

THE CORPORATION OF THE
TOWN OF PELHAM

By-LAW #339 (1975)

Being a by-law to authorize the Mayor and Clerk to execute an agreement with Penn Rock Construction Company Limited for the installation of site services to the arena.

WHEREAS Council deems it desirable to enter into an agreement with Penn Rock Construction Company Limited for the installation of site services (water, sanitary and storm sewers) to the arena;

NOW THEREFORE COUNCIL OF THE CORPORATION OF THE TOWN OF PELHAM ENACTS AS FOLLOWS:

- (1) THAT the agreement attached hereto and made part of this by-law be and the same is hereby approved.
- (2) THAT the Mayor and Clerk be and each of them is hereby authorized and instructed on behalf of the Corporation to execute the said agreement and the Clerk is hereby authorized to affix the Corporate Seal thereto.

READ A FIRST, SECOND AND THIRD TIME
AND FINALLY PASSED BY COUNCIL THIS
6th. DAY OF October, 1975 A.D.

Doug. C. Beamer A.M.
MAYOR

REES
CLERK

CONTRACT DOCUMENTS

TOWN OF PELHAM, ONTARIO

PROPOSED ARENA
MUNICIPAL SERVICES

Project
EO 75193 June 1975

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

GKS:GL
/tp

TOWN OF PELHAM, ONTARIO

PROPOSED ARENA
MUNICIPAL SERVICES

Project
EO 75193 June 1975

ADDENDUM NO. 2
(October 6th, 1975)

This addendum shall form part of the Contract Documents. The Tenderer shall insert the addendum behind the cover page of the Contract Documents.

1. Add Section 8 - Storm Sewer Extensions to the Contract.

TOWN OF PELHAM, ONTARIO

PROPOSED ARENA
MUNICIPAL SERVICES

Project
EO 75193 June 1975

ADDENDUM NO. 1
(September 26th, 1975)

This Addendum shall form part of the Contract Documents. The Tenderer shall insert the addendum behind the cover page of the Contract Documents.

- 1). Delete all references to 'Bonding' in this Contract.
- 2). Delete reference to Payment Certificates in this Contract.
Payment will be made subsequent to completion of the contract.

LIST OF CONTRACT DOCUMENTS

The following shall form the Contract Documents:

	<u>Paper</u>	<u>Pages</u>
	<u>Colour</u>	
Addenda Numbered <u>1</u> to <u>2</u>	Green	1
Tenderer's Check List	Hot Pink	1
List of Contract Documents	Pink	4
Tendering Information	Blue	8
Form of Tender	Yellow	1
Agreement	White	1
Agreement to Bond	White	1
Bid Bond (CCA (S)20)	White	1
Performance Bond (CCA (S)21)	White	2
Labour and Material Payment Bond (CCA (S)22)	White	1
List of Sub-Contractors (CD-3)	White	1
Tenderer's Experience in Similar Work (CD-4)	White	1
Tenderer's Senior Staff (CD-5)	White	1
Tenderer's Plant (CD-6)	White	2
Supplementary Conditions	Blue	8
General Conditions of the Contract (CD-1)	Blue	5
Project Specifications	White	
Section 01010 - General		
Section 02550 - Site Clearing, Excavating, Backfilling and Restoration of Trenches	White	8
Section 02560 - Sanitary and Storm Sewers	White	8
Section 02570 - Watermains	White	7

LIST OF STANDARDS AND DRAWINGS

B-75193-P1	Sanitary Sewer and Watermain
B-75193-P2	Storm Sewer - Plan and Profile
S-2	Standard Pipe Bedding Details
S-3	48" Dia. Pre-Cast Concrete Manhole
S-4	2'x2' Pre-Cast Concrete Catch Basin
S-6	Manhole Cover
S-7	Depressed Catch Basin Frame and Grate
S-8	Headwall Grating - 1
S-11	Sanitary Sewer Lateral Detail
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
E-STD-2-4	Shallow Precast Manhole
E-STD-2-8	Cast in Place Flat Top Manhole
E-STD-2-16	Cast-in-Place Catchbasin
E-STD-2-18	Ditch Intake Catchbasin
DD-701-A	4'x4' Catch Basin and Manhole

TENDERING INFORMATION

TI.01 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,
43 South Pelham Street,
FONTHILL, Ontario L0S 1E0

Up to Noon, Local Time - Tuesday, September 30th, 1975

- B. The tenders will be opened publicly as soon after the closing time as possible.

- C. Tenders shall be made on the Form of Tender which shall not be detached from the other 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 PROVINCIAL SALES TAX

- A. All prices shall exclude Provincial Sales Tax on all materials to be incorporated into the work, except for ready-mix concrete, and hot and cold asphaltic mix.

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 hot and cold asphaltic mix, so that the Owner may apply for refund of taxes.

TI.05 FEDERAL SALES TAX

- A. All prices shall exclude Federal Sales Tax on material and equipment to be incorporated into the work.

The Contractor shall be required to pay Federal Sales Tax on purchases of material and equipment to be incorporated into the work, but can recover such tax by application to the Federal Excise Division on submission of evidence that the taxed items were part of a project under control of a municipality. Should the Contractor's claim for refund be disallowed by the Excise Division, the Owner will pay to the Contractor a sum equal to the disallowed amount.

TI.06 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
2. Machinery and Plant to be used
3. Tenderer's Senior Staff

TI.07 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 \$3,000.00.

Bid bond shall be in an amount equal to \$3,000.00 and shall be on C.C.A. Document (S)20.

The tenderer shall keep his tender open for acceptance for sixty days after the closing date. Withdrawal during this period will result in forfeiture or enforcement of the 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, all within two weeks of the date of acceptance of the tender, or to start work as specified, will automatically mean the forfeiture or enforcement of the bid bond.

Tender deposits of unsuccessful tenderers will be returned not later than two weeks following Contract award.

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

TI.08 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.09 SUB-CONTRACTORS

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

TI.10 ACCEPTANCE OF TENDERS

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

TI.11 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 weeks of the award of the Contract.

TI.12 TEST BORINGS

- A. Test borings have been taken on the site and results of these tests are available for viewing at the office of the Consultant, Proctor & Redfern Limited, 110 James Street, 3rd Floor, St. Catharines, Ontario.

FORM OF TENDER

FT.01 TENDER PRICE

1. Offer by: NAME: Penn Rock Company Limited
ADDRESS: 38 Oakwood Street,
Port Colborne, Ontario.
DATE: September 29th, 1975

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:
Twenty-Eight Thousand, Four Hundred
and Forty-Eight Dollars and Fifty Cents

Dollars (\$ 28,448.50

FT.02 CONTINGENCIES AND ALLOWANCES

- A. We agree that the tender price includes the contingency sum of \$3,000.00 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.
 - (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 M.T.C. 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 2 inclusive, and the tender price includes the provisions set out in such addenda.

EO 75193 SEC FT.

Page 2.

FT. 06 COMPLETION

- A. We agree to commence work as specified, to proceed continuously to the completion and to complete all work within 6 weeks from the date of issue of the written order to start work.

FT. 07 SCHEDULE OF TENDER PRICES

Item No.	Description	Unit	Quantity	Unit Price	T O T A L
-------------	-------------	------	----------	------------	-----------

PROPOSED ARENA - MUNICIPAL SERVICES

1). SANITARY SEWERS

The Tender's unit prices bid shall include all necessary excavation, Class 'B' bedding, supply and installation of specified pipe, connection to manholes and backfill as specified. Restore road, driveway and lawns to original condition (lawns by sodding).

a).	8-inch diameter A.C. pipe (Class 2400) M.H. 100 to M.H. 101	Lin.Ft.	250	\$ 8.00	\$ 2,000.00
b).	8-inch diameter A.C. pipe (Class 2400) M.H. 101 to M.H. 102	Lin.Ft.	160	\$ 8.00	\$ 1,280.00
c).	6-inch diameter A.C. pipe (Class 2400) from M.H. 102 to a point 5 feet north of the north wall of the arena	Lin.Ft.	5	\$ 10.00	\$ 50.00
TOTAL FOR ITEM 1 SANITARY SEWERS					\$ 3,330.00

2). SANITARY MANHOLES

- 2.01 48-inch diameter pre-cast concrete standard manhole (Dwg. S-3)
Lump Sum price includes all necessary excavation and supply
and place all materials including frame and cover, ladder rungs
and benching.

Item No.	Description	Unit	Quantity	Unit Price	T O T A L
a).	M.H. 100 (approx. depth 9.0 feet)			Lump Sum \$	1,000.00
2.02	Precast flat top concrete manholes (Dwg. E-STD-2-8) Lump Sum price includes all necessary excavation and supply and place all materials including frame and cover, ladder rungs and benching.			Lump Sum \$	300.00
a).	M.H. 102 (approx. depth 4.0 feet)			Lump Sum \$	20.00
2.03	Clean out				
TOTAL FOR ITEM 2 SANITARY MANHOLES					\$ 1,320.00

3. STORM SEWERS

The Tender's unit prices bid shall include all necessary excavation, Class 'B' bedding, supply and installation of specified pipe, connections to manholes and backfill as specified.

a).	18-inch diameter mortar joint concrete pipe (C-14-ES) C.B. 1 to Outlet	Lin.Ft.	52	\$ 16.50	\$ 858.00
b).	18-inch diameter mortar joint concrete pipe (C-14-ES) C.B.M.H. 1 to C.B.M.H. 2	Lin.Ft.	176	\$ 9.00	\$ 1,584.00
c).	15-inch diameter mortar joint concrete pipe (C-14-ES) C.B.M.H. 2 to C.B.M.H. 3	Lin.Ft.	52	\$ 8.00	\$ 416.00
d).	15-inch diameter mortar joint concrete pipe (C-14-ES) C.B.M.H. 3 to C.B.M.H. 4	Lin.Ft.	312	\$ 8.00	\$ 2,496.00

Item No.	Description	Unit	Quantity	Unit Price	T O T A L
e).	12-inch diameter mortar joint concrete pipe (C-14-ES) C.B.M.H. 3 to C.B. A	Lin.Ft.	45	\$ 8.50	\$ 382.50
TOTAL FOR ITEM 3					\$ 5,736.50
STORM SEWERS					

4. STORM MANHOLES

4.01 48-inch diameter pre-cast concrete standard manholes (Dwg. S-3)
Lump Sum price includes all necessary excavation and supply and place all materials including frame and cover or grate, and ladder rungs.

a).	C.B.M.H. 2 (approx. depth 7.5 feet)	Lump Sum	\$	565.00
b).	C.B.M.H. 3 (approx. depth 7.0 feet)	Lump Sum	\$	525.00
c).	Ditch intake C.B.M.H. 4 (approx. depth 6.5 feet)	Lump Sum	\$	490.00

4.02 Cast-in-place 4'x4' catchbasin manhole with sump (M.T.C. STD. No. DD-701-A). Lump Sum price includes all necessary excavation and supply and place all materials including frame and cover, and ladder rungs.

Item No.	Description	Unit	Quantity	Unit Price	T O T A L
a).	C.B.M.H. 1 (approx. depth 4.0 feet)			Lump Sum \$	300.00
4.03	Pre-cast 2'x2' concrete catchbasin (STD. S-7) Lump Sum price includes all necessary excavation and supply and place all materials including frame and cover, and ladder rungs.				
a).	C.B. A (approx. depth 5.0 feet)			Lump Sum \$	300.00
TOTAL FOR ITEM 4 STORM MANHOLES					\$ 2,180.00

5. WATERMAINS

For Items (a) and (b) the Tenderer's unit prices shall include connection to existing main, all necessary excavation, fittings, plugs, concrete thrust blocks, Class 'B' bedding and specified backfill as shown on Standard Drawing W-2, W-3, and W-4.

a).	Supply and place 6-inches A.C. watermain (Class 200)	Lin.Ft.	475	\$ 10.00	\$ 4,750.00
b).	Supply and install 6-inch. gate valve and cast iron valve box complete	Each	1	\$ 350.00	\$ 350.00
c).	Supply and install hydrant including tee off main, secondary valves, bedding and thrust blocks as shown on STD. Dwg. W-5 Each		1	\$	\$ 1,000.00
TOTAL FOR ITEM 5 WATERMAINS					\$ 6,100.00

6. END SECTION ON STORM SEWERS

Including headwall as

EO 75193 SEC FT
Page 6.

Item No.	Description	Unit	Quantity	Unit Price	T O T A L
	shown on Dwg. B-75193-P2 and grading as shown on Dwg. STD. S-8			Lump Sum	\$ 1,000.00
TOTAL FOR ITEM 6 END SECTION ON STORM SEWERS					\$ 1,000.00

7. STORM SEWER CONNECTIONS

The Tenderer's unit prices bid shall include all necessary excavation, Class 'B' bedding, installation of specified pipe, connections to provided building outlets, connection to storm sewer and backfill as specified.

a).	6-inch diameter mortar joint concrete pipe (C-14-ES) roof drain connections	Lin.Ft.	222	\$ 6.00	\$ 1,332.00
TOTAL FOR ITEM 7 STORM SEWER CONNECTIONS					\$ 1,332.00

8. STORM SEWER EXTENSIONS

a).	12-inch diameter mortar joint concrete pipe (C-14-ES) between CBMH #2 and CMBH #6	Lin.Ft.	145	\$ 8.00	\$ 1,160.00
b).	12-inch diameter mortar joint concrete pipe (C-14-ES) between CBMH #6 and CBMH #5	Lin.Ft.	270	\$ 8.00	\$ 2,160.00
c).	48-inch diameter precast catchbasin manholes				
i).	CBMH #6 (approx. 8 feet deep)			Lump Sum	\$ 605.00
ii).	CBMH #5 (approx. 7 feet deep)			Lump Sum	\$ 525.00
TOTAL FOR ITEM 8 STORM SEWER EXTENSIONS					\$ 4,450.00

SUMMARY

ITEM #1 - SANITARY SEWERS	\$ 3,330.00
ITEM #2 - SANITARY MANHOLES	\$ 1,320.00
ITEM #3 - STORM SEWERS	\$ 5,736.50
ITEM #4 - STORM MANHOLES	\$ 2,180.00
ITEM #5 - WATERMAINS	\$ 6,100.00
ITEM #6 - END SECTION ON STORM SEWERS	\$ 1,000.00
ITEM #7 - STORM SEWER CONNECTIONS	\$ 1,332.00
ITEM #8 - STORM SEWER EXTENSIONS	\$ 4,450.00
CONTINGENCY ALLOWANCE	<u>\$ 3,000.00</u>
TOTAL CONTRACT VALUE	<u><u>\$ 28,448.50</u></u>

507450

OFFERED ON BEHALF
OF THE CONTRACTOR

Penn Rock
Signature

Contractor's Seal

Signature

M. Smits
Witness

Penn Rock Company Limited
Company Name

38 Oakwood Street,
Port Colborne, Ontario.
Address

OCT - 17 - 1975
Date

Proctor and Redfern Limited
Project EO 75193

TOWN OF PELHAM, ONTARIO
PROPOSED ARENA MUNICIPAL SERVICES

AGREEMENT

This Agreement made in triplicate this 7th day of Oct. 1975
between

Penn Rock Company 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 29th day of Sept. 1975 (which shall be deemed to form part of the Contract) to the satisfaction of the Engineer for the total contract price of \$ 28,448.50 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 -

Name The Town of Pelham
Officers *mayor*
OP E. B. Laid
crane
W. J. D.
Date OCTOBER 16, 1975

EXECUTION BY CONTRACTOR -

Company Name Penn Rock Co. Ltd.
Signatures *Penn Rock*
Witness *N. Smiths*
Date *OCT 18 - 1975*

Seal

Seal

AGREEMENT TO BOND

Date _____ 1975

Project EO 75193

*

Gentlemen:

Proposed Arena Municipal Services
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 municipal services to the proposed arena in the Town of
Pelham, 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 in an amount equal to 100 percent of the
tender price, and a Payment Bond in an amount equal to 50 percent
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

* Enter the name of the surety company at the top of this page.

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 Obligees

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 submitted a written tender to the Obligee, dated the

day of 19, for

100

.....

.....

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the aforesaid Principal shall have the tender accepted within sixty (60) days from the closing date of tender and the said Principal will, within the time required, enter into a formal contract and give the specified security to secure the performance of the terms and conditions of the Contract, then his obligation shall be null and void; otherwise the Principal and the Surety will pay unto the Obligee the difference in money between the amount of the bid of the said Principal and the amount for which the Obligee legally contracts with another party to perform the work if the latter amount be in excess of the former.

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

Any suit under this Bond must be instituted before the expiration of six months from the date 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

In the presence of

()

()

()

()

..... (Seal)

(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 Oblige 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 Oblige, 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 Oblige, 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

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

Principal (Seal)

..... (Seal)

Surety

A
 B
 C
 D
 E
 F
 G
 H
 I
 J
 K
 L
 M
 N
 O
 P
 Q
 R
 S
 T
 U
 V
 W
 X
 Y
 Z

LIST OF SUB-CONTRACTORS

SUB-TRADE	NAME OF SUB-CONTRACTOR	ADDRESS OF SUB-CONTRACTOR

Proctor & Redfern Limited
Consulting Engineers
June 11th, 1975
AS:hs

TENDERER'S EXPERIENCE IN SIMILAR WORK

YEAR COMPLETED	DESCRIPTION OF CONTRACT	FOR WHOM WORK PERFORMED	VALUE
1975	San. Sewer	City of Port Colborne	\$400,000.00
1975	Watermains	City of Port Colborne	\$100,000.00
1974	Storm Sewers	City of Welland	\$50,000.00

Proctor & Redfern Limited
Consulting Engineers
June 11th, 1975
AS:hs

TENDERER'S SENIOR STAFF

NAME	APPOINTMENT	QUALIFICATIONS AND EXPERIENCE
Paul Perron	Superintendent	25 Years

Proctor & Redfern Limited
Consulting Engineers
June 11th, 1975
AS:hs

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

PLANT UNDER TENDERER'S CONTROL: Port Colborne

Backhoes

Dozer

Excavator

PLANT TO BE RENTED:PLANT TO BE PURCHASED:

Proctor & Redfern Limited
Consulting Engineers
June 11th, 1975
AS:hs

SUPPLEMENTARY 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 "D.H.O." means "The Ministry of Transportation and Communications" and "M.T.C.".
- B. "The Department of Transportation and Communications" and "D.T.C." means "The Ministry of Transportation and Communications" and "M.T.C.".
- C. "Town" or "Corporation" means "The Corporation of the Town of Pelham".
- D. The word "provide" shall mean - supply all labour, materials, equipment, handling and cartage required for complete installation of the item concerned.

SC.03 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 in writing.
- 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.

SC.04 PAYMENTS

- A. As well as monies held back by Provincial Statutes the Owner will retain 5 percent of the value of work done, such amount being held back from each progress payment. This additional holdback will be retained for a period of one year from the "Acceptance Date" which is described

in Article 33 of the General Conditions.

SC.05 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 50 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.06 PERFORMANCE BOND

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

SC.07 INSURANCE

- A. Notwithstanding the provisions of Clause 28 of the General Conditions, no 'damage insurance' will be required on this Contract.

GENERAL CONDITIONS OF THE CONTRACT

SUBJECT INDEX

	CLAUSE		CLAUSE
ACCEPTANCE CERTIFICATE.....	33	MATERIALS, REJECTION OF.....	19
ASSIGNMENT.....	40	MATERIALS, SUPPLY OF.....	16
AUTOMOBILE INSURANCE.....	25	MATERIALS AND WORKMANSHIP.....	13
BOND, PERFORMANCE.....	39	NOTICES.....	4
CERTIFICATES, ACCEPTANCE.....	33	OPERATIONAL RISKS.....	12
CERTIFICATES, FINAL PAYMENT.....	36	OWNERSHIP OF DOCUMENTS.....	22
CERTIFICATES, INSURANCE POLICIES AND,..	29	OWNERSHIP OF PLANT AND MATERIALS.....	15
CERTIFICATES, PROGRESS.....	32	PAYMENT CERTIFICATE, FINAL.....	36
CHANGES IN THE WORK.....	18	PAYMENTS.....	35
COLD WEATHER.....	14	PERFORMANCE BOND.....	39
COMMENCEMENT & COMPLETION.....	5	PLANT AND MATERIALS, OWNERSHIP OF.....	15
COMPENSATION, WORKMEN'S.....	26	POLICIES AND CERTIFICATES, INSURANCE...	29
COMPLETION, SUBSTANTIAL.....	34	PREMISES, USE OF.....	6
COMPLETION & COMMENCEMENT.....	5	PROGRESS CERTIFICATES.....	32
CONTRACTORS, SUB.....	3	PROSECUTION OF THE WORK.....	11
CONTRACT, TERMINATION OF.....	38	PUBLIC SAFETY.....	10
DAMAGE INSURANCE.....	28	REJECTION OF WORK AND MATERIALS.....	19
DAMAGE, LOSS OR.....	27	RELEASE OF HOLDBACK.....	34
DEFINITIONS.....	1	RESTORATION.....	7
DETAILS AND INSTRUCTIONS.....	17	RISKS, OPERATIONAL.....	12
DOCUMENTS.....	2	SAFETY, PUBLIC.....	10
DOCUMENTS, OWNERSHIP OF.....	22	SHOP DRAWINGS.....	21
DRAWINGS, SHOP.....	21	STATUTES.....	9
ENGINEER.....	20	SUBCONTRACTORS.....	3
FINAL PAYMENT CERTIFICATE.....	36	SUBSTANTIAL COMPLETION.....	34
GARANTEE.....	37	SUPPLY OF MATERIAL.....	16
HOLDBACK RELEASE.....	34	TERMINATION OF CONTRACT.....	38
HOURS OF WORK.....	30	USE OF PREMISES.....	6
INSTRUCTIONS, DETAILS AND.....	17	UTILITIES.....	8
INSURANCE, AUTOMOBILE.....	25	VALUATION.....	31
INSURANCE, DAMAGE.....	28	WEATHER, COLD.....	14
INSURANCE, LIABILITY.....	24	WORK, CHANGES IN.....	18
INSURANCE, POLICIES & CERTIFICATES.....	29	WORK, HOURS OF.....	30
LIABILITY.....	23	WORK AND MATERIALS, REJECTION OF.....	19
LIABILITY INSURANCE.....	24	WORK, PROSECUTION OF.....	11
LOSS OR DAMAGE.....	27		

GENERAL CONDITIONS OF THE CONTRACT

1. Wherever used in these General Conditions, contract documents, drawings, or any other document 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 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.

**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 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.

**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 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.

**3.
SUB-
CONTRACTORS**

- (b) In any notice to the Contractor with respect to work and repairs of any nature required to be done under the Contract (or with respect to any other matter), 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. COMMENCEMENT 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 any responsibility under the Contract, nor be taken as evidence of acceptance of work or material, nor as a waiver of any 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, all surplus material and rubbish shall be removed, all damage 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, any structure with a weight that may endanger its safety.
- (c) The Contractor shall comply with the Engineer's directions regarding signs, advertisements, fires and smoking.
- (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 all 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 all 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 all utility services, such as water, electricity, heat and gas, needed for the execution of the work.

9. STATUTES

- (a) In all matters affecting the performance of the work, the Contractor shall comply with all relevant statutes, by-laws and ordinances of Federal and Provincial Governments and of Municipal Corporations. The Contractor shall also comply with all

- (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. (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.
- 11.
PROSECUTION
OF THE WORK**
- (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. (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.
- 12.
OPERATIONAL
RISKS**
- (b) The position of pole lines, conduits, watermain, sewers and other underground and overground utilities and structures is not necessarily shown on the Contract drawings, and, where shown, the accuracy of the position of such utilities and structures is not guaranteed. Before starting work, 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 specified, the Contractor shall support all such utilities and structures, or temporarily remove them, and restore them, to the satisfaction of the owners of the utilities and structures.
13. (a) All workmanship shall be first-class and material new and of best quality, all to the
- 13.**

14.
COLD
WEATHER

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 all the materials shall be heated and protected. Unless the Engineer directs otherwise, all work such as masonry, concrete and painting 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.

15.
OWNERSHIP
OF PLANT
AND
MATERIAL

- (a) The Contractor's plant, and all approved material 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 any such plant or approved material from the site without the Engineer'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 all material, and shall furnish for approval representative samples of all material. Substitution of material specified shall be made only on the written approval of the Engineer.

17.
DETAILS AND
INSTRUCTIONS

- (a) The Contractor shall not deviate from or in any way alter the Contract documents without the written authority of the Engineer. Any 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 all 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 take such steps (including the procuring of plant, labour and material) and do such work as he may consider advisable, or
- (ii) at the option of the Owner, exercise the powers given in Clause 38.

The cost so incurred may be deducted or collected under the provisions of the Contract, and any such action taken by the Engineer shall not relieve the Contractor from any 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. All 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. Any extension of time will be determined by the Engineer at

20. (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) 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.

20.
THE ENGINEER

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 co-ordinating the work of all trades.

21.
SHOP
DRAWINGS

22. All Contract documents, including all 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 all claims:

23.
THE CONTRACTOR

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 \$500,000, 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.
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 \$500,000. 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 any material, equipment, or similar items to be incorporated into the work. The Contractor shall properly guard the works and make good all 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 Acceptance Certificate.
28. DAMAGE INSURANCE	The Contractor shall insure the works 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 work, 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 Acceptance 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) copies of damage insurance as required in Clause 28, and (ii) either copies of liability and automobile insurances, or insurance certificates indicating compliance with Clauses 24 and 25.

30. 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.
30. HOURS OF WORK
31. (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.
31. VALUATION
32. 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.
32. PROGRESS CERTIFICATES
33. (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."
33. ACCEPTANCE CERTIFICATE
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
34. SUBSTANTIAL COMPLETION AND HOLDBACK

37.
GUARANTEE

- (a) The Contractor shall guarantee that the material and 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, 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 of making good may commence after or extend beyond the end of the guarantee period.

38.
TERMINATION
OF CONTRACT

- (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 all materials and plant on the premises, and may finish the work by any method he may deem expedient, but without undue delay or expense. In such case, the Contractor shall not receive any 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.

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 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 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,
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: _____

SEAL:

SECTION 01010 - GENERAL

PART 1 GENERAL

Part 1.01 DESCRIPTION OF WORK

1. This Contract is for the construction of the following works in the Town of Pelham, Ontario:
 - (A) Storm, sanitary and water services for the proposed arena.

Part 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.
 2. Such additional land as shown on the Contract Drawings.
 3. Such additional land designated as easements shown on the Contract Drawings.
 4. Such areas of 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 LOCAL LABOUR

- A. Give preference to the hiring of local labour. Maintain the labour force to at least 50 percent local labour, provided the labour is available locally and is physically fit and properly qualified by training and experience to meet the Contractor's requirements.
- B. Do not apply the foregoing to Superintendent, Timekeeper, Foreman, Machiner Operators nor until ten days after the Contractor has actually commenced operations.

mark the location, alignment, elevation and grade of the work. Give adequate notice of the need for such setting out.

Carefully protect and preserve all 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 as may be 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.

Part 1.05 CONSTRUCTION SCHEDULE

- A. Within two 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

Part 2.01 TESTS

- A. Where required by the Engineer, supply certified copies of all tests upon all materials to be used in the construction of the works, indicating that the materials comply with the specifications. Have an approved testing laboratory make such tests at the Contractor's expense.

Part 2.02 CANADIAN MATERIALS

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

rules of the appropriate Road Authority. Flagmen must wear fluorescent red or orange safety vests, arm bands and hats.

- B. 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.
- C. On streets that are not officially closed, maintain one lane of traffic in each direction at all times. Should temporary detours be constructed, comply with the requirements of the Road Authority as to location, dimensions, strength, road markings, signing and all other relevant details. Remove detours when no longer needed, and restore all surfaces to the original condition.
- D. Whether streets are officially closed or not, maintain reasonable access to adjacent properties for pedestrians and vehicles.
- E. Maintain all traffic signs in their original positions. Be sure that the signs are not obscured.

Part 3.03 NOTIFICATIONS

- A. When streets are to be closed, or traffic restricted, notify the appropriate Fire and Police Departments, giving at least seven days notice of the closing or restriction.
- B. If bus routes are affected, notify the Bus Company, giving at least seven days notice.
- C. When streets are to be re-opened, or restrictions removed, notify the Fire, Police and Bus Authorities.

Part 3.04 REQUIREMENTS OF MUNICIPALITIES

Part 3.05 MUNICIPAL INSPECTORS - Continued

- 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 3.06 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.

Part 3.07 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.

Part 3.08 MUD AND DUST

- A. Keep clean all streets and other construction areas. 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.

Part 3.09 OTHER CONSTRUCTION

- A. Other construction may be proceeding at the same time near the work of this Contract. Extend cooperation

B. Permanent relocation of underground or overhead utilities will be carried out by others, if necessitated by coincidence of lines or grades, or both.

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

PART 1 GENERAL

Part 1.01 INTENT

- A. This Section covers the work for site clearing, excavating, backfilling and restoration for sewers, watermains, force-mains and yard piping, from five feet beyond the exterior wall of structures. It also covers the site clearing, excavating, backfilling and restoration for valve chambers, manholes and catchbasins.
- B. Related work is as follows -
 - 1. Existing Utilities
 - 2. Site Clearing
 - 3. Excavating
 - 4. Sheathing and Shoring
 - 5. Backfilling
 - 6. Restoration
- C. Related work specified elsewhere is as follows -
Under Section 02580 - Forcemains.

Part 1.02 EXISTING UTILITIES

- A. Contact the various utility companies prior to commencing work and become informed of the exact location of all utilities and protect them during construction and assume all liability for damage to utilities.
- B. Utilities that require relocation will be the responsibility of the utility.

of the Engineer and the utility company concerned.

Part 1.03 EXISTING DRAINAGE

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

Part 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 not measure sheathing specified on the drawings to be left in place.
 - 2. Measure rock excavation on a cubic yard basis.

Part 1.05 BASIS FOR PAYMENT

- A. Conditions
 - 1. Unless otherwise specified, include temporary access, site clearing, excavating, shoring, sheathing, support of existing utilities, dewatering, testing of material, backfilling, removal of surplus excavation, restoration and all other labour, equipment and materials necessary for the complete installation of the work, in unit prices for sewers, watermains, forcemains, yard piping, manholes, valve chambers, and catchbasins.
 - 2. Base the volume of rock excavation in trenches on a width equal to the outside diameter of the pipe plus one foot and a depth from the top of the exposed rock to 6 inches below the bottom of the pipe.
 - 3. Base the volume of rock excavation for structure on the outside dimension of structures plus one foot and a depth from the top of the exposed rock to the bottom

2. Check elsewhere in this section for definition of rock excavation.

(A) Rock excavation will be paid for at the unit price contained in the Form of Tender. Include the disposal of rock in the unit price.

PART 2 PRODUCTS

Part 2.01 MATERIALS

A. Granular Materials

1. Granular 'A', 'B' and 'D' in accordance with MTC Form 1010.
2. Crushed Stone - produce from bedded or massive rock formation rock formation and from boulders. Break into fragments to conform to the following graduation requirements.

(A) Sieve Size	Percentage Passing By Weight
1 Inch	100
3/4 Inch	90-95
No. 4	5-10

B. Surface Treatment

1. Surface treatment with bituminous materials - MTC Form 304.

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 2 inches in size.
2. Imported topsoil - medium loam from a meadow or farm

Part 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.

Part 3.02 TOPSOIL

- A. If suitable for sodding and seeding, strip the topsoil from within the limits of excavation and from fill areas in advance of construction and stockpile in areas designated by the Engineer.
- B. Strip topsoil in such a manner as to prevent any damage to the roots of trees designated to be saved.
- C. On completion of the backfill of the trench, spread the topsoil as directed by the Engineer.

Part 3.03 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 one foot above top of pipe, for single pipe -
 - 1. Minimum
 - (A) One foot greater than the external diameter of pipe or 2 feet 6 inches for earth excavation or 3 feet to 0 inches for rock excavation whichever is greater, excluding an allowance for shoring.
 - 2. Maximum

- 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 all 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 2 feet above the elevation of the top of the pipes before trenching for the pipes. Place fill in 12 inch lifts and compacted to 95 percent Standard Proctor Density.
- G. Rock
1. Remove rock, boulders and masonry to provide a clearance of at least 6 inches below and on all sides of the pipe or structure.
 2. Rock excavation will be paid for as a separate item.
 - (A) 'Rock' means boulders exceeding $1/3$ cu. yard in volume or solid ledge rock which requires drilling and blasting, for its removal. No soft or disintegrated rock, no loose shaken or previously blasted rock, no broken stone in rock fillings or elsewhere, no rock which may have fallen into the trench from outside the limits of the excavation will be measured for payment. The removal of existing masonry or concrete foundations, where directed by the Engineer, will be considered as 'rock'. Frozen ground will

be paid for as described in the Form of Tender.

- I. Remove the subgrade where it has been adversely changed and is not adequate to support the pipe. Replace with crushed stone or other approved material as directed by the Engineer.
- J. Trench in existing roadways in a manner to prevent over-break. Saw cut all pavement in clean straight lines prior to the start of excavation.

Part 3.04 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 4 inches. Place backfill material in lifts not exceeding 12 inches. Compact to 95 percent Standard Proctor Density.
- 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.
- C. Trenches under the travelled portion of streets and roads including turnouts and intersecting roads shall be topped with 24 inches of Granular 'A' material on local roads and compacted to 95 percent Standard Proctor Density.
- D. All excavation under road shoulders, shall be backfilled with selected excavated material in 12 inch layers compacted to 95 percent Standard Proctor Density with the exception of the top 12 inches which shall be granular 'A' material compacted to 95 percent Standard Proctor Density.
- E. Repair backfill at all times with regard to settlement, pot-holing and washboarding until acceptance.

Part 3.05 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 so as to be firmly held in place at all times and leave in place until the pipe has been backfilled to a minimum depth of 2 feet above the pipe. If there is any danger of cave-in, completely backfill the trench before removing the sheathing.
- C. Take special care to ensure that all 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 3 feet below the surface of the ground.

Part 3.06 DEWATERING

- A. Maintain the excavation free of water at all times.
- B. Do not use sanitary sewers for the discharge of water from the trenches.

Part 3.07 DISPOSAL OF SURPLUS EXCAVATED MATERIAL

- A. Spread surplus excavated material on the site as directed by the Engineer.
- B. Greenbelt Areas
 - 1. Reinstall all damage or removed trees and ornamental shrubs as directed by the Engineer.

(A) Paved Roadways

	<u>Thickness</u>
(1) H.L. 3	1 1/2 Inches
(2) H.L. 6	1 1/2 Inches
(3) Granular	24 Inches

(B) Surface Treated Roadways

- (1) Primer M.C.-0 Grade 1/4 gal./sq.yd. - 1 coat
- (2) Seal R.C.-0 Grade 1/4 gal./sq.yd. - 2 coats
- (3) 3/8 Stone 22 lbs./sq.yd. - 2 coats

2. If weather conditions delay the placing of the permanent asphalt restoration on paved areas, then carry out temporary restoration using 2 inch cold mix cold laid asphalt.

No additional payment will be made for this temporary road restoration, maintenance, or for its removal prior to the placing of the final restoration.

B. Trench Restoration

1. Restore trenches as follows:

(A) The trenches between CBMH 1 and CBMH 2, CBMH 2 and CBMH 3 and CBMH 3 and CBA.

- (1) Fine grade and seed the disturbed areas.

(B) The remainder of the trench:

- (1) Grade the disturbed areas and leave in a neat condition.

SECTION 02560 - SANITARY AND STORM SEWERS

PART 1 GENERAL

Part 1.01 INTENT

- A. This Section covers all sewer work including manholes and catchbasins from 5 feet beyond the exterior walls of structures.
- B. This Section covers sewer work and related work including -
 - 1. Pipe
 - 2. Manholes and catchbasins
 - 3. Sanitary sewer building service connections
 - 4. Storm sewer building service connections
 - 5. Line and grade
 - 6. Bedding
 - 7. Testing
 - 8. Concrete

Part 1.02 TESTING

- A. Supply test certificates in accordance with the appropriate specification, for the following materials -
 - 1. Pipe
 - 2. Precast manholes and catchbasins
 - 3. Concrete

B. Handling

1. Load and unload materials so as to avoid shock or damage.

C. Storage

1. Place materials in safe storage. Keep interiors of all pipes, and fittings clean.

Part 1.04 MEASUREMENT FOR PAYMENT

A. The Engineer will -

1. Measure sewers along the centreline of construction from centre to centre of manhole.
2. Measure building service connection along the centreline of construction from the centreline of the main sewer to within 5 feet of the proposed building.
3. Measure roof drain connections, foundation weeping tile connection and ice melting pit connection along the centreline of construction from the centreline of the main sewer to within 5 feet of the proposed building.
4. Count each type of manhole.
5. Count each type of catchbasin.
6. Count each type of catchbasin manhole.

Part 1.05 BASIS OF PAYMENT

A. Conditions

1. Unless otherwise specified include all testing of materials, bedding and testing of pipes after installation and the requirements of Section 02550 - Site Clearing, Excavating, Backfilling and Restoration of Trenches

cluding the connections to manholes, catchbasins, existing sewers or other facilities.

2. Include in the unit price for the building sanitary sewer service connection as outlined in the Form of Tender, the pipe and the complete installation of the service pipe, all necessary fittings, connection to the main sewer, riser pipe, capping and making the connection to the building outlet provided.
3. Include in the unit price for each storm service connection as outlined in the Form of Tender, the pipe and the complete installation of the service pipe, all necessary fittings, connection to the main sewer and riser pipe, capping and making the connection to the building outlets provided.
4. Include in the unit price for each type of catchbasin, the complete installation of the catchbasin including concrete, brickwork, reinforcing steel, frame and grating as shown on STD. S-4.
5. Include in the unit price for each catchbasin manhole, the complete installation of the catchbasin manhole including concrete, benching, brickwork, reinforcing steel, ladder rungs, drop pipe and safety grating if required, frame and grating as shown on STD. S-3.
6. Include in the unit price for each manhole, the complete installation of the manhole including concrete, benching, brickwork reinforcing steel, ladder rungs, drop and safety grating if required, frame and cover as shown on STD. S-3.

PART 2 PRODUCTS

Part 2.01 GENERAL

- A. Quote of the basis of the type of material specified on

(A) Non-reinforced circular concrete pipe - ASTM C14.

(B) Reinforced circular concrete pipe - ASTM C76.

2. Pipe diameter and class - as shown on the drawings.
3. Fittings and specials - in accordance with the specification for the type of pipe being used.

B. Asbestos Cement Sewer Pipe

1. Asbestos cement pipe and fittings - ASTM C428.
2. Pipe diameter and class - as shown on the drawings.
3. Joints - 'Ring-Tite', 'Fluid-Tite' or approved equal.
4. Supply pipe in standard 10 foot lengths. Supply short lengths, machined as required, to install fittings in the correct locations.

C. Manholes and Catchbasin Manholes

1. Precast concrete manholes and catchbasin manholes - ASTM C478 and as shown on STD S-3 rubber type gaskets - ASTM C443.
2. Cast-in-place manholes - constructed as shown on E-STD-2-8.
3. Cast iron covers for sanitary sewer manholes - STD S-6.
4. Cast iron gratings for catchbasin manholes - STD S-7.
5. Ladder rungs - as shown on STD S-3.
6. Bricks - ASTM C32, Grade MA.
7. Reinforcing steel - CSA G30.12, Grade 10.

3. Ditch intake catchbasins - construct as shown on E-STD-2-18.
4. Cast iron grating for precast and cast-in-place catchbasins - STD S-7.
5. Bricks - ASTM C32 - Grade MA.

E. Headwall

1. Outlet headwall - construct as shown on Drawing No. B-75193-P2.
2. Headwall grating - construct as shown on STD S-8.

F. Sanitary Sewer Building Service Connections

1. Asbestos cement pipe - CGSB-34GP23.
2. Service connection to the main sewer - by tee or wye only.

G. Storm Sewer Building Service Connections

1. Concrete pipe - ASTM C14.
2. Asbestos cement pipe - CGSB-34-GP-23.
3. Service connections to the main sewer - by tee or wye only.

PART 3 EXECUTION

Part 3.01 LINE AND GRADE

- A. Supply, erect and maintain batter boards and site rails to ensure accurate line and grade of all pipes. Have at least three batter boards in use at all times, placed not more than 50 feet apart. Obtain Engineer's approval for alter

Standard Proctor Density.

Part 3.03 BEDDING

- A. Sewer bedding - as specified on E-STD-S-2.
- B. Granular material - refer to Section 02550.
- C. Compact granular bedding material to a density of 95% Standard Proctor Density.
- D. Compact 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 the pipe where cover is less than one foot.

Part 3.04 CONNECTIONS TO EXISTING FACILITIES

- A. Connect sewers to existing manholes, catchbasins and other facilities as shown on the drawings or as directed by the Engineer.
- B. Obtain permission from the Engineer and the authority responsible for the existing facilities prior to making any connections.

Part 3.05 PIPE LAYING

- A. Lay, joint and test pipes and fittings in accordance with the manufacturer's instructions and in the manner hereinafter specified, in the presence of the Engineer and subject to his approval.
- B. Lower pipe carefully into the trench. Before lowering and while suspended, inspect the pipes for defects. Remove foreign material from inside the pipe.
- C. Use temporary watertight bulkheads to prevent the flow of trench water, storm water, silt and sand within the pipe.

- C. Catchbasin manholes - construct as detailed on STD S-3.
- D. Install precast manholes with benching in accordance with STD S-3.
- E. Install precast catchbasin manholes with sump in accordance with STD S-3.

Part 3.07 CATCHBASINS

- A. Proceed with construction of catchbasins at same time as pipe laying.
- B. Catchbasins - construct as detailed on E-STD-2-16.
- C. Install precast catchbasins in accordance with STD 2-4.

Part 3.08 BUILDING SERVICE CONNECTIONS

- A. Lay building service connections from the main sewer to within 5 feet of proposed building as shown on STD S-11.
- B. Connect to the main by tee or wye only.

Part 3.09 CLEANING AND TESTING OF SANITARY SEWERS

- A. Flush and clean sewers and manholes prior to testing. Carry out testing in the presence of the Engineer.

Supply all water for cleaning and testing.

- B. Inspect manholes for defects and signs of leakage. Repair visible leaks or faults as approved by or as directed by the Engineer.
- C. Carry out testing from manhole to manhole as the work progresses. Test only the length of sewer between any two manholes at any one time.
- D. Do not proceed with construction of new sewers when

1. Test	Permissible Leakage
Infiltration test -	0.25 Imperial gallons per
When ordered by the	hour per inch of pipe dia.
Engineer	per 100 feet of sewer

F. Method of infiltration test for sewers is as follows -

1. Isolate the section of sewer to be tested at its upper limits by temporarily plugging the outlet of the upstream manhole.
2. Construct a temporary dyke in the inlet pipe of the downstream manhole. The measurement of infiltration may be determined by timing the flow of water into a calibrated contour, or over a weir, or by any other method acceptable to the Engineer.
3. Do not start until steady state conditions have been established to the satisfaction of the Engineer.

G. No part of the work will be accepted until the sewers are clean and free from sand, earth, mud, or other obstructions. When required by the Engineer pass a pill of 2 inches less in diameter than the sewer from manhole to manhole.

H. Furnish all labour, tools, and equipment necessary to clean and test the sewer.

Part 3.10 CLEANING OF STORM SEWERS

A. Flush and clean sewers, manholes and catchbasins prior to acceptance.

SECTION 02570 - WATERMAINS

PART 1 GENERAL

Part 1.01 Intent

A. This section covers watermains and related work including:

1. Pipe
2. Fittings, specials and joints
3. Hydrants
4. Valves and valve boxes.
5. Service connections
6. Line and grade
7. Bedding
8. Testing
9. Disinfecting

Part 1.02 Certificates of Testing

A. Provide test certificates in accordance with the appropriate specification for the following materials:

1. Pipe
2. Fittings, specials and gaskets
3. Valves
4. Hydrants

PART 1 GENERAL (continued)

Part 1.03 Delivery, Storage and Handling (continued)

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, any part of the coating or lining is damaged, then repair in a satisfactory manner.

C. Storage

1. Place materials in safe storage. Keep interiors of all pipes, fittings, and other accessories clean. Store valves and hydrants in a manner that will protect them from damage by freezing.

Part 1.04 Measurement for Payment

A. The Engineer will:

1. Measure watermains along the centreline of construction, straight-through bends, fittings, specials, valve and valve chambers.
2. Measure service connections in the horizontal plane along the centreline of the pipe from the centre of watermains within 5 feet of the building.
3. Count complete hydrant sets.
4. Count complete valves and valve boxes.
5. Count complete connections to existing mains.

PART 1 GENERAL (continued)

Part 1.05 Basis for Payment (continued)

A. Conditions (continued)

1. (continued) installation and the requirements of Section 02550 Site Clearing, Excavating, Backfilling and Restoration.
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 foot for watermain the complete supply and installation of the pipe and all necessary fittings as shown on STD. W-2, and W-4, and connection to existing main.
2. Include in the unit price for each hydrant the complete supply and installation of the pipe from the main, connection to the main, secondary valve and valve box, hydrant, crushed stone backfill and blocking of the hydrant all as shown on STD. W-5.
3. Include in the unit price for each valve and valve box the complete supply and installation of the valve and valve box as shown on STD. W-5.

PART 2 PRODUCTS

Part 2.01 General

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

Part 2.02 Materials - Conform to latest edition of reference Standards.

PART 2 PRODUCTS (continued)

Part 2.20 Materials (continued)

A. Asbestos Cement Pipe (continued)

3. Supply pipe in standard lengths. Supply short lengths machined as required to install fittings and valves in the correct locations.
4. Joints - 'Ring-Tite', 'Fluid-Tite', or approved equal.

B. Fittings and Specials (Asbestos cement pipe)

1. Fittings and specials - comply with the specification for the type of pipe being used.
2. Submit to the Engineer for approval, tabulated layout schedules and drawings of all fittings and specials indicating the internal pressure rating, maximum external load rating, type of joints and identification mark numbers for all component parts.

C. Gate Valves

1. Gate valves - Iron body bronze mounted with inside screw, non-rising spindle opening counter-clockwise, with 2-inch square operating nut. Valve equipped with 'O' rings and mechanical joints. Use Canada Valve No. 55, Jenkins Bros. Fig. 398, McAvity No. 20075-0 or equal.

D. Valve Boxes

1. Valve Boxes - cast iron, auger type similar to Fergusson No. 101 and adjustable to 5'6" or bury.

E. Hydrants

1. Century type as manufactured by Canada Valve or

PART 3 EXECUTION

Part 3.01 , Line and Grade

- A. Supply, erect and maintain batter boards and site rails to ensure accurate line and grade of all pipes. Have at least three batter boards in use at all times, placed not more than 50 feet apart. Obtain Engineer's approval for alternative methods.
- B. On straight lines, lateral deviation in excess of 6 inches will not be tolerated. On straight grades, grade deviation in excess of 3 inches will not be tolerated.
- C. For vertical or horizontal bends do not deviate the pipe lines more than 12 inches from line or more than 6 inches from grade as the case may be.

Part 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.

Part 3.03 Bedding

- A. Watermain bedding - as specified on STD. W-2
- B. Granular material - refer to Section 02550
- C. Compact Granular Bedding material to a density of 95 percent Standard Proctor Density.

Part 3.04 Connection to Existing Watermains

- A. Connect new mains to existing mains as shown on the drawings.
- B. Obtain permission from the Engineer and the authority responsible for the existing mains prior to making any connections

PART 3 EXECUTION (continued)

Part 3.05 , Pipe Laying (continued)

- B. Use temporary water-tight bulkheads to prevent the flow of trench water, storm water, silt and sand within the pipe.
- C. Carefully lower pipe 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 bead ends by 3,000 p.s.i. concrete thrust blocks to undisturbed ground as detailed on STD. W-4. Arrange thrust blocks to transfer the full thrust of the deflection at test pressure without exceeding the bearing capacity of the ground.
- E. Construct anchor blocks of 3,000 p.s.i. concrete as shown on STD. W-4.

Part 3.06 Valve and Valve Boxes

- A. Install valves and valve boxes plumb, centered over the operating nut and supported in place during backfilling with the cover flush with the finished grade.
- B. Do not backfill until valves or valve boxes have been inspected by the Engineer, or the inspector of the authority having jurisdiction.

Part 3.07 Hydrants

- A. Install hydrants plumb with the nozzles parallel with the watermain.
- B. Set hydrants to the established grade with nozzles at least fifteen inches above the ground.
- C. Do not backfill until hydrants have been inspected by the Engineer.

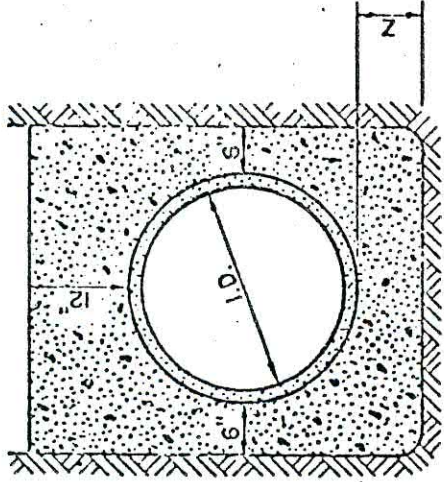
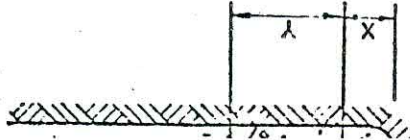
PART 3 EXECUTION (continued)

Part 3.08 Testing (continued)

- B. Apply a hydrostatic test pressure of 150 p.s.i. for at least one hour. Record the amount of water used in this period by pumping from a suitable container of known volume.
- C. The allowable leakage under the 150 p.s.i. test pressure is 70 Imperial gallons per inch of diameter per mile per 24 hours.
- D. Where the measured leakage exceeds the allowable leakage, locate the leaks and repair. Retest the main. Repeat this process until such time as the allowable leakage requirement is met.

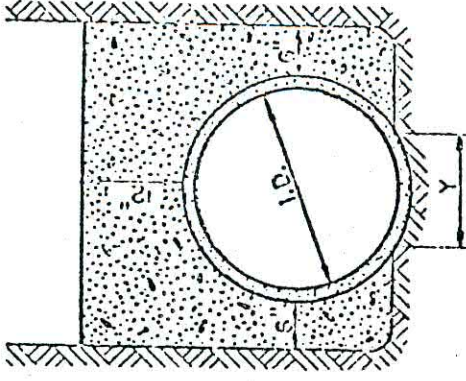
Part 3.09 Disinfection and Flushing

- A. Flush the main prior to chlorination.
- B. Disinfect the main by introducing a sufficient quantity of Pittchlor HTH or other approved chemical to produce a solution with a chlorine residual of 50 ppm.
- C. Leave the chlorine solution in the main for at least 24 hours.
- D. After disinfection of the main, again flush until all the chemical is removed.
- E. Give the Engineer at least two days notice of the date when disinfection of the system is to start so that the arrangements can be made for others to take samples and test the chlorine residual.



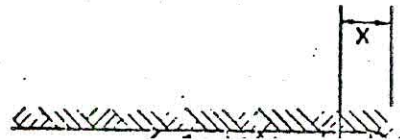
SAND OR SELECT PIT RUN GRAVEL

CLASS B BEDDING



SAND OR SELECT PIT RUN GRAVEL

CLASS C BEDDING



1500 P.S.I. CONC.

CLASS BB BEDDING

NOTES

X = 1/4 INSIDE DIAMETER OF PIPE
WITH MIN. OF 6"

Y = 1/2 OUTSIDE DIAMETER OF PIPE

Z = 1/3 INSIDE DIAMETER OF PIPE
WITH MIN. OF 6" & MAX. OF 12"

CONCRETE OR GRANULAR MATERIAL TO
EXTEND TO SOLID TRENCH WALLS

SELECTED FINE MATERIAL SHALL
BE HAND PLACED TO 12" ABOVE
THE TOP OF PIPE OVER CLASSES
'A' - 'AA' - 'BB'

STANDARD PIPE BEDDING DETAILS

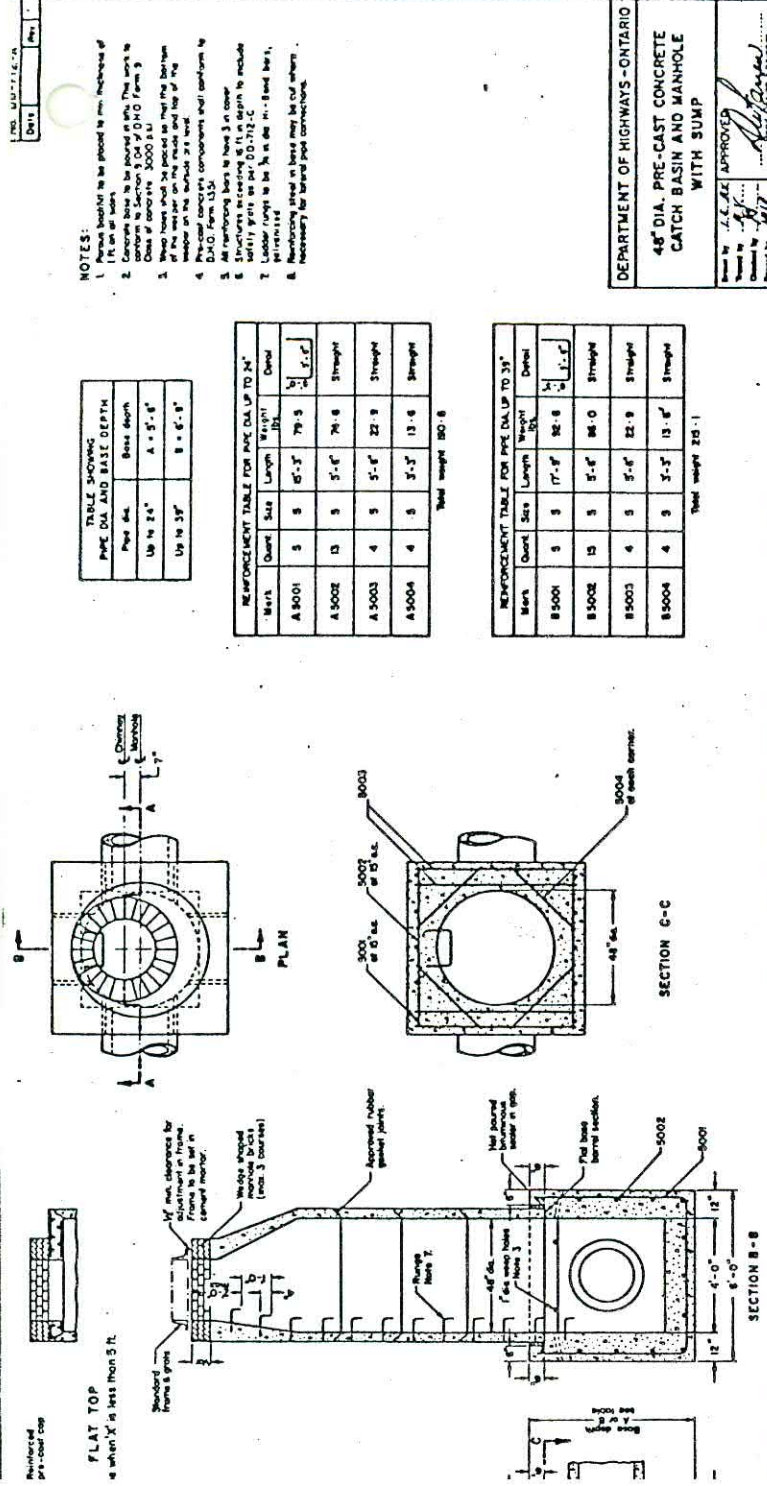
TOWN OF PELHAM STANDARD

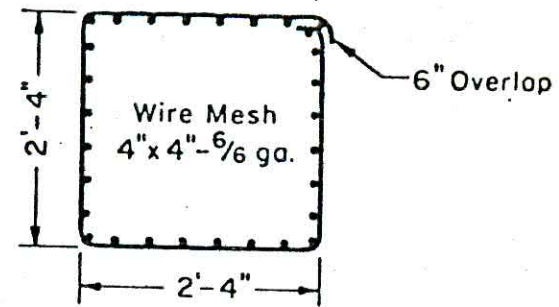
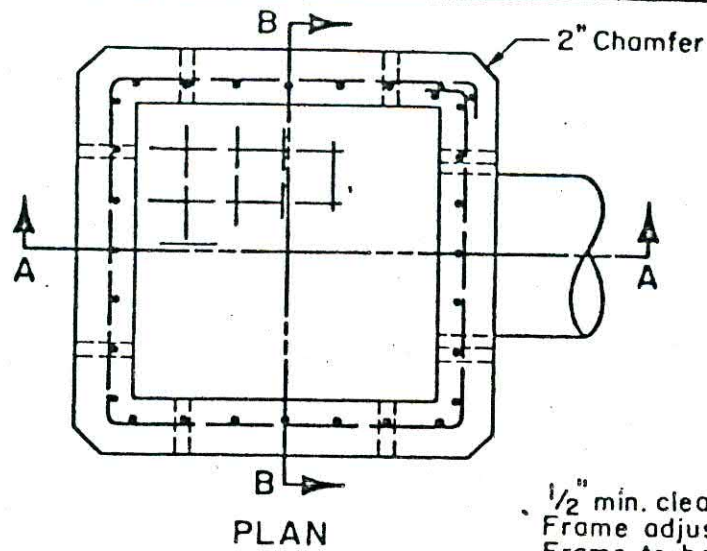
August 13th, 1970

[Signature]
Proctor & Redfern Ltd.

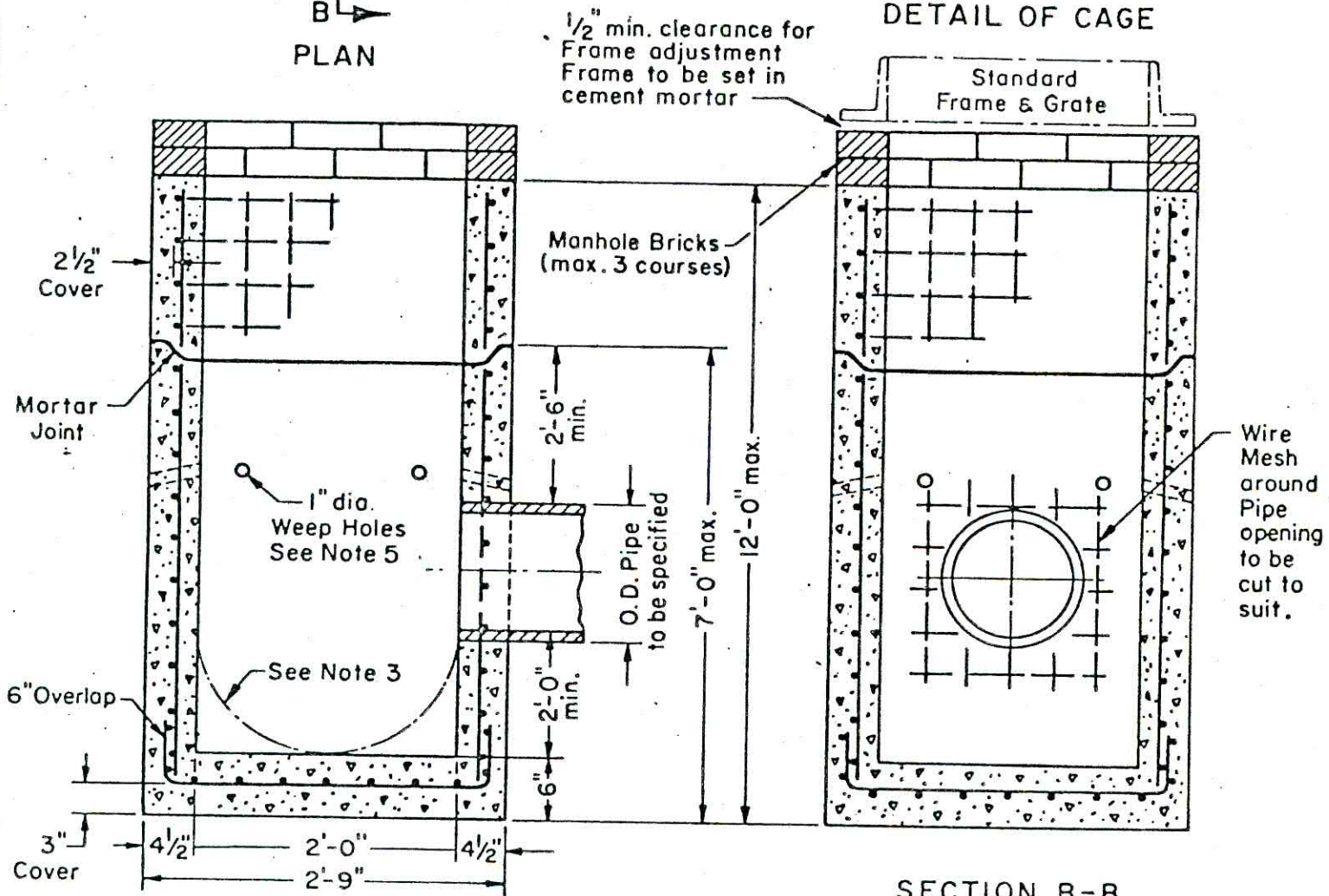
48" DIA. PRE-CAST CONCRETE MANHOLE

5-3



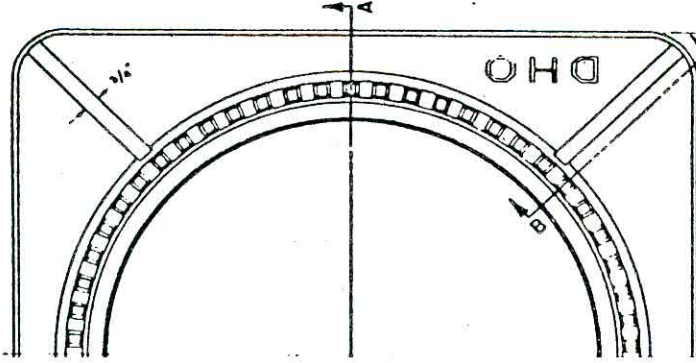


DETAIL OF CAGE



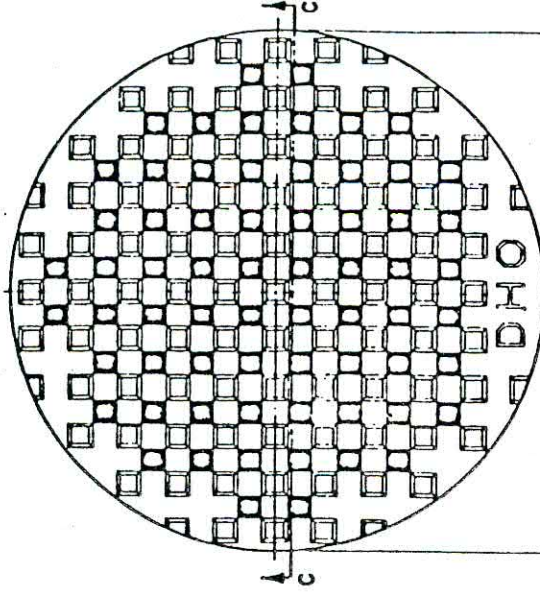
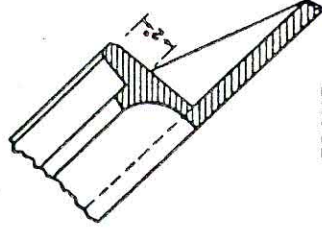
NOTES:

No. DD-704
Date Nov 18/59 Rev 2



PLAN

SECTION A-A



COVER PLAN

COVER SECTION C-C

NOTES

- 1 Allowable tolerances
Dimensions 12 in or less $\pm 1/8$ in.
Dimensions over 12 in up to and including 36 in $\pm 1/4$ in.
- 2 Marking
a 'D.H.O.' is to be cast on both frame and grate as shown in raised letters of 1 in. minimum size.
b The initials or mark of the manufacturer are to be distinctly cast in raised letters on both frame and grate

SECTION A-A

AM STANDARD

W. L. G. Proctor & Redfern Ltd.

Highways Standard No. DD-704

DEPARTMENT OF HIGHWAYS-ONTARIO

MANHOLE COVER

APPROVED

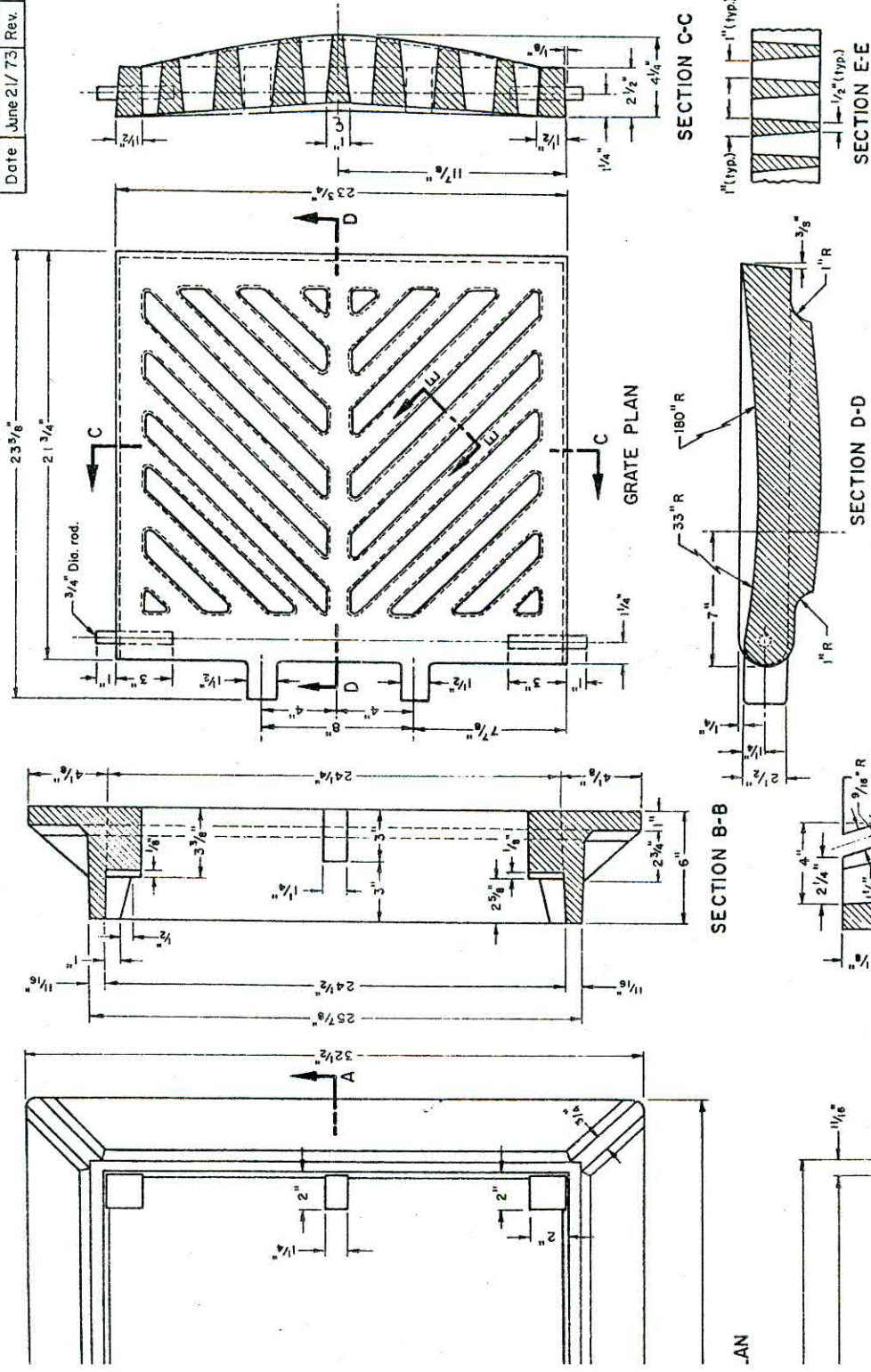
June 21/56
Date

W. L. G. Proctor & Redfern Ltd.
Road Design Engineer

C

No. DD-713-B

Date	June 21/ 73	Rev.
------	-------------	------



MINISTRY OF TRANSPORTATION
AND COMMUNICATIONS — ONTARIO

DEPRESSED CATCH BASIN FRAME AND GRATE DIAGONAL OPENINGS

APPROVED

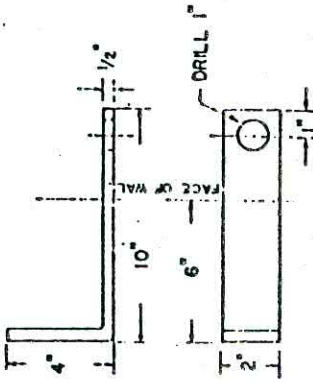
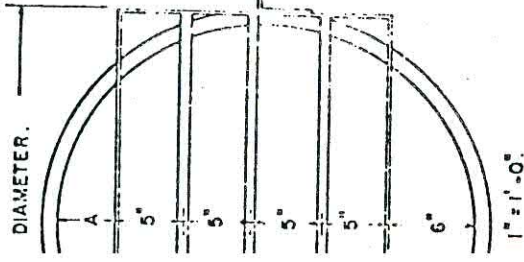
Drawn by S.S.
Traced by S.S.
Checked by E.G.
Passed by D.J.Z.

Director Systems Design Branch

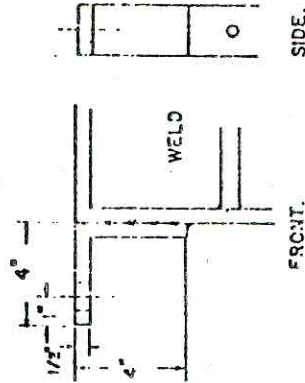
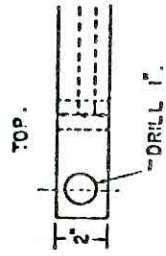
NOTES:

1. Allowable tolerances:
Dimensions 12" or less $\pm 1/8"$
Dimensions over 12" up to and including 36" $\pm 1/4"$
2. The initials or mark of the manufacturer are to be distinctly cast in raised letters on both frame and cover.

1-A



DETAIL OF HINGE STRAP. 3 REQUIRED.
Scale 2" = 1'-0"



DETAIL OF MOUNTING BRACKET.
3 REQUIRED.
Scale 2" = 1'-0"

PIPE DIAMETERS	A	No. of Bars in Frame.
12"	1"	0
15"	4"	0
18"	2"	1
21"	5"	1
24"	3"	2
27"	1"	3
30"	4"	3
33"	2"	4
36"	5"	4
39"	3"	5
42"	1"	6
48"	2"	7

MATERIAL - FRAME, HINGE STRAP & MOUNTING BRACKET - 1/2" X 2" M. STL. BARS IN FRAME - 3/4" ϕ .

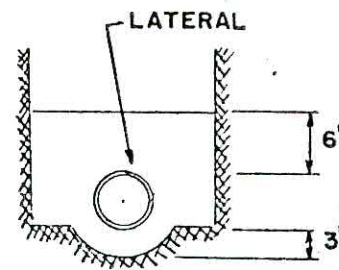
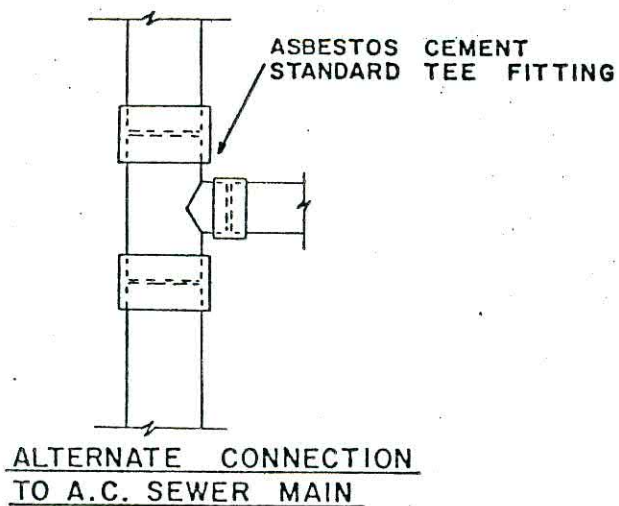
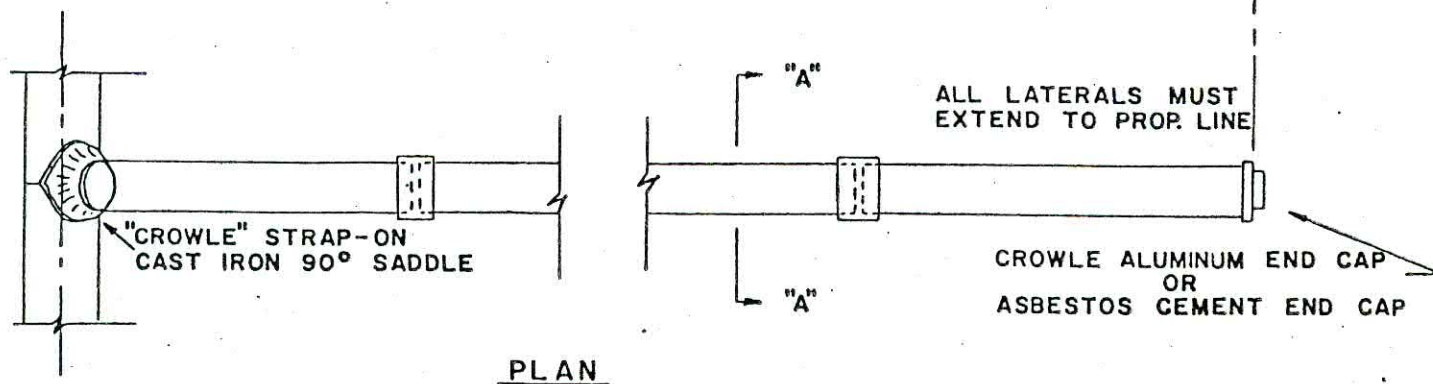
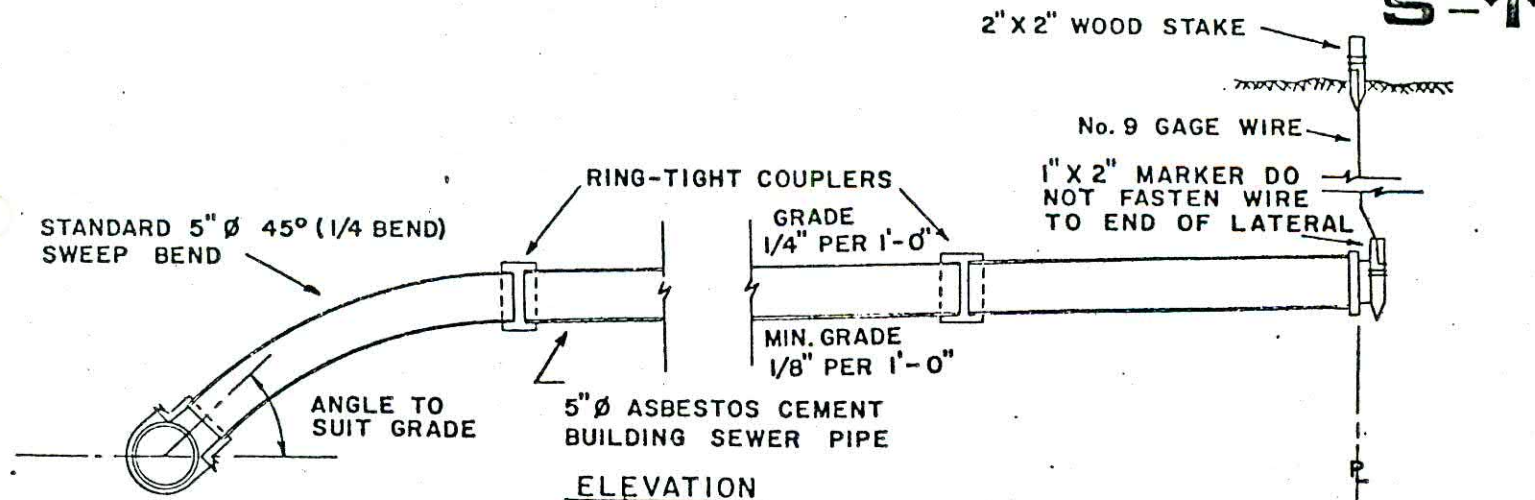
PAINTED 2 COATS RED LEAD & 1 COAT BLACK.

* 7/8" BOLT & NUT, OR 7/8" ϕ BAR THREADED BOTH ENDS, & 2-7/8 NUTS.

TOWN OF PELHAM STANDARD

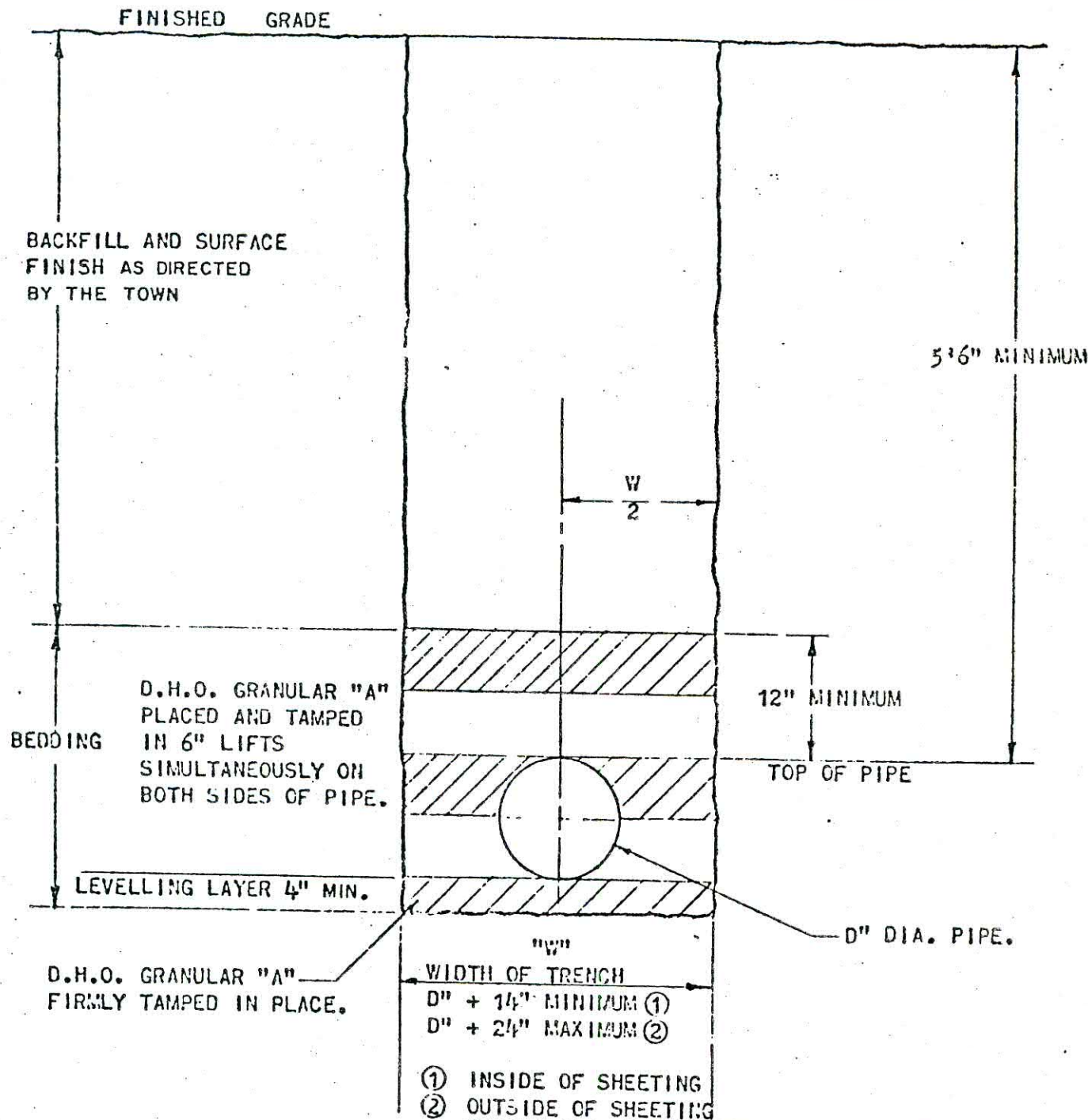
HEADWALL GRATING - I (12" TO 48" ϕ PIPES)

Aug. 13, 1970 *W. L. Long*
Proctor & Redfern Ltd.



SECTION "A"-A

STANDARD LATERAL BEDDING DETAIL
CLASS "A" GRANULAR MATERIAL



TOWN OF PELHAM STANDARD

August 13th, 1970

Proctor & Redfern Ltd.

Source: City of Welland Water Department

NOTE

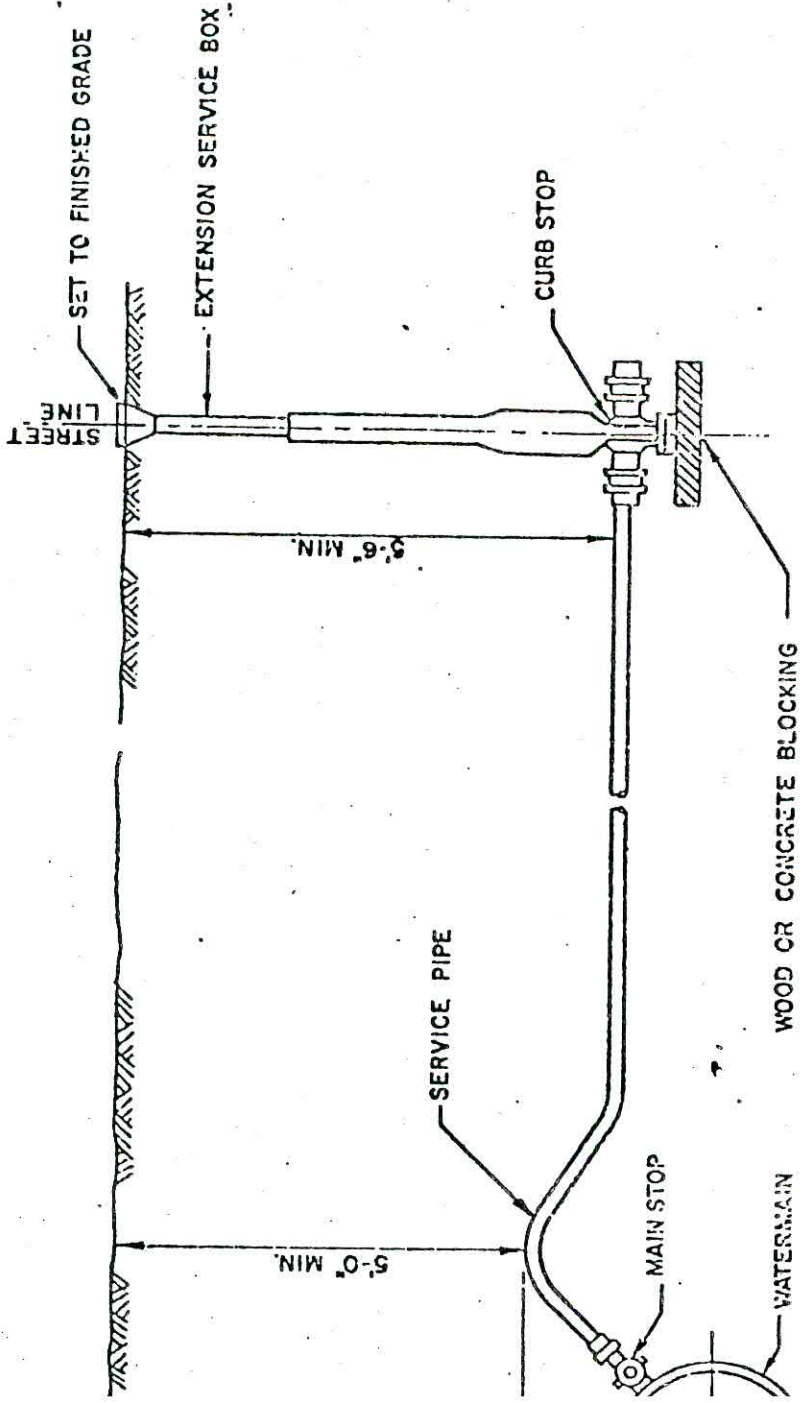
WV-3

TOWN OF PELHAM STANDARD

August 13th, 1970

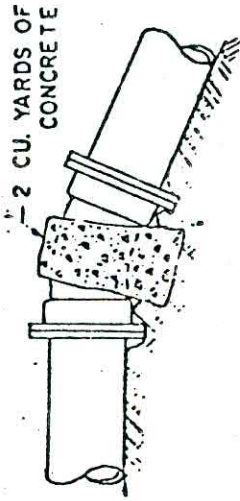
W. D. Long

Proctor & Redfern Ltd.

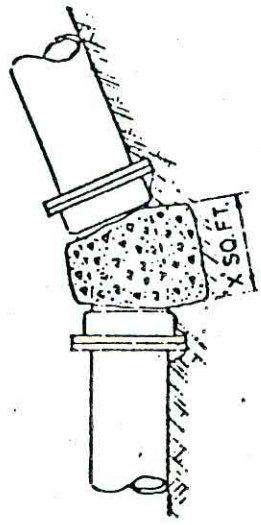


STANDARD WATER SERVICE CONNECTION

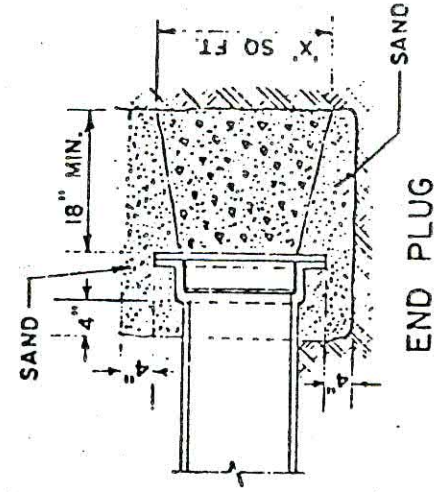
NOTE: CONCRETE FOR THRUST BLOCKS TO BE 3000 P.S.I. LAID TO UNDISTURBED GROUND.



$\frac{1}{16}$ VERTICAL BEND-DOWN



$\frac{1}{16}$ VERTICAL BEND-UP



BEND

$\frac{1}{4}$ HORIZONTAL BEND

SIZE OF THRUST BLOCKS

'X' SQ. FT.

$\frac{1}{16}$ BEND					$\frac{1}{8}$ BEND					$\frac{1}{4}$ BEND					TEE, CROSS & END PLUG							
4"	6"	8"	10"	12"	16"	4"	6"	8"	10"	12"	16"	4"	6"	8"	10"	12"	16"					
1	2	3	4				2	3	5	7				2	4	7	9					
1	1	2	2				1	2	3	4				1	2	4	5					
1	1	1	1				1	1	2	2				1	2	2	3					
1	1	1	1				1	1	2	2				1	1	2	2					

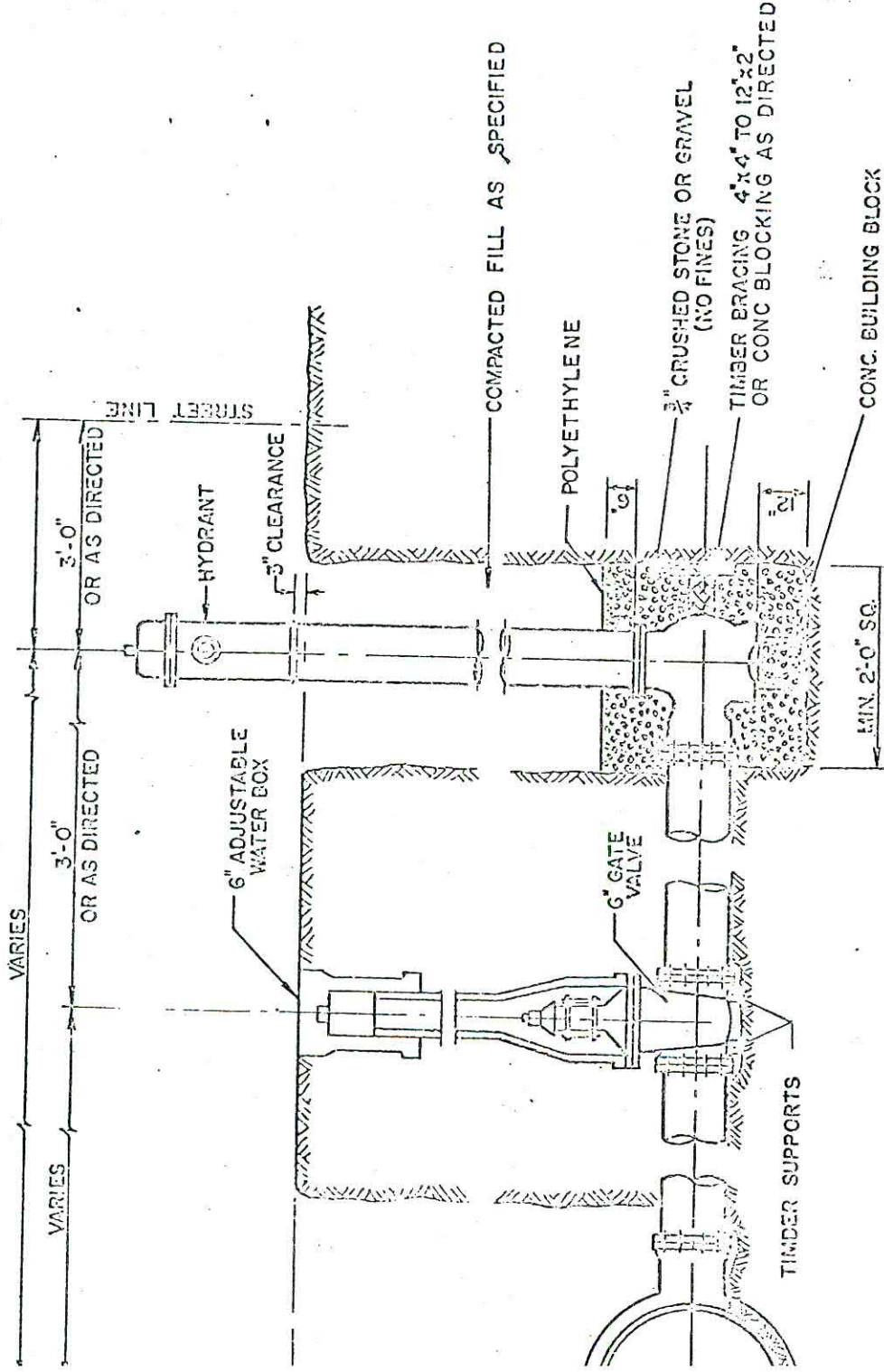
CONCRETE THRUST BLOCKS TO FITTINGS
AM STANDARD

August 13th, 1970

Redfern Ltd
Proctor & Redfern Ltd

STANDARD HYDRANT ASSEMBLY

W-5



NOTE: HYDRANT TO BE SET PLUMB WITH STEM
EXTENSIONS TO SUIT DEPTH OF LEAD.
LEAD TO BE SET LEVEL

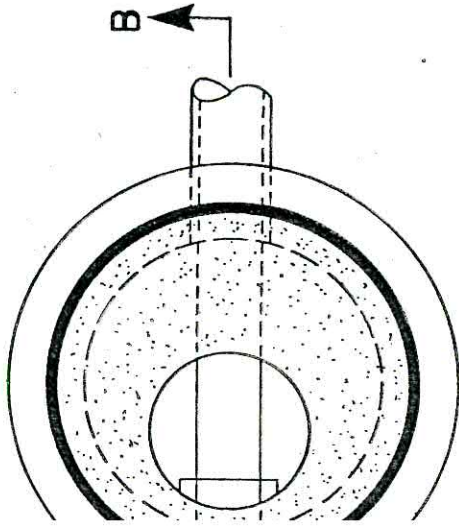
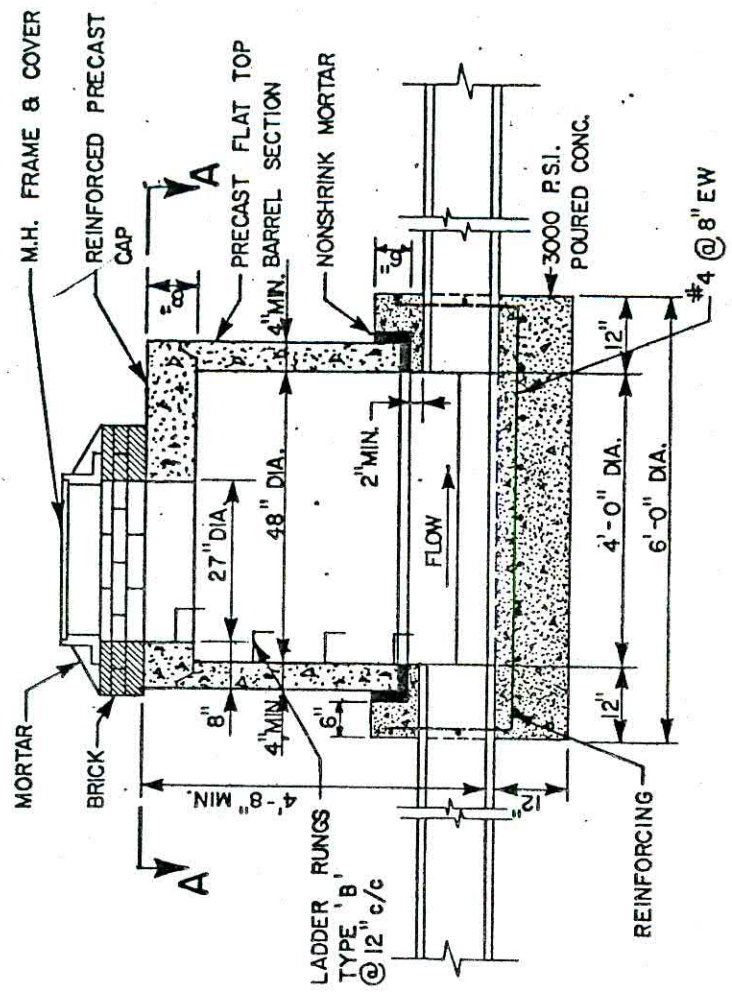
TOWN OF PELHAM STANDARD

Aug. 13th, 1970

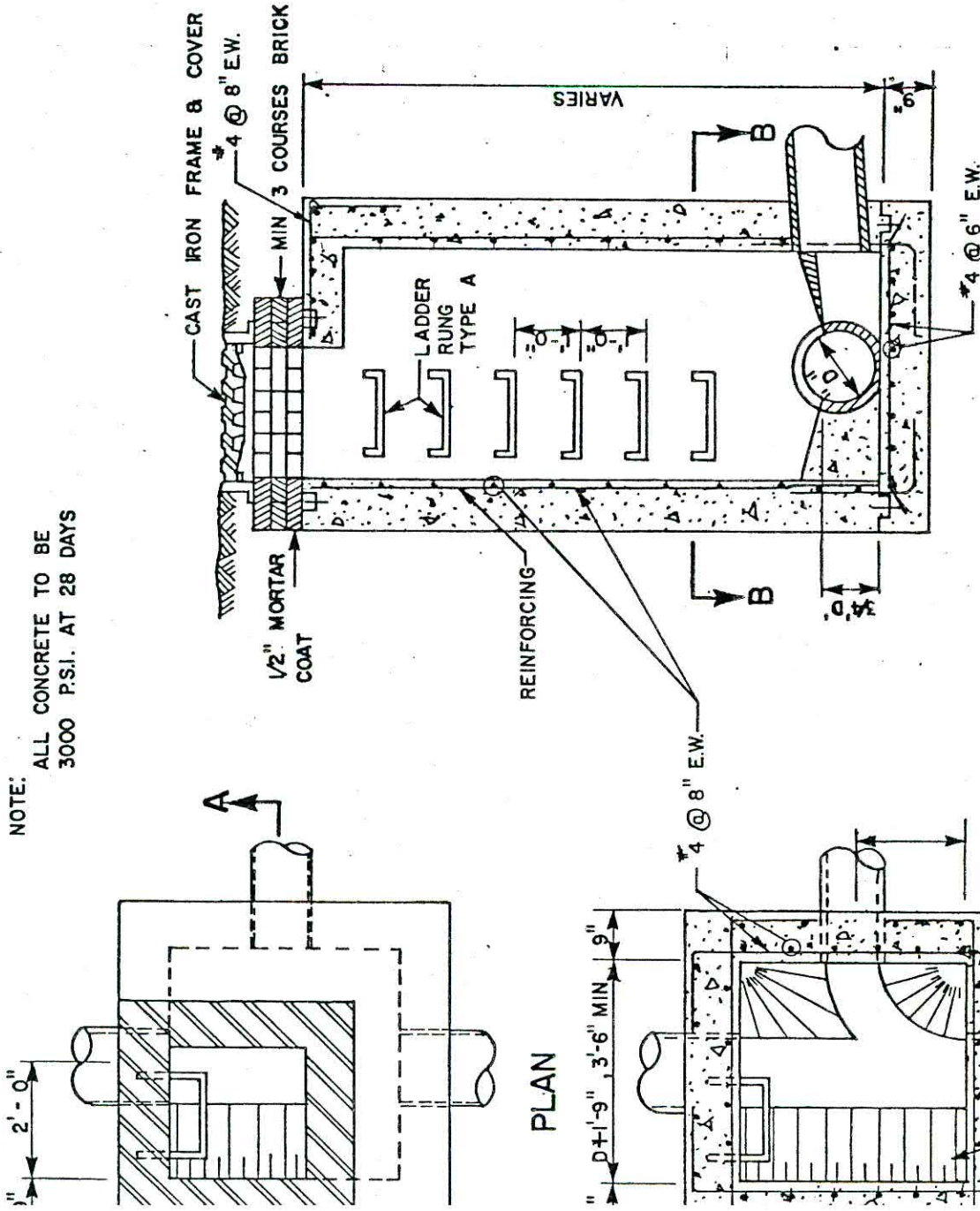
DETAILS OF HYDRANT AND LEAD

WITH SECONDARY VALVE

Proctor & Redfern Ltd.

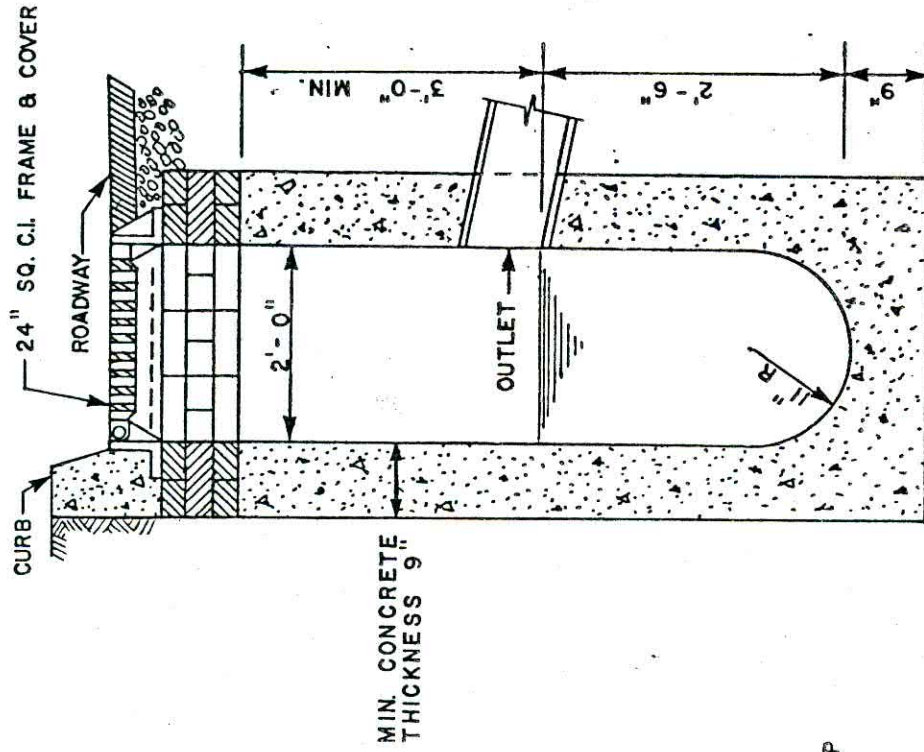


NOTE:
ALL CONCRETE TO BE
3000 P.S.I. AT 28 DAYS

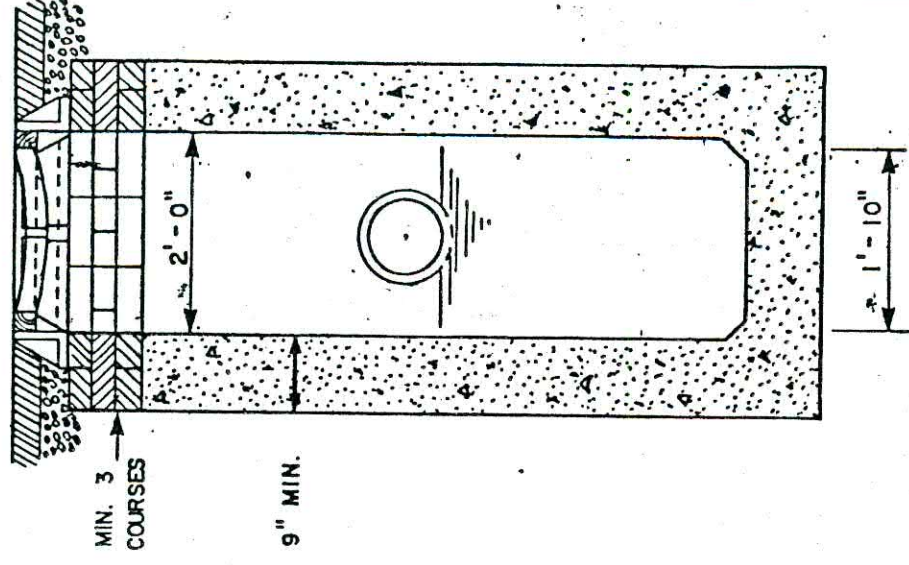


SECTION B - B

SECTION A - A



SECTION A-A

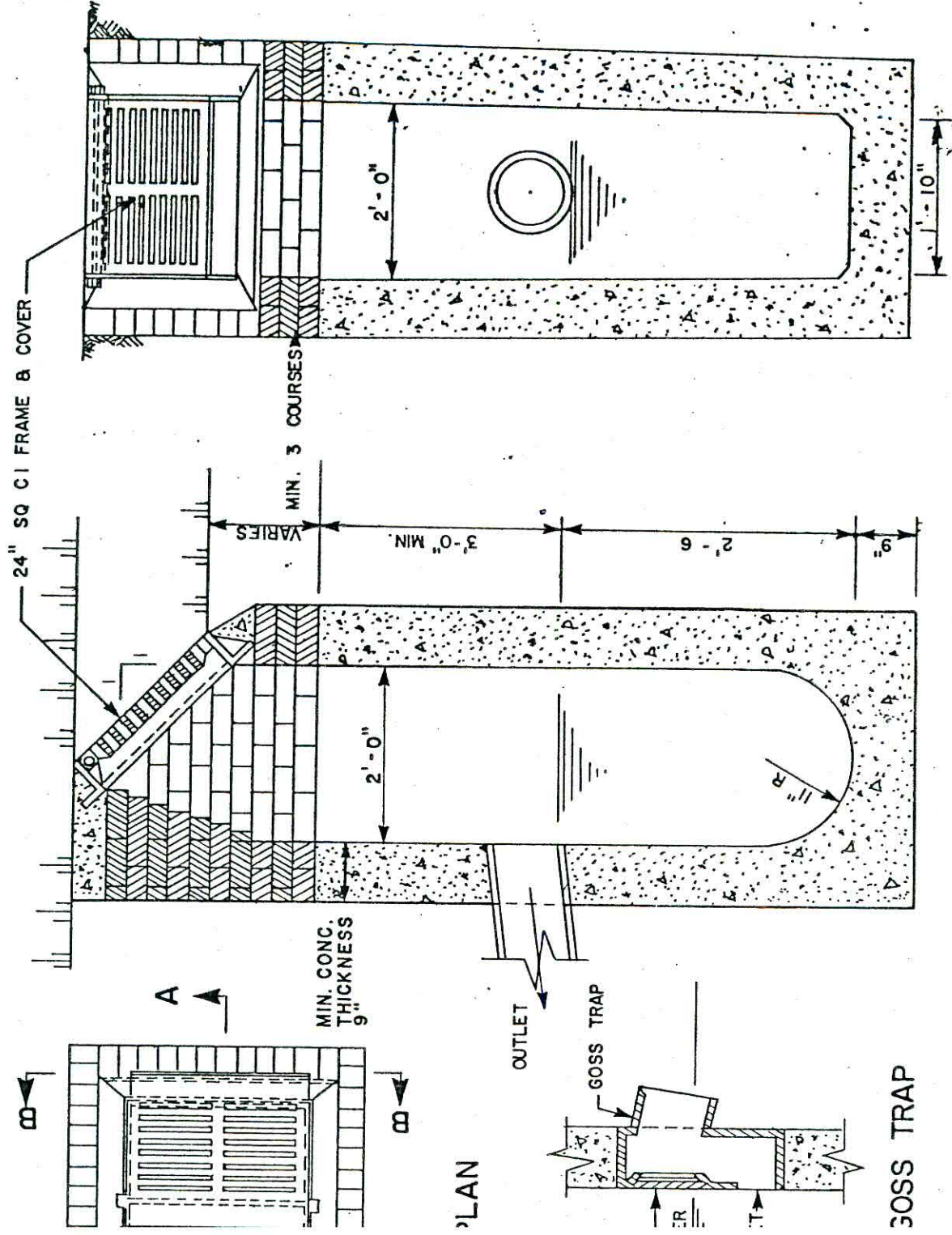


SECTION B-B

NOTES:

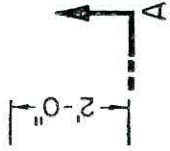
1. ALL CONCRETE TO BE 3000 P.S.I. AT 28 DAYS
2. GOSS TRAP TO BE INSTALLED WHERE SPECIFIED

RAP



CONCRETE 3000 PSI AT 28 DAYS

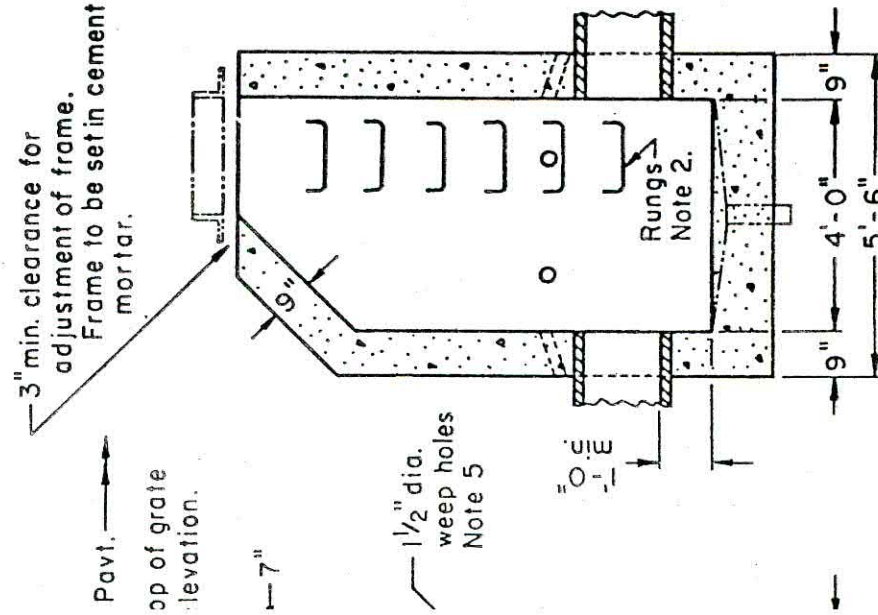
TRAP TO BE INSTALLED WHERE SPECIFIED



CONCRETE VOLUMES (cu. yds.)										
DEPTH (ft.)	TENTHS OF ONE FOOT									
	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9
5	3.34	3.39	3.44	3.49	3.55	3.60	3.65	3.71	3.76	3.81
6	3.86	3.92	3.97	4.02	4.07	4.13	4.18	4.23	4.29	4.34
7	4.39	4.44	4.50	4.55	4.60	4.66	4.71	4.76	4.81	4.87
8	4.92	4.97	5.03	5.08	5.13	5.18	5.24	5.29	5.34	5.39
9	5.45	5.50	5.55	5.61	5.66	5.71	5.76	5.82	5.87	5.92
10	5.98	6.03	6.08	6.13	6.19	6.24	6.29	6.35	6.40	6.45
11	6.50	6.56	6.61	6.66	6.71	6.77	6.82	6.87	6.93	6.98
12	7.03									

NOTES:

1. Porous backfill to be placed to a min. thickness of 1 ft. on all sides.
2. Ladder rungs to be No. 6 Hi-Bond bars, galvanized.
3. 4 in. dia. tile in porous ground only, slope bottom as indicated when tile is used.
4. All concrete work to conform to Section 9-04 of MTC Form 9. Class of concrete: 3000 p.s.i.
5. Weep holes shall be placed so that the bottom of the weeper on the inside and the top of the weeper on the outside are level.
6. Where manhole exceeds 12 ft. depth, this Std. to be used in conjunction with DD-703-A.
A deduction of 1-12 cu. yds. for the base is to be made to the concrete volumes shown.
7. This Std. to be read in conjunction with MTC Form 407.



SECTION B-B

No. DD-701-A

Date June 21/73 Rev. 3

MINISTRY OF TRANSPORTATION
AND COMMUNICATIONS - ONTARIO

4' x 4' CATCH BASIN AND MANHOLE

WITH SUMP - DEPTH 12' MAX.

APPROVED

Drawn by S.S.
Traced by S.S.
Checked by E.G.
Passed by D.J.R.

Director Systems Design Branch