing and testing purposes and for providing sufficient hypochlorite solution to disinfect the main. Before obtaining potable water from the local water utility, the Contractor shall make arrangements with the utility for operating valves or hydrants.

Part 3.06 Restoration

1. All asphalt driveways shall be reinstated with 3 inches of HL-3 Hot-Mix Asphalt over Granular 'A' base. All joints shall be properly cut and painted with bituminous emulsion.
2. All disturbed lawn areas shall be reinstated with No. 1 nursery sod.
3. All roadway areas will be topped with 12 inches of Granular 'A' compacted to 95 percent Standard Proctor Density.
4. All disturbed surface treated areas shall be resurfaced with a double application of RS1K emulsion applied at the rate of 1/3 gallon per square yard and 3/8" stone chips applied at the rate of 25 pounds per square yard for each application.
5. Only existing culverts located parallel to and within 5 feet of the watermain will be paid for under the List of Additional Unit Prices. Any other culverts that are damaged shall be reinstated by the Contractor at his expense.

Part 3.07 Services Installed by Boring

1. Where specified, services shall be installed across the travelled portion of the road by boring. The Contractor's method of boring shall be approved by the Engineer.



STANDARD WATER SERVICE CONNECTION