

File No. 04-1000-20-2011-010

April 11, 2011

By Email:

s.22(1)

Dear s.22(1) :

Re: Request for Access to Records under the Freedom of Information and Protection of Privacy Act (The "Act")

I am writing regarding your request of December 30, 2010 for a copy of the Pedre Contractors Ltd. contract with the City, ITT# - PS10094. Please find the responsive record attached to the email by which this letter is being sent to you.

The contract contains information, the disclosure of which could reasonably be expected to be harmful to the business interests of the contractor business entity. As a result, and based on the provisions of s. 21 of the Act (see full text appended below), certain unit costing, proprietary work flow and methodology, and business specific financial information has been blacked out in the contract. Final costs, incurred by the City of Vancouver, are required to be released and are revealed throughout the contract.

Under section 52 of the Act you may ask the Information & Privacy Commissioner to review any matter related to the City's response to your request. The Act allows you 30 business days from the date you receive this notice to request a review by writing to:

Office of the Information & Privacy Commissioner,
P.O. Box 9038, Stn. Prov. Govt.
Victoria, B.C. V8W 9A4
Tel. 250-387-5629; Fax 250-387-1696

If you request a review, please provide the Commissioner's office with the following:

- 1) the file number assigned to your request (04-1000-20-2011-010);
- 2) a copy of this letter;
- 3) a copy of your original request for information sent to the City of Vancouver; and
- 4) detailed reasons or grounds upon which you are seeking a review.

If you have any questions, please feel free to contact us at your convenience.

Yours truly,



Janice MacKenzie
Deputy City Clerk

Janice.mackenzie@vancouver.ca
453 W. 12th Avenue Vancouver BC V5Y 1V4
Phone: 604.871.6146
Fax: 604.873.7419

Encls.

:vh

Freedom of Information and Protection of Privacy Act

Disclosure harmful to business interests of a third party

21 (1) The head of a public body must refuse to disclose to an applicant information

(a) that would reveal

(i) trade secrets of a third party, or

(ii) commercial, financial, labour relations, scientific or technical information of or about a third party,

(b) that is supplied, implicitly or explicitly, in confidence, and

(c) the disclosure of which could reasonably be expected to

(i) harm significantly the competitive position or interfere significantly with the negotiating position of the third party,

(ii) result in similar information no longer being supplied to the public body when it is in the public interest that similar information continue to be supplied,

(iii) result in undue financial loss or gain to any person or organization, or

(iv) reveal information supplied to, or the report of, an arbitrator, mediator, labour relations officer or other person or body appointed to resolve or inquire into a labour relations dispute.



AGREEMENT

**Construction of Force Main and Gravity Sewers
(ITT NO. PS10094)**

BETWEEN:

CITY OF VANCOUVER

AND

PEDRE CONTRACTORS LTD.

DATED: SEPTEMBER 15, 2010

TABLE OF CONTENTS

- 1. AGREEMENT**
 - 2. General Conditions**
 - 3. Supplementary General Conditions**
 - 4. Form of Tender**
 - 5. Insurance Certificates**
 - 6. Performance Bond and Labour & Material Payment Bond**
 - 7. Prime Contractor Agreement Form**
 - 8. Notice to Proceed**
 - 9. Schedule A - Notice to Proceed**
 - 10. Schedule B - Notice to Proceed**
-

AGREEMENT

This AGREEMENT is made as of the 15th day of September, 2010.

BETWEEN:

CITY OF VANCOUVER,
having an office at 453 West 12th Avenue,
Vancouver, British Columbia, V5Y 1V4

(the "City")

OF THE FIRST PART

AND:

PEDRE CONTRACTORS LTD.
104 - 10180 199B Street,
Langley, British Columbia, V1M 3X8

(the "Contractor")

OF THE SECOND PART

WHEREAS:

- A. In June, 2010, the City issued an Invitation to Tender (reference ITT No. PS10094) for the construction of forcemain and gravity sewers in the City of Vancouver, called "Construction of Forcemain and Gravity Sewers";
- B. In response thereto, the Contractor submitted a Tender to the City (the "Tender")
- C. By resolution of its Bid Committee made on August 23, 2010 the City approved the Tender.
- D. On that basis, the City and the Contractor have agreed that the Contractor will perform for the Work specified in the Contract Documents (as defined below), in accordance therewith.

THEREFORE, in consideration of the promises exchanged herein, the parties agree as follows:

ARTICLE I - INTERPRETATION

Capitalized terms and words used in this Contract, which are not otherwise defined herein, have the meanings designated in Part E - General Conditions attached or the other Contract Documents, as the case may be.

ARTICLE II - ROLE OF THE ENGINEER

The City hereby designates and appoints the Owner (hereinafter referred to as the "Engineer" for the purposes of this Contract) to act as its sole and exclusive agent for the purpose of managing and administering for the City the performance of the Work by the Contractor in accordance with the Specifications, Drawings and other Contract Documents under the Contract as set out in the Contract Documents. The Contractor must coordinate the Work with the Engineer. The Contractor will have no cause for claim against the City whatsoever with respect to delays or other interruption of the Work by City employees or due to the above requirement to coordinate the Work with the Engineer.

Unless otherwise notified in writing by the City to the Contractor, the agency of the Engineer will continue for the entire duration of this Contract including the period of any guarantees or warranties given by or through the Contractor. In the event of the revocation in writing of the agency of the Engineer by the City, the Engineer will have no further authority under this Contract, except as may be specifically designated in writing by the City and agreed to in writing by the Engineer, and all references to the Engineer in this Contract will thereafter be deemed to be a reference to the City or to such other person designated in writing to the Contractor. The Engineer may from time to time delegate to a representative the performance of or the authority to perform the duties, responsibilities, rights and obligations of the City in respect of which the Engineer has been designated and appointed its sole and exclusive agent.

Despite any other term of the Contract Documents, where the Contractor must submit to the Engineer for approval a drawing or other information which indicates a method or technique by which the Contractor will carry out a certain aspect of the Work, the Engineer's approval of such drawing or other information will be deemed only to be an acknowledgement by the Engineer that such drawing or other information appears to be consistent with the requirements of the Contract Documents. Under no circumstances will the Engineer's approval of the drawing or other information be, or be interpreted as, the City's or Engineer's approval or endorsement of the method or technique described in the drawing or other information and under no circumstances will the Engineer's approval of the drawing or other information modify or limit in any way the Contractor's total, complete and unconditional responsibility for design, engineering and proper implementation of the appropriate methods and techniques necessary to successfully carry out the Work specified in the Contract Documents.

ARTICLE III - PERFORMANCE OF THE CONTRACT

The Contractor hereby agrees and undertakes to perform the Work, and will furnish all materials, equipment, Products, labour and services and supervision necessary to carry out the Work, in a professional and workmanlike manner in accordance with all applicable laws and regulations, and all is contemplated by and in accordance with the Contract Documents. The City in turn agrees and undertakes to perform its obligations under the Contract Documents in accordance with the requirements of the Contract Documents.

ARTICLE IV - CONTRACT DOCUMENTS

The following is a list of the documents that contain the terms and conditions of the Contract (the "Contract Documents"). This list is subject to subsequent amendments in accordance with the provisions of the Contract Documents. Terms used anywhere in the Contract Documents that are defined in other parts of the Contract Documents will have will have the meanings given to them there.

- (a) This Agreement, as executed;
- (b) Notice of Award delivered to Contractor;
- (c) Conditional Notice to Proceed, including amendment dated August 25, 2010;
- (c) Notice to Proceed delivered to Contractor;
- (d) Part B - Instructions to Tenderers portion of the Tender Documents;
- (e) Part C - Form of Tender portion of the Tender Documents, including, without limitation, all Schedules thereto, as completed by Tenderer;
- (f) Part E - General Conditions portion of the Tender Documents;
- (g) Schedule "J" to Part C Form of Tender - Prime Contractor Agreement Form portion of the Tender Documents;
- (h) Appendix "A" to Part D Form of Agreement - Project Specific Insurance;
- (i) Part F - Supplementary General Conditions portion of the Tender Documents;
- (j) Part G - Specifications portion of the Tender Documents;
- (k) Part H- Project Scope Drawings portion of the Tender Documents;
- (l) Appendix "B" to Part H Project Scope Drawings - Geotechnical Report;
- (m) Performance Bond required under the Tender Documents;
- (n) Labour and Materials Payment Bond required under the Tender Documents; and
- (o) Any addenda to any Contract Documents.

The Contract Documents are complementary to each other, and what is called for by any one will be as binding as if called for by all. The intent and spirit of the Contract Documents is that the Contractor is required to complete the Work in every detail within the times and for the purposes designated, and that the Contractor must furnish and do any and everything necessary for such purposes notwithstanding any omission from the Contract Documents. In the event of a discrepancy or contradiction between a term or condition in one Contract Document with an Contract Document, Part E - GC. 2 will apply.

ARTICLE V - SCHEDULE OF WORK

The Contractor will commence the Work in accordance with the Conditional Notice to Proceed. The Contractor will proceed with the Work diligently, will perform the Work in accordance with the construction schedules as required by the Contract Documents and achieve Substantial Performance of the Work by January 31, 2011 and Total Performance of the Work by March 30, 2011 (the "Contract Performance Deadline"), subject to the provisions of the Contract Documents for adjustments to the Contract Performance Deadline.

Time is of the essence in this Contract.

ARTICLE VI - PAYMENT

Subject to additions and deductions for variations in the Work and to quantities utilized as may be agreed upon in writing, and to the provisions of the Contract, the City will pay the Contractor as remuneration for the performance of the Work a maximum total of *three million, fifty thousand, one hundred and eighty dollars and zero cents* (\$3,050,180.00) excluding applicable taxes and including without limitation permit and license fees (the "Contract Amount").

Applications for Payment:

- (a) During its performance of the Work, the Contractor may apply to the Engineer, in form approved by the Engineer, on or before the last day of every month, for payment for Work performed and materials supplied at or to the Work Site to the date of the application, provided that the Engineer may at any time require as a condition of payment the submission of documentation set out in the Part E - GC. 60, portion of the Contract Documents.
- (b) On Substantial Performance being certified in accordance with the procedures set out in the Part E -GC. 60 portion of the Contract Documents and the value of the certified deficiencies being agreed upon, the Contractor may make application to the Engineer for the balance of all monies then owing to the Contractor under the Agreement, submitting also such documentation as is required under the Part E - GC.60 subject to the deficiency holdback contemplated by paragraph (h) of this Article VI.
- (c) On correction and completion of all deficiencies listed on the Certificate of Substantial Performance, the Contractor will apply to the Engineer for final payment, accompanied by the documentation required by the Part E - GC. 60.

The City's payment to the Contractor for any Work under the Contract will not be construed as an acceptance of the Work as having been performed in accordance with the Contract Documents.

The City's issuance of a Certificate of Total Performance will constitute a waiver by the Contractor of all claims under the Contract, except those previously made in writing and still unsettled, if any, and specified by the Contractor in his application for final payment pursuant to subparagraph (c) above.

The City will make payments to the Contractor as follows for Work performed:

- (d) On or before the fifth day of the month following the Contractor's application for payment, the Engineer will adjust, if necessary, and certify the Contractor's progress estimate. Where the Engineer makes any changes to the amount submitted by the Contractor for payment, the Contractor will be notified in writing within five (5) Working Days and will be given the opportunity to defend his application without delay.
- (e) Within thirty (30) calendar days of the date the City receives any Engineer certified application for payment, the City will make payment to the Contractor up to the value of the completed Work as certified by the Engineer, less any holdback required under the *Builders Lien Act* equal to ten percent (10%) of such certified value and less the aggregate of any previous payments all in accordance with the Contract and with the *Builders Lien Act*.
- (f) The City, in addition to any other holdbacks as provided by the Contract Documents, will be entitled to deduct and retain from payments otherwise due to the Contractor for Work performed, a maintenance security holdback ("Maintenance Security") in the amount of five percent (5%) of the Contract Price to cover the cost of corrections to the Work that may be required under the Part E - GC. 51. The balance of the Maintenance Security not required under the Maintenance Security remaining at the end of the warranty period for the Work as provided for in the Contract, will be paid without interest to the Contractor at the end of that warranty period. The Contractor may substitute a letter of credit for the Maintenance Security, in the amount of the Maintenance Security held back and required under the Contract, in a form and from a financial institution acceptable to the City.
- (g) Where the Engineer has issued a Certificate of Substantial Performance in respect of any of the Work performed by subcontractors, and where fifty-five (55) calendar days have elapsed since the issuance of the certificate without any claims of builders lien being filed which arose under the subcontract, the City will release to the Contractor any *Builders Lien Act* holdback amount retained for such subcontract work.
- (h) After fifty-five (55) calendar days have elapsed from the date of issuance of a Certificate of Substantial Performance in accordance with Part E - GC. 60 part of the Contract Documents, and upon the Engineer's satisfaction that no encumbrance, lawful claim or lien exists, the City, within a further ten (10) calendar days, will make payment to the Contractor of all monies due under the Contract at the date of Substantial Performance of the Work, including the release of any remaining *Builders Lien Act* holdback amounts, provided, however, that the Contractor hereby authorizes the City to retain as a deficiency holdback at least twice the estimated value of any certified deficiencies (the "Deficiencies Security"), and to apply any builders lien holdback monies then held by the City towards such Deficiencies Security, and if that amount is insufficient, to immediately provide the City with an additional cash payment equivalent to the shortfall. The Contractor may substitute a letter of credit for the Deficiencies

Security, in the amount of the Deficiencies Security held back and required under the Contract, in a form and from a financial institution acceptable to the City.

- (i) Subject to all other provisions of the Contract, upon the issuance of a Certificate of Total Performance, the City will make a final payment of all monies owing to the Contractor under the Contract.
- (j) Where payment is not made in accordance with the payment provisions above, the overdue amount will bear interest at the lending rate of the Bank of Montreal for its prime commercial customers and such interest will be calculated from and after the date upon which such payment is due and will accrue until the date of payment of the overdue amount, together with accrued interest. This interest obligation on the part of the City will be the sole remedy of the Contractor for any late payment under the Contract.
- (k) Notwithstanding anything to the contrary in this Article VI - Payment, the Contractor must not make application for payment, and the City is not obliged to make payment, for Work done until each section of sewer main, as described in Part C - Form of Tender has been installed, pressure tested, disinfected, services have been changed over and the old sewer main has been abandoned, all in accordance with the Contract Documents.

ARTICLE VII - DAMAGES FOR DELAYS

Liquidated Damages for Late Completion.

If the Contractor fails to complete the Work by the Contract Performance Deadline as set out in Article V above, as may be modified pursuant to the provisions of the Contract Documents, then the City may deduct from any monies owing to the Contractor for the work:

- (a) as a genuine pre-estimate of the City's increased costs for delay of sequential construction tasks, an amount of CDN three hundred dollars (\$300.00) per day or pro rata portion for each calendar day that completion of the Work is delayed after the Contract Performance Deadline; plus
- (b) all direct out-of-pocket costs, such as, without limitation, costs for safety or security measures taken or equipment rented, reasonably incurred by the City as a result of such delay.

If monies owing to the Contractor are less than the total amount of liquidated damages owed by the Contractor to the City under subparagraph (a) above, then any such shortfall will be due and owing to the City from the Contractor immediately on written notice from the City therefore and upon Substantial Performance of the Work.

ARTICLE VIII - NOTICES

Unless otherwise specifically provided in the Contract Documents (see, for example Part E - GC. 17), all notices, instructions, orders or other communications given in writing by the City will be conclusively deemed to have been given to the Contractor if delivered to

the Contractor personally (or in the case of a company, to any of its officers or directors personally), or to the Contractor's superintendent, foreman or other authorized representative, or if delivered by mail or faxed addressed to the Contractor at the business address of the Contractor set forth below or in the Tender for the Work:

Contractor:

Name: PEDRE CONTRATORES LTD

Address: 104 - 10180 199B ST.

City: VANCOUVER, BC

Postal Code: V1M 3X8

Fax Number: 604 881 2412

Attention: s.22(1), s.21(1)

Unless otherwise specifically provided in the Contract Documents all notices, requests, claims or other communications by the Contractor will be in writing and will be given by personal delivery or by registered mail addressed to the:

City:

CITY OF VANCOUVER
4th Floor, 507 West Broadway
Vancouver, British Columbia
V5Z 0B4

Attention: Jiamei Bai, Engineering Services
Sewers Design

Either of the said addresses may be changed from time to time by written notice to the other party.

Any such notices, instructions, orders, requests or other communications sent by mail as aforesaid will be deemed to have been given on the second Working Day following the mailing thereof.

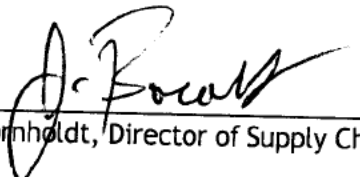
ARTICLE IX - SUCCESSORS AND ASSIGNS

The Agreement will be binding upon and will ensure to the benefit of the successors and assigns of the respective parties hereto.

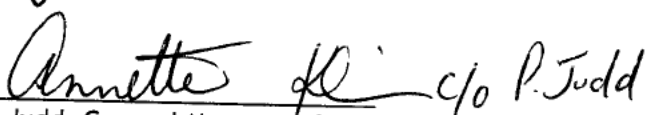
IN WITNESS WHEREOF the parties hereto have set their hands and seals as of the day and year first above written.

CITY OF VANCOUVER

BY:


Jim Bornholdt, Director of Supply Chain Management

BY:


Peter Judd, General Manager of Engineering

BY:


Francie Connell, Director of Legal Services

CONTRACTOR

s.22(1), s.21(1)

JEFFREY M. GREENBERG

Print Name and Title

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

TABLE OF CONTENTS

GC NO.

- GC.1. DEFINITIONS
- GC.2. INTERPRETATION
- GC.3. PERSONAL EXAMINATION
- GC.4. CONTRACT AMOUNT
- GC.5. PERFORMANCE BOND
- GC.6. LABOUR AND MATERIALS PAYMENT BOND
- GC.7. WORKSAFEBC COMPLIANCE AND CONTRACTOR TO BE PRIME CONTRACTOR
- GC.8. LABOUR
- GC.9. COMMENCEMENT AND COMPLETION OF THE WORK
- GC.10. DELAY IN PROGRESS OF THE WORK
- GC.11. SPECIFICATIONS AND DRAWINGS
- GC.12. SHOP DRAWINGS
- GC.13. RECORD PLANS
- GC.14. ENGINEER SOLE JUDGE [Intentionally Deleted]
- GC.15. ENGINEER'S ABSENCE
- GC.16. ACCESS AND ASSISTANCE
- GC.17. NOTICES TO CONTRACTOR
- GC.18. CONTRACTOR'S SUPERINTENDENT AND EMPLOYEES
- GC.19. INSPECTION OF WORK
- GC.20. DAILY REPORT
- GC.21. WEEKLY MEETINGS
- GC.22. CONSTRUCTION SCHEDULE
- GC.23. MAINTENANCE OF SCHEDULE
- GC.24. EMERGENCIES
- GC.25. SUBCONTRACTORS AND SUPPLIERS
- GC.26. CONTRACTOR'S PLANT AND UTILITIES
- GC.27. PLANT, LABOUR AND MATERIALS
- GC.28. MATERIAL AND EQUIPMENT SUPPLIED BY THE CONTRACTOR
- GC.29. MATERIAL IN IMPERIAL UNITS
- GC.30. SUPPLY OF MATERIALS BY THE CITY
- GC.31. TEMPORARY STRUCTURES
- GC.32. WORK AREAS AND CONTRACT LIMITS
- GC.33. OFFICE FACILITIES FOR THE ENGINEER [Intentionally Deleted]
- GC.34. STORAGE AREAS
- GC.35. HOURS OF WORK
- GC.36. TRAFFIC CONTROL
- GC.37. PUBLIC CONVENIENCE
- GC.38. ACCESS TO EXISTING STRUCTURES
- GC.39. PROTECTION OF WORK AND PROPERTY
- GC.40. FIRE, SECURITY AND SAFETY REGULATIONS
- GC.41. OVERLOADING
- GC.42. DRAINAGE
- GC.43. CLEANING UP
- GC.44. SAFEGUARDING EXISTING PROPERTY

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

- GC.45. EXISTING UTILITIES
- GC.46. DUST CONTROL
- GC.47. ALTERATIONS, EXTRAS, DEDUCTIONS & CLAIMS
- GC.48. ERRORS BY CONTRACTOR
- GC.49. TESTING OF MATERIALS
- GC.50. DEFECTIVE WORK
- GC.51. WARRANTY
- GC.52. CONTRACTOR'S LIABILITY
- GC.53. CONTRACTOR/SUBCONTRACTOR INSURANCE REQUIREMENTS
- GC.54. WorkSafeBC ASSESSMENTS [Intentionally Deleted - see CG.7.]
- GC.55. CLAIMS FOR WAGES
- GC.56. LIENS 32
- GC.57. PATENT INFRINGEMENT
- GC.58. MONEY DUE TO CITY
- GC.59. ASSIGNMENT
- GC.60. CERTIFICATES AND PAYMENTS
- GC.61. TERMINATION OF CONTRACT WITHOUT DEFAULT OF CONTRACTOR
- GC.62. TERMINATION OF CONTRACT FOR CONTRACTOR'S DEFAULT
- GC.63. SUBMITTALS
- GC.64. NON-RESIDENT WITHHOLDING TAX
- GC.65. NO PROMOTION OF RELATIONSHIP WITH THE CITY
- GC.66. TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS
- GC.67. HARMONIZED SALES TAX ("HST") - PROVINCIAL SALES TAX ("PST") AND FEDERAL GOOD AND SERVICES TAX ("GST") HARMONIZATION

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

GC.1. DEFINITIONS

Where used in the Form of Agreement (including its Schedule), Invitation to Tender, Instructions to Tenderers, Form of Tender (including the Schedules), Bonds, General Conditions, Specifications and Drawings, Addenda (if any) or any other documents forming part of the Contract Documents, the following terms have the respective meanings ascribed to them below:

- a) "Bid Bond" is defined in Part B - Instructions to Tenderers Section 7.0;
- b) "Certificate of Substantial Performance" means, subject always to Article VI of Part D - Form of Agreement and to the warranty under GC.51, the certificate issued by the Engineer indicating that Substantial Performance of the Work has been achieved;
- c) "Certificate of Total Performance" means, subject always to Article VI of Part D - Form of Agreement and to the warranty under GC.51, a certificate issued by the Engineer accepting the Contractor's certification that the entire Work of the Contract has been performed by the Contractor to the requirements of the Contract Documents;
- d) "City" means the City of Vancouver as a municipal corporation continued pursuant to the *Vancouver Charter*;
- e) "Contract Amount" is defined in Article VI of Part D - Form of Agreement or Agreement;
- f) "Contract Documents" is defined in Article IV of the Form of Agreement or Agreement;
- g) "Contract Performance Deadline" means March, 2011;
- h) "Contractor" or a pronoun in place thereof, means the person or persons who have undertaken to carry out and perform the Work pursuant to the Contract;
- i) "Detailed Design Drawings" means drawings, plans, sketches and/or details provided by the Engineer that are specific to the Works.
- j) "Drawings" means all plans, profiles, drawings, sketches or copies thereof exhibited, used or prepared for or in connection with the Work embraced under the Contract, including the Detailed Design Drawings and the Standard Design Drawings;
- k) "Engineer" means the Engineer as defined in Article II of the Form of Agreement or Agreement or his/her delegate, who may be an

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

employee of the City or an independent engineer engaged by the City on its behalf;

- (l) **"Form of Agreement or Agreement"** means the agreement in final form entered into between the Contractor and the City in form and substance of the Form of Agreement forming part of the Tender Documents, including its Appendix "A";
- m) **"Form of Tender"** means the form of tender forming part of the Tender Documents, including its Schedules "A" through "J";
- n) **"Invitation to Tender"** means the invitation to tender for PS10056 Watermain Supply and Installation work in the City of Vancouver, together with all its attachments, schedules, supplements and amendments;
- o) **"Instructions to Tenderers"** means Part B - Instructions To Tenderers forming part of the Tender Documents;
- p) **"General Conditions"** means Part E - General Conditions and "GC ____" means the particular general condition identified by number;
- q) **"Labour and Material Payment Bond"** is defined in Section 6.0 of Part B - Instructions to Tenderers.
- r) **"Notice of Award"** is defined in Section 2.0 of Part C - Form of Tender;
- s) **"Notice to Proceed"** is defined in Section 3.0 of Part C - Form of Tender;
- t) **"OH&S Regulation"** means *Occupational Health & Safety Regulation* (BC Regulation 296/97, as amended by BC Regulation 185/99) enacted pursuant to the *Workers Compensation Act* (British Columbia), as such Regulation is amended or re-enacted from time to time;
- u) **"Other Contractors"** means any person, firm or corporation employed by or having a contract with the City and/or associated parties otherwise than through the Contractor;
- v) **"Performance Bond"** is defined in Section 6.0 of Part B - Instructions to Tenderers.
- w) **"Plant"** means every temporary or accessory means necessary or required to carry on or complete the Work and extra work, in the time and manner herein provided including, without limiting the generality of the foregoing, all tools, fixed and moveable machinery, engines, motor vehicles, trucks, compressors, all temporary structures such as workshops, sheds, storehouses, shoring forms, trestles and hoardings

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

and all other appliances, apparatus or equipment of every sort, kind and description whatsoever;

- x) **"Prime Contractor"** means the Contractor, as that term is defined in section 118(1) of the WCA, and used in the WCA, the OH&S Regulation and by WorkSafeBC;
- y) **"Prime Contractor Agreement"** means the agreement to be entered into between the City and the Contractor in Part C - Form of Tender attached as Schedule J;
- z) **"Products"** means material (including but not limited to backfill), machinery, equipment and fixtures incorporated or to be incorporated in the Work as required by the Contract Documents;
- aa) **"Site"** means the place or places where the Work under the Contract is to be carried out, erected, built or constructed;
- bb) **"Standard Design Drawings"** means drawings from the City's Engineering Standards. These drawings may include but not be limited to drawings, sketches, and/or plans from the City's Streets, Sewers, Utilities, Water Works or other City department standards.
- cc) **"Subcontractor"** means the person or persons with whom the Contractor has made an agreement to perform a portion or portions of the Work or to supply materials or equipment therefor;
- dd) **"Substantial Performance"** means the stage of completion of all of the Work, as certified by the Engineer, when:
 - the Work is ready for use or is being used for its intended purpose;
and
 - the total of incomplete, defective and deficient Work can be completed at an estimated cost of no more than 3% of the Contract Price.
- ee) **"Surety"** means the company which executes a bond required by the Contract to be furnished to the City;
- ff) **"Tables"** means information provided in a tabular format within the Specifications.
- gg) **"Tender Documents"** is defined in Section 11.- of Part B - Instructions to Tenderers.
- hh) **"Total Performance"** means when all the Work, including all deficiencies but excluding any correction of completed Work that appears during the Warranty Period or other on-going warranty or

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

guarantee as provided by the Contract Documents, has been performed as required by the Contract Documents, as certified by the Engineer;

- ii) "Warranty" and "Warranty Period" are defined in GC. 51;
- jj) "Waterworks Connection Database Service Lists" means information from the City's database showing location and material of existing water services.
- kk) "WCA" means the *Workers Compensation Act* (British Columbia), including without limitation, all regulations enacted pursuant to it, as such Act or regulations are amended or re-enacted from time to time;
- ll) "Work" or "Works" means (unless the context requires a different meaning) the whole of the Work as described in the Form of Tender, including all materials, matters, Products and things required to be done or supplied therefore, and all work(s) mentioned or referred to in the Contract Documents, including all extra or additional work or materials, matters or things which may be ordered by the City of the Engineer as herein provided;
- mm) "Working Day" means any day other than a Saturday, Sunday or "holiday" as defined in the *Interpretation Act* (British Columbia); and
- nn) "WorkSafeBC" means the Provincial body which is responsible for administering and implementing the WCA, and the OH&S Regulation, and includes the Workers' Compensation Board.

GC.2. INTERPRETATION

In this Contract, the masculine includes the feminine and bodies corporate, and each includes the others. Also, any reference to the singular includes the plural where appropriate.

Drawings and Specifications are intended to be complementary. Should any difference exist between the Drawings and Specifications, or should any errors or inconsistency occur in any or between any of the Drawings and Specifications, the Contractor, before proceeding, must bring them to the attention of the Engineer.

The Engineer will furnish from time to time such detail drawings and information as the Engineer may consider necessary for the Contractor's guidance. These detail drawings will take precedence over the Drawings initially forming part of the Tender documents, and will be considered as explanatory of them and not as indicating changes in the Work.

On all Drawings, figures take precedence over scaled dimensions. Scaling of dimensions, if done, is done at the Contractor's own risk. Despite the

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

above, in the event of any inconsistency between the Drawings and Specifications or between any other Contract Documents or within any Contract Documents which could be construed as creating an ambiguity in the amount of Work involved, the cost or amount of Product being supplied, the Contract Amount being lower or higher, or any other similar discrepancy or inconsistency, the discrepancy or conflict will be resolved as follows:

the portion of the Contract Documents most favourable to the City will be deemed to be correct;

the more specific provision will take precedence over the less specific;

the more stringent in respect of the Contractor will take precedence over less stringent; and

the more expensive item will take precedence over the less expensive.

GC.3. PERSONAL EXAMINATION

The Contractor is required to examine carefully the Site, and the Drawings, Tables, Specifications and other Contract Documents. The Contractor must satisfy itself as to the character, quality and quantity of work to be performed, materials to be furnished, and as to the requirements of the Drawings, Tables, Specifications and other Contract Documents. The Drawings, Tables, Specifications and other Contract Documents show or describe conditions as they are believed by the Engineer to exist, but it is not to be inferred that all of the conditions as shown thereon are actually existent, nor will the City or any of its respective officers be liable for any loss sustained by the Contractor as a result of any variance between the conditions as stated in the Drawings, Tables, Specifications or other Contract Documents and the actual conditions revealed during the progress of the Work, or otherwise.

The submission of a tender will be prima facie evidence that the Contractor has made such an examination. The Contractor agrees that the Contractor has satisfied itself by the Contractor's own investigation and research regarding all conditions, that the Contractor's conclusion to enter into the proposed contract is based upon such investigation and that the Contractor will make no claim against the City or the Engineer because any of the estimates, tests or representations of any kind affecting the Work made by any officer or agent of the City or the Engineer may prove to be in any respect erroneous. The Contractor assumes the risk of unforeseen conditions and agrees to complete the Work under whatever circumstances that may develop. Any information shown or described in the Drawings, Tables, Specifications or any other Contract Documents as to the soil or material borings or tests of existing material is not guaranteed, and no claim for extra work or damages will be considered if it is found during

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

construction that the actual soil or material conditions vary from those indicated.

GC.4. CONTRACT AMOUNT

Bids must include all Federal, Provincial and Municipal fees and other taxes, rates and assessments, and the Contractor agrees that the City will not be liable in any manner therefor and the Contractor agrees to indemnify and save harmless at all times the City against all claims which are made with respect thereto. All such taxes, rates, assessments and fees must be paid by the Contractor, but if refundable, must be refunded to the City and will be the exclusive property of the City.

The Contractor must include in the Contract Amount all cash allowances mentioned in the Specifications, if any, which allowances must be expended in whole or in part as the Engineer directs, the Contract Amount being adjusted in conformity therewith. The Contract Amount includes such sums for expenses and profit on account of such cash allowances as the Contractor requires.

GC.5. PERFORMANCE BOND

The Contractor, together with a surety company acceptable to the City, which is authorized and licensed to carry on business in British Columbia and has an office in British Columbia, will be required to enter into a performance bond in a form satisfactory to the Engineer for a sum equal to fifty percent (50%) of the Contract Amount as surety for the due and proper performance of the Contract including Warranty. The expense of the performance bond will be borne by the Contractor.

GC.6. LABOUR AND MATERIALS PAYMENT BOND

The Contractor, together with a surety company acceptable to the City, which is authorized and licensed to carry on business in British Columbia and has an office in British Columbia, will be required to enter into a labour and materials bond in a form satisfactory to the Engineer for a sum equal to fifty percent (50%) of the Contract Amount as surety for the due and proper payment for material and labour used in carrying out the Contract. The expense of the labour and materials bond will be borne by the Contractor.

GC.7. WorkSafeBC COMPLIANCE AND CONTRACTOR TO BE PRIME CONTRACTOR

- a) Payment of WCA and WorkSafeBC Assessments - The Contractor agrees that it will at its own expense procure and carry or cause to be procured and carried and paid for, all WCA and WorkSafeBC required coverage for itself and all workers, employees, servants and others engaged in or upon any work or service which is the subject of this Contract. The Contractor agrees that the City has the unfettered

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

right to set off the amount of the unpaid premiums and assessments for such WCA and WorkSafeBC required coverage against any monies owing by the City to the Contractor. The City will have the right to withhold payment under this Contract until all WCA and WorkSafeBC required premiums, assessments or penalties in respect of work done or service performed in fulfilling this Contract have been paid in full.

- b) **Designation of Contractor as Prime Contractor** - The City now designates the Contractor as the Prime Contractor, and the Contractor now acknowledges and agrees to its designation as the Prime Contractor, for the purposes of WorkSafeBC and the WCA.
- c) **Prime Contractor's Obligations** - Without in any way limiting the Contractor's obligations under WorkSafeBC and the WCA, and by way of example only, the Contractor will:
 - i) appoint and provide a qualified coordinator for the purpose of ensuring the coordination of health and safety activities for the Site;
 - ii) provide and receive and respond to all information required to be given, received or relayed by the Contractor (both as an employer and as the Prime Contractor) pursuant to WorkSafeBC requirements and the WCA; and
 - iii) within five (5) Working Days of the City giving the Notice of Award to the Contractor, sign and deliver to the City, the "Prime Contractor Agreement" in the form attached.
- d) **General WorkSafeBC Obligations** - In addition to, and not in lieu of, the Contractor's obligations as the Prime Contractor, the Contractor will have a safety program acceptable to WorkSafeBC and in strict compliance with the WCA, and will ensure that all City, WorkSafeBC and WCA safety policies, rules and regulations are observed during performance of this Contract, not only by the Contractor but by all Subcontractors, workers, material suppliers and others engaged in the performance of this Contract.
- e) **Notice of Project** - At least twenty-four (24) hours prior to commencement of construction, the Contractor will:
 - (i) complete and file a "Notice of Project" with WorkSafeBC in compliance with Section 20.2 of the OH&S Regulation;
 - (ii) post the Notice of Project at the Site; and

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

- (iii) will provide a copy of the Notice of Project to the City and confirm in writing that (i) and (ii) above have been complied with.
- f) **Initial Proof of WorkSafeBC Registration/Good Standing** - Within five (5) Working Days of the City giving the Notice of Award to the Contractor, the Contractor will provide the City with the Contractor's and all Subcontractor's WorkSafeBC/WCA registration numbers.
- g) **Subsequent Proof of WorkSafeBC Registration/Good Standing** - Prior to execution of the Contract and prior to commencing the Work under the Contract, the Contractor must provide a letter from WorkSafeBC confirming the Contractor's and all Subcontractors' registrations and that all assessments have been paid to the date thereof by each. Throughout the term of the Contract the Contractor must and the Contractor must require that all Subcontractors maintain such coverage and pay such assessments as will protect them, the City and the Engineer from claims under the WCA. Concurrently with making any application for payment under this Contract, the Contractor will provide the City with written confirmation that the Contractor and all Subcontractors are registered in good standing with WorkSafeBC and under the WCA, and that all assessments have been paid to date of application for payment.
- h) **Pre-Contract Hazard Assessment** - The Contractor may or may not have received, as part of the Contract Documents, a "Pre-Contract Hazard Assessment" prepared by or for the City pursuant to the City's statutory obligations under Section 119 of the WCA as an "owner of a workplace". Despite the City's statutory obligations, the Contractor as Prime Contractor now acknowledges and agrees that it may not rely on any such "Pre-Contract Hazard Assessment" and now agrees to assume by the terms of this Contract full responsibility for carrying out the City's obligations under Section 119 of the WCA, including without limitation and by way of example only, conducting all due diligence inquiries of all applicable City staff and departments in order to ascertain what, if any, information is known or has been recorded by City staff about the Site that is necessary to identify and eliminate or control hazards to the health or safety of persons at the Site. The City now agrees to make all reasonable efforts to assist the Contractor in obtaining timely access to City staff and City records for this purpose. Within five (5) Working Days of the City giving the Notice of Award to the Contractor, the Contractor will start conducting such due diligence inquiries and must complete and deliver written confirmation of the completion of such inquiries to the Engineer prior to the City being obligated to issue the Notice to Proceed.

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

- i) **Special Indemnity Against WorkSafeBC Non-Compliance** - The Contractor will indemnify the City and hold harmless the City from all manner of claims, demands, costs, losses, penalties and proceedings arising out of or in any way related to:
- i) unpaid WorkSafeBC/WCA assessments of the Contractor or any other employer for whom the Contractor is responsible under this Contract;
 - ii) the acts or omissions of any person engaged directly or indirectly by the Contractor in the performance of this Contract, or for whom the Contractor is liable pursuant to the Contractor's obligations as the Prime Contractor, and which acts or omissions are or are alleged by WorkSafeBC to constitute a breach of the WCA, the OH&S Regulation, or any other requirements of WorkSafeBC, including any and all fines and penalties levied by WorkSafeBC; or
 - iii) any breach of the Contractor's obligations under this General Condition.
- j) **Prime Contractor Agreement Form** - The Contractor must complete and sign and deliver the Prime Contractor Agreement in the form set out in Schedule J Part C Form of Tender prior to commencing any work on the Site.
- k) **Safety Regulation Enforcement** - Should the Engineer witness the Contractor or an agent of the Contractor in violation of the WCA or WorkSafeBC safety regulations, the Contractor will be notified verbally. If the violation of the WCA or WorkSafeBC safety regulations continues, the Engineer will notify the Contractor of the violation in writing and ask the Contractor to remedy the violation. If the Contractor is unable or unwilling to remedy the violation, in addition to any other remedy the City may have under the Contract Documents, the Contract may be terminated by the City immediately, and without liability to the City.

GC.8. LABOUR

The Contractor agrees to employ appropriate tradesmen on the Work. Where the tradesmen are covered by collective agreements, the Contractor must abide by the wages and conditions of such collective agreements covering such tradesmen. Notwithstanding the foregoing, the Contractor must pay or cause to be paid to every person employed on the Work not less than the wages or remuneration generally accepted as current at the time.

The Contractor must endeavour to avoid labour problems and minimize work stoppages, jurisdictional or other labour disputes on the Site.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

GC.9. COMMENCEMENT AND COMPLETION OF THE WORK

The Contractor must not commence the Work or procure any material therefor until it has received the Notice to Proceed from the City. Forthwith after the receipt of the Notice to Proceed, the Contractor must at once begin and continuously carry on to completion (subject as herein provided) and must

complete and give full possession thereof on or before the date specified by the Contractor in its tender, unless a longer period is allowed in writing by the Engineer in which case it must be carried on to completion and possession given to the City within the additional time so allowed. No progress or interim estimate or certificate will release the Contractor or its surety from any responsibility or may be taken as evidence of any such release, or as an acceptance of any Work or material, or as a waiver of any condition herein. The whole Work and every portion and detail thereof must, at the time of completion, be put and left by the Contractor in good and satisfactory condition, finished in all respects and at the time must be fully up to the requirements of the Drawings and Specifications in every particular aspect; all surplus and refuse material and rubbish removed from the vicinity of the Work; the premises left in a neat and tidy condition; all damages to adjacent property, including pavements, foot walks, boulevards, sodding, trees, shrubs and plants, or other things injured or interfered with by the Contractor, or in any way due to its work, made good; all wages paid, and every other requirement of the Contract complied with. In case of the Contractor's failure to finish the Work properly and fully, and as required, or in case of the Work or any part thereof being taken out of its hands, as provided in these General Conditions, the City may proceed to finish the Work for the Contractor as its agent in this respect and at the Contractor's expense or proceed as provided in GC.62.

Before the completed Work is accepted and paid for, the Contractor must notify the Engineer in writing that it is ready for final inspection. Upon receipt of such notification, the Engineer will arrange to give the entire Work a minute and thorough inspection, either in person or through a competent representative.

Any defects or omissions noted during this inspection must be made good by the Contractor without extra charge before the Work will be accepted.

When the defects or omissions, if any, have been made good to the satisfaction of the Engineer, the Engineer will communicate the Engineer's acceptance of the Work to the City, subject always to Article VI of the Form of Agreement or Agreement and to the Contractor's warranty obligations.

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

GC.10. DELAY IN PROGRESS OF THE WORK

a) Delays

- i) If the Contractor is delayed in the performance of the Work by an act, omission or wilful default of the City, the Engineer or anyone employed or engaged by them, contrary to the provisions of the Contract Documents, (other than as a result of lockouts, strikes or other labour disputes involving the City or its employees, which circumstances are covered by paragraph (a)(iii) below), then the time fixed herein for

completion will be extended for such reasonable time as the Engineer may decide.

- ii) If the Contractor is delayed in the performance of the Work by a Stop Work Order issued by a court or other public authority and provided that such Stop Work Order was not issued as the result of an act or fault of the Contractor or anyone employed or engaged by him directly or indirectly, then the time fixed for completion herein will be extended for such reasonable time as the Engineer may decide.

- iii) If the Contractor is delayed in the performance of the Work by unforeseeable causes beyond the Contractor's control (which causes, for the purposes of this paragraph do include lockouts, strikes or other labour disputes involving the City or its employees, but do not include (A) lockouts, strikes or other labour disputes involving the Contractor, its subcontractors, suppliers or their respective employees, (B) delays by common carriers supplying goods or services necessary for the Work, where other carriers are available, and (C) unfavourable weather conditions of any kind, given that the Contractor is familiar with the weather conditions applicable to the Site and should have allowed for the same in its tender), then the time fixed for completion herein will be extended for such reasonable time as the Engineer may decide, but in no case will the extension of time be less than the time lost as the result of the event causing the delay, unless such shorter extension be agreed to by the Contractor. The Contractor will not be entitled to payment for any costs, loss, or damages incurred as the result of such delay.

- iv) The Engineer may, from time to time and for such period as the Engineer may deem expedient, suspend in whole or in part, the performance of the Work under the Contract, and the Engineer will order the time herein fixed for the completion of the Work to be extended for a period which is deemed by the Engineer equivalent to the time lost by reason of such suspension.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

- v) No extension will be made for delay unless written notice of claim is given to the Engineer not later than seven (7) calendar days after the commencement of delay, providing however, that in the case of a continuing cause of delay only one notice of claim will be necessary.

- vi) In the event that the Work is delayed or suspended in accordance with:

paragraphs (a)(i) or (iv) of this GC.10, the Contractor will not be entitled to make any claim by reason of such delay or suspension for any losses, costs or damages except and unless, within seven (7) calendar days of the occurrence of such delay or suspension, the Contractor must give notice in writing to the Engineer of the basis of its claim. Such claim will be limited to such unavoidable direct costs (excluding all charges for storage of Products, Plant, tools and equipment and indirect, overhead or other like costs) incurred as a result of such delay or suspension, and approved by the Engineer. In the case of a delay as described in paragraph (a)(i) or a suspension pursuant to paragraph (a)(iv), a sum equal to five percent (5%) of such approved, unavoidable direct costs (in lieu of all profit) will also be allowed. Despite any other term of this Contract, in no event will the City's liability for any delay claim (whether under this GC.10 or otherwise, at law or in equity, in contract or in tort) exceed the lesser of five hundred dollars (\$500.00) for each Working Day of delay or two percent (2%) of the Contract Amount. All unavoidable direct costs claimed by the Contractor must be submitted and substantiated to the Engineer for verification on a weekly basis as incurred, failing which, they will not be considered nor payable by the City. Authorization for any payment of the claim will only be given by written Work Order, duly signed and issued by the Engineer; and

paragraphs (a)(ii) or (a)(iii), the Contractor will not be entitled to payment for any costs, loss or damages incurred as the result of such delay and despite any other term of this Contract, the City will incur no liability for any such delay claim whether or not such claim is brought at law or in equity, contract or tort, or any other basis.

- b) Non-Avoidance

No delay or suspension described in this GC.10 will vitiate or avoid the Contract, or any part thereof, or any security or obligation for the performance thereof, unless the City elects to the contrary.

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

c) Resumption of Work

At the end of such delay or suspension, or upon the removal of the cause thereof, or upon the Contractor receiving notice from the Engineer requiring the resumption of work, the Contractor must at once resume the performance of the Work and diligently carry on the same under the direction of the Engineer.

d) Continuance of Work After Time Fixed for Completion

The Contractor must not construe any direct or inferred permission to continue work after expiry of time for completion of the Work, as stipulated in the Contract or as amended by the order of the Engineer, as a waiver of damages for non-compliance with the requirement for the completion of the Work by or within such time. The Engineer may withhold such amounts from amounts otherwise due to the Contractor as the Engineer deems necessary to satisfy claims by the Engineer, the City or by Other Contractors caused by such non-compliance with the requirement for the completion of the Work by or within such time.

e) Restriction of Delay Claims

Despite any other term of the Contract Documents, including without limitation this GC.10 and GC. 47 - *Alterations, Extras, Deductions and Claims*, in no event will the Contractor be entitled to make any extra or delay claim or seek any other form of compensation either in contract or in tort, at law or in equity, on account of any delay or work stoppage ordered by the Engineer

(i) on account of any emergency pursuant to GC.24 - *Emergencies*,
or

(ii) in order to investigate, mitigate or otherwise supervise or administer any potential discovery of heritage artifacts, environmental contamination, or other matter requiring a stoppage or suspension of the Work in order to comply with environmental, aboriginal, heritage, burial or other similar regulatory requirements.

GC.11. SPECIFICATIONS AND DRAWINGS

The Contractor must keep in its field office and available to the Engineer a complete set of the Specifications and Drawings, and of any further drawings which may from time to time be supplied or approved by the Engineer. The Contractor will be supplied with five (5) sets of Specifications.

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

Wherever standard Specifications are referred to, it will be a reference to the latest edition of those Specifications, and they will be considered to be a part of the Contract.

The Contractor will be supplied with five (5) prints of each of the Drawings and the Contractor must satisfy itself as to the accuracy of the said copies in every detail. Any additional copies desired will be furnished by the Engineer at cost to the Contractor.

The Drawings forming part of the Contract are intended to show the position and extent of the works, the general features of the design and construction, and the dimensions and proportions of all principal parts, but neither they nor the Specifications are guaranteed to show or describe every part or detail of the Work; anything omitted from the Drawings and Specifications, which may fairly be considered to be necessary for the proper execution and completion of the Work, will be deemed to be included in the Contract.

Anything whatever which may be imperfectly specified or imperfectly shown on the Drawings, must be taken, considered and done as if it were perfectly shown and perfectly specified.

All dimensions on the Drawings, except as noted thereon, are shown in metric units.

The Engineer may from time to time issue further drawings or revised drawings as the Engineer deems necessary and such drawings will be deemed to form part of the Contract. All sets of Drawings and Specifications must be kept up to date by the Contractor at all times utilizing the Engineer's revised drawings and other documents issued to the Contractor.

All Drawings, Specifications, models and copies thereof furnished by the Engineer are and will remain the Engineer's property. Such documents and models are to be used only with respect to the Work, are not to be copied or revised in any manner without the written authorization of the Engineer and are to be returned to the Engineer on request at the completion of the Work.

GC.12. SHOP DRAWINGS

- a) The Contractor must submit, with such promptness so as to cause no delay in its work, or that of any Other Contractor, one (1) sepia and one (1) copy of all shop or setting drawings and schedules required for the Work of the Contractor, and the Engineer will pass upon them with reasonable promptness. The Contractor must make any corrections required by the Engineer, and file with the Engineer one (1) sepia and one (1) copy.

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

- b) The Engineer's review of shop drawings or schedules will not relieve the Contractor from responsibility for deviations from Drawings and Specifications unless the Contractor has in writing called the Engineer's attention to such deviation at the time of submission, nor will it relieve the Contractor from the responsibility for errors of any sort in shop drawings or schedules.

GC.13. RECORD PLANS

The Contractor must supply the Engineer with three (3) complete sets of "as constructed record plans" of the Work, on or before the date the Contractor makes application to the Engineer for a Certificate of Substantial Performance.

GC.14. ENGINEER SOLE JUDGE (intentionally omitted)

GC.15. ENGINEER'S ABSENCE

In the absence of the Engineer, any of the Engineer's assistants whom the Engineer may designate to supervise the Work, will have (subject to the instructions of the Engineer) full power to decide as to the manner of conducting and executing the Work in every particular aspect, and the Contractor must follow the instructions or orders of the person so designated.

GC.16. ACCESS AND ASSISTANCE

The Contractor must furnish the Engineer and any of the Engineer's assistants at all times with convenient means of access to all parts of the Work, and also with all required assistance, to facilitate thorough examination of the same, and inspection, culling or removal of doubtful or defective material or Products and for any other purpose required in connection with the Work, or in the discharge of their respective duties, for which service no additional allowance will be made.

GC.17. NOTICES TO CONTRACTOR

During the continuance of the Work, the Contractor must maintain an office within the Greater Vancouver area equipped with a telephone and must have in this office on all Working Days between 8:30 a.m. and 4:30 p.m. an official of the Contractor.

Before commencement of construction, the Contractor must provide the Engineer with a list of at least three (3) persons who have authority to act on behalf of the Contractor in times of emergency. At least one on the list

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

must be available at all times beyond the normal working hours of the City (9:00 a.m. to 5:00 p.m., on all Working Days).

Any written notice, instruction, order or other communication to the Contractor will be conclusively deemed to have been well and sufficiently given and served if delivered to the Contractor personally (or in the case of a company, to any of its officers or directors personally), or to the Contractor's superintendent, foreman or any of the three (3) authorized representatives referred to above in this GC.17.

Any such communication given by mail or fax addressed to the Contractor at the address or fax number of the Contractor set forth in Article VII of the Form of Agreement or Agreement or in the tender for the Work will be conclusively deemed to have been well and sufficiently given and served, in the case of fax, when confirmation of dispatch is received by the sender, and in the case of mail, on the second Working Day following the mailing thereof; provided, however, that should there be between the time of the mailing and the actual receipt of the notice, a mail strike, slowdown or other labour dispute which might affect delivery of such notice, then such notice will only be effective if and when actually delivered.

In any written notice to the Contractor in respect of general, special or other repairs, or of any Work of any nature required to be done under any of the provisions of the Contract Documents, or of any other matter, it will not be obligatory upon the Engineer to specify minutely or in detail everything required, or to specify by measurement the exact extent thereof, or the precise spot or spots where the Work, material or products may be defective or faulty, or where any of the requirements of the Specifications have not been observed; but a reference in such notice to the clause or clauses bearing upon the matter, and a description of the locality in general terms and sufficiently clear, in the Engineer's opinion, to indicate where the defects or trouble exists, will be deemed to be and will be ample notice.

GC.18. CONTRACTOR'S SUPERINTENDENT AND EMPLOYEES

The Contractor must keep on the Site, during the progress of the Work, a competent superintendent and any necessary assistants, all satisfactory to the Engineer. The superintendent must not be changed except with the consent of the Engineer, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in its employ. The superintendent must represent the Contractor in the Contractor's absence and directions on minor matters given to the superintendent will be held to be given to the Contractor. Important decisions will be given in writing to the Contractor. The Contractor must give efficient supervision to the Work, using its best skill and attention.

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

Should any person employed on the Site, or in connection therewith, give any just cause for complaint, the Engineer may require that such person be replaced forthwith, and such person must not be again employed by the Contractor on the Site without the consent, in writing, of the Engineer.

GC.19. INSPECTION OF WORK

The Engineer may appoint inspectors or surveyors to inspect all materials used, Products made and all work done. Such inspections may extend to any or all parts of the Work and to the preparation or manufacture of the Products to be used whether on Site or elsewhere. Inspectors and surveyors are not authorized to revoke, alter, enlarge or accept any portion of the Work or to issue instructions contrary to the Drawings and Specifications.

GC.20. DAILY REPORT

The Engineer will maintain, in detail, a daily report to record progress of the Work, the number of personnel at the Site, the materials delivered to the Site, and all such other items which the Engineer deems necessary to record. The daily reports will be kept in the Engineer's Site Office and the Contractor or the Contractor's representative will be required to read and sign each report. In case of differences of opinion between the Engineer and the Contractor regarding the particulars stated in the daily report, the Contractor must, within seven (7) days, give notice in writing to the Engineer expounding such difference.

GC.21. WEEKLY MEETINGS

The Contractor must meet weekly with the Engineer on the Site to discuss work done in the previous week, and work proposed to be done in the week just starting, and as requested by the Engineer during the course of the Work.

GC.22. CONSTRUCTION SCHEDULE

Before beginning work, the Contractor must furnish the Engineer with a complete construction schedule showing the Contractor's proposed program of operations. This schedule must indicate the various subdivisions of the Work and the dates of commencing and finishing of each. The construction schedule must be completed using Microsoft Project or other scheduling software as approved by the Engineer.

The form of the schedule must be approved by the Engineer. On the last day of each calendar month, a copy of the schedule must be submitted to the Engineer with particulars indicating the percentage completed of each division of the Work to that date.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

The Contractor must immediately advise the Engineer of any proposed changes in the submitted construction program. If, in the opinion of the Engineer, the construction program as submitted is inadequate to ensure the completion of the Work within the time limited therefor, or is otherwise not in accordance with the Tender, or if the Work is not being adequately or properly prosecuted in any respect, the Engineer, without derogating from the City's rights under the Contract, will have the right to require the Contractor to submit a new construction schedule providing for proper and timely completion of the Work, and the Contractor will be entitled to no claim for extension of time on account of such requirement.

GC.23. MAINTENANCE OF SCHEDULE

a) Work Delayed by the Contractor

The Contractor must at all times provide a sufficient number of skilled personnel to maintain the progress of the Work and compliance with the master schedule, and if in the opinion of the Engineer the Contractor delays the progress of the works of Other Contractors then the Contractor will be responsible for all loss and damage, including, without limitation, that of Other Contractors for stand-by and/or delay occasioned thereby.

If, in the opinion of the Engineer, the Contractor delays or is about to delay the Work or the progress of any portion of the Work as shown by the master schedule, then upon the written notification by the Engineer, the Contractor must use such additional overtime work or shifts as may be necessary to catch up and/or maintain the general progress of the master schedule and the cost and expenses incurred by use of said overtime work or shift will be borne entirely by the Contractor.

b) Work Accelerated by the Engineer

Should the Engineer be required to expedite the final completion of the Work or the works of Other Contractors, then, provided the Contractor is not in default in any of the provisions of the Contract affecting the master schedule, the Engineer may order the Contractor to work additional shifts for which the City will pay:

- i. the substantiated extra premium wage incurred by such shift work;
- ii. the approved additional wages of supervision; and
- iii. an agreed percentage addition for profit for accelerated work.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

Such instructions to the Contractor will only be valid when given in writing by the Engineer. The Contractor will be responsible for having time sheets covering all such shift work checked and approved daily by the Engineer and claims for reimbursement of the extra wages will only be accepted when properly supported by such signed time sheets.

c) **Work Out-of-Sequence**

The Contractor must at no additional cost perform its Work as to operation or location out-of-sequence as and when directed by the Engineer.

d) **Execution of Other Works or Contracts**

The Contractor must afford all facilities for the execution of any other works which may be undertaken by the City or by such parties as may be employed by the City, so that such works may be properly and conveniently completed, and the Engineer will have full authority to make and enforce such regulations as the Engineer may deem necessary for the conduct of such other works; and the Contractor must proceed in such manner and with and complete in such order such portions of the Work as the Engineer may require, and the Engineer will be the sole judge as to what facilities are due and proper, and can be afforded without any undue interference with the execution of the Contract.

The Contractor must at all times give free access and every reasonable facility to the employees of the City and to Other Contractors, to such portion of the Works and adjoining land as may be necessary to enable them to execute and maintain works of any description; such accommodation and access being regulated and directed by the Engineer and no inconvenience or alleged inconvenience arising therefrom will form any ground for claims, losses or damages, compensation or otherwise, by the Contractor against the City.

GC.24. EMERGENCIES

The Engineer has the authority in an emergency to stop the progress of the Work whenever in his/her opinion such stoppage may be necessary to ensure the safety of life, or the Work or neighbouring property. This includes authority to make changes in the Work, and to order, assess and award the cost of work extra to the Agreement or otherwise, as may in his/her opinion be necessary. The Engineer will within two (2) Working Days confirm in writing any such instructions.

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

GC.25. SUBCONTRACTORS AND SUPPLIERS

The Contractor must supply complete information to Subcontractors and equipment and material suppliers. The Contractor agrees to bind every Subcontractor by the terms of the General Conditions, Drawings, Specifications, and other Contract Documents as far as applicable to their component of the Work. Where both Specifications and Drawings are required to provide complete information on any aspect of the Work, the Contractor must supply both to the Subcontractor or supplier concerned.

In every subcontract the Contractor must specify that the Contractor or agent of the Contractor will be the person responsible for payment certification under that subcontract for the purposes of the *Builders Lien Act* (and not the City or Engineer).

GC.26. CONTRACTOR'S PLANT AND UTILITIES

The Contractor must at its own expense supply, maintain and remove its field office and whatever electric or telephone facilities the Contractor requires for its Plant for either domestic or construction purposes.

The Contractor must provide and properly maintain, in clean and sanitary condition, suitable and convenient privy or toilet accommodation for the Contractor's employees so that they will not be a source of inconvenience, complaint or nuisance to the public or to others in the vicinity of the Site.

Contractors must make all necessary arrangements with the Engineering Department of the City for obtaining water from the City.

GC.27. PLANT, LABOUR AND MATERIALS

The Contractor at its own expense must provide all necessary temporary buildings and storage grounds and must furnish all necessary labour, materials and Plant together with all proper and required facilities for moving and transporting the same, so that the Contract and all Work required to be done under it can and will be carried on in a workmanlike manner, properly, satisfactorily, continuously and expeditiously, to completion, to the Engineer's satisfaction in all respects. Unless otherwise specified, all materials must be new and both workmanship and materials must be of good quality.

Should any Plant, equipment, appliance, materials or workmanship which the Engineer may deem to be inferior or unfit for use in the Works or on the Site be brought on the ground or used, the same must be wholly removed there from within twenty-four (24) hours after notification to that effect from the Engineer, and in the case of failure or neglect on the part of the Contractor to remove the same the Engineer may cause the same to be

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

taken away at the Contractor's expense, and deposited, wasted or otherwise disposed of in any locality, place or way the Engineer considers convenient or proper, and the Contractor must forthwith pay to the City on demand, all expenses incurred including storage, if any, or the same may be deducted or collected by the City as provided in GC.58.

GC.28. MATERIAL AND EQUIPMENT SUPPLIED BY THE CONTRACTOR

Material and equipment supplied by the Contractor must be as specified. If the Contractor wishes to supply and install items other than specified, the Contractor must apply for and must receive written permission from the Engineer before incorporating such items into the Work. Descriptive literature and price schedules covering such alternative items must be supplied to the Engineer if requested.

The Contractor must furnish for the approval of the Engineer as the Engineer may reasonably require samples of any material of any kind to be used in the Work and no material may be used which is in any way inferior to the approved samples; but it is understood that the approval of any material will not subject the City or the Engineer to pay for the same nor prevent the rejection afterwards of any portion thereof which is found in the Engineer's judgement to be unsound or unfit to be used, nor will such approval be considered as any waiver of objection to the Work at any subsequent period on account of the unsoundness or imperfection of the materials used.

GC.29. MATERIAL IN IMPERIAL UNITS

Where manufactured materials that are specified in metric units are not available, materials manufactured to Imperial units may be substituted, provided the Contractor can satisfy the Engineer that the substitute materials are at least equivalent to those specified.

GC.30. SUPPLY OF MATERIALS BY THE CITY

The Contractor's responsibility for materials supplied by the City will begin upon the Contractor's acceptance at the points of supply to the Site. All such materials must be examined by the Contractor and the Contractor must advise the Engineer in writing of any defective or damaged material. Any material supplied by the City which is damaged after acceptance by the Contractor must be replaced by the Contractor at its own expense.

Any material supplied by the City that is not required for the Work will remain the property of the City. Such material must be neatly stored by the Contractor at the point of original supply.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

GC.31. TEMPORARY STRUCTURES

Temporary structures erected by the Contractor will remain the Contractor's property and be removed from the site on completion of the Work.

The Contractor will be responsible for the design, adequacy, safety and efficiency of all falsework, temporary structures and construction processes required in connection with the completion of the Work and performance of the Contract. All such designs and plans must be prepared and sealed by a professional engineer licensed to practice in British Columbia and submitted to the Engineer for review and comment, but such review will not relieve the Contractor of any responsibility.

The Contractor must make good at the Contractor's expense immediately all defects arising from the Contractor's faulty design, equipment or application thereof.

GC.32. WORK AREAS AND CONTRACT LIMITS

The Contractor must lay out the Work and will be responsible for establishing and maintaining all stakes, lines, levels and elevations as may be required to carry out the Work, and to the satisfaction of the Engineer. The Contractor may have to modify the alignment and elevation of the Work to suit the as-built location of existing City watermains to which it will be connecting. Test holes shown on drawings should be dug prior to laying of pipes. The Contractor assumes full responsibility for the alignment, dimensions and elevations of each and every part of the Work and their mutual compatibility.

The Contractor must, as far as is practicable, confine its operations to the Site. Any land or property outside Site boundaries which the Contractor requires during performance of the Work must be acquired by the Contractor at its own expense, and the Contractor must make its own arrangements for the use of such land or property and for the compensation of its owners. Site boundaries will be determined by the Engineer.

The City will have attempted to obtain all the permits and easements required for the Work to take place by the time at which the Contractor is scheduled to perform the Work but due to extenuating circumstances may not have actually finalized all the easements and permits. It may be necessary, therefore, for the Contractor to reschedule the Work to refrain, temporarily, from working on certain of the easements or permit areas. Extra compensation will not be allowed for costs incurred by the Contractor as a result of the failure of the City to secure permits or easements on properties such that the Contractor can proceed on its predetermined schedule of installation.

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

Work to be performed by the Contractor outside the Contract Work limits includes:

- a) installation of barricades and barriers and other safety and traffic control measures; and
- b) repairing and making good property and improvements which are damaged or destroyed by the Contractor's operations.

GC.33. OFFICE FACILITIES FOR THE ENGINEER (Intentionally Omitted)

GC.34. STORAGE AREAS

Working and storage areas will be allocated by the Engineer for use by the Contractor. The Contractor will be responsible for the maintenance and clean-up of the allotted areas.

GC.35. HOURS OF WORK

The Contractor must comply at all times with all applicable requirements of the City's Noise By-law, which allows construction between the hours of 7:00 a.m. to 8:00 p.m., Monday to Saturday, and 10:00 a.m. to 8:00 p.m. on Sundays and holidays. No work may be done outside these hours except as approved by the Engineer. A request for a Noise By-Law exemption to work outside the specified hours must be made in writing to the Mayor's Office a minimum of two (2) weeks prior to the work being done.

The Contractor must keep the Engineer advised on the proposed hours of work so that inspection can be co-ordinated. Work without inspection is not be permitted.

The City's forces work between the hours of 7:30 a.m. and 3:30 p.m. on all Working Days, except those where City Hall is closed. The Contractor must not expect any work to be performed by the City's crews outside these hours except by special arrangement agreed to by the Engineer or in case of emergency. Work performed in the absence of a required inspection is not permitted.

GC.36. TRAFFIC CONTROL

For all works on City streets, lanes or sidewalks, all traffic control must be provided by the Contractor, at the Contractor's expense, except where otherwise specifically provided for in the Contract Documents. The Contractor must adhere to the standard procedures and practices prescribed in the Ministry of Transportation and Highways "Traffic Control Manual for Work on Roadways" (Second Field Edition).

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

The Contractor must, at the Contractor's expense, also provide, erect and maintain all requisite barriers, fences or other proper protection and must provide and maintain such flagpersons, watchpersons and lights as may be necessary or as may be ordered by the Engineer, in order to ensure safety to the public as well as to those engaged about the premises or Works, and must (where it is practicable in the Engineer's opinion) keep any roadway open for the use of the public, or for some restricted use specified by the Engineer, for such width as the Engineer may direct.

At the request of the Engineer, the Contractor must submit a traffic management plan for the Engineer's approval five (5) Working Days prior to commencing work and within two (2) Working Days of any request by the Engineer for modifications to the Contractor's traffic management plan after commencement of the Work.

The Contractor must, from the date of commencement to the date of completion of the Work, assume responsibility for the barricading and signing of hazards resulting from such works as utility trenches, out-of-grade utility-access covers, or any other obstruction or impediment to pedestrian or vehicular traffic, be these works in progress prior to or subsequent to the above mentioned date of commencement.

Unless ordered otherwise by the Engineer, the Contractor must inspect the barricades and warning signs of unattended construction sites at least once per day.

When any work is carried out at night, the Contractor must supply, at the Contractor's expense, a sufficient number of electric or other approved lights to enable the work to be done in an efficient and satisfactory manner, and the Engineer will have the right to order additional lights at the Contractor's expense if, in the Engineer's opinion, they are or may be required.

Licence numbers of vehicles legally parked at the time of placement of signs must be recorded by the Contractor and made available for the Engineer. If these vehicles are still parked when work commences, the Engineer must be contacted by the Contractor for further instructions.

For the information of the Contractor, the Parking Enforcement Branch or the Vancouver City Police are the only designated authorities approved to call tow trucks. Providing the signing is adequate and the Contractor has contacted the Engineer, the City of Vancouver will pay the costs of towing. Owners of vehicles unlawfully parked will be charged with costs of towing and other costs.

The Contractor must provide forty-eight (48) hours notice to the Engineer for erection or relocation of temporary no parking or no stopping signs. Parking regulation signage placed by the Contractor is unenforceable.

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

Truck Safety

All truck operators must operate the vehicle in a safe and courteous manner and in full compliance with the *Motor Vehicle Act* [RSBC 1996] Chapter 318 and its associated regulations.

All truck operators must comply with the City of Vancouver By-laws including: Motor Vehicle Noise and Emission Abatement By-law (9344) and the Street and

Traffic By-law (2849) regulating truck use, including truck routes, engine brake noise, and weight and load securement provisions.

GC.37. PUBLIC CONVENIENCE

In carrying out the Work, or any portion thereof, the convenience of the public must always be specially considered and provided for by the Contractor, who must not obstruct any street, thoroughfare or sidewalk longer or to any greater extent than is absolutely necessary in the Engineer's opinion. The Contractor must not deposit any material upon any street, sidewalk, boulevard, grass plot or other City or public property, without the Engineer's permission nor may the Contractor allow the same to remain thereon longer than necessary, but must remove all rubbish and other material, clean and thoroughly restore all such places to as good and as tidy a condition as the Contractor found them, as speedily as possible, from time to time as the Work progresses, or as directed. Unless material and rubbish are removed within four (4) days after the completion of the Work and without previous notice to the Contractor the Engineer will proceed to do whatever is necessary to restore such places to as good and as tidy a condition as before the commencement of the Work and charge the cost thereof against the Contractor. Where the Contractor obstructs more of the street, roadway or place than is ordered or sanctioned by the Engineer in writing, then the Engineer may cause such obstructions to be removed at the expense of the Contractor.

GC.38. ACCESS TO EXISTING STRUCTURES

The Contractor must at all times maintain satisfactory pedestrian access to buildings and private property.

The Contractor must provide suitable notice to affected property owners prior to changes in access. Interruption of access to any entrance must be kept to a minimum.

The Contractor must maintain fire exits from existing buildings as required by the Fire Department.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

GC.39. PROTECTION OF WORK AND PROPERTY

The Contractor must maintain continuously adequate protection of all the Contractor's Work from damage and must protect the City's property from all injury arising in connection with the Contract. The Contractor must make good any such damage or injury. The Contractor must protect adequately adjacent property as required by law and the Contract.

GC.40. FIRE, SECURITY AND SAFETY REGULATIONS

a) Fire and Security

The Contractor must comply and the Contractor must enforce compliance by all its agents, employees, Subcontractors and suppliers with any and all fire regulations which have been or may be established from time to time by the Engineer and anybody having jurisdiction over such matters.

All security regulations which have or may be promulgated by the Engineer or other authorized representatives of the City must be complied with. Watchmen for the buildings and grounds may be provided by the City at the City's discretion. However, neither the City nor the Engineer will be responsible for any loss or damage to the property of the Contractor whether or not watchmen are provided by the Engineer. The Contractor will furnish such security as the Contractor feels necessary for the protection of the Contractor's equipment and Products stored or used on Site.

b) Loss Control

The Contractor will provide a Loss Control Program, satisfactory to the City to meet WorkSafeBC and other requirements.

c) Safety

When required by WorkSafeBC Regulations, first aid facilities, including an attendant, must be provided on the Site at all times during working hours by the Contractor. Such facilities will be completely equipped in accordance with the requirements of the Workers' Compensation Board.

The Contractor will be fully responsible for taking all necessary precautions for the safety of the Contractor's workers on the Site or for complying with all applicable safety laws and regulations, particularly those regulations pursuant to the Workers' Compensation Act to prevent accidents or injury to persons on, about or adjacent to the Site.

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

The Contractor must provide all safeguards required directly for or as a result of the Work as referred to in GC.39 - *Protection of Work and Property* and in the scope of work described in the Contract Documents.

GC.41. OVERLOADING

No part of the Site may be loaded with a load greater than it is calculated to bear safely. Should any damage or accident occur through the violation of this requirement, the City will hold the Contractor solely answerable and liable.

GC.42. DRAINAGE

The Contractor must keep all portions of the Work well, properly and efficiently drained until completion, and the Contractor will be held responsible for all damage which may be caused or result from water backing up or flowing over, through, from or along any part of the Work, or which any of the Contractor's operations may cause to flow elsewhere.

GC.43. CLEANING UP

The Contractor must at all times keep the Site free from accumulations of waste material or rubbish caused by its employees or work, and at the completion of the Work, it must remove all its rubbish from and about the Site and all its tools, scaffolding and surplus materials, and must leave the Site "broom clean" or the equivalent, unless more exactly specified. In case of dispute, the Engineer may remove the rubbish and charge the cost to the Contractor as the Engineer determines to be just.

GC.44. SAFEGUARDING EXISTING PROPERTY

Existing property, buildings, fences or other improvements of any kind must be protected by the Contractor during the life of the Contract. The Contractor must make good to the satisfaction of the Engineer any damage done to the existing property, buildings, fences or other improvements. This applies to areas of private property incorporated in the Work area.

Where removal of existing improvements such as pavement, fences, structures, sewers and ducts is necessary during the course of the Work, the same must be re-established by the Contractor to the satisfaction of the Engineer. The cost of protection and rehabilitation will be borne by the Contractor.

GC.45. EXISTING UTILITIES

The Contractor will be responsible for the care of all public utilities and in the event of any of these requiring to be removed, raised or lowered

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

permanently, this will be done either by the City or by the utility company interested and at the expense of the City. If temporary alteration of location is required for purposes of the construction, such work will be done by the City or by the utility company interested at the expense of the Contractor. The Contractor, however, will be held responsible for, and will have to bear the cost due to any damage done to utility services through its operations.

Reasonable notice must be given to the Engineer of any change required in utility services.

Existing utilities are shown on the Drawings. These, however, are shown for convenience only and the City assumes no responsibility for improper locations, or failure to show utility locations on the construction plans. The Contractor must establish their locations by obtaining relevant City of Vancouver, BC Hydro, Terasen Gas and other plans and uncovering the utilities on site at no extra cost to the City.

The Contractor must provide adequate barricades and lighting around and adjacent to any open excavation or potentially dangerous location or other locations designated by the Engineer.

The Contractor must at all times ensure that the fire hydrants are not obstructed.

GC.46. DUST CONTROL

The Contractor must at all times control the generation of dust by its operations by water sprinkling or by other methods approved by the Engineer.

GC.47. ALTERATIONS, EXTRAS, DEDUCTIONS & CLAIMS

The City without invalidating the Contract will have the right to make or order any alterations and changes, such as it may deem advisable, at any time before or during the prosecution of the Work, in any line, grade, Drawings, Specifications or detail thereof, or to increase or decrease the dimensions, quantity of material or work, or to alter the situation or level, or to vary the form or dimensions of any part of the Work, or to vary in any other way the Work; or to order any additional or extra work to be done or additional or extra materials to be furnished; and the Contractor must, in pursuance of the Engineer's written orders to that effect, proceed with, carry out and execute the Work as directed, and must supply such additional materials and do such additional or extra work in pursuance of such orders without being entitled to any extension of time for completion, or any additional payment on account thereof, except only as herein provided.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

In each and every case where additional or extra work or material of any kind is ordered to be done or supplied, or where the Contractor does or supplies, or contemplates doing or supplying, any work or material, the Contractor must notify the Engineer in writing and must state in its notification clearly and fully what the circumstances are, and the additional sum or compensation it intends to demand therefor, otherwise it will have no claim in respect thereof. All such demands for additional payment will be subject to review and approval by the Engineer. If any work, labour or material is not required to be performed or supplied, then the City may deduct from the Contract Amount the value of such work, labour or material not required to be performed or supplied which will be determined by using the unit or lump sum prices contained in the Schedule of Quantities and Prices applicable to such work, labour or material, or if, in the opinion of the Engineer none of the unit or lump sum prices aforesaid apply, then using the hourly rates for work and labour or cost of material set out herein, or such fixed sum as agreed upon between the Contractor and the City.

All claims of every nature which the Contractor may have in respect of the Contract or Work done thereunder, are to be summarized and submitted by it (in duplicate) to the Engineer within one (1) month of the completion of same, and the Contractor may make no claim of any nature afterwards; and no claim not then made or not then allowed by the City will be sustainable, and the City will be in no way disentitled to determine any and all questions concerning said claims, and no action or suit may be commenced by either party to the Contract until after the final Certificate of Total Performance has been signed by the Engineer and then only for the amount appearing thereby to be due to the Contractor.

GC.48. ERRORS BY CONTRACTOR

Changes, errors or mistakes made by the Contractor or the Contractor's Subcontractors, workmen or employees, and all settlements, washouts and defects, must be rectified by the Contractor at its expense.

GC.49. TESTING OF MATERIALS

Except where otherwise specified, testing of materials will be carried out by the Contractor and paid for by the Contractor.

GC.50. DEFECTIVE WORK

All defective work must be forthwith made good by the Contractor at its own expense to the Engineer's or City's satisfaction, as the case may be.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

GC.51. WARRANTY

The Contractor must perform the Work in a proper and workmanlike manner and in accordance with the requirements of the Contract Documents and maintain the Work against any defects arising from faulty installation, material or workmanship during the period of twelve (12) months from the date of issuance of the Certificate of Substantial Performance (The "Warranty Period") and make good in a permanent manner satisfactory to the City any defects arising from any of these causes (the "Warranty").

Whether the Contractor should replace defective Products or Work, or repair the same, will be determined by the Engineer. Should the Contractor fail to make good defects within (3) Working Days after being notified by the City to do so, the City at its option may do so and all costs, charges and expenses so incurred may be deducted or collected by the City as provided in GC.58 - *Money Due to City*. If the City considers the defects to be dangerous and that an emergency situation exists, the City, at the City's discretion may effect repairs immediately and all costs, charges and expenses incurred as a result may be deducted or collected by the City as provided in GC.58 - *Money Due to City*. The decision of the City will be final as to the necessity of repairs or of any work done or required to be done under the provisions of the Contract and for the amounts expended thereunder. If in the opinion of the Engineer, it is in the City's best interests (taking into account effects on the City's overall schedule, the difference in value between the Work as performed and that called for by the Contract Documents, and other relevant factors) not to correct defective Work or Work not provided in the Contract Documents, the Engineer will assess the amount which should be deducted from the amount otherwise due to the Contractor and will assess the length of time by which the obligations should be extended in order to put the City in as close a position financially and in terms of the useful life of the Work as would have been the case had the Contractor performed the Work as called for by the Contract Documents. For further certainty, the Engineer may extend the Warranty Period in appropriate circumstances to a minimum of twice the Warranty Period originally provided for under the Contract Documents, subject always to the above parameters.

GC.52. CONTRACTOR'S LIABILITY

The Contractor will be liable for any and all damages, losses, costs, actions, causes of action, suits, claims, demands, orders, judgements, builders' liens, liabilities, obligations, expenses (including legal expenses), indirect or consequential damages (including loss of profits and loss of use and damages arising out of delays) (collectively, "Losses"), as applicable, for injuries or accident to person or property done or caused by the Contractor, the Contractor's Subcontractors or employees, or resulting from the prosecution of the Work or any of its operations,

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

or caused by reason of the existence or location or condition of the Work, or of any materials, Products or Plant used therein or thereon, or which may happen by reason thereof, or arising from any failure, neglect or omission on the Contractor's part, or on the part of the Contractor's Subcontractors or employees, to do or perform any or all of the several acts or things required to be done by the Contractor or them under and by the Contract, and the Contractor hereby releases and agrees to hold harmless the City from, and covenants and agrees to indemnify and save harmless at all times the City against, all such Losses whatsoever arising out of or in connection therewith, and in the event of any action being brought by any person against the City, either directly or indirectly, or by reason of the execution of the Contract, the City may enforce payment by the Contractor of all such loss, costs, damages and expenses as a debt due to the City. The release and indemnity of the City set forth above will survive the expiry or sooner termination of the Contract, and expressly includes and extends to the Engineer, and to all elected officials, officers and other employees and agents of the City. This indemnity will not affect or prejudice the City from exercising any other rights that may be available to it at law or in equity.

In the case of the Contractor's failure, neglect or omission to observe and perform faithfully and strictly all the provisions of the Contract, the City may either with or without notice (except where in this Contract notice is specially provided for, and then upon giving the notice therein provided for), take such steps, procure such material, equipment, trucks, and men, and do such work or things as it may deem advisable towards carrying out and enforcing the same, and any and all expenses so incurred may be deducted or collected by the City under the provisions of GC.58.

Any such action taken by the City under this General Condition as it is herein empowered to take will not in any way relieve the Contractor or its sureties from any liability under the Contract.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

GC.53. CONTRACTOR/SUBCONTRACTOR INSURANCE REQUIREMENTS

53.1 GENERAL INSURANCE REQUIREMENTS

- 53.1.1** The Contractor and Subcontractors shall deliver to with the City within five (5) Working Days of issuance of the Notice of Award, a certificate of insurance in the form of Appendix A to Part D of the Invitation to Tender (the "Project Specific Insurance Certificate"), and where required by the City, certified copies of all insurance policies and endorsements evidencing the placement and endorsement of insurance in accordance with this GC.53.
- 53.1.2** The Contractor and Subcontractor shall file with the City evidence of renewal of the insurance policies required under this GC.53 at least fifteen (15) calendar days prior to their respective expiry.
- 53.1.3** In addition to the specific requirements below, all policies of insurance shall:
- a) be endorsed so as to provide for thirty (30) calendar days' prior notice to the City of cancellation, lapse or material change;
 - b) if property insurance (as opposed to liability) insurance, contain a waiver of subrogation in favour of the City and its mayor and council members, officers, directors, employees, volunteers and agents (collectively, "City Personnel");
 - c) specifically name (i) the City and (ii) all City Personnel as additional insureds;
 - d) be issued by a company or companies authorized to issue insurance policies in British Columbia and acceptable to the City;
 - e) be endorsed to provide the following Notice for Policy Changes and Cancellations to the City: "It is understood and agreed that this policy will not be cancelled nor will coverage be reduced either in whole or in part, without the insurer giving at least thirty (30) days prior written notice by registered mail to the City of Vancouver (except for cancellation for non-payment of premiums, in which case applicable statutory provisions apply)"; and
 - f) be issued on a policy form acceptable to the City.
- 53.1.4** Unless otherwise specified, insurance shall be continuously maintained from no later than the five (5) Working Days after issuance of the Notice of Award through to the date of Total Performance of the Work.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

53.1.5 The Contractor and each of its Subcontractors, as applicable, shall be responsible for payment of all deductible amounts.

53.1.6 The Contractor and each of its Subcontractors, as applicable, must provide at its own cost any additional insurance which it is required by law to provide or which it considers necessary to appropriate.

53.1.7 The City will have the right to deduct amounts for which the Contractor is responsible under this General Condition from any monies which are due or may become due to the Contractor.

53.2 SPECIFIC INSURANCE COVERAGE

53.2.1 Without restricting the generality of the Contractor's release and indemnification obligations set forth elsewhere in the Contract Documents, the Contractor shall provide at the Contractor's expense the following types of insurance:

- a) **Wrap Up Liability Insurance** protecting the City, City Personnel, the Contractor, its Subcontractors and their respective agents and employees against damage arising from personal injury (including death) and claims for property damage which may arise out of the operations of the Contractor, its Subcontractors, or their respective agents or employees in connection with the Work.

The policy shall be placed prior to commencement of the Work and shall specifically cover liability arising out of the performance of this Contract and shall cover all liability assumed by the Contractor under any contract or agreement, including the indemnity provisions of this Contract. The policy shall be maintained continuously throughout the entire term of the Contract until Total Performance of the Work, and thereafter, in the case of completed operations coverage for a further period of twenty-four (24) months and shall contain the following extensions of coverage:

- i) Broadform Property Damage and Completed Operations;
- ii) Personal Injury;
- iii) Blanket Contractual Liability;
- iv) Cross Liability and Severability of Interests Clause;
- v) Contingent Employer's Liability; and
- vi) Non-owned Automobile Liability.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

And where such further risk exists, following extensions of coverage shall be included:

- i) Shoring, blasting, excavating, underpinning, demolition, removal, pile-driving and grading, as applicable;
- ii) Hoist liability;
- iii) Operation of attached machinery;
- iv) Unlicensed and specifically licensed vehicles;
- v) Loading and unloading of vehicles; and
- vi) Contractor's pollution liability including coverage for liability arising out of hostile fire and sudden and accidental release of contaminants.

This insurance shall be for an amount of not less than five million dollars (\$5,000,000) inclusive per occurrence, and shall include a standard form of severability of interests and cross-liability clause. The deductible per occurrence shall not exceed ten thousand dollars (\$10,000) and the Contractor shall be liable for all deductible amounts.

- b) **Automobile Liability Insurance**, to be carried at all times during performance of the Work, on all licensed vehicles owned by or leased to the Contractor, protecting against damages arising from bodily injury (including death), and from claims for property damage arising from the operations of the Contractor, its agents or employees. This insurance shall be for a minimum amount of five million dollars (\$5,000,000) inclusive per accident.
- c) **All-Risks Course of Construction Property Insurance** in the joint names of the Contractor, the City and all City Personnel, covering the Work and all property of every description to be used in the performance of the Work. This insurance shall be primary, and be of an amount of not less than the sum of the Total Contract Price. The deductible per occurrence shall not exceed ten thousand dollars (\$10,000). This insurance shall remain in full force and effect throughout the period of construction or until Total Performance of the Work, and also during any period in which the property insured is being prepared for use or occupancy and while partially used or occupied; provided all coverage may cease when the Work has been formally accepted as fully and finally complete by the City, whichever occurs first. This property insured shall include the following:

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

- i) **At Site:** all materials, equipment and machinery, labour and supplies of any nature whatsoever, work in progress, including property of the insured or of others for which the insured may have assumed responsibility to be used in or incidental to the Site preparations, excavation, demolition or existing structures, erection and/or fabrication and/or reconstruction and/or repair of the project insured (collectively, "Property"), commencing when the Property becomes at the insured's risk, at the Site, and while there awaiting, during and subsequent to erection, installation, fabrication, repair and/or testing.
- ii) **In Transit:** Transit coverage for Property that will form a part of the project insured, from the commencement of loading at the original point of shipment anywhere in Canada or the Continental United States of America, but excluding such Property in the course of manufacturing or processing within buildings at the manufacturer's or supplier's site.
- iii) **Off Site:** Off Site coverage for Property that will form a part of the project insured, anywhere in Canada or the Continental United States of America, but excluding such property while in transit or in the course of manufacturing or processing within buildings at the manufacturer's or supplier's site.
- d) **All Risk Contractor's Equipment Insurance:** covering all equipment owned or rented by the Contractor, its Subcontractors and their respective agents or employees against all risks of loss or damage, with coverage sufficient to allow immediate replacement. In the event of loss or damage to the said construction equipment, or any part thereof, the Contractor or the Subcontractor, as the case may be, will, if so requested by the City in writing, forthwith replace such damaged or destroyed construction equipment. In the event of a loss and upon payment of claim under this policy of insurance, the insurer will waive its right of subrogation against the City, the Engineer and all architects, engineers or consultants engaged in or connected with the construction and Site preparation and related operations of the Work and any of their servants, agents, employees, and partent, subsidiary, affiliated or associated firms.

53.3 FAILURE TO INSURE

- 53.3.1** If the Contractor or any Subcontractor fails to obtain and maintain insurance as required hereunder, or if the City does not approve any insurance policy or policies submitted to the City, and the Contractor or Subcontractor, as the case may be, thereafter does not meet the

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

requirements of the City as to terms and conditions of the insurance policy, the City will have the right to place and maintain such insurance in the name of the Contractor or Subcontractor. The cost thereof will be payable by the Contractor to the City on demand, and the City may deduct the cost thereof from any monies which are due or may become due to the Contractor. If coverage should lapse, all work by the Contractor must be stopped until satisfactory evidence of renewal is produced.

GC.54. WorkSafeBC ASSESSMENTS [intentionally omitted - see GC.7]

GC.55. CLAIMS FOR WAGES

The City may settle any claim for damages, and pay all wages overdue or the price of any materials or the amount due and payable by the Contractor to any Subcontractor, for which payment is in arrears, and the amount thereof will be debt due by the Contractor to the City, as and for money paid by the City for the Contractor and may be deducted or collected by the City as provided in GC.58 - *Money Due to City*, but the City does not assume any liability in this respect; nor will the persons to whom such wages or payments are paid become, by such payments, the employees or servants of the City.

GC.56. LIENS

The Contractor hereby agrees to make payment and take all other steps which may be necessary to insure that all Contract monies, and the Work, and every part

thereof, will be and remain at all times free from and not liable to any lien or charge at law or in equity, or to any claim of liability under the *Builders Lien Act*, or to any attachment for debt, garnishee process or otherwise, and the Contractor and its sureties, as well as its respective executors, administrators, successors and assigns, will fully indemnify and save harmless the City and all its officers, servants and employees from any and all such liability, and will, on demand, immediately cause any such lien, charge, claim or attachment to be removed or released from the records of any Land Title Office or Court in which the same may appear.

Notwithstanding anything to the contrary contained in the Contract Documents, the City will not be obliged to pay any monies to the Contractor if and for so long as any liens exist against the Works or the Site.

GC.57. PATENT INFRINGEMENT

The Contractor will fully indemnify the City against and from all suits or actions arising from the claim of any person or persons who are or claim to be patentees of any process used in connection with the Work or of any

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

material, Products, Plant, machinery, tool or appliance used therein or thereon, or in any way therewith.

GC.58. MONEY DUE TO CITY

All money payable to the City by the Contractor may be retained out of any money then due, or which may become due, from the City to the Contractor under this or any other contract with the City, or otherwise howsoever, or may be recovered from the Contractor and its sureties, or any of either of them, in any Court of competent jurisdiction as a debt due to them; and the Engineer will have full power to withhold any estimate or certificate, if circumstances arise which may indicate to him the advisability of so doing, until the Engineer is satisfied that the Work and material so far done or furnished are in accordance with the Contract and that the Contractor is otherwise entitled thereto, though the sum to be retained may be unascertained.

GC.59. ASSIGNMENT

The Contractor must not, without the consent in writing of the City first had and obtained, assign or transfer any sum or sums, or any part thereof, due or to become due to the Contractor under the Contract, or assign, transfer or sublet any portion of the Contract or of the Work, but must carry out the Work with its own men or those of a Subcontractor under the Contractor's supervision. This General Condition, however, does not apply to the furnishing of material for the different parts of the Work, for which material, however, the Contractor will be held strictly responsible, and no excuse for the quality of the material or for the non-delivery in good time by any Subcontractor, as affecting the progress of the Work, will be entertained, not will the City's consent to the assigning, transferring or subletting of any portion of the Work relieve the Contractor from any of its obligations or liabilities under the Contract. No assignment, transfer or subletting hereinbefore mentioned, except if the same is made in accordance herewith, will be in any manner valid or binding on the City.

GC.60. CERTIFICATES AND PAYMENTS

Payment Certifier:

The Engineer will be the "payment certifier" and the person responsible for payment certification under the Contract for the purposes of the *Builders Lien Act*. The Engineer will not be the "payment certifier" under any subcontract.

Certificate for Substantial Performance:

- a) The Contractor must give written notice to the Engineer that the Work is substantially performed when applicable, and, upon

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

subsequent inspection by the Engineer, a list of deficient work will be issued to the Contractor by the Engineer. When these deficiencies have been rectified to the satisfaction of the Engineer, the Engineer will recommend that the Work is substantially performed and ready for official inspection.

At the time of the application for a Certificate of Substantial Performance, the Contractor must deliver up to, and to the complete satisfaction of the Engineer:

the "as constructed record plans" of the Work required by GC.13 - *Record Plans*; documentation showing compliance with WCB requirements; and a sworn declaration in a form acceptable to the Engineer that all amounts relating to the Work, due and owing to third parties including all Subcontractors and suppliers, have been paid.

- b) The City, the Engineer and the Contractor will inspect the Work and any remaining deficiencies will be detailed and included on the Certificate of Substantial Performance. The date of Substantial Performance will be as stated in this Certificate. Upon issuance of the Certificate of Substantial Performance to the Contractor, the Engineer will set a reasonable date for the Total Performance of the Work.
- c) For the purposes of the *Builders Lien Act*, the Certificate of Substantial Performance as described herein will serve as the Contractor's certificate for completion, and the date of Substantial Performance stated in the Certificate will be deemed to be the date of the Certificate's issuance.
- d) Notwithstanding the foregoing, under no circumstances will issuance of the Certificate of Substantial Performance be deemed to mean that the Engineer or the City has accepted the Work as being in compliance with the Contract Documents.

Certificate of Total Performance:

- a) Upon the provision of satisfactory evidence that the deficiencies have been rectified, the City and the Engineer will then be permitted to verify such rectification. Upon rectification of all claims and statutory declarations as specified in GC 60(b) ii and to the reasonable satisfaction of the Engineer, the Engineer will issue the Certificate of Total Performance.

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

Statutory Declarations:

- a) The Contractor must submit with the Contractor's application for payment such statutory declarations as may be required herein, which must be sworn in duplicate by the Contractor, or by such person on behalf of the Contractor as the Engineer may approve.

- i. Prior to payment and as condition to any payment, the Engineer may at any time require the Contractor to file with him a statutory declaration showing that all wages for the various classes of labour, the hire of trucks, equipment, etc., employed in or about the Site, all Products or other things supplied for use in or upon the Work and amounts due to Subcontractors and suppliers have been paid and satisfied and that there is no encumbrance, lawful claim or lien accruing for labour or services in connection with the Work.

Should any amounts be due and unpaid for wages, equipment, hire, Products and Subcontractors or suppliers as above listed or any encumbrance, lawful claim or lien accrue, the amounts must be listed on a duly attested statement, in duplicate, and attached to the Statutory Declaration referred to above.

The Engineer may at any time, if the Engineer deems it advisable, require from the Contractor a statement showing the rates of wages paid by him for the various classes of labour, the rates of hire of trucks and equipment employed and the prices and quantities of any Products

supplied for use in or upon the Work and may also require the statement to show in detail the names of unpaid employees, the rates of wages and amounts due to each, and the names of creditors, quantities, prices and amounts due to each. Such statement must be duly attested in duplicate as above and be a condition precedent to the right of the Contractor to receive payment.

- ii. Prior to final payment and as a condition to issuance by the Engineer of a Certificate of Total Performance, the Contractor must file with the Engineer a statutory declaration showing that all Work in respect of the Contract has been completed; all accounts, detailed in the first sentence of paragraph (d)(i) of this General Condition have been paid and satisfied and there is no encumbrance, lawful claim or lien accruing for labour, products or services in connection with the Work; and payments already received and now due under the final payment application are accepted by the Contractor as full compensation

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

for everything furnished and done by the Contractor under the Contract.

Other Documentation

- a) The Engineer may as a further condition to any payment, at any time, require the Contractor to furnish such or other detailed information as may be necessary to establish to their satisfaction the compliance by the Contractor with the conditions of the Contract.

Books Open for Inspection

- a) The Contractor's payrolls, time-books, books of account, invoices, receipts and statements relating to its Work under the Contract must be at all times open for inspection and extract by the Engineer and the City and any authorized representative of them.

GC.61. TERMINATION OF CONTRACT WITHOUT DEFAULT OF CONTRACTOR

The Engineer may, as agent for and on behalf of the City, at the Engineer's discretion terminate the Contract at any time upon written notice to the Contractor notwithstanding the fact that the Contractor may not then be in default, in which event the City will be liable to the Contractor only for a reasonable amount for Work done and materials delivered at or to the Site up to the date of the termination.

Upon payment of the aggregate of the aforesaid sums, the City, the Engineer and the Contractor will be released from their liabilities or obligations under the Contract save and except that the liabilities and obligations of the Contractor will

continue with respect to deficiencies and warranties in the portion of the Work completed prior to termination.

GC.62. TERMINATION OF CONTRACT FOR CONTRACTOR'S DEFAULT

- a) The Engineer as agent for and on behalf of the City, without prejudice to any other right, may elect to terminate the Contract forthwith upon notice to the Contractor if:
 - i) the Contractor neglects or refuses to sign the Drawings and execute the Contract within seven (7) days after notification from the Engineer so to do;
 - ii) the Contractor neglects or fails to commence work within seven (7) days after the date of execution of the Contract by the Contractor;

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

- iii) the Contractor commits an act of bankruptcy or becomes a bankrupt or makes a general assignment for the benefit of the Contractor's creditors;
 - iv) a receiver is appointed for the Contractor's business;
 - v) the Contractor fails, on reasonable notice from the Engineer, to supply enough proper workmen or Products;
 - vi) the Contractor does not pay promptly the Contractor's employees, Subcontractors or suppliers;
 - vii) the Contractor does not comply with the requirements of the WCA, the OH&S Regulation or WorkSafeBC, or otherwise fails to meet the safety requirements of the Contract; or
 - viii) the Contractor breaches any provision of the Contract.
- b) On such termination the Engineer may arrange for the performance of the Work by whatever method the Engineer deems expedient but without undue delay or expense.
- c) The Engineer may take possession of all Products, equipment, tools, structures and appliances belonging to or provided by the Contractor located on the Site which the Engineer deems necessary to prosecute the Work, which possession the Contractor hereby pledges to the Engineer as agent for and on behalf of the City, as security for the performance of the Contract and the Work, provided that upon completion of the Work the Engineer will
- return to the Contractor or its legal representative any such chattels so taken in possession in their original condition (ordinary wear and tear excepted) if not incorporated in the Work, without any compensation for use thereof.
- d) In case the Work or any part thereof is taken out of the hands of the Contractor, as herein provided, it will in no way affect the relative obligations of the City and the Contractor or its sureties in respect of the Contractor's or their obligation, or in respect of the remainder of the Work (if any), as the Engineer may consider reasonable. The Contractor and its sureties in every case will be liable for such damages, expenditures and extra expenditures, and for all additional cost of the Work which may be incurred by reason of termination of the Contract pursuant to this GC.62, together with the penalties, if any, from the date fixed for the completion of the Work, and the same may be deducted or collected by the City as provided by GC.58.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

- e) All the powers of the Engineer with respect to the determination of any doubts, disputes and differences, and the determination of the sum or sums, or balance of money to be paid to or received from the Contractor, and otherwise in respect of the Contract will nevertheless continue in force.
- f) The fulfilment by the Contractor of any stipulation in the Contract may be enforced by legal proceedings and judgement, or order of Court, without prejudice to any other remedy herein contained. Neither the City nor any of its officers or employees will be liable or accountable to the Contractor in any way for the manner in which, or the price at which the Work, or any portion thereof, may have been or may be done or completed by the City.
- g) No proceeding taken pursuant to this GC.62 or pursuant to any other provision of the Contract, will at any time be deemed to be an assignment of the Contract or of any portion thereof, unless otherwise agreed to in writing.

GC.63. SUBMITTALS

The Contractor must submit product data and samples to the Engineer for review on request. The Contractor's responsibility for deviation in submissions is not relieved by the Engineer's review unless the Engineer gives written acceptance of specific deviations from the requirements of the Contract Documents. The Contractor must make any changes in submissions which the Engineer may request consistent with the Contract Documents and must resubmit as directed by the Engineer. The Contractor must not proceed with work until relevant submittals have been reviewed by the Engineer. The Contractor must co-ordinate submittals with the requirements of the Contract Documents and must allow fourteen (14) days for the Engineer's review.

GC.64. NON-RESIDENT WITHHOLDING TAX

If the Contractor is, at any time, a non-resident of Canada, within the meaning of the *Income Tax Act* (Canada) as amended, then, and the Contractor hereby so agrees, the City may deduct from all money payable under the Contract and remit to the Receiver-General of Canada, the Government of Canada or Canada Revenue Agency sums not greater than the greater of:

- a) twenty-five percent (25%) of all money payable under the Contract; and
- b) sums required to be withheld and remitted by the *Income Tax Act* (Canada) as amended.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS**

The City will receive a further credit under the Contract for money withheld as of and from the date of the withholding (regardless of when or whether remitted) and no interest will be payable by the City on sums withheld, not remitted as aforesaid and later paid directly to the Contractor.

GC.65. NO PROMOTION OF RELATIONSHIP WITH THE CITY

The Contractor must not disclose or promote its relationship with the City or any board, branch, department or other part thereof, including by means of any verbal declarations, announcements, sales, marketing or other literature, letters, client lists, press releases, brochures, internet based information or other written materials (the "Communications") without the express prior written consent of the City (except as may be necessary for the Contractor to perform the Contractor's obligations under the terms of the Agreement or as the City may otherwise expressly agree in writing).

GC.66 TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS

The City has made no independent inquiries to ascertain the existence or nature, of any toxic or hazardous material, substance or condition at the Site (which expressly includes the subsurface as well as the surface at the Site), and accordingly makes no representations regarding the same. Prior to the Contractor commencing the Work, and thereafter through the term of performance of the Work, the Contractor must take all reasonable steps to determine whether any toxic or hazardous material, substance or condition is present at the Site.

If the Contractor encounters any toxic or hazardous material, substance or condition at the Site or has reasonable grounds to believe that any of the same are present at the Site, then the Contractor must promptly take all reasonable steps to ensure that no person suffers any injury, sickness or death and that no property is injured or destroyed as a result of exposure to or the presence of such material, substance or condition, and must immediately report the situation and circumstances to the City in writing.

The Contractor must in all instances comply fully with all requirements of applicable environmental legislation, the City, the WCA and WorkSafeBC, whether specifically outlined above in this GC.66 or not, applicable to toxic and hazardous materials, substances and work/work site conditions.

GC.67 HARMONIZED SALES TAX ("HST") - PROVINCIAL SALES TAX ("PST") AND FEDERAL GOOD AND SERVICES TAX ("GST") HARMONIZATION

The parties agree that the Contract Price presently includes all duties, sales and social service taxes, excise taxes, personal property taxes on products,

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART E - GENERAL CONDITIONS

materials, construction machinery and equipment and other property owned or leased by the Contractor, and any other taxes, assessments, charges applicable to or arising directly or indirectly out of the performance of the work under the Contract other than the GST. The Contractor shall be registered in accordance with applicable laws and shall comply with all requirements hereunder to collect and remit GST and HST (as presently announced by the federal and provincial government to be effective July 1, 2010 for British Columbia and Ontario) and to pay or remit any other such taxes, assessments or charges. For greater certainty, on the harmonization of the PST with the GST, or the replacement of the PST with a value-added tax similar to the GST, the Contractor will decrease the Contract Price to the same extent that the Contractor is no longer required to pay the PST included in the Contract Price and is instead paying a recoverable value-added tax (or HST). If requested by the Owner, the Contractor shall make available to the representatives or auditors of the Owner, all relevant accounting books, tax records, invoices and other documents for inspection and audit during normal business hours. Any refund, rebate or credit in respect of PST or other taxes, assessments or charges payable arising directly or indirectly out of the performance of work under the Contract shall be for the benefit of the Owner and the Contractor shall participate and cooperate, as required, in any filing or application process necessary to initiate or complete the intent of this provision. The Contractor shall provide the Owner, at the Owner's request, such documents and particulars relating to the performance of work under the Contract in respect of which GST or HST is required to be paid by the Owner that are necessary to substantiate any claim for any input tax credits as may be permitted pursuant to the Excise Tax Act (Canada) or other applicable laws. The Contractor represents and warrants that the Contractor is not a non-resident of Canada for the purposes of the Income Tax Act (Canada) and that the Contractor has complied fully with the provisions of all applicable tax legislation, including, the Social Service Tax Act (British Columbia). The Contractor shall be liable to the Owner for: (i) any non-compliance with any of the Contractor's obligations under this paragraph; and (ii) any costs, penalties, assessments or other charges incurred by or levied against the Owner by reason of the Contractor being or becoming a non-resident of Canada for the purposes of the Income Tax Act (Canada).

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART F - SUPPLEMENTARY GENERAL CONDITIONS**

1.0 PROGRESS PAYMENTS

Notwithstanding anything else in the Contract, the Contractor will not make application for payment and the City is not obliged to make payment for Work done until each sub-project, if any, as described in the Contract Documents, has been completed in accordance with the Contract Documents.

2.0 SCOPE OF WORK

The Work will include the supply of all materials, overhead, labour, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all work as shown on the Drawings and described in the Contract Documents.

The Work will be done in accordance with the Contract Documents and to the satisfaction of the Engineer. For inspection purposes, the Contractor will coordinate its work with the Engineer. The Contractor will have no cause for claim against the City whatsoever with respect to delays or other interruption to the Work by City forces or due to the above requirement to coordinate his/her work with the Engineer.

3.0 NO PARKING SIGNS

The contractor must provide 48 hours notice to the Engineer for erection or relocation of temporary no parking or no stopping signs. Parking regulation signage placed by the contractor is unenforceable.

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

Tenderer's Name: PEDRE CONTRACTORS LTD

"Tenderer"

Mailing Address: 104 - 10180 199B ST.

LANGLEY, BC, V1M 3X8

Cheque Payable/Remit to Address: 104 - 10180 199B ST.

LANGLEY, BC, V1M 3X8

Telephone No.: 604 881 2411 Fax No.: 604 881 2412
s.22(1), s.21(1)

Key Contact Person.: [REDACTED]

GST Registration No.: [REDACTED] Incorporation Date: 1988

City of Vancouver Business License Number: N/A
(If your office is located in Vancouver or N/A if not applicable)

WorkSafeBC Account Number: [REDACTED]
s.21(1)

Dunn and Bradstreet Number: N/A

1.0 Total Tender Price and Schedule

- 1.1 Having fully examined and considered the Work Site, the access thereto and all conditions affecting the Work and having carefully read and examined all of the Tender Documents, including without limitation the Invitation to Tender, the Instructions to Tenderers, the Form of Tender, the Form of Agreement, the General Conditions, the Supplementary General Conditions, the Appendices, the Specifications and Drawings and the Addenda, Amendments and Questions and Answers issued as supplements to the aforementioned documents (if any), the undersigned hereby offers to complete the Work covered by the Tender Documents and to furnish all plant, tools, equipment, labour, Products, material and supervision necessary to perform and complete the Work for the fixed "Total Tender Price" of:

For Tender or RFP Openings
Representative from City Clerk's Dept.

P. [Signature]

Pedre Contractors Ltd.

Name of Tenderer

Page FT1

MK
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

ITT NO. PS10094

The Total Tender Price, which excludes ~~GST~~^{HST}, is

three million nine hundred thirty two thousand dollars
two hundred and ninety

and zero cents (\$3,932,290.00)

Accordingly, the undersigned offers to complete the Work according to the following schedule:

- (a) Work will begin within five (5) Working Days subject to approval by the City issuing the Notice to Proceed.
- (b) Substantial Performance of the Work is targeted for **January, 2011**.
- (c) Total Performance of the Work will be achieved by **March, 2011**.

The undersigned confirms that the above stated Total Tender Price is in accordance with Part B - Instructions to Tenderers, Section 3.0 Total Tender Price.

If Schedule A - Schedule of Quantities and Prices forms part of this Tender, and if there is any conflict between the Total Tender Price entered above and the correct summation of the lump sum and/or unit prices, and correct extensions of the unit prices and approximate quantities entered in the aforesaid Schedule, the said correct summation shall take precedence.

2.0 Notice of Award

2.1 The undersigned agrees that this Tender is irrevocable and open for acceptance by the City for a period of sixty (60) Working Days from the day following the date of the Closing Time, even if the tender of another Tenderer is accepted by the City. If within this sixty (60) day period the City gives a Notice of Award accepting this Tender, the undersigned, within five (5) Working Days of the giving thereof, will deliver to the City, to its satisfaction:

- (a) a Performance Bond and a Labour and Material Payment Bond, each in the amount of fifty percent (50%) of the Total Tender Price, issued by a surety licensed to carry the business of suretyship in the province of British Columbia, and in a form acceptable to the City;
- (b) a detailed Construction schedule, as required by Part E - General Conditions (GC 22);

Pedre Contractors Ltd.

Name of Tenderer

Page FT2

MK.
Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

- (c) a traffic management plan, as required by Part E - General Conditions (GC36);
- (c) a valid City of Vancouver business license if the Tenderer's head office is located within the City of Vancouver and/or where the Tenderer is required to perform any work at a site located within the City of Vancouver;
- (c) a WorkSafe BC "clearance letter" indicating that the Tenderer is in WorkSafe BC compliance, as required by Part E - General Conditions (GC 7);
- (d) a Certificate of Insurance showing the Tenderer has all insurance coverages and requirements in place as required under Part E - General Conditions (GC 53); and
- (e) Prime Contractor Agreement, as required by Schedule J, Part C - Form of Tender.

3.0 Notice to Proceed

3.1 Upon the City receiving from the successful Tenderer the materials described above in Section 2 of this Form of Tender, the City will give to the Tenderer a Notice to Proceed (the "Notice to Proceed") and the Tenderer will proceed as follows:

- (a) duly execute and give to the City five (5) copies of a final form Agreement in form and substance of the Form of Agreement Part D of the Tender Documents within five (5) Working Days after receipt thereof from the City; and
- (b) commence the Work within five (5) Working days of the delivery of the Notice to Proceed or such longer time as may be otherwise specified in the notice to proceed.

4.0 Conditions

4.1 If the City gives a Notice of Award to undersigned Tenderer, and the undersigned:

- (a) fails or refuses to deliver the documents as specified and required by Section 2 and 3 of this Form of Tender; or

~~LEO'S CONTRACTORS LTD.~~

Name of Tenderer

Page FT3

MX
Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

- (b) fails or refuses to commence the Work in accordance with the Tender Documents and the Notice to Proceed,

then such failure or refusal will be deemed to be a refusal to perform the Contract and the Work, and the City, on written notice to the undersigned Tenderer, may award the Contract to another Tenderer or person. The Tenderer agrees that, as full compensation for damages suffered by the City because of such failure or refusal on the part of the undersigned Tenderer to perform the Contract and the Work, the Tenderer's Bid Bond will be forfeited to the City in the amount equal to the lesser of:

- (c) the face value of the Bid Bond; or
- (d) the amount by which the Total Tender Price presented herein is less than the amount for which the City contracts with another Tenderer or other person to perform the Work.

4.2 The undersigned acknowledges and agrees that the lowest submitted Tender will not necessarily be accepted, and that the City reserves the right to reject this Tender at any time without further explanation or to accept any Tender considered advantageous to the City.

4.3 The Schedules attached to this Form of Tender form a part of it.

5.0 Certification

- 5.1 The undersigned hereby certify that this Tender complies in all respects with the requirements of the Tender Documents.

Rede Contractor Ltd.

Name of Tenderer

Page FT4

MM

Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

6.0 Labour

6.1 The above stated Total Tender Price is based on the Work being performed by union/~~non-union~~ labour. (Delete or cross out "union" or "non-union" as applicable).

SIGNED and SEALED this 13th day of JULY, 2010 by the duly authorized officers of the Tenderer:

Tenderer's Legal Name or Registered Corporate Name and Address:
(Seal)

per: PEDRE CONTRACTORS LTD

per: [Signature]

Witness' Name, Signature, and Address where Tenderer is a Proprietorship or Partnership:

(Address)

(Name and Signature)

Pedre Contractors Ltd.

Name of Tenderer

Page FT5

mk
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE A
SCHEDULE OF QUANTITIES AND UNIT PRICES

The following amounts are the Tenderer's lump sum and/or unit prices for the corresponding items listed below. The lump sums prices, unit prices and the subtotal price shown below include all labour, materials, services and other inputs, overhead and profit for and all fees in respect of the Work, except ~~GST~~. The ~~GST~~ will be shown separately.
HST HST

The Tenderer acknowledges that the City may delete any of the items in this Schedule A in order to meet budget limitations and award a Contract for only the remaining items.

Legend - L.S. = Lump Sum, cu.m = Cubic Metre, Sq.m = Square Metre, lin.m = Linear Metre

Pedre Contractors Ltd.

Name of Tenderer

Page FT6

mk

Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

**SCHEDULE A Continued
SCHEDULE OF QUANTITIES AND UNIT PRICES**

Item	Description of Work	Unit	Est. Qty.	Unit Price Bid	Amount Bid
1.	SECTION A - FORCEMAINS Arbutus St. from Kitsilano Pump Station to York St. (to 45 degree bend on York east)			s.21(1)	
1.1	Test Excavations	each	6		
1.2	Pipe construction in peat - 450 mm dia. mainline pipe	lin.m	123		
1.3	Pipe construction in peat - 300 mm dia. mainline pipe	lin.m	20		
1.4	Pipe construction - 450 mm dia. forcemain pipe	lin.m	100		
1.5	Mainline 450 mm dia. standard gate valve	each	1		
1.6	Mainline 300 mm dia. standard gate valve	each	2		
1.7	Pipe connection between 450 mm dia. forcemain and existing 300 mm dia. forcemain at Kitsilano Pump Station	L.S.	1		
1.8	Flowmeter manhole complete with flowmeters (meters supplied by City) and sump pump and piping to sewer	L.S.	1		
1.9	Bypass pump manhole complete with piping, valves and sump pump and piping to sewer	L.S.	1		
1.10	Electrical duct, trenching, restoration, junction boxes and wiring from flow meter manhole and pump bypass manhole to Kitsilano Pump Station	L.S.	1		
1.11	Premium to construct 300 mm forcemain crossing near Cornwall	L.S.	1		
1.12	Premium to construct 450 mm and 300 mm forcemain connection to Kitsilano Pump Station discharge piping	L.S.	1		
1.13	Pipe connection between new 450 mm dia. forcemain and existing 450 mm dia. forcemain at Arbutus and York	L.S.	1		
1.14	Forcemain Pressure Testing	L.S.	1		
SUBTOTAL SECTION A (excluding GST)				s.21(1)	

Pedre Contractors Ltd.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

**SCHEDULE A Continued
SCHEDULE OF QUANTITIES AND UNIT PRICES**

Item	Description of Work	Unit	Est. Qty.	Unit Price Bid	Amount Bid
2.	SECTION B - FORCEMAINS York St. (45 degree bend at York east) Arbutus St. to Chestnut St.				
2.1	Test Excavations	each	5	s.21(1)	
2.2	Pipe Construction - 450 mm dia. mainline forcemain pipe	lin.m	453		
2.3	450 mm dia. standard gate valve c/w angle operator	each	1		
2.4	Premium to construct watermain and combined sewer crossings at Maple Street.	L.S.	1		
2.5	Premium to construct connection to existing Jervis Forcemain at Chestnut Street	L.S.	1		
2.6	Air Valve Chamber at Maple Street	L.S.	1		
2.7	Air Valve Chamber at Chestnut Street	L.S.	1		
2.8	Blowdown Chamber at Maple Street	L.S.	1		
2.9	Forcemain Pressure Testing	L.S.	1		
SUBTOTAL SECTION B (excluding GST)					s.21(1)

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Pedie Contractors Ltd.

Name of Tenderer

Page FT8

mx
Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

**SCHEDULE A Continued
SCHEDULE OF QUANTITIES AND UNIT PRICES**

Item	Description of Work	Unit	Est. Qty.	Unit Price Bid	Amount Bid
3.	SECTION C - GRAVITY SEWERS Arbutus Street in the vicinity of West First Avenue and York Avenue			s.21(1)	
3.1	Test Excavations	each	7		
3.2	Remove Existing Manholes and Pipe	L.S.	1		
3.3	Pipe Construction				
	(a) 200 mm dia. sanitary	lin.m	120		
3.4	Manholes				
	(a) Sanitary manhole	each	3		
	(b) Connect to existing manhole	each	1		
3.5	Mainline Pipe Cleanout	each	1		
3.6	Service Connections				
	(a) 100 mm dia.	each	2		
	(b) 150 mm dia.	each	1		
3.7	Flushing and Testing Gravity Sewers	L.S.	1		
3.8	Video Inspection Gravity Sewer	L.S.	1		
3.9	Bypass Pumping	L.S.	1		
3.10	Remove piping and cap two stubs at connections to the English Bay Interceptor sewer	each	2		
SUBTOTAL SECTION C (excluding GST)					s.21(1)

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Name of Tenderer

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

**SCHEDULE A Continued
SCHEDULE OF QUANTITIES AND UNIT PRICES**

Item	Description of Work	Unit	Est. Qty.	Unit Price Bid	Amount Bid
4.	SECTION D - FORCEMAIN Fir Street Lane (west of Granville Street between West Second Avenue and West Fourth Avenue)			s.21(1)	
4.1	Test Excavations	each	4		
4.2	Pipe Construction - 300 mm dia. mainline forcemain pipe to Manhole S1 at West Fourth Avenue	lin.m	175		
4.3	Pipe Construction - 350 mm dia. mainline gravity sewer pipe from Manhole S1 to 900 dia. combined sewer on west Fourth Avenue	lin.m	17		
4.4	Premium to construct crossing and connect to the existing Granville Forcemain on West Second Avenue	L.S.	1		
4.5	Premium to construct crossing and connect to the existing 900 dia. combined sewer on West fourth Avenue	L.S.	1		
4.6	Construct Manhole S1	each	1		
4.7	Forcemain Pressure Testing	L.S.	1		
4.8	Flushing and Testing Gravity Sewer	L.S.	1		
4.9	Video Inspection Gravity Sewer	L.S.	1		
SUBTOTAL SECTION D (excluding GST)				s.21(1)	

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Name of Tenderer

Page FT10

mk
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE A Continued
SCHEDULE OF QUANTITIES AND UNIT PRICES

Item	Description of Work	Unit	Est. Qty.	Unit Price Bid	Amount Bid
5.	SECTION E - GRAVITY SEWERS West 8th Ave. - Bayswater St. to Balaclava St.				
5.1	Test Excavations	each	1	s.21(1)	
5.2	Remove existing manholes and pipe	L.S.	N/A		
5.3	Pipe Construction				
	(a) 750 mm dia. storm	lin.m	84		
	(b) 675 mm dia. storm	lin.m	109		
	(c) 525 mm dia. sanitary	lin.m	192		
5.4	Manholes				
	(a) Storm manhole	each	2		
	(b) Sanitary manhole	each	2		
	(c) Combined manhole	each	1		
	(d) Connect to existing manhole	each	N/A		
5.5	Mainline Pipe Cleanout	each	1		
5.6	Service Connections				
	(a) 100 mm dia.	each	27		
	(b) 150 mm dia.	each	26		
	(c) 200 mm dia.	each	2		
5.7	Flushing and Testing Gravity Sewers	L.S.	1		
5.8	Video Inspection Gravity Sewer	L.S.	1		
5.9	Bypass Pumping	L.S.	1		
SUBTOTAL SECTION E (excluding GST)					s.21(1)

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Name of Tenderer

Page FT11

MK
 Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

**SCHEDULE A Continued
SCHEDULE OF QUANTITIES AND UNIT PRICES**

Item	Description of Work	Unit	Est. Qty.	Unit Price Bid	Amount Bid
6.	SECTION F - GRAVITY SEWERS West 8th Ave. - Trutch St. to Balaclava St. and Trutch St. to Lane South of West 8th				
6.1	Test Excavations	each	N/A	\$ N/A	\$ N/A
6.2	Remove existing manholes and pipe	L.S.	N/A	\$ N/A	\$ N/A
6.3	Pipe Construction			s.21(1)	
	(a) 600 mm dia. storm	lin.m	130		
	(b) 250 mm dia. storm	lin.m	50		
	(c) 250 mm dia. sanitary	lin.m	171		
6.4	Manholes				
	(a) Storm manhole	each	2		
	(b) Sanitary manhole	each	2		
	(d) Connect to existing manhole	each	1		
6.5	Mainline Pipe Cleanout	each	1		
6.6	Service Connections				
	(a) 100 mm dia.	each	24		
	(b) 150 mm dia.	each	24		
	(c) 200 mm dia.	each	4		
6.7	Flushing and testing gravity sewers	L.S.	1		
6.8	Video inspection gravity sewer	L.S.	1		
6.9	Bypass Pumping	L.S.	1		
SUBTOTAL SECTION F (excluding GST)				s.21(1)	

Pedre Contractors Ltd.

Name of Tenderer

Page FT12

Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE A Continued
SCHEDULE OF QUANTITIES AND UNIT PRICES

Item	Description of Work	Unit	Est. Qty.	Unit Price Bid	Amount Bid
7.	SECTION G - GRAVITY SEWERS Trutch St. from West 8th Avenue to West 7th Avenue				
7.1	Test Excavations	each	N/A	\$ N/A	\$ N/A
7.2	Remove Existing Manholes and Pipe	L.S.	1	s.21(1)	
7.3	Pipe Construction				
	(a) 200 mm dia. storm	lin.m	41		
	(b) 200 mm dia. sanitary	lin.m	96		
7.4	Manholes				
	(a) Sanitary manhole	each	1		
7.5	Mainline Pipe Cleanout	each	1		
7.6	Service Connections				
	(a) 200 mm dia.	each	2		
7.7	Flushing and Testing Gravity sewers	L.S.	1		
7.8	Video inspection Gravity Sewer	L.S.	1		
7.9	Bypass Pumping	L.S.	1		
SUBTOTAL SECTION G (excluding GST)					s.21(1)

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Name of Tenderer

Page FT13

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Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE A Continued
SCHEDULE OF QUANTITIES AND UNIT PRICES

Item	Description of Work	Unit	Est. Qty.	Unit Price Bid	Amount Bid
8.	SECTION H - GRAVITY SEWERS West 7th Avenue - Waterloo St. to Trutch St.				
8.1	Test Excavations	each	1	s.21(1)	
8.2	Remove Existing Manholes and Pipe	L.S.	1		
8.3	Pipe Construction				
	(a) 450 mm dia. storm	lin.m	283		
	(b) 200 mm dia. sanitary	lin.m	269		
8.4	Manholes				
	(a) Storm manhole	each	2		
	(b) Sanitary manhole	each	2		
	(c) Connect to existing manhole	each	1		
8.5	Mainline Pipe Cleanout	each	1		
8.6	Service Connections				
	(a) 100 mm dia.	each	43		
	(b) 150 mm dia.	each	46		
	(c) 200 mm dia.	each	6		
8.7	Flushing and Testing Gravity Sewers	L.S.	1		
8.8	Video Inspection Gravity Sewer	L.S.	1		
8.9	Bypass Pumping	L.S.	1		
SUBTOTAL SECTION H (excluding GST)					s.21(1)

Name of Tenderer

MK
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE A Continued
SCHEDULE OF QUANTITIES AND UNIT PRICES

Item	Description of Work	Unit	Est. Qty.	Unit Price Bid	Amount Bid
9.	SECTION I - FORCEMAINS West 8th Ave. - Lane West of Cambie St.				
9.1	Excavate & remove existing 600mm DI forcemain piping	L.S.	1	s.21(1)	
9.2	Excavate & remove existing 600mm conc. gravity piping and plug connection to English Bay Interceptor	L.S.	1		
9.3	Remove Existing manhole Structure and Pipe	L.S.	1		
9.4	Supply and Install 600 mm dia. DI Forcemain	lin.m	10		
9.5	Premium to Construct the Works - West 8th Ave lane	L.S.	1		
SUBTOTAL SECTION I (excluding GST)					s.21(1)

Item	Description of Work	Unit	Est. Qty.	Unit Price Bid	Amount Bid
10.	SECTION J - INDETERMINATE ITEMS				
10.1	Imported 150 mm Minus Subgrade Fill	cu.m	50	s.21(1)	
10.2	Overexcavation/Additional Excavation	cu.m	100		
10.3	Trench Rock	cu.m	10		
10.4	Relay sewer services (from the top of riser to the property line, storm and sanitary side by side in the same trench)	Lin. m	10		
10.5	Relay catchbasin leads (from edge of main sewer trench to catchbasin)	Lin. m	10		
10.6	Polyethylene Encasement of Pipe	Lin. m	200		
SUBTOTAL SECTION J (excluding GST)					s.21(1)

Pedre Contractors Ltd.

Name of Tenderer

Page FT15

mk
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCE MAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE A Continued
SCHEDULE OF QUANTITIES AND UNIT PRICES

Item	Description of Work	Unit	Est. Qty.	Unit Price Bid	Amount Bid
11.	SECTION K - ADDITIONAL PAVING including sawcutting, removal of existing asphalt and base, and preparation of new base				
11.1	ADDITIONAL PAVING Arterial, Industrial & Transit Routes DWG. MF137-AE-4	Sq. m	15	s.21(1)	
11.2	ADDITIONAL PAVING Higher Zoned Routes DWG. MF137-AE-3	Sq. m	100		
SUBTOTAL SECTION K (excluding GST)					s.21(1)

TOTAL TENDER PRICE (Section A + B + C + D + E + F + G + H + I + J + K) (excluding GST)	\$3,932,290.00
GST HST	\$471,874.80

Transfer Total Tender Price (excluding GST) to page FT2 - Section 1.0

Pedre Contractors Ltd.

Name of Tenderer

Page FT16

mk
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE B
PRELIMINARY CONSTRUCTION SCHEDULE

Milestone Dates:

- (1) Work will begin within five (5) Working Days subject to approval by Vancouver City Council and the Owner issuing the Notice to Proceed.
- (2) Work should be substantially completed on or before January, 2011.
- (3) Total Performance of the Work will be completed by March, 2011, or such later date as both parties may agree.

Detailed Construction Schedule to be completed by Tenderer:

WORK DESCRIPTION	Aug. 2010	Sept. 2010	Oct. 2010	Nov. 2010	Dec. 2010	Jan. 2011	Feb. 2011	March 2011
SECTION A/B	s.21(1)							
SECTION C								
SECTION D								
SECTION E,F,G,H								
SECTION I								
FINAL RESURFACING (WEATHER DEPENDENT)								///

Name of Tenderer

Page FT17

mk
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE C
SUBCONTRACTORS and SUPPLIERS

1.0 Subcontractors

The Tenderer should insert in Schedule "C" to the Tender a list of Subcontractor(s) and Supplier(s), providing name, address of place of business, and the portion of the Work to be done by the Subcontractor and/or Supplier or the equipment or materials to be supplied by the Subcontractor and/or Supplier. Pursuant to Schedule C, the City reserves the right to object to any of the Subcontractors and Suppliers listed in a Tender. If the City objects to a listed Subcontractor and/or Supplier then the City will permit a Tenderer to, within five (5) Working days, propose a substitute Subcontractor and/or Supplier acceptable to the City. A Tenderer will not be required to make such a substitution and, if the City objects to a listed Subcontractor and/or Supplier, the Tenderer may, rather than propose a substitute Subcontractor and/or Supplier, consider its Tender rejected by the City and by written notice withdraw its Tender. The City shall, in that event, return the Tenderer's bid security.

The Tenderer will list below all subcontractors it intends to use in its performance of the Work, and what parts of the Work each subcontractor will be undertaking (the "Subcontractors").

The Tenderer, if awarded the Contract, will engage the listed Subcontractors only, and no others in their stead, without prior written authorization of the City.

The Tenderer, if awarded the Contract, will ensure that every Subcontractor is bound by a legal agreement with the same terms and conditions of the Contract.

Tenderers are to provide the following information about the Subcontractors:

- (a) Describe how the Tenderer's operation is structured with respect to Subcontractors.
- (e) Describe insurance held by Subcontractors.

If no Subcontractors will be used, indicate "Not Applicable".

Pedre Contractors Ltd.

Name of Tenderer

Page FT18

mk
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE C cont'd
SUBCONTRACTORS and SUPPLIERS

SUB-CONTRACTORS - #1

Subcontractor's Name, Address, City,	s.21(1)
Describe the type of Work to be performed by Subcontractor:	
Description of Prior Relevant Project:	
Location of Prior Relevant Project:	
Contract Value:	
Start and Completion Date:	2009
Completed on Schedule?	Yes/No (circle correct answer)
Name of General Contractor:	PEDRE CONTRACTORS
Name and Telephone Number of Project Reference:	s.21(1)

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Name of Tenderer

mk
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE C cont'd
SUBCONTRACTORS and SUPPLIERS

SUB-CONTRACTORS - #2

Subcontractor's Name, Address, City	s.21(1)
Describe the type of Work to be performed by Subcontractor:	
Description of Prior Relevant Project:	
Location of Prior Relevant Project:	
Contract Value:	
Start and Completion Date:	
Completed on Schedule?	<input checked="" type="radio"/> Yes / <input type="radio"/> No (circle correct answer)
Name of General Contractor:	<i>Pedree Cons.</i>
Name and Telephone Number of Project Reference:	s.21(1)

Pedree Contractors Ltd.

Name of Tenderer

mk
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE C cont'd
SUBCONTRACTORS and SUPPLIERS

SUB-CONTRACTORS - #3

Subcontractor's Name, Address, City	N/A.
Describe the type of Work to be performed by Subcontractor:	
Description of Prior Relevant Project:	
Location of Prior Relevant Project:	
Contract Value:	
Start and Completion Date:	
Completed on Schedule?	Yes/No (circle correct answer)
Name of General Contractor:	
Name and Telephone Number of Project Reference:	

Pedre Contractors Ltd.

Name of Tenderer

Page FT21

MK
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE C cont'd
SUBCONTRACTORS and SUPPLIERS

2.0 Suppliers

The Tenderer will list here all major suppliers and manufacturers it intends to use on in performing the Work.

SUPPLIER	MANUFACTURER	ADDRESS	ITEM
s.21(1)			

Pedre Contractors Ltd.

Name of Tenderer

Page FT22

mk
Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

**SCHEDULE D
TENDERER'S RELATED EXPERIENCE**

The Tenderer will describe its related experience by describing similar work it has undertaken previously, as follows:

DESCRIPTION OF PROJECT:

s.21(1)

LOCATION OF PROJECT:

CONTRACT VALUE (Canadian Funds): \$

START AND COMPLETION DATES:

COMPLETED ON SCHEDULE? Yes/No
(Circle correct response)

NAME OF CONTRACT OWNER:

NAME OF PROJECT REFERENCE:

**CURRENT TELEPHONE NUMBER AND EMAIL
OF PROJECT REFERENCE:**

**NAMES OF KEY PERSONNEL AND
SUBCONTRACTORS:**

Pedre Contractors Ltd.

Name of Tenderer

Page FT23

MR
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE D cont'd
TENDERER'S RELATED EXPERIENCE

DESCRIPTION OF PROJECT:

s.21(1)

LOCATION OF PROJECT:

CONTRACT VALUE (Canadian Funds): \$

START AND COMPLETION DATES:

COMPLETED ON SCHEDULE? Yes/No
(Circle correct response)

NAME OF CONTRACT OWNER:

NAME OF PROJECT REFERENCE:

CURRENT TELEPHONE NUMBER AND EMAIL
OF PROJECT REFERENCE:

NAMES OF KEY PERSONNEL AND
SUBCONTRACTORS:

Name of Tenderer

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE D cont'd
TENDERER'S RELATED EXPERIENCE

s.21(1)

DESCRIPTION OF PROJECT:

LOCATION OF PROJECT:

CONTRACT VALUE (Canadian Funds): \$

START AND COMPLETION DATES:

COMPLETED ON SCHEDULE? Yes/No
(Circle correct response)

NAME OF CONTRACT OWNER:

NAME OF PROJECT REFERENCE:

CURRENT TELEPHONE NUMBER AND EMAIL
OF PROJECT REFERENCE:

NAMES OF KEY PERSONNEL AND
SUBCONTRACTORS:

Pedre Contractors Ltd.

Name of Tenderer

Page FT25

MV
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE E
FORCE ACCOUNT LABOUR RATES AND EQUIPMENT RATES

(See Section 19.0 of Part B - Instructions to Tenderers)

1.0 Force Account Labour Rates

Tenderers should provide labour rates in the table below for all labour categories that will be involved in the Work. The labour rates will remain firm for the term of the Contract and will be used by the Owner for the purpose of evaluating and valuing changes in the Work in the case of lump sum, or in case of force account valuation. The rates provided below are all inclusive and include without limitation, wages and assessments and benefits payable in accordance with Applicable Laws, mobilization and demobilization, supervision, administration, small tool allowance including small tool rental, overhead and profit.

For the purposes of the above, small tools are considered to be any tool worth \$2,000.00 or less in new value. All other tools should be listed as equipment in the table under item 2 below.

Overtime hourly rates is applicable only at prior written request of the Engineer and only for labour expended after 5:00 pm on Working Days or on any day other than a Working Day.

Pedre Contractors Ltd

Name of Tenderer

MK
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE E Continued
FORCE ACCOUNT LABOUR RATES AND EQUIPMENT RATES

LABOUR CLASSIFICATION	REGULAR RATE (/hr)	OVERTIME RATE (/hr)
SEE PAGE 27 A ATTACHED		

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Name of Tenderer

Page FT27

mk

Initials of Authorized Signatory

**2009/10 Labour Force Account Rates**

<u>Labour Category</u>	<u>Rate/Hr.</u>	<u>OT Rate</u>
Superintendent	\$ s.21(1)	\$ s.21(1)
Foreman	\$	\$
Equipment Operator	\$	\$
Truck Driver	\$	\$
Pipe Layer	\$	\$
Skilled Labourer	\$	\$
Concrete Finisher	\$	\$
Carpenter/Form Maker	\$	\$
Unskilled Labour	\$	\$
Flag Person	\$	\$
Welder	\$	\$
Surveyor	\$	\$
Grademan	\$	\$

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INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE E Continued
FORCE ACCOUNT LABOUR RATES AND EQUIPMENT RATES

2. Force Account Equipment Rates

Tenderers should provide equipment rates for all equipment that will be involved in the Work. The equipment rates will remain firm for the term of the Contract and will be used by the Owner for the purpose of evaluating and valuing changes in the Work in the case of lump sum, or in case of force account valuation. The rates provided below are all inclusive and include without limitation, fuel, lubrication, service, maintenance, depreciation, mobilization and demobilization, overhead and profit.

It is acknowledged by the Contractor that if any portion of an hour is spent in performing the Work on a force account basis, a pro rata portion of the force account rate shall only be charged.

EQUIPMENT CLASSIFICATION	HOURLY RATE	SPECIFY MAKE & MODEL
SEE PAGE 28A ATTACHED		

3.0 Materials and Supplies

In the event that additional materials and supplies are required for work adjusted and or claimed pursuant to Part E - GC. 47, the Contractor will be reimbursed (after duly invoicing the City) at cost plus a mark up of fifteen percent (15%) to compensate the Contractor for all overhead and profit.

Pedre Contractors Ltd.
Name of Tenderer

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2009/10 Equipment Force Account Rates

<u>Equipment Make & Model</u>	<u>Yr/Capy.</u>	<u>Rate/Hr.</u>
JD 690 E LC Excavator	94 20.5 te	\$s.21(1)
Cat. 320 UL Excavator	02 20.5 te	\$
Cat. 325 L Excavator	98 26.8 te	\$
Komatsu PC300 LC-6 Excavator	00 40.0 te	\$
Cat. 345 BL Excavator	01 46.0 te	\$
JD 450 CLC Excavator	05 46.0 te	\$
JD 650 DLC Excavator	07 65.0 te	\$
JD TC54H Front End Loader	04 3.0 yd3	\$
Cat. IT24F Front End Loader	95 2.0 yd3	\$
Cat. IT28F Front End Loader	00 3.0 yd3	\$
JD 310SG Rubber Tire Backhoe	03 70 HP	\$
JD 450 LGP Dozer	00 70 HP	\$
JD 650 LGP Dozer	07 100 HP	\$
Tandem Dump Truck (Rented)	-- 12 yd 3	\$
Tandem & Pup (Rented)	-- 20 yd 3	\$
Western Star Flat Deck & Crane	24,000 kg	\$
Dynapac CA 151 66" Roller	96 7.0 te	\$
Bomag BW90AD-2 30" Roller	99 1.5 te	\$
F550 3 ton tool van	99 SA	\$
F350 1 ton flat deck	07 SA	\$
Chev. Pickup Truck	05 ¾ te	\$
Plate Tamper	-- 22 in.	\$
Hyd. Compactor (Excavator)	4000 ft/lb	\$
Hyd. Compactor (Backhoe)	1000 ft/lb	\$
Hyd. Breaker (Backhoe)	1000 ft/lb	\$
Target Pro 65II Slab Saw	-- 30 in	\$
Rammer Hammer G100	05 10000 Ft-lbs	\$

Pedre Contractors Ltd.

WKL

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE F
CONSENT OF SURETY

SEE ATTACHED

PROJECT

Should it be required, we the undersigned Surety Company do hereby consent and agree to become bound as sureties in an approved Contract Performance Bond and Labour and Material Payment Bond each in the amount of fifty percent (50%) of the awarded Total Tender Price for the fulfillment of the Contract and for the performance of the Work as described herein, which may be awarded to _____ at the Total Tender Price set forth in the attached Tender, which Performance Bond and Labour and Material Payment Bond we understand are to be filed with the City of Vancouver within five (5) Working Days from the date the Notice of Award is given by the City to the Contractor.

We hereby further declare that the undersigned Surety Company is legally entitled to do business in the Province of British Columbia and that it has a net worth over and above its present liabilities and the amounts herein set forth, together.

The Common Seal of _____
was hereto affixed in the
presence of:

Pedre Contractors Ltd.

Name of Tenderer

Page FT29

mk
Initials of Authorized Signatory

s.21(1)

CONSENT OF SURETY

No. 000,000

Name and address of Owner or Oblige CITY OF VANCOUVER

Name of contractor Should the tender of PEDRE CONTRACTORS LTD

Describe project for ITT NO. PS10094 CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS

Tender call date JULY 6, 2010.

be accepted and provided the contractor above named shall enter into a written contract for performance of the work described above, we the undersigned Surety Company do hereby consent and agree to become bound as Surety in an approved Performance Bond for **FIFTY (50%)** percent of the amount of tender for the fulfilment of the contract for the said work.

Should it be required, we the Surety, also agree to become bound as Surety in an approved Labour and Material Payment Bond for **FIFTY (50%)** percent of the amount of tender with respect to the above project.

It is a condition of this Consent of Surety that if the required bond or bonds are not called for within sixty (60) days from the closing date of the tender described above, this Consent of Surety shall be null and void.


Dated 5TH day of JULY in the year 2010.

s.21(1)

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE G
PROPOSED KEY PROJECT PERSONNEL

The following are the Key Project Personnel we propose to use for the Work:

		Name
Project Superintendent:		s.21(1) 
Project Manager:		
Construction Safety Officer:		
Foreman:		

Pedre Contractors Ltd.

Name of Tenderer

Page FT30

mk
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE H
EXCAVATION SUPPORT SYSTEM DETAILS

The Tenderer shall provide support system details for any excavations greater than 1.2m as shown in Part G, Specifications and provide confirmation that the proposed support system has "WorkSafeBC" approval.

Additional pages may be attached to this page and/or separate numbered documents such as specifications, descriptive literature and drawings may be submitted with this Schedule. Each such additional page and/or separate document must be clearly marked "PS10094 - Part C - Form of Tender - Schedule H", and must be signed by the Tenderer.

* STEEL CAGES

* TIMBER SHORING

* GEOTECHNICAL ENGINEERS CERTIFICATION

ALL IN ACCORDANCE WITH WORKSAFE
BC REGULATIONS

Pedre Contractors Ltd.

Name of Tenderer

Page FT31

WK

Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

Proof of Qualification to act as Prime Contractor

- The Prime Contractor is to provide a current copy of its WorkSafeBC "Clearance Letter", a signed copy of this Prime Contractor Agreement and all other documents requested by the Owner prior to commencement of the Work.
- The Prime Contractor is to notify the Owner of any changes of status with WorkSafeBC or the WCB during the course of the Project.

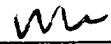
After the Prime Contractor has been designated and before Work has commenced, the Prime Contractor shall:

- Conduct all necessary and appropriate inquiries of all relevant Owner staff and records in order to verify in writing to the Owner that the Owner has given to the Contractor all information known to the Owner that is necessary to identify and eliminate or control hazards to the health and safety of persons at the Place of the Work.
- Conduct a pre-contract hazard assessment and carefully review, and plan to address, all hazards identified in that assessment.
- Inform all other employers whose employees are providing services for the Project at the Place of the Work, that it is the Prime Contractor.
- Establish and maintain a system or process to ensure all employers, employees and visitors at/to the Place of the Work comply with the WCA, the OH&S Regulation and the requirements of WorkSafeBC. The Prime Contractor will thus be responsible for site orientation and hazard communication.
- Review and complete a "Pre-Job Meeting Form" if the Owner requests.
- For construction projects, post the Notice of Project on the Place of the Work and deliver a copy to WorkSafeBC at least twenty-four (24) hours before construction commences.
- Comply with Section 20.2 of the OH&S Regulation in respect of the Notice of Project.
- Identify and set expectations for each subcontractor's safety contact.
- Coordinate all safety-related activities, from site orientations to safety committee meetings and toolbox talks, to inspections and incident reviews.
- Inform employers and workers of the workplace hazards associated with the Place of the Work.
- At the Place of the Work, provide the information listed in Section 20.3(4) of the OH&S Regulation.
- In all other respects strictly comply with, and strictly enforce compliance by others, as applicable, with, the WCA, the OH&S Regulation, the requirements of WorkSafeBC, the safety policies and procedures of the Owner and the terms and conditions of the Contract Documents applicable.

Pedre Contractors Ltd.

Name of Tenderer

Page FT34


Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

Throughout the term of the Project, the Prime Contractor shall:


- Ensure that all hazards are promptly and appropriately identified and addressed.
- Ensure the health and safety of the workers on the Project.
- Maintain a current list of persons that each sub-trade (employer) has designated to be responsible for that employer's health and safety activities.
- Ensure provision of first aid equipment and services as required by the OH&S Regulation.
- Coordinate all occupational health and safety activities for the Project.
- Prepare, and communicate to all workers on the Place of the Work, an emergency response plan, taking into account the number of people onsite, the people who work outside regular hours and the types of emergencies that may arise. This plan should also describe subcontractor and individual worker responsibilities (e.g. responding to a fire) and provide for any necessary training and equipment, including first aid supplies as work processes change over the course of the Project, this emergency response plan must be updated as appropriate.
- Make and maintain detailed notes and reports in respect of the initial site safety meeting, safety committee meetings, reviews of contractors' safety systems, inspection and incident investigations, first aid records and orientation and training.
- On any site where workers of two (2) or more employers are working at the same time and the combined workforce is greater than five (5), identify and designate a "Qualified Coordinator" to coordinate health and safety activities.
- In all other respects strictly comply with, and strictly enforce compliance by others, as applicable, with, the WCA, the OH&S Regulation, the requirements of WorkSafeBC, the safety policies and procedures of the Owner and the terms and conditions of the Contract Documents applicable.

Prime Contractor's Qualified Coordinator, if applicable, (Construction Only) responsibilities:

- Comply with all requirements listed in Section 20.3(3) of the OH&S Regulation and on page 13 of the Owner's Multiple Employer Workplace/Contractor Coordination Program (2003).
- Coordinate all health and safety activities for the Project.
- Post workplace drawings showing where first aid is located, the emergency transportation system for injured workers and evacuation marshalling points.
- Ensure that regular workplace safety meetings are held and documented.
- Know who all other contractors' "Qualified Persons" are.

Pedre Contractors Ltd.
Name of Tenderer

Page FT35


Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

- Ensure that all workers at the Place of the Work are informed of workplace hazards, from both the pre-contract hazard assessment and from ongoing work activities of all employers at the Place of the Work, and ensure that hazards are properly and punctually addressed throughout the duration of the Project.

3.0 DESIGNATION AS PRIME CONTRACTOR

By signing this Prime Contractor Agreement, the undersigned Contractor accepts all responsibilities of a Prime Contractor as outlined above and in the Owner's Contractor Coordination Program (2003), Part III of the WCA and the OH&S Regulation, as well as any other responsibilities required by WorkSafeBC.

As a Contractor signing this Prime Contractor Agreement with the Owner, the undersigned company agrees that the company and its management staff, supervisory staff and workers will comply with the all WorkSafeBC requirements, the OH&S Regulation and Part III of the WCA.

Any violation of a requirement of WCB Legislation by the Prime Contractor may be considered a breach of the Contractor's Contract with the Owner resulting in possible termination or suspension of the Contract and/or any other actions deemed appropriate at the discretion of the Owner.

Any penalties, sanctions or additional costs levied against the Owner, as a result of an action or inaction of the Prime Contractor in its capacity as such, are the sole responsibility of the Prime Contractor, as set out in the Contract.

I, the undersigned, acknowledge that I have read and understand the information above. By signing this Prime Contract Agreement, I agree as an authorized representative of the Contractor to accept all responsibilities of the Prime Contractor for this Project.

Date

JULY 13, 2010

Contract #

PS10094

Name of Contractor

PEFRE CONTRACTORS LTD

Qualified Coordinator's Name

(Construction Only)

s.21(1)

Signature of Authorized Representative



s.21(1)

Print Name and Title

Pefre Contractors Ltd.

Name of Tenderer

Page FT36

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Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

**SCHEDULE K
TENDERER'S CHECKLIST**

Before submitting your Tender, check the following points:

1. Has your Tender been signed, witnessed and sealed?
2. Have all pages of the Form of Tender been initialed?
3. Have you enclosed your Bid Bond?
4. Have you enclosed the Consent of Surety, signed and sealed by your proposed Surety?
5. Have you completed and provided all documentation required in all Schedules in the Form of Tender?
6. Have you shown in the Form of Tender the time for completion of the Work?
7. Have you listed all your Subcontractors?
8. Have you listed your experience in similar work and provided contact information for references?
9. Have you listed your key staff?
10. Are the documents complete?
11. Have you completed Paragraph 7 of the Form of Tender regarding labour?
12. Have you included a letter from your insurer and reviewed with your insurer the insurance requirements in Section GC 53 of the Part E - General Conditions portion of the Tender Documents?
13. Have you included a Certificate of Existing Insurance in the form of Schedule I, Part C - Form of Tender?

NOTE: This Checklist is provided as an aid to the Tenderer. However, it is each Tenderer's sole responsibility to ensure the completeness of his/her Tender.

Pedre Contractors Ltd.
Name of Tenderer

Page FT37

mx
Initials of Authorized Signatory

CONFIRMATION OF VEHICLE INSURANCE COVERAGE



Insurance Corporation
of British Columbia

(Hereinafter called the Corporation)

APV47

NAME OF INSURED (surname followed by given name(s)) PEDRE CONTRACTORS LTD.		
ADDRESS OF INSURED 104 - 10180 199B STREET		
CITY LANGLEY	PROVINCE BC	POSTAL CODE VIM 3X8

This is to confirm to:

City of Vancouver, ITT No. PS10094 Construction of Forcemain and Gravity Sewers

that coverage in accordance with the Insurance (Vehicle) Act (the Act), the Insurance (Vehicle) Regulation (the Regulation), and the ICBC Autoplan Optional Policy is provided as herein described to the insured named above and is in force at this date.

This confirmation is issued as a matter of information only and confers no rights on the confirmee and imposes no obligations on the Corporation, or the undersigned representative.

COVERAGE	VEHICLE PLATE NO.	LIMIT OF LIABILITY	DESCRIPTION OF VEHICLE			
			YEAR	MAKE	MODEL	SERIAL NUMBER
THIRD PARTY LIABILITY (REGULATION, PART 8) (OPTIONAL POLICY, DIVISION 4)	1.	\$ 5,000,000.00				ALL VEHICLES
	2.	\$				ATTACHED TO
	3.	\$				s.21(1)
	4.	\$				
	5.	\$				
	6.	\$				
	7.	\$				
	8.	\$				
	9.	\$				
	10.	\$				
	11.	\$				
	12.	\$				
	13.	\$				

AGENT'S COMMENTS	AGENT'S NO. 16002
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The Motor Vehicle Liability Insurance Card Canada Inter-Province on the back of this Confirmation of Vehicle Insurance Coverage is not valid.

Coverage effective from:	Coverage to expire on:
DATE (ddmm/yyyy) 01 - 10 - 2009	DATE (ddmm/yyyy) 30 - 09 - 2010

DULY AUTHORIZED REPRESENTATIVE
[Signature]
Pedre Contractors Ltd.

DATE *June 30/2010*
COPY 1 - CONFIRMEE

NOT VALID UNLESS STAMPED BY
AUTHORIZED ISSUING OFFICE

AM **16002**
PM
TIME OF VALIDATION **JUN 30 2010**

APV47 (06/2007)

COPY 1 - CONFIRMEE

COPY 2 - ICBC-CORPORATE DISBURSEMENTS
(no signatures required on Copies 2, 3 and 4)

COPY 3 - CUSTOMER

COPY 4 - AGENT

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE J
PRIME CONTRACTOR AGREEMENT FORM

1.0 DEFINITIONS

- a) "OH&S Regulation" means the Occupational Health & Safety Regulation (British Columbia Regulation 296/97) enacted pursuant to the WCA, and any successor legislation, all as such Regulation is amended or re-enacted from time to time;
- b) "Owner" means City of Vancouver;
- c) "Place of the Work" means the work site at the locations shown on Part H - Project Scope Drawings;
- d) "Prime Contractor" means the Contractor, who is designated pursuant to Article 3 below by the Owner to be the Prime Contractor for the Project with respect to occupational health and safety for the purposes of WCB Legislation;
- e) "Project" means the construction of forcemain and gravity sewers project, as contemplated by the Contract Documents, and includes all the Work;
- f) "WCA" means the *Workers Compensation Act*, R.S.B.C. 1996, Chapter 492, and any successor legislation, as such Act is amended or re-enacted from time to time;
- g) "WCB" means the Worker's Compensation Board of British Columbia; and
- h) "WCB Legislation" means the WCA and all regulations thereto including the OH&S Regulation, and all rules, regulations and requirements of WorkSafeBC, and any successor legislation, rules, regulations and requirements, all as amended or re-enacted from time to time; and
- i) "WorkSafeBC" means the British Columbia Provincial governmental organization by that name which is responsible, inter alia, for promoting workplace health and safety for the workers and employers of British Columbia, and for working with the affected parties to provide return-to-work rehabilitation, compensation, health care benefits and a range of other services, in the event of work-related injuries or diseases suffered by workers in British Columbia.

All other capitalized terms used in this Prime Contractor Agreement have the meanings given to them in the Contract Documents of which this Prime Contractor Agreement is a part, as applicable.

2.0 PRIME CONTRACTOR'S RESPONSIBILITIES

Indic Contractors Ltd.

Name of Tenderer

Page FT33

WW
Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

Proof of Qualification to act as Prime Contractor

- The Prime Contractor is to provide a current copy of its WorkSafeBC "Clearance Letter", a signed copy of this Prime Contractor Agreement and all other documents requested by the Owner prior to commencement of the Work.
- The Prime Contractor is to notify the Owner of any changes of status with WorkSafeBC or the WCB during the course of the Project.

After the Prime Contractor has been designated and before Work has commenced, the Prime Contractor shall:

- Conduct all necessary and appropriate inquiries of all relevant Owner staff and records in order to verify in writing to the Owner that the Owner has given to the Contractor all information known to the Owner that is necessary to identify and eliminate or control hazards to the health and safety of persons at the Place of the Work.
- Conduct a pre-contract hazard assessment and carefully review, and plan to address, all hazards identified in that assessment.
- Inform all other employers whose employees are providing services for the Project at the Place of the Work, that it is the Prime Contractor.
- Establish and maintain a system or process to ensure all employers, employees and visitors at/to the Place of the Work comply with the WCA, the OH&S Regulation and the requirements of WorkSafeBC. The Prime Contractor will thus be responsible for site orientation and hazard communication.
- Review and complete a "Pre-Job Meeting Form" if the Owner requests.
- For construction projects, post the Notice of Project on the Place of the Work and deliver a copy to WorkSafeBC at least twenty-four (24) hours before construction commences.
- Comply with Section 20.2 of the OH&S Regulation in respect of the Notice of Project.
- Identify and set expectations for each subcontractor's safety contact.
- Coordinate all safety-related activities, from site orientations to safety committee meetings and toolbox talks, to inspections and incident reviews.
- Inform employers and workers of the workplace hazards associated with the Place of the Work.
- At the Place of the Work, provide the information listed in Section 20.3(4) of the OH&S Regulation.
- In all other respects strictly comply with, and strictly enforce compliance by others, as applicable, with, the WCA, the OH&S Regulation, the requirements of WorkSafeBC, the safety policies and procedures of the Owner and the terms and conditions of the Contract Documents applicable.

Pedre Contractors Ltd.

Name of Tenderer

Page FT34


Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

Throughout the term of the Project, the Prime Contractor shall:

- Ensure that all hazards are promptly and appropriately identified and addressed.
- Ensure the health and safety of the workers on the Project.
- Maintain a current list of persons that each sub-trade (employer) has designated to be responsible for that employer's health and safety activities.
- Ensure provision of first aid equipment and services as required by the OH&S Regulation.
- Coordinate all occupational health and safety activities for the Project.
- Prepare, and communicate to all workers on the Place of the Work, an emergency response plan, taking into account the number of people onsite, the people who work outside regular hours and the types of emergencies that may arise. This plan should also describe subcontractor and individual worker responsibilities (e.g. responding to a fire) and provide for any necessary training and equipment, including first aid supplies as work processes change over the course of the Project, this emergency response plan must be updated as appropriate.
- Make and maintain detailed notes and reports in respect of the initial site safety meeting, safety committee meetings, reviews of contractors' safety systems, inspection and incident investigations, first aid records and orientation and training.
- On any site where workers of two (2) or more employers are working at the same time and the combined workforce is greater than five (5), identify and designate a "Qualified Coordinator" to coordinate health and safety activities.
- In all other respects strictly comply with, and strictly enforce compliance by others, as applicable, with, the WCA, the OH&S Regulation, the requirements of WorkSafeBC, the safety policies and procedures of the Owner and the terms and conditions of the Contract Documents applicable.

***Prime Contractor's Qualified Coordinator, if applicable, (Construction Only)
responsibilities:***

- Comply with all requirements listed in Section 20.3(3) of the OH&S Regulation and on page 13 of the Owner's Multiple Employer Workplace/Contractor Coordination Program (2003).
- Coordinate all health and safety activities for the Project.
- Post workplace drawings showing where first aid is located, the emergency transportation system for injured workers and evacuation marshalling points.
- Ensure that regular workplace safety meetings are held and documented.
- Know who all other contractors' "Qualified Persons" are.

Pedre Contractors Ltd.

Name of Tenderer

Page FT35

mk
Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

- Ensure that all workers at the Place of the Work are informed of workplace hazards, from both the pre-contract hazard assessment and from ongoing work activities of all employers at the Place of the Work, and ensure that hazards are properly and punctually addressed throughout the duration of the Project.

3.0 DESIGNATION AS PRIME CONTRACTOR

By signing this Prime Contractor Agreement, the undersigned Contractor accepts all responsibilities of a Prime Contractor as outlined above and in the Owner's Contractor Coordination Program (2003), Part III of the WCA and the OH&S Regulation, as well as any other responsibilities required by WorkSafeBC.

As a Contractor signing this Prime Contractor Agreement with the Owner, the undersigned company agrees that the company and its management staff, supervisory staff and workers will comply with the all WorkSafeBC requirements, the OH&S Regulation and Part III of the WCA.

Any violation of a requirement of WCB Legislation by the Prime Contractor may be considered a breach of the Contractor's Contract with the Owner resulting in possible termination or suspension of the Contract and/or any other actions deemed appropriate at the discretion of the Owner.

Any penalties, sanctions or additional costs levied against the Owner, as a result of an action or inaction of the Prime Contractor in its capacity as such, are the sole responsibility of the Prime Contractor, as set out in the Contract.

I, the undersigned, acknowledge that I have read and understand the information above. By signing this Prime Contract Agreement, I agree as an authorized representative of the Contractor to accept all responsibilities of the Prime Contractor for this Project.

Date

JULY 13, 2010

Contract #

PS10094

Name of Contractor

PEDRE CONTRACTORS LTD

Qualified Coordinator's Name

Signature of Authorized
Representative

Print Name and Title

s.21(1)

Pedre Contractors Ltd.

Name of Tenderer

Page FT36

mk
Initials of Authorized Signatory

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE K
TENDERER'S CHECKLIST

Before submitting your Tender, check the following points:

1. Has your Tender been signed, witnessed and sealed?
2. Have all pages of the Form of Tender been initialed?
3. Have you enclosed your Bid Bond?
4. Have you enclosed the Consent of Surety, signed and sealed by your proposed Surety?
5. Have you completed and provided all documentation required in all Schedules in the Form of Tender?
6. Have you shown in the Form of Tender the time for completion of the Work?
7. Have you listed all your Subcontractors?
8. Have you listed your experience in similar work and provided contact information for references?
9. Have you listed your key staff?
10. Are the documents complete?
11. Have you completed Paragraph 7 of the Form of Tender regarding labour?
12. Have you included a letter from your insurer and reviewed with your insurer the insurance requirements in Section GC 53 of the Part E - General Conditions portion of the Tender Documents?
13. Have you included a Certificate of Existing Insurance in the form of Schedule I, Part C - Form of Tender?

NOTE: This Checklist is provided as an aid to the Tenderer. However, it is each Tenderer's sole responsibility to ensure the completeness of his/her Tender.

Pedre Contractors Ltd.
Name of Tenderer

Page FT37

mx
Initials of Authorized Signatory

SCHEDULE "I"



CERTIFICATE OF EXISTING INSURANCE TO BE COMPLETED AND APPENDED TO THE PROPOSAL/TENDER

Section 2 through 8 - to be completed by the Insurer or its Authorized Representative

1. THIS CERTIFICATE IS ISSUED TO: City of Vancouver, 453 W 12th Avenue, Vancouver, BC V5Y 1V4
And certifies that the insurance policy (policies) as listed herein have been issued to the Named Insured(s) and are in full force and effect as of the effective date of the agreement described below.
2. NAMED INSURED: (must be the same name as proponent/bidder and is either an individual or a legally incorporated company)
Pedre Contractors Ltd.
BUSINESS TRADE NAME or DBA DOING BUSINESS AS:
General Contractor
BUSINESS ADDRESS:
#104 - 10180, 199B Street, Langley, BC V1M 3X8
DESCRIPTION OF OPERATION:
Invitation to Tender No. PS10094 - Construction of Forcemain and Gravity Sewers
3. PROPERTY INSURANCE containing a Waiver of Subrogation Clause in favour of the City and its Board of Parks and Recreation.
(All Risks Coverage including Earthquake and Flood)
INSURER: _____ INSURED VALUES: (Replacement Cost)
POLICY NUMBER: _____ Building and Tenants Improvement: \$ _____
POLICY PERIOD: From _____ to _____ Deductible Per Loss: \$ _____
4. COMMERCIAL GENERAL LIABILITY INSURANCE (Occurrence Form)
Including the following extensions:

<ul style="list-style-type: none"> ✓ Personal Injury ✓ Property Damage including Loss of Use ✓ Products and Completed Operations ✓ Cross Liability or Severability of Interest ✓ Employees as Additional Insureds ✓ Blanket Contractual Liability ✓ Non-Owned Auto Liability 	INSURER <u>S.21(1)</u> POLICY NUMBER <u>S.21(1)</u> POLICY PERIOD: From <u>09 May 2010</u> to <u>09 May 2011</u> LIMITS OF LIABILITY: (Bodily Injury and Property Damage inclusive) Per Occurrence: \$ <u>S.21(1)</u> Aggregate: \$ _____ All Risk Tenant's Legal Liability: \$ _____ Deductible Per Occurrence: \$ _____ Deductible Per Occurrence: \$ _____
---	---
5. AUTOMOBILE LIABILITY INSURANCE for operation of owned and/or leased vehicles
INSURER: _____ LIMITS OF LIABILITY:
POLICY NUMBER: _____ Combined Single Limit: \$ _____
POLICY PERIOD: From _____ to _____ If vehicles are insured by ICBC, complete and provide Form APV-47.
6. ☐ UMBRELLA OR ☐ EXCESS LIABILITY INSURANCE
INSURER: N/A LIMITS OF LIABILITY: (Bodily Injury and Property Damage inclusive)
POLICY NUMBER: _____ Per Occurrence: \$ _____
POLICY PERIOD: From _____ to _____ Aggregate: \$ _____
Self-Insured Retention: \$ _____
7. PROFESSIONAL LIABILITY INSURANCE
INSURER: N/A LIMITS OF LIABILITY:
POLICY NUMBER: _____ Per Occurrence/Claim: \$ _____
POLICY PERIOD: From _____ to _____ Aggregate: \$ N/A
If the policy is in a "Claims Made Form", please specify the applicable Retroactive Date: _____ Deductible per Occurrence/Claim: \$ _____
8. OTHER INSURANCE

TYPE OF INSURANCE <u>Contractors Equipment</u> INSURER <u>S.21(1)</u> POLICY NUMBER <u>S.21(1)</u> POLICY PERIOD From <u>09 May 2010</u> to <u>09 May 2011</u> TYPE OF INSURANCE _____ INSURER _____ POLICY NUMBER _____ POLICY PERIOD From _____ to _____	Limits of Liability Per Occurrence \$ <u>As per Schedule on file.</u> Aggregate \$ _____ Deductible Per Loss \$ _____ Limits of Liability Per Occurrence \$ _____ Aggregate \$ _____ Deductible Per Loss \$ _____
---	--

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE: JARINE LLOYD THOMPSON CANADA INC.
S.21(1)

PRINT NAME OF INSURER OR ITS AUTHORIZED REPRESENTATIVE, ADDRESS AND PHONE NUMBER
S.21(1)

Pedre Contractors Ltd.

s.21(1)

UNDERTAKING OF INSURANCE

**City of Vancouver
Invitation to Tender No. PS10094- Construction of Forcemain and Gravity Sewers**

We, the undersigned, s.21(1) on behalf of s.21(1)
s.21(1) of Canada with respect to Insurance under GC.53.2, in the amount of
\$5,000,000 Wrap Up Liability with 24 months completed operations and 'All Risk' Course of
Construction Insurance, DO HEREBY UNDERTAKE AND AGREE to insure and provide
the insurance as per Policy No. s.21(1) expiring May 9, 2011.

PEDRE CONTRACTORS LTD.

Dated at Surrey, **BRITISH COLUMBIA**, this 30th day of June 2010.

**This undertaking cannot be considered to be binding upon the insurer(s) for
coverage which would incept after the expiry date of this policy.**

s.21(1)

Authorized Representative

Pedre Contractors Ltd.

CONFIRMATION OF VEHICLE INSURANCE COVERAGE



Insurance Corporation
of British Columbia

(Hereinafter called the Corporation)

APV47

NAME OF INSURED (surname followed by given name(s)) PEDRE CONTRACTORS LTD.		
ADDRESS OF INSURED 104 - 10180 199B STREET		
CITY LANGLEY	PROVINCE BC	POSTAL CODE V1M 3X8

This is to confirm to:

City of Vancouver, ITT No. PS10094 Construction of Forcemain and Gravity Sewers

that coverage in accordance with the Insurance (Vehicle) Act (the Act), the Insurance (Vehicle) Regulation (the Regulation), and the ICBC Autoplan Optional Policy is provided as herein described to the insured named above and is in force at this date.

This confirmation is issued as a matter of information only and confers no rights on the confirmee and imposes no obligations on the Corporation, or the undersigned representative.

COVERAGE	VEHICLE PLATE NO.	LIMIT OF LIABILITY	DESCRIPTION OF VEHICLE			
			YEAR	MAKE	MODEL	SERIAL NUMBER
THIRD PARTY LIABILITY (REGULATION, PART 8) (OPTIONAL POLICY, DIVISION 4)	1.	\$ 5,000,000.00				ALL VEHICLES
	2.	\$				ATTACHED TO
	3.	\$				s.21(1)
	4.	\$				
	5.	\$				
	6.	\$				
	7.	\$				
	8.	\$				
	9.	\$				
	10.	\$				
	11.	\$				
	12.	\$				
	13.	\$				

AGENT'S COMMENTS	AGENT'S NO. 16002
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The Motor Vehicle Liability Insurance Card Canada Inter-Province on the back of this Confirmation of Vehicle Insurance Coverage is not valid.

Coverage effective from:	Coverage to expire on:
DATE (ddmm/yyyy) 01 - 10 - 2009	DATE (ddmm/yyyy) 30 - 09 - 2010

s.21(1)

NOT VALID UNLESS STAMPED BY
AUTHORIZED ISSUING OFFICE

AM **16002**

PM **JUN 30 2010**

TIME OF VALIDATION

APV47 (06/2007)

Pedre Contractors Ltd.

COPY 1 - CONFIRMEE

COPY 2 - ICBC-CORPORATE DISBURSEMENTS
(no signatures required on Copies 2, 3 and 4)

COPY 3 - CUSTOMER

COPY 4 - AGENT

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE J
PRIME CONTRACTOR AGREEMENT FORM

1.0 DEFINITIONS

- a) "OH&S Regulation" means the Occupational Health & Safety Regulation (British Columbia Regulation 296/97) enacted pursuant to the WCA, and any successor legislation, all as such Regulation is amended or re-enacted from time to time;
- b) "Owner" means City of Vancouver;
- c) "Place of the Work" means the work site at the locations shown on Part H - Project Scope Drawings;
- d) "Prime Contractor" means the Contractor, who is designated pursuant to Article 3 below by the Owner to be the Prime Contractor for the Project with respect to occupational health and safety for the purposes of WCB Legislation;
- e) "Project" means the construction of forcemain and gravity sewers project, as contemplated by the Contract Documents, and includes all the Work;
- f) "WCA" means the *Workers Compensation Act*, R.S.B.C. 1996, Chapter 492, and any successor legislation, as such Act is amended or re-enacted from time to time;
- g) "WCB" means the Worker's Compensation Board of British Columbia; and
- h) "WCB Legislation" means the WCA and all regulations thereto including the OH&S Regulation, and all rules, regulations and requirements of WorkSafeBC, and any successor legislation, rules, regulations and requirements, all as amended or re-enacted from time to time; and
- i) "WorkSafeBC" means the British Columbia Provincial governmental organization by that name which is responsible, inter alia, for promoting workplace health and safety for the workers and employers of British Columbia, and for working with the affected parties to provide return-to-work rehabilitation, compensation, health care benefits and a range of other services, in the event of work-related injuries or diseases suffered by workers in British Columbia.

All other capitalized terms used in this Prime Contractor Agreement have the meanings given to them in the Contract Documents of which this Prime Contractor Agreement is a part, as applicable.

2.0 PRIME CONTRACTOR'S RESPONSIBILITIES

Tender Contractors Ltd

Name of Tenderer

Page FT33


Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
APPENDIX A - PROJECT SPECIFIC INSURANCE**



**CERTIFICATE OF INSURANCE
Project Specific Insurance**

Section 7a) - to be completed by City staff. Select # of days Written Notice is required.
Section 2 through 7 - to be completed by the Insurer or its Authorized Representative

THIS CERTIFICATE IS ISSUED TO: City of Vancouver, 453 West 12th Avenue, Vancouver, B.C. V5Y 1V4

and certifies that the insurance policies as listed herein have been issued to the Named Insured(s) and are in full force and effect as of the effective date of the agreement described below.

NAMED INSURED: Pedre Contractors Ltd.

MAILING ADDRESS: #104 10180 199B Street, Langley, BC V1M 3X8

LOCATION ADDRESS: _____

DESCRIPTION OF PROJECT/CONTRACT:

City of Vancouver, Tender No. PS10094 Construction of Forcemain and Gravity Sewers

3. PROPERTY INSURANCE - ALL RISK COURSE OF CONSTRUCTION (BUILDERS RISK FORM) INSTALLATION FLOATER

- Providing All Risk Coverage including Earthquake and Flood up to full replacement cost of the Project/Contract described above
- Naming the City of Vancouver as an insured and containing a Loss Payee Clause in favour of the City of Vancouver stating that proceeds of any claims against the insurer be made payable to the City of Vancouver as its interests may appear

INSURER: s.21(1)

INSURED VALUES: (Full Replacement Cost value of Project)

TYPE OF COVERAGE: Builders Risk Broad Form

Limit: s.21(1)

POLICY NUMBER: To Be Advised

Deductible Per Loss: _____

POLICY PERIOD: From Aug 27, 2010 to Mar 27, 2011

4. WRAP UP LIABILITY INSURANCE (Occurrence Form) in the joint names of the Named Insured, the Owner, City of Vancouver, Architects, Engineers, Consultants, Sub-consultants, Contractors, and Subcontractors, including their officials, officers, employees, agents, and all participants engaged in or connected with the above Project/Contract including the following extensions:

- ✓ Personal Injury
- ✓ Cross Liability or Severability of Interest
- ✓ Employees as Additional Insureds
- ✓ Blanket Contractual Liability
- ✓ Broad Form Products and Completed Operations
- ✓ Broad Form Property Damage including Loss of Use
- ✓ Non-Owned Auto Liability
- ✓ Sudden and Accidental Pollution coverage

Check Additional Extensions where applicable and included:

- ☐ Work below ground level over 3 meters
- ☐ Excavation, shoring, underpinning, pile driving or caisson
- ☐ Demolition, removal or weakening of support of property
- ☐ Blasting
- ☐ Operation of hoist or attached machinery
- ☒ 24 Months Completed Operations
- ☐ 36 Months Completed Operations

INSURER: s.21(1)

POLICY NUMBER: To be Advised

POLICY PERIOD: From Aug 27, 2010 to Mar 27, 2011

LIMITS OF LIABILITY: (Bodily Injury and Property Damage Inclusive)

Per Occurrence: \$ 5,000,000.00 Aggregate: \$ 5,000,000.00 Deductible Per Occurrence: s.21(1)

5. AUTOMOBILE LIABILITY INSURANCE for operation of owned and/or leased vehicles

INSURER: _____

LIMITS OF LIABILITY:

POLICY NUMBER: _____

Combined Single Limit: \$ _____

POLICY PERIOD: From _____ to _____

If vehicles are insured by ICBC, complete and provide Form APV-47

6. OTHER INSURANCE (e.g. Contractors' Equipment) - Please specify Name of Insurer(s), Policy Number, Policy Period, and Limit

Contractors Equipment - s.21(1)

\$ As per schedule on File

POLICY PROVISIONS:

Where required by the governing contract, agreement, lease, permit or license, it is understood and agreed that:

- (a) Stay (60) days written notice of cancellation or reduction of coverage with respect to any of the policies listed herein, either in part or in whole, will be given by the Insurer(s) to the Holder of this Certificate; the exception is cancellation for non-payment of premiums in which case the applicable statutory conditions will apply;
- (b) All property insurance policies must contain a provision in which the Insurer(s), upon payment of a claim will waive all rights of subrogation against the City of Vancouver, its officials, officers, employees or agents;
- (c) The Insurance policy (policies) listed herein shall be primary with respect to the above described project/contract. Any insurance or self-insurance maintained by the City of Vancouver shall be in excess of this insurance and not contribute to it.

SIGNED BY THE INSURED OR ITS AUTHORIZED REPRESENTATIVE

s.21(1)

Dated: _____

s.21(1)

3ER

Dated: August 30, 2010

PS10094

CONFIRMATION OF VEHICLE INSURANCE COVERAGE



Insurance Corporation
of British Columbia

(Hereinafter called the Corporation)

NAME OF INSURED (surname followed by given name(s)) PEDRE CONTRACTORS LTD.		
ADDRESS OF INSURED 104-10180 199B STREET		
CITY LANGLEY		
PROVINCE BC	POSTAL CODE V1M 3X8	

APV47

This is to confirm to:

City of Vancouver, Tender No. PS10094 Construction of Forcemain and Gravity Sewers

that coverage in accordance with the Insurance (Vehicle) Act (the Act), the Insurance (Vehicle) Regulation (the Regulation), and the ICBC Autoplan Optional Policy is provided as herein described to the insured named above and is in force at this date.

This confirmation is issued as a matter of information only and confers no rights on the conferee and imposes no obligations on the Corporation, or the undersigned representative.

COVERAGE	VEHICLE PLATE NO.	LIMIT OF LIABILITY	DESCRIPTION OF VEHICLE			
			YEAR	MAKE	MODEL	SERIAL NUMBER
THIRD PARTY LIABILITY REGULATION PART 6 (OPTIONAL POLICY DIVISION 4)	1.	\$ 5,000,000.00				ALL VEHICLES
	2.	\$				ATTACHED TO ICBC
	3.	\$				s.21(1)
	4.	\$				
	5.	\$				
	6.	\$				
	7.	\$				
	8.	\$				
	9.	\$				
	10.	\$				
	11.	\$				
	12.	\$				
	13.	\$				

AGENT'S COMMENTS	AGENT'S NO. 16002
------------------	-----------------------------

The Motor Vehicle Liability Insurance Card Canada Inter-Province on the back of this Confirmation of Vehicle Insurance Coverage is not valid.

Coverage effective from:	Coverage to expire on:
DATE (ddmm/yyyy) 01-10-2009	DATE (ddmm/yyyy) 30-09-2010

s.21(1)

NOT VALID UNLESS STAMPED BY
AUTHORIZED ISSUING OFFICE

AM **16002**

PM

TIME OF VALIDATION **AUG 30 2010**

APV47 (062007)

COPY 1 - CONFIRMEE

COPY 2 - ICBC-CORPORATE DISBURSEMENTS
(no signatures required on Copies 2, 3 and 4)

COPY 3 - CUSTOMER

COPY 4 - AGENT

CONFIRMATION OF VEHICLE INSURANCE COVERAGE



Insurance Corporation
of British Columbia

(Hereinafter called the Corporation)

APV47

NAME OF INSURED (surname followed by given name(s)) PEDRE CONTRACTORS LTD.		
ADDRESS OF INSURED 104-10180 199B STREET		
CITY LANGLEY	PROVINCE BC	POSTAL CODE V1M 3X8

This is to confirm to:

City of Vancouver, Tender No. PS10094 Construction of Forcemain and Gravity Sewers

that coverage in accordance with the Insurance (Vehicle) Act (the Act), the Insurance (Vehicle) Regulation (the Regulation), and the ICBC Autoplan Optional Policy is provided as herein described to the Insured named above and is in force at this date.

This confirmation is issued as a matter of information only and confers no rights on the confirmee and imposes no obligations on the Corporation, or the undersigned representative.

COVERAGE	VEHICLE PLATE NO.	LIMIT OF LIABILITY	DESCRIPTION OF VEHICLE			
			YEAR	MAKE	MODEL	SERIAL NUMBER
THIRD PARTY LIABILITY (REGULATION, PART 8) (OPTIONAL POLICY, DIVISION 4)	1.	\$ 5,000,000.00				ALL VEHICLES
	2.	\$				ATTACHED TO ICBC
	3.	\$				s.21(1)
	4.	\$				
	5.	\$				
	6.	\$				
	7.	\$				
	8.	\$				
	9.	\$				
	10.	\$				
	11.	\$				
	12.	\$				
	13.	\$				

AGENT'S COMMENTS	AGENT'S NO. 16002
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The Motor Vehicle Liability Insurance Card Canada Inter-Province on the back of this Confirmation of Vehicle Insurance Coverage is not valid.

Coverage effective from:	Coverage to expire on:
DATE (ddmm/yyyy)	DATE (ddmm/yyyy)
01-10-2009	30-09-2010

DULY AUTHORIZED REPRESENTATIVE

DATE

TIME OF VALIDATION

APV47 (082007)

COPY 1 - CONFIRMEE

COPY 2 - ICBC-CORPORATE DISBURSEMENTS
(no signatures required on Copies 2, 3 and 4)

COPY 3 - CUSTOMER

COPY 4 - AGENT

NOT VALID UNLESS STAMPED BY
AUTHORIZED ISSUING OFFICE

16002

AUG 30 2009

s.21(1)

Standard Construction Document

PERFORMANCE BOND

s.21(1)

No. s.21(1)

Bond Amount: s.21(1)

PEDRE CONTRACTORS LTD., as Principal, hereinafter called the Principal, and s.21(1) a corporation created and existing under the laws of Canada and duly authorized to transact the business of Suretyship in all provinces and territories of Canada, as Surety, hereinafter called the Surety, are held and firmly bound unto **CITY OF VANCOUVER** as Oblige, hereinafter called the Oblige, in the amount of **** s.21(1) lawful money of Canada, for the payment of which sum the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS, the Principal has entered into a written contract with the Oblige, dated 25TH day of AUGUST, in the year 2010, for ITT NO. PS10094 **CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS**

Including one (1) year maintenance from the date of substantial completion hereinafter referred to as the Contract.

The condition of this obligation is such that if the Principal shall promptly and faithfully perform the Contract then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Whenever the Principal shall be, and declared by the Oblige to be, in default under the Contract, the Oblige having performed the Oblige's obligations thereunder, the Surety shall promptly:

- 1) remedy the default, or;
- 2) complete the Contract in accordance with its terms and conditions or;
- 3) obtain a bid or bids for submission to the Oblige for completing the Contract in accordance with its terms and conditions and upon determination by the Oblige and the Surety of the lowest responsible bidder, arrange for a contract between such bidder and the Oblige and make available as work progresses (even though there should be a default, or a succession of defaults, under the contract or contracts of completion, arranged under this paragraph) sufficient funds to pay to complete the Principal's obligations in accordance with the terms and conditions of the Contract and to pay those expenses incurred by the Oblige as a result of the Principal's default relating directly to the performance of the work under the Contract, less the balance of the Contract price; but not exceeding the Bond Amount. The balance of the Contract price is the total amount payable by the Oblige to the Principal under the Contract, less the amount properly paid by the Oblige to the Principal, or;
- 4) pay the Oblige the lesser of (1) the Bond Amount or (2) the Oblige's proposed cost of completion, less the balance of Contract price.

It is a condition of this bond that any suit or action must be commenced before the expiration of two (2) years from the earlier of (1) the date of Substantial Performance of the Contract as defined in the lien legislation where the work under the Contract is taking place, or, if no such definition exists, the date when the work is ready for use or is being used for the purpose intended, or (2) the date on which the Principal is declared in default by the Oblige.

The Surety shall not be liable for a greater sum than the Bond Amount.

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

IN WITNESS WHEREOF, the Principal and the Surety have Signed and Sealed this Bond dated 1ST day of SEPTEMBER, in the year 2010.

SIGNED and SEALED

in the presence of

PEDRE CONTRACTORS LTD.
s.21(1)

Name of person signing

s.21(1)

Name of person signing



Copyright 2002

Canadian Construction Documents Committee

(CCDC 221 - 2002 has been approved by the Surety Association of Canada)

CCDC

LABOUR & MATERIAL PAYMENT BOND

(Trustee Form)

Standard Construction Document

CCDC 222 - 2002

No. s.21(1)

Bond Amount: s.21(1)

PEDRE CONTRACTORS LTD. as Principal, hereinafter called the Principal, and s.21(1) a corporation created and existing under the laws of Canada and duly authorized to transact the business of Suretyship in all provinces and territories of Canada, as Surety, hereinafter called the Surety, are held and firmly bound unto **CITY OF VANCOUVER** as Obligee, hereinafter called the Obligee, in the amount of **** s.21(1) lawful money of Canada, for the payment of which sum the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS, the Principal has entered into a written contract with the Obligee, dated 25TH day of AUGUST, in the year 2010 for ITT NO. PS10094 CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS

in accordance with the Contract Documents submitted, and which are by reference made part hereof and are hereinafter referred to as the Contract.

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

1. A Claimant for the purpose of this Bond is defined as one having a direct contract with the Principal for labour, material, or both, used or reasonably required for use in the performance of the Contract, labour and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment directly applicable to the Contract provided that a person, firm or corporation who rents equipment to the Principal to be used in the performance of the Contract under a contract which provides that all or any part of the rent is to be applied towards the purchase price thereof, shall only be a Claimant to the extent of the prevailing industrial rental value of such equipment for the period during which the equipment was used in the performance of the Contract. The prevailing industrial rental value of equipment shall be determined, insofar as it is practical to do so, by the prevailing rates in the equipment marketplace in which the work is taking place.
2. The Principal and the Surety, hereby jointly and severally agree with the Obligee, as Trustee, that every Claimant who has not been paid as provided for under the terms of its 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 its contract with the Principal and have execution thereon. Provided that the Obligee 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 Obligee or by joining the Obligee 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 Obligee against all costs, charges and expenses or liabilities incurred thereon and any loss or damage resulting to the Obligee 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 Obligee to sue on and enforce the provisions of this Bond.
3. It is a condition precedent to the liability of the Surety under this Bond that such Claimant shall have given written notice as hereinafter set forth to each of the Principal, the Surety and the Obligee, stating with substantial accuracy the amount claimed, and that such Claimant shall have brought suit or action in accordance with this Bond, as set out in sub-clauses 3 (b) and 3 (c) below. Accordingly, no suit or action shall be commenced hereunder by any Claimant:
 - a) unless such notice shall be served by mailing the same by registered mail to the Principal, the Surety and the Obligee, 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 Territory in which the subject matter of the Contract is located. Such notice shall be given.
 - i) in respect of any claim for the amount or any portion thereof, required to be held back from the Claimant by the Principal, under either the terms of the Claimant's contract with the Principal, or under the lien 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

- 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 Territory in which the work described in the Contract is to be installed or delivered as the case may be 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 2365 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, hypothec and privileges of said Claimant.
5. Any material change in the contract between the Principal and the Obligor shall not prejudice the rights or interest of any Claimant under this Bond, who is not instrumental in bringing about or has not caused such change.
6. 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 claims made under the applicable lien legislation or legislation relating to legal hypothecs, whether or not such claim is presented under and against this Bond.
7. The Surety shall not be liable for a greater sum than the Bond Amount.

IN WITNESS WHEREOF, the Principal and the Surety have Signed and Sealed this Bond dated 1ST day of SEPTEMBER, in the year 2010.

SIGNED and SEALED
in the presence of

PEDRE CONTRACTORS LTD.

s.21(1)

Name of person signing

s.21(1)



Copyright 2002
Canadian Construction Documents Committee

(CCDC 222 - 2002 has been approved by the Surety Association of Canada)

Page 2 of 2
CCDC

INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER

SCHEDULE J
PRIME CONTRACTOR AGREEMENT FORM

1.0 DEFINITIONS

- a) "OH&S Regulation" means the Occupational Health & Safety Regulation (British Columbia Regulation 296/97) enacted pursuant to the WCA, and any successor legislation, all as such Regulation is amended or re-enacted from time to time;
- b) "Owner" means City of Vancouver;
- c) "Place of the Work" means the work site at the locations shown on Part H - Project Scope Drawings;
- d) "Prime Contractor" means the Contractor, who is designated pursuant to Article 3 below by the Owner to be the Prime Contractor for the Project with respect to occupational health and safety for the purposes of WCB Legislation;
- e) "Project" means the construction of forcemain and gravity sewers project, as contemplated by the Contract Documents, and includes all the Work;
- f) "WCA" means the *Workers Compensation Act*, R.S.B.C. 1996, Chapter 492, and any successor legislation, as such Act is amended or re-enacted from time to time;
- g) "WCB" means the Worker's Compensation Board of British Columbia; and
- h) "WCB Legislation" means the WCA and all regulations thereto including the OH&S Regulation, and all rules, regulations and requirements of WorkSafeBC, and any successor legislation, rules, regulations and requirements, all as amended or re-enacted from time to time; and
- i) "WorkSafeBC" means the British Columbia Provincial governmental organization by that name which is responsible, inter alia, for promoting workplace health and safety for the workers and employers of British Columbia, and for working with the affected parties to provide return-to-work rehabilitation, compensation, health care benefits and a range of other services, in the event of work-related injuries or diseases suffered by workers in British Columbia.

All other capitalized terms used in this Prime Contractor Agreement have the meanings given to them in the Contract Documents of which this Prime Contractor Agreement is a part, as applicable.

2.0 PRIME CONTRACTOR'S RESPONSIBILITIES

Name of Tenderer

Page FT33

MK .

Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

Proof of Qualification to act as Prime Contractor

- The Prime Contractor is to provide a current copy of its WorkSafeBC "Clearance Letter", a signed copy of this Prime Contractor Agreement and all other documents requested by the Owner prior to commencement of the Work.
- The Prime Contractor is to notify the Owner of any changes of status with WorkSafeBC or the WCB during the course of the Project.

After the Prime Contractor has been designated and before Work has commenced, the Prime Contractor shall:

- Conduct all necessary and appropriate inquiries of all relevant Owner staff and records in order to verify in writing to the Owner that the Owner has given to the Contractor all information known to the Owner that is necessary to identify and eliminate or control hazards to the health and safety of persons at the Place of the Work.
- Conduct a pre-contract hazard assessment and carefully review, and plan to address, all hazards identified in that assessment.
- Inform all other employers whose employees are providing services for the Project at the Place of the Work, that it is the Prime Contractor.
- Establish and maintain a system or process to ensure all employers, employees and visitors at/to the Place of the Work comply with the WCA, the OH&S Regulation and the requirements of WorkSafeBC. The Prime Contractor will thus be responsible for site orientation and hazard communication.
- Review and complete a "Pre-Job Meeting Form" if the Owner requests.
- For construction projects, post the Notice of Project on the Place of the Work and deliver a copy to WorkSafeBC at least twenty-four (24) hours before construction commences.
- Comply with Section 20.2 of the OH&S Regulation in respect of the Notice of Project.
- Identify and set expectations for each subcontractor's safety contact.
- Coordinate all safety-related activities, from site orientations to safety committee meetings and toolbox talks, to inspections and incident reviews.
- Inform employers and workers of the workplace hazards associated with the Place of the Work.
- At the Place of the Work, provide the information listed in Section 20.3(4) of the OH&S Regulation.
- In all other respects strictly comply with, and strictly enforce compliance by others, as applicable, with, the WCA, the OH&S Regulation, the requirements of WorkSafeBC, the safety policies and procedures of the Owner and the terms and conditions of the Contract Documents applicable.

Name of Tenderer

Page FT34

 MK
Initials of Authorized Signatory

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

Throughout the term of the Project, the Prime Contractor shall:

- Ensure that all hazards are promptly and appropriately identified and addressed.
- Ensure the health and safety of the workers on the Project.
- Maintain a current list of persons that each sub-trade (employer) has designated to be responsible for that employer's health and safety activities.
- Ensure provision of first aid equipment and services as required by the OH&S Regulation.
- Coordinate all occupational health and safety activities for the Project.
- Prepare, and communicate to all workers on the Place of the Work, an emergency response plan, taking into account the number of people onsite, the people who work outside regular hours and the types of emergencies that may arise. This plan should also describe subcontractor and individual worker responsibilities (e.g. responding to a fire) and provide for any necessary training and equipment, including first aid supplies as work processes change over the course of the Project, this emergency response plan must be updated as appropriate.
- Make and maintain detailed notes and reports in respect of the initial site safety meeting, safety committee meetings, reviews of contractors' safety systems, inspection and incident investigations, first aid records and orientation and training.
- On any site where workers of two (2) or more employers are working at the same time and the combined workforce is greater than five (5), identify and designate a "Qualified Coordinator" to coordinate health and safety activities.
- In all other respects strictly comply with, and strictly enforce compliance by others, as applicable, with, the WCA, the OH&S Regulation, the requirements of WorkSafeBC, the safety policies and procedures of the Owner and the terms and conditions of the Contract Documents applicable.

Prime Contractor's Qualified Coordinator, if applicable, (Construction Only) responsibilities:

- Comply with all requirements listed in Section 20.3(3) of the OH&S Regulation and on page 13 of the Owner's Multiple Employer Workplace/Contractor Coordination Program (2003).
- Coordinate all health and safety activities for the Project.
- Post workplace drawings showing where first aid is located, the emergency transportation system for injured workers and evacuation marshalling points.
- Ensure that regular workplace safety meetings are held and documented.
- Know who all other contractors' "Qualified Persons" are.

**INVITATION TO TENDER NO. PS10094
CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS
PART C - FORM OF TENDER**

- Ensure that all workers at the Place of the Work are informed of workplace hazards, from both the pre-contract hazard assessment and from ongoing work activities of all employers at the Place of the Work, and ensure that hazards are properly and punctually addressed throughout the duration of the Project.

3.0 DESIGNATION AS PRIME CONTRACTOR

By signing this Prime Contractor Agreement, the undersigned Contractor accepts all responsibilities of a Prime Contractor as outlined above and in the Owner's Contractor Coordination Program (2003), Part III of the WCA and the OH&S Regulation, as well as any other responsibilities required by WorkSafeBC.

As a Contractor signing this Prime Contractor Agreement with the Owner, the undersigned company agrees that the company and its management staff, supervisory staff and workers will comply with the all WorkSafeBC requirements, the OH&S Regulation and Part III of the WCA.

Any violation of a requirement of WCB Legislation by the Prime Contractor may be considered a breach of the Contractor's Contract with the Owner resulting in possible termination or suspension of the Contract and/or any other actions deemed appropriate at the discretion of the Owner.

Any penalties, sanctions or additional costs levied against the Owner, as a result of an action or inaction of the Prime Contractor in its capacity as such, are the sole responsibility of the Prime Contractor, as set out in the Contract.

I, the undersigned, acknowledge that I have read and understand the information above. By signing this Prime Contract Agreement, I agree as an authorized representative of the Contractor to accept all responsibilities of the Prime Contractor for this Project.

Date

AUG 25, 2010

Contract #

PS10094

Name of Contractor

PEDRE CONTRACTORS LTD.

Qualified Coordinator's Name

(Construction Only)

Signature of Authorized
Representative

s.21(1)

Print Name and Title

Name of Tenderer

Page FT36

MK.
Initials of Authorized Signatory

August 25, 2010

Pedre Contractors Ltd.
#104 - 10180 199B Street
Langley, British Columbia
V1M 3X8

Attention: s.21(1)

Dear Sir:

**Re: Construction of Force Main and Gravity Sewers - Negotiations following termination of
Invitation to Tender PS10094 (the "ITT") - Conditional Notice to Proceed with Work**

The purpose of this letter is to set out the terms and conditions upon which the City of Vancouver (the "City") is willing to enter into a contract with Pedre Contractors Ltd. ("Pedre") and to authorize Pedre to proceed with the Work described in the ITT, and as modified by this letter. Capitalized terms that are not otherwise defined in this letter have the meanings given to them in the ITT.

The ITT was cancelled on July 29, 2010 and the City and Pedre subsequently entered into negotiations to settle the terms and conditions regarding the scope of Work and the Contract Price. The City and Pedre have resolved these issues and agree to enter into a contract for the Work described in the ITT on the same basis as if the ITT were not cancelled. The City and Pedre agree that the finalized Form of Agreement will be on the same terms and conditions as the Form of Agreement in the ITT subject only to the modifications in this letter.

The City and Pedre agree to the following modifications, as applicable, to Pedre's Tender and the ITT:

- (a) the Schedule of Quantities and Prices included with Pedre's Tender is deleted and replaced with the attached Schedule A - Schedule of Quantities and Prices;
- (b) the Specifications attached as Schedule B - Modifications to Specifications will supersede the corresponding Specifications in the ITT;
- (c) the Contract Price is \$3,050,180;
- (d) Substantial Performance of the Work will be achieved by January 31, 2011; and
- (e) Total Performance of the Work will be achieved by March 30, 2011.

The City is hereby authorizing Pedre to proceed with the Work on August 31, 2010, provided that:

- (a) promptly upon receipt of the finalized Form of Agreement from the City, Pedre will sign and deliver the executed Form of Agreement to the City;
- (b) Pedre will at all times be subject to and comply with the terms and conditions in the Form of Agreement, as modified by this letter, and any portion of the Work performed prior to Pedre's

execution of the finalized Form of Agreement will be deemed to have been performed under the finalized Form of Agreement; and

- (c) if for any reason the parties are unable to execute the finalized Form of Agreement on or before September 15, 2010, (subject to extension upon mutual agreement), this conditional notice to proceed will be terminated. Upon such termination, the City will pay Pedre for the costs reasonably incurred by Pedre in performing the Work. Such payment will be made following submission of a detailed statement of costs and supporting documentation and the City will be entitled to audit such costs. Upon such payment, neither party will have any further liability or obligation to the other arising out of or relating to this agreement.

If Pedre agrees to the terms and conditions of this letter and wishes to proceed with the Work as provided in this letter, please sign this letter where provided below. This conditional notice to proceed will come into effect only upon execution and delivery of this letter by both parties.

CITY OF VANCOUVER (Owner)

BY: 

Jim Bornholdt, Director Supply Management

Receipt of the this LETTER OF INTENT/NOTICE TO PROCEED is now acknowledged by the Contractor:

s.21(1)

BY: 

this 30th day of AUGUST, 2010.

ITT PS10094 - CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS									
Item	Description	UNIT	Estimate Qty	Rede Contractor Ltd Unit Price	Total Price	New Proposal Unit Price	Total Price	Comments	
1.0	SECTION A - FORCEMAIN ARBUS ST. from Kislano Pump Station to York St. (to 45 degree bend on York east)								
1.1	Test Excavations	each	6	\$	\$	\$	\$		
1.2	Pipe construction in peat - 450 mm dia. mainline pipe	lin.m	123	\$	\$	\$	\$		
1.3	Pipe construction in peat - 300 mm dia. mainline pipe	lin.m	20	\$	\$	\$	\$		0 reduction applied all mainline construction with new depth
1.4	Pipe construction - 450 mm dia. forcemain pipe	lin.m	100	\$	\$	\$	\$		
1.5	Mainline 450 mm dia. standard gate valve	each	1	\$	\$	\$	\$		
1.6	Mainline 300 mm dia. standard gate valve	each	2	\$	\$	\$	\$		
1.7	Pipe connection between 450 mm dia. forcemain and existing 300 mm dia. forcemain at Kislano Pump Station	L.S.	1	\$	\$	\$	\$		
1.8	Flowmeter manhole complete with flowmeters (meters supplied by City) and sump pump and piping to sewer	L.S.	1	\$	\$	\$	\$		Lump Sum includes two flowmeter manholes (instead of one as per original design). Additional cost is 0 from the original bid
1.9	Bypass pump manhole complete with piping, valves and sump pump and piping to sewer	L.S.	1	\$	\$	\$	\$		
1.10	Electrical duct, trenching, restoration, junction boxes and wiring from flow meter manhole and pump bypass manhole to Kislano Pump Station	L.S.	1	\$	\$	\$	\$		
1.11	Premium for crossing of new 450mm at cornwall and construction conflict related to existing utilities and manholes	L.S.	1	\$	\$	\$	\$		New alignment reduced the crossing costs. Lump Sum Price adjusted accordingly and accounts for potential utility, manholes and other conflicts, and includes provisions for traffic management plan and geotech work for the Project.
1.12	Premium to construct 450 mm and 300 mm forcemain connection to Kislano Pump Station discharge piping	L.S.	1	\$	\$	\$	\$		
1.13	Pipe connection between new 450 mm dia. forcemain and existing 450 mm dia. forcemain at Arbus and York	L.S.	1	\$	\$	\$	\$		
1.14	Forcemain Pressure Testing	L.S.	1	\$	\$	\$	\$		
2.0	SUBTOTAL SECTION A								
	SECTION B - FORCEMAIN York St. (45 degree bend at York east) ARBUS ST. to Chestnut St.								
2.1	Test Excavations	each	5	\$	\$	\$	\$		
2.2	Pipe Construction - 450 mm dia. mainline forcemain pipe	lin.m	453	\$	\$	\$	\$		
2.3	450 mm dia. standard gate valve c/w angle operator	each	1	\$	\$	\$	\$		
2.4	Premium to construct watermain and combined sewer crossings at Maple Street.	L.S.	1	\$	\$	\$	\$		
2.5	Premium to construct connection to existing Jervis forcemain at Chestnut Street	L.S.	1	\$	\$	\$	\$		
2.6	Air Valve Chamber at Maple Street	L.S.	1	\$	\$	\$	\$		
2.7	Air Valve Chamber at Chestnut Street	L.S.	1	\$	\$	\$	\$		Based on discussion with Park board, the location of the valve has moved further up north in Saultern park. 0 was added for additional material and labour cost. Drawings will be updated to reflect the change.

ITT P510094 - CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS									
Item	Description	UNIT	Estimated Qty	Perkins Construction Ltd. Unit Price	Cost Price	Value Proposed Unit Price	Total Price	Comments	
2.8	Blowdown Chamber at Maple Street	L.S.	1	\$		\$			
2.9	Forcemain Pressure Testing	L.S.	1	\$		\$			
3.0	SUBTOTAL SECTION B								
3.1	SECTION C - GRAVITY SEWERS Arbutus Street in the vicinity of West First Avenue and York Avenue								
3.1	Test Excavations	each	7	\$		\$			
3.2	Remove Existing Manholes and Pipe	L.S.	1	\$		\$			
3.3	Pipe Construction								
3.3	(a) 200 mm dia. sanitary	lin.m	120	\$		\$			
3.4	Manholes								
	(a) Sanitary manhole	each	3	\$		\$			
	(b) Connect to existing manhole	each	1	\$		\$			
3.5	Mainline Pipe Cleanout	each	1	\$		\$			
3.6	Service Connections								
	(a) 100 mm dia.	each	2	\$		\$			
	(b) 150 mm dia.	each	1	\$		\$			
3.7	Flushing and Testing Gravity Sewers	L.S.	1	\$		\$			
3.8	Video Inspection Gravity Sewer	L.S.	1	\$		\$			
3.9	Bypass Pumping	L.S.	1	\$		\$			
3.10	Remove piping and cap two sumps at connections to the English Bay Interceptor sewer	each	2	\$		\$			
	SUBTOTAL SECTION C								
4.0	SECTION D - FORCEMAIN Fir Street Lane (west of Graville Street between West Second Avenue and West Fourth Avenue)								
4.1	Test Excavations	each	4	\$		\$			
4.2	Pipe Construction - 300 mm dia. mainline forcemain pipe to Manhole S1 at West Fourth Avenue	lin.m	175	\$		\$			
4.3	Pipe Construction - 350 mm dia. mainline gravity sewer pipe from Manhole S1 to 900 dia. combined sewer on west Fourth Avenue	lin.m	17	\$		\$			
4.4	Premium to construct crossing and connect to the existing Graville Forcemain on West Second Avenue	L.S.	1	\$		\$			
4.5	Premium to construct crossing and connect to the existing 900 dia. combined sewer on West Fourth Avenue	L.S.	1	\$		\$			
4.6	Construct Manhole S1	each	1	\$		\$			
4.7	Forcemain Pressure Testing	L.S.	1	\$		\$			
4.8	Flushing and Testing Gravity Sewer	L.S.	1	\$		\$			
4.9	Video Inspection Gravity Sewer	L.S.	1	\$		\$			
	SUBTOTAL SECTION D								
5.0	SECTION E - GRAVITY SEWERS West 8th Ave. - Bayswater St. to Balclutha St.								
5.1	Test Excavations	each	1	\$		\$			
				\$ 0.21(1)		\$ 0.21(1)			
				\$				This section has been deleted from the scope	

ITT PS10094 - CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS									
Item	Description	Unit	Estimated Qty	Pacifi Contractors Ltd		New Proposal		Comments	
				Unit Price	Total Price	Unit Price	Total Price		
5.2	Remove existing manholes and pipe	L.S.	N/A						
5.3	Pipe Construction								
	(a) 750 mm dia. storm	lin.m	84	\$					
	(b) 675 mm dia. storm	lin.m	109	\$					
	(c) 325 mm dia. sanitary	lin.m	192	\$					
5.4	Manholes								
	(a) Storm manhole	each	2	\$					
	(b) Sanitary manhole	each	2	\$					
	(c) Combined manhole	each	1	\$					
	(d) Connect to existing manhole	each	N/A	\$					
5.5	Mainline Pipe Cleanout	each	1	\$					
5.6	Service Connections								
	(a) 100 mm dia.	each	27	\$					
	(b) 150 mm dia.	each	25	\$					
	(c) 200 mm dia.	each	2	\$					
5.7	Flushing and Testing Gravity Sewers	L.S.	1	\$					
5.8	Video Inspection Gravity Sewer	L.S.	1	\$					
5.9	Bypass Pumping	L.S.	1	\$					
6.0	SUBTOTAL SECTION E								
	SECTION F - GRAVITY SEWERS West 8th Ave. - Trutch St. to Balclutha St. and Trutch St. to Lane South of West 8th								
6.1	Test Excavations	each	N/A						
6.2	Remove existing manholes and pipe	L.S.	N/A						
6.3	Pipe Construction								
	(a) 600 mm dia. storm	lin.m	130	\$					
	(b) 250 mm dia. storm	lin.m	50	\$					
	(c) 250 mm dia. sanitary	lin.m	171	\$					
6.4	Manholes								
	(a) Storm manhole	each	2	\$					
	(b) Sanitary manhole	each	2	\$					
	(d) Connect to existing manhole	each	1	\$					
6.5	Mainline Pipe Cleanout	each	1	\$					
6.6	Service Connections								
	(a) 100 mm dia.	each	24	\$					
	(b) 150 mm dia.	each	24	\$					
	(c) 200 mm dia.	each	4	\$					
6.7	Flushing and Testing gravity sewers	L.S.	1	\$					
6.8	Video Inspection gravity sewer	L.S.	1	\$					
6.9	Bypass Pumping	L.S.	1	\$					
	SUBTOTAL SECTION F								

s.21(1)

s.21(1)

ITT PS10094 - CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS									
Item	Description	UNIT	Estimated Qty	Rebid Contractors Ltd. Unit Price	Rebid Contractors Ltd. Total Price	New Proposal Unit Price	New Proposal Total Price	Comments	
7.0	SECTION G - GRAVITY SEWERS Trutch St. from West 8th Avenue to West 7th Avenue								
7.1	Test Excavations	each	N/A						
7.2	Remove Existing Manholes and Pipe	L.S.	1	\$	\$				
7.3	Pipe Construction								
	(a) 200 mm dia. storm	lin.m	41	\$	\$				
	(b) 200 mm dia. sanitary	lin.m	96	\$	\$				
7.4	Manholes								
	(a) Sanitary manhole	each	1	\$	\$				
7.5	Mainline Pipe Cleanout	each	1	\$	\$				
7.6	Service Connections								
	(a) 200 mm dia.	each	2	\$	\$				
7.7	Pushing and Testing Gravity sewers	L.S.	1	\$	\$				
7.8	Video Inspection Gravity Sewer	L.S.	1	\$	\$				
7.9	Bypass Pumping	L.S.	1	\$	\$				
	SUBTOTAL SECTION G								
8.0	SECTION H - GRAVITY SEWERS West 7th Avenue - Waterloo St. to Trutch St.								
8.1	Test Excavations	each	1	\$	\$				
8.2	Remove Existing Manholes and Pipe	L.S.	1	\$	\$				
8.3	Pipe Construction								
	(a) 450 mm dia. storm	lin.m	283	\$	\$				
	(b) 200 mm dia. sanitary	lin.m	269	\$	\$				
8.4	Manholes								
	(a) Storm manhole	each	2	\$	\$				
	(b) Sanitary manhole	each	2	\$	\$				
	(c) Connect to existing manhole	each	1	\$	\$				
8.5	Mainline Pipe Cleanout	each	1	\$	\$				
8.6	Service Connections								
	(a) 100 mm dia.	each	43	\$	\$				
	(b) 150 mm dia.	each	46	\$	\$				
	(c) 200 mm dia.	each	6	\$	\$				
8.7	Flushing and Testing Gravity Sewers	L.S.	1	\$	\$				
8.8	Video Inspection Gravity Sewer	L.S.	1	\$	\$				
8.9	Bypass Pumping	L.S.	1	\$	\$				
	SUBTOTAL SECTION H								
9.0	SECTION I - FORCEMAINS West 8th Ave. - Lane West of Cambie St.								
9.1	Excavate & remove existing 600mm DI forccmain piping	L.S.	1	\$	\$				
9.2	Excavate & remove existing 600mm conc. gravity piping and plug connection to English Bay Interceptor	L.S.	1	\$	\$				

ITT PS10094 - CONSTRUCTION OF FORCEMAIN AND GRAVITY SEWERS										
Item	Description	UNIT	Estimated Qty	Redline Contractor List	Unit Price	Total Price	New Proposal	Unit Price	Total Price	Comments
9.3	Remove Existing manhole Structure and Pipe	L.S.	1			\$				
9.4	Supply and install 600 mm dia. DI Forcemain	lin.m	10			\$				
9.5	Premium to Construct the Works - West 8th Ave Lane	L.S.	1			\$				
SUBTOTAL SECTION I										
10.0	SECTION J - INDETERMINATE ITEMS									
10.1	Imported 150 mm Minus Subgrade Fill	cu.m	50			\$				
10.2	Overexcavation/Additional Excavation	cu.m	100			\$				
10.3	Trench Rock	cu.m	5			\$				
	a) quantity < 5 cu.m	cu.m	5			\$				
	a) quantity ≥ 5 cu.m	cu.m	5			\$				
10.4	Relay sewer services (from the top of riser to the property line, storm and sanitary side by side in the same trench)	Lm.m	10			\$				
10.5	Relay catchbasin leads (from edge of main sewer trench to catchbasin)	Lm.m	10			\$				
10.6	Polyethylene Encasement of Pipe	Lm.m	200			\$				
SUBTOTAL SECTION J										
11.0	removal of existing asphalt and base, and preparation of new base									
11.1	ADDITIONAL PAVING Arterial, Industrial & Transit Routes DWG. MF137-AE-4	Sq. m	15			\$				
11.2	ADDITIONAL PAVING Higher Zoned Routes DWG. MF137-AE-3	Sq. m	100			\$				
11.3	Curb and Gutter Repair									
	a) quantity <5	lin.m	NA							
	b) 5 quantity <10	lin.m	NA							
	a) quantity >10	lin.m	NA							
11.4	Concrete Sidewalk									
	a) quantity <5	Sq.m	NA							
	b) 5 quantity <10	Sq.m	NA							
	a) quantity ≥10	Sq.m	NA							
SUBTOTAL SECTION K										
TOTAL SCHEDULE A (SUBTOTAL SECTIONS A - K)										
TOTAL SCHEDULE A (SUBTOTAL SECTIONS E and J)										
HST (12.0%)										
TOTAL										

- | | | | |
|--|---|--|---|
| 1.0 GENERAL | <ul style="list-style-type: none">.1 Section 02731 refers to those portions of the work that are unique to the supply and installation of sewer mains, service connections and catch basin leads. Related appurtenances are included in other Sections. This section must be referenced to and interpreted simultaneously with all other sections pertinent to the works described herein..2 All details of sewer facilities not specifically covered in this section to comply with ASTM and CGSB standards and/or manuals of practice as directed by Engineer..3 All work performed on existing sewer systems or on the installation of new sewer mains, manholes, services and/or other sewer related structures shall be done in accordance with these Specifications and approved Construction Drawings. | | |
| 1.1 Related Work | <table border="0"><tr><td style="vertical-align: top;"><ul style="list-style-type: none">.1 Excavation, Trenching, Backfill and Surface Restoration.2 Manholes and Catchbasins.3 Concrete Reinforcement.4 Cast-in-Place Concrete</td><td style="vertical-align: top; padding-left: 20px;"><ul style="list-style-type: none">Section 02223Section 02725Section 03200Section 03300</td></tr></table> | <ul style="list-style-type: none">.1 Excavation, Trenching, Backfill and Surface Restoration.2 Manholes and Catchbasins.3 Concrete Reinforcement.4 Cast-in-Place Concrete | <ul style="list-style-type: none">Section 02223Section 02725Section 03200Section 03300 |
| <ul style="list-style-type: none">.1 Excavation, Trenching, Backfill and Surface Restoration.2 Manholes and Catchbasins.3 Concrete Reinforcement.4 Cast-in-Place Concrete | <ul style="list-style-type: none">Section 02223Section 02725Section 03200Section 03300 | | |
| 1.2 References | <ul style="list-style-type: none">.1 The abbreviated standard specifications for testing, materials, fabrication and supply, referred to herein, are fully described in References - Section 02000. | | |
| 1.3 Samples | <ul style="list-style-type: none">.1 Samples may be required. | | |
| 1.4 Material Certification | <ul style="list-style-type: none">.1 Products having CSA certification to be used where readily available. Certification by Standards Council of Canada approved independent third body that products conform to CSA standards is acceptable in lieu of CSA certification..2 At least 2 weeks prior to commencing work, submit manufacturer's recent test data and certification that materials to be incorporated into works are representative and meet requirements of this section. Include manufacturer's drawings where pertinent. | | |
| 1.5 Scheduling of Work | <ul style="list-style-type: none">.1 Schedule work to minimize interruptions to existing services..2 Maintain existing sewage flows during construction. | | |

- .3 Submit schedule of expected interruptions for approval by Engineer and adhere to approved schedule.**
- .4 On approval by the Engineer, notify residents, at least 48 hours in advance, of dates and periods when construction will occur and if service will be interrupted.**

1. On all questions relating to the acceptability of material, machinery or plant equipment, classifications of material or work, the proper execution, progress or sequence of the work, quantities and the interpretation of these Specifications or Construction Drawings, the decision of the Engineer shall be final and binding, and shall be a condition precedent to any payment under the Contract.

- .1 Errors and omissions found by the Contractor within these specifications or on the Construction Drawings shall be reported immediately to the Engineer.
- .2 Any work or material not herein specified or shown on the Construction Drawings, but which by fair implication, in the judgement of the Engineer, should be included therein, shall be done or furnished by the Contractor as part of his/her contract as though shown or included in the Drawings and Specifications.

1 The Contractor shall notify all utility owners prior to excavation at or near the Site(s). This will include, but not limited to, Telus, B.C. Hydro, Terasen Gas, and the City of Vancouver Engineering Department Street Lighting and Utilities Branch. The Contractor will be responsible to arrange to have a utility inspector on-site as required by the above noted utility owners.

1. **UNDER NO CIRCUMSTANCES SHALL ANY SEWER OR WATER SERVICE BE DISTURBED OR SHUT-OFF IN ANY WAY, UNLESS PRIOR ACCEPTANCE IS GRANTED IN WRITING FROM THE CITY OF VANCOUVER.**

- .2 Furthermore, unless approved otherwise by the Engineer, all sewer services to local residents and businesses shall not be shut off in excess of 24 hours. Water services may not be shut off for more than 3 hours. Alternative sanitary and water facilities (to be approved by the Engineer) shall be made available to local residents and businesses if their private facilities are inoperable due to any service interruption.
- 1.10 Water, Electricity, Etc., for Construction**
- .1 The Contractor shall, at his/her own expense, arrange for and provide adequate supplies of water, electricity or other source of power and light, etc., wherever required for the construction and maintenance of the Works.
- 1.11 Compliance with WCB Rules and Regulations**
- .1 The Contractor will be responsible to perform all construction practices under strict compliance with all Workers Compensation Board rules and regulations. Furthermore, the Contractor will be responsible to provide all required miscellaneous supplies and equipment to conform to these rules and regulations. All costs associated with complying with WCB rules and regulations (i.e., supplying appropriate supplies and equipment) shall be included in the Contractor's bid price(s).
- 1.12 Compliance with City Confined Space Entry Regulations**
- .1 The Contractor will be responsible to perform all construction practices under the strict compliance with the most recent version of the City of Vancouver's "Confined Space: Program and Training Manual". A copy of this guide is available by phoning Jason Pratt, Superintendent of Occupational Health and Safety in Engineering at (604)326-4678.
- 1.13 Prevention of Flooding**
- .1 The Contractor shall regulate his/her work at all times to ensure that a continuity of drainage flow is maintained, so that flooding of public or private lands cannot occur as the result of the Contractor's operations.
- 1.14 Accuracy of Setting-out and Positioning**
- .1 The maximum allowable errors from the true position of the finished Works are given in the following table. The Contractor should note that all portions of the Works must be set out and positioned to comply with the allowable tolerances on pipes, couplings, pipe couplings and other equipment. If the structures

and/or pipes are not constructed within the limits of the specified errors, and if in the Engineer's opinion, remedial or extra work is necessitated thereby, then the Contractor shall, at his/her own expense, execute or otherwise bear the cost of such remedial work requested by the Engineer.

- .2 It shall be noted that the rate of deviation for the maximum allowable horizontal and vertical errors from true position of finished works shall not exceed 10 mm in 3 metres from the required line and 6 mm in 3 metres from the required grade.

ITEM	Maximum Allowable Error from True Position of Finished Works		
	HORIZONTAL	VERTICAL	
		TOP ELEV.	INVERT ELEV.
Gravity Main Sewer Lines (between manholes)	. 30 mm	N/A	. 10 mm
Sewer Force Mains	. 50 mm	N/A	. 25 mm
Lateral or Branch Gravity Sewer Lines	. 30 mm	N/A	. 10 mm
Manholes, C.B.'s, and Related Structures	. 30 mm	. 10 mm	. 10 mm

- .3 The Contractor shall have all sewer pipes and structures checked for horizontal and vertical alignment after the Works have been installed but prior to backfilling.

**1.15 Installation of Sewer Pipes
and Structures - General**

- .1 All sewer pipes, manholes, and other sewer appurtenances shall conform in quality to the conditions specified herein and shall be laid, jointed and installed in strict accordance with the Manufacturer's Specifications as extended in these Specifications and Contract Drawings.

1.16 Inspection and Testing

- .1 The Engineer and City of Vancouver Inspectors shall have free and uninterrupted access to any and all parts of the work area for the purpose of making inspections and taking samples of materials being used.
- .2 If any material, design or installation work does not conform to the these Specifications, or the specifications so noted on the approved Construction Drawings, the Engineer has the authority to stop work and order the removal of unsatisfactory materials or require work to be redone to City Specifications.
- .3 If any work is backfilled or covered up without the approval or consent of the Engineer, the work must, if required by the Engineer, be uncovered for inspection.
- .4 Prior to the Works being inspected by the Engineer, the Contractor shall make whatever preliminary tests are necessary to assure that the materials and equipment are in accordance with the Construction Drawings and these specifications.
- .5 The Contractor shall be notified of all deficiencies discovered by the Engineer upon completion of each inspection. The Contractor shall correct such deficiencies within seven (7) days of the notice.
- .6 **THE CONTRACTOR WILL BE HELD LIABLE FOR ALL COSTS ASSOCIATED WITH THE REMOVAL OF AND/OR THE RECONSTRUCTION OF WORKS WHICH ARE NOT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AS DETERMINED BY THE ENGINEER.**

1.17 Measurement and Payment

- .1 All units of measurement for payment will be as specified herein unless shown otherwise in the Form of Tender.
- .2 Test excavation - This item includes all costs to conduct test excavations to locate buried utilities that may be in conflict with the proposed works. The cost includes pavement removal and vacuum excavating to expose the utility in question, survey the elevation and location of the utility and reporting the information to the City, backfilling and pavement patching all to City standards.

Payment will be made at the unit price tendered in Schedule A (items 1.1, 2.1, 3.1, 4.1, 5.1, 6.1, 7.1, 8.1) and will be paid out monthly based on the number of test excavations completed.

- .3 Forcemain pipes - This item includes all cost to supply and install forcemain pipe. It includes but is not limited to the supply and installation of pipe of specified size and material complete with in-line bends, couplings and fittings to line and grade, shoring, trench excavation, thrust blocks and offsite disposal to the contractors disposal site, dewatering, bedding, cover, backfill with imported material, reconstruction of road sub-base, base and pavement, curbs, traffic islands, sidewalks, line painting, signage and boulevard landscaping to City of Vancouver standards.

Payment will be made at the unit price tendered in Schedule A (items 1.2, 1.3, 1.4, 2.2, 4.2, 9.4) and will be paid out monthly based on the length of pipe constructed. Measurement shall be along the centerline of the all pipe constructed including the distance through all valves, fittings and structures.

- .4 Gate valve - this item includes all costs to supply and install direct bury gate valves complete with operators, extensions if required and valve boxes to grade. Note that the gate valve in the bypass pump manhole is paid for as part of the manhole construction cost and is not paid for under this item.

Payment will be made at the unit price tendered in Schedule A (items 1.5, 1.6, 2.3) for each valve installed.

- .5 Pipe Connection between 450 mm/300 mm Forcemains and 300 mm Forcmain Crossing - this item includes the extra cost to construct the connection between the new 450 mm diameter forcemain and the existing 300 mm forcmain near the Kitsilano Pump Station and the controlled density fill (to MMCD 02236 specifications) in the trench excavation where the new 450 mm forcmain crosses under the 300mm forcmain near Cornwall Avenue.

Payment will be made at the lump sum price tendered in Schedule A, item 1.7.

- .6 Flow meter manholes - this item includes all costs to supply and install the flow meter manholes outside the Kitsilano Pump Station complete with fittings, sewage sump pump and pump discharge connection to the adjacent sanitary distribution box in the road and restoration of the disturbed area.

The cost also includes the installation of the two flowmeters into the forcmain piping within separate manholes. The flow meters will be pre-purchased by the City and will be available for pickup at the City works yard.

Payment will be made at the lump sum price tendered in Schedule A, item 1.8.

- .7 Bypass pumping manhole - this item includes all costs to supply and install the bypass pump manhole outside the Kitsilano Pump Station complete with fittings, piping, 450 mm gate valve and 350 mm gate valve with bevel gear operator, power and sewage sump pump and pump discharge connection to the adjacent sanitary distribution box in the road and restoration of the disturbed area.

Payment will be made at the lump sum price tendered in Schedule A, item 1.9.

- .8 Electrical to Bypass and Flow Meter Manholes - this item includes all costs to supply and install the electrical duct, junction boxes, wire the sump pumps to the junction boxes and related work. The payment extent is from the outside wall of the pump station to the respective manholes. The cost includes road, sidewalk and landscape restoration as required.

The power and communications wiring for the flow meters will be supplied with the flow meters and should remain coiled up around the meter. The electrical contractor for the Kitsilano Pump Station upgrade will run the wiring from the meters into the station and complete the connections and meter testing. The same contractor will install the power cable for the sump pumps from the pump station to the junction box and complete the connection and testing of the pumps.

Payment will be made at the lump sum price tendered in Schedule A, item 1.10.

- .9 Premium for crossing cornwall and construction conflict related to existing utilities and manholes - this item includes the extra cost for crossing of the new 450mm forcemain at Cornwall as well as potential manhole, utility and other conflicts along the new 450mm fm alignment from Cornwall to York. This item also includes provisions for traffic management plan and geotech work for the Project.

Payment will be made at the lump sum price tendered in Schedule A, item 1.11.

- .10 Connection to Kitsilano Pump Station Discharge Piping - this item includes the extra cost to construct the new forcemain connections to the existing discharge piping at the Kitsilano pump Station. It includes grade adjustments to match the new pipe to the existing pipe, removal of the old forcemain pipe at the tie-in, coordination with the City relative to operation of the station and other contractors working at the station and restoration of the area.

Payment will be made at the lump sum price tendered in Schedule A, item 1.12.

- .11 New 450 mm Forcemain Connection to Existing 450mm Forcemain at York and Arbutus - this item includes the extra cost to construct the new forcemain connections to the existing 450 mm forcemain at the intersection of York Avenue and Arbutus Street.

It includes grade adjustments to match the new pipe to the existing pipe, removal of the old forcemain pipe at the tie-in, coordination with the City relative to operation of the Kitsilano Pump Station, draining of the forcemain and preparation of a proposed work procedure.

The City will drain the forcemains back into the Kitsilano Pump Station.

Payment will be made at the lump sum price tendered in Schedule A, item 1.13.

- .12 Forcemain Pressure and Leakage Testing - this item provides for all cost to pressure and leakage test the sanitary sewer forcemains. Testing shall be in accordance with AWWA C600. The cost includes all temporary measures needed to isolate the main from the existing system, equipment needed for testing, supply of water from the City and permitting.

Payment will be made at the unit price tendered in Schedule A, items 1.14, 2.9, 4.7.

- .13 Premium to Construct Forcemain Crossing at York Avenue and Maple Street - This item includes the extra cost to construct the forcemain piping through the intersection of York Avenue and Maple Street.

It includes grade and horizontal alignment adjustments to the pipe to provide clearance beneath the major pipe crossing and junction chamber in the intersection and backfilling the trench excavation with controlled density fill (to MMCD 02236 specifications).

Payment will be made at the lump sum price tendered in Schedule A, item 2.4.

- .14 Premium to Construct Forcemain Connection to Existing Jervis Forcemain at Chestnut Street - this item includes the extra cost to construct the forcemain connection to the existing pipe stub from the Jervis forcemain at the intersection of Chestnut Street and York Avenue.

It includes grade and horizontal alignment adjustments to the pipe to make the connection.

Payment will be made at the lump sum price tendered in Schedule A, item 2.5.

- .15 Air Valve Chambers and Blowdown Chambers - these items include all costs to construct sewage air valve chambers and blow down chambers. It includes but is not limited to connection to the proposed forcemain, piping from the forcemain to the chamber, chamber, installation, internal piping, and valves and fittings and restoration of the road, curb, sidewalk boulevard and any other areas disturbed during construction.

Payment will be made at the lump sum price tendered in Schedule A, items 2.6, 2.7, 2.8.

- .16 Remove Existing Manholes and Pipe - this item includes all cost to remove and dispose of manholes and piping encountered during construction that is either obsolete or in conflict with construction of the new works.

Payment will be made at the lump sum price tendered in Schedule A, items 3.2, 5.2, 6.2, 7.2, 8.2, 9.1, 9.2, 9.3.

- .17 Sanitary and Storm Sewer Pipe Construction - this item provides for all costs to construct new gravity sanitary and storm sewer pipe by open cut. It includes all costs to saw cut and remove pavement, temporary support of existing nearby utilities if required, excavation, shoring, supply and installation of pipe, connection to existing pipe, backfilling, sub-base and base and pavement restoration (except permanent pavement restoration), disposal of excavated material and all other and all other work and materials necessary to complete installation as shown on the Contract Drawings.

Payment will be made at the unit rate tendered in Schedule A, items 3.3, 4.3, 5.3, 6.3, 7.3, 8.3, for the length of new pipe constructed.

- .18 Manhole construction - this item provides for all costs to supply and install new precast concrete manholes, bases and tops complete with frame and cover to final grade, connection to existing piping, backfilling, road sub-base and base and paving. The cost shall allow for up to 0.5 m of extra depth of manhole from that shown on the drawings.

Payment will be made at the unit rate tendered in Schedule A, items 3.4, 4.6, 5.4, 6.4, 7.4, 8.4.

- .19 Sewer Mainline Pipe Cleanout - this item provides for all costs to supply and install new sewer cleanout at the end of the sanitary sewer complete with base and top complete with frame and cover to final grade, connection to new piping, backfilling, road sub-base and base and paving.

Payment will be made at the unit rate tendered in Schedule A, items 3.5, 5.5, 6.5, 7.5, 8.5.

- .20 Sewer Service and Catch Basin Connections - this item provides for all costs to reconnect sanitary sewer, storm sewer and combined sewer lot service connections, services from easements and catch basin leaders to the new mainline pipe at the mainline pipe or edge of the trench excavation.

It includes the cost of the mainline lateral, excavation of the existing service, connecting of the mainline lateral to the existing service with service pipe, bends, fittings and transition coupling. Where a lot is currently serviced with one service connection it includes capping of a second service lateral at the mainline.

This item also includes the cost to supply materials and dye test each building wastewater system to identify live and dead services.

Backfilling is considered part of the mainline sewer installation cost.

Payment will be made at the unit rate tendered in Schedule A, items 3.6, 5.6, 6.6, 7.6, 8.6 for each service connection or capped lateral service constructed of the appropriate size.

- .21 Cleaning, Flushing and Testing Sanitary and Storm Sewers - this item provides for all costs to clean and flush storm sewers and clean flush and test sanitary sewers to City specifications.

Payment will be made at the lump sum price tendered in Schedule A, items 3.7, 4.8, 5.7, 6.7, 7.7, 8.7.

- .22 Video Inspection - this item provides for all costs to video inspect storm and sanitary sewers to City specifications.

Payment will be made at the lump sum price tendered in Schedule A, items 3.8, 4.9, 5.8, 6.8, 7.8, 8.8.

- .23 Bypass Pumping - this item provides for all costs to complete flow control and bypass pumping for construction of the new sewer works.

Payment will be made at the lump sum price tendered in Schedule A, items 3.9, 5.9, 6.9, 7.9, 8.9.

- .24 Cap Stubs to English Bay Interceptor - this item provides for all costs to cap existing sewer connections to the English Bay Interceptor sewer where existing pipe connections are being discontinued as part of the new sewer separation construction program. The cost includes excavation, cutting the connection, capping or plugging the connection watertight, backfilling and complete restoration of the disturbed area.

Payment will be made at the unit price tendered in Schedule A, item 3.10 for each connection capped.

- .25 Premium to Construct Forcemain Connection to Existing Forcemain on West Second Avenue - this item includes the extra cost to construct the new forcemain connection to the Granville Island forcemain at West second Avenue.

It includes grade adjustments to match the new pipe to the existing pipe, removal of the old forcemain pipe at the tie-in, coordination with the City relative to operation of the Granville Pump Station, draining of the forcemain and preparation of a proposed work procedure.

The City will drain the forcemain back into the Granville Pump Station.

Payment will be made at the lump sum price tendered in Schedule A, item 4.4.

- .26 Premium to Construct the Road Crossing and Connection to the Existing Combined Sewer on West Fourth Avenue - this item includes the extra cost to construct the gravity sewer connection to the existing combined sewer manhole on West Fourth Avenue.

It includes all cost to connect into the manhole, re-benching as required, horizontal and vertical alignment adjustments to the pipe to make the connection and restoration of the excavated area.

Payment will be made at the lump sum price tendered in Schedule A, item 4.5.

- .27 Premium to Construct the Works - West 8th Ave. Lane - this item provides compensation for the extra costs to construct the connections to the existing piping, provision of thrust blocks and complete restoration to the area disturbed by the construction.

Payment will be made at the lump sum price tendered in Schedule A, item 9.5.

- .28 Imported 150 mm Minus Subgrade Fill - this item provides compensation for excavation of soft zones beneath the pipe

trench as directed by the field engineer with off-site disposal of excavated material to the Contractor's disposal site. Also includes the supply, placement and compaction of imported 150 mm minus sub-grade fill to replace the excavated material.

Payment will be based on the neat volume of imported material as determined by the calculated in place compacted quantity at the unit rate tendered in Schedule A, item 10.1 based on before and after survey.

This is an indeterminate item and the quantity identified in Schedule A may increase, decrease or not be used at all. No payment will be made if the work is not undertaken.

- .29 Overexcavations/Additional excavation - The removal of unstable materials (not including rock excavation) and its corresponding replacement materials shall be measured on a volume basis. The volume to be paid for shall be the total number of cubic metres acceptably placed and compacted, as computed from measurements made by the Engineer, except that no payment will be made for material placed outside of the limits specified for excavation. The volume of replacement material shall be as measured in its compacted position, and as determined by the method of Average End Areas, or other such means appropriate for measurement as determined by the Engineer. The removal of unstable material and the supplying, placing, and compaction of replacement material shall be paid for at the Contract Unit Price per cubic metre for item 10.2 as indicated on the Schedule A and measured as specified herein, which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work as set out in these Specifications.

This is an indeterminate item and the quantity identified in Schedule A may increase, decrease or not be used at all. No payment will be made if the work is not undertaken.

- .30 Trench Rock - This item is indeterminate and provides a unit price for removal and disposal of hard trench rock and boulders in excess of 1 metre nominal dimension encountered in the excavation for construction of utilities under this contract.

Payment will be made for the volume of rock excavated as measured in the field at the unit rate tendered in Schedule A, item 10.3. The applicable payment rate shall be determined by the total quantity measured for each sub-project as defined by each section outlined within the schedule of quantities.

This is an indeterminate item and the quantity identified in Schedule A may increase, decrease or not be used at all. No payment will be made if the work is not undertaken.

- .31 Relay of Services and Catchbasins - this item provides for all costs to install sanitary sewer, storm sewer and catch basin leaders to the new mainline pipe measured from the top of the riser to the property line. This work will be paid for at the Contract Unit Price per linear metre indicated in Schedule A, items 10.4, 10.5 of the Form of Tender.

This work includes saw cutting pavement, excavation, disposal of surplus excavated material, installation of both sanitary and storm sewer service pipes, fittings and related materials, bedding, imported backfill, cleaning, testing where applicable, surface restoration (except permanent pavement restoration), and all other work and materials necessary to complete the installation as shown on Contract Drawings or City of Vancouver Standard Drawings.

This is an indeterminate item and the quantity identified in Schedule A may increase, decrease or not be used at all. No payment will be made if the work is not undertaken.

- .32 Polyethylene Encasement of Ductile Iron Pipe

This item provides for all costs to supply and install polyethylene plastic encasement on ductile iron pipe, valves and fittings for corrosion protection to ANSI/AWWA C105/A21.5 standards. Payment will be made at the unit rate tendered in Schedule A of the Form of Tender for the length of polyethylene encasement constructed for all sizes of pipe up to 600mm in diameter.

This is an indeterminate item and the quantity identified in Schedule A, item 10.6, may increase, decrease or not be used at all. No payment will be made if the work is not undertaken.

- .33 Pavement and surface restoration - the City road pavement restoration requirements are for replacement of the existing thickness of pavement regardless of thickness. All pavement and surface restoration, such as asphalt, curb and gutter, sidewalks, to be performed in accordance to the latest edition of City of Vancouver Street Restoration Manual. Assume pavement repair to be higher zoned except on 4th avenue, which will be arterial pavement standards. No additional payment will be made and shall be incidental to additional items within this contract. If the city requires additional pavement restoration, payment will be made in accordance to the additional paving items in section 11 of the Schedule A. The applicable payment rate shall be determined

by the total quantity measured for each sub-project as defined by each section outlined within the schedule of quantities.

2.0 PRODUCTS

2.1 General

- .1 All materials shall be new and undamaged. Unless approved otherwise by the Engineer, the same manufacturer of each item shall be used throughout the construction of the Works. Concrete pipe shall be free of chips, cracks, porous concrete, or any other defects which would impair joint sealing and durability.

2.2 Pipes and Fittings

- .1 The following pipe is permitted for gravity and pressure main sewers, connections and fittings. The pipe material, pipe class, and the type of bedding shall be shown on the design drawings. Lifting holes on concrete pipe are not permitted for sizes 900mm or less. For sizes greater than 900mm, no more than two lifting holes permitted in a piece of pipe. Provide pre-fabricated plugs to seal holes water tight after installation of pipe.

MATERIAL	CLASS	SIZE	USE	STANDARD
GRAVITY PIPE AND FITTINGS				
Concrete	Non-Reinforced CL. 3	150 - 750 mm	Mains	ASTM C14M
Concrete	Reinforced CL. III, IV, or V	300 - 1650 mm	Mains	ASTM C76M
PVC Gravity Sewer Pipe	DR 28	100 - 150 mm	Connections	CSA B182.2-M ASTM D3034
PVC Gravity Sewer Pipe	DR 35	200 - 375 mm	Mains & Conn.s Connections	CSA B182.2-M ASTM D3034
Vit. Clay	Extra Strength	100 - 375 mm	Mains & Conn.s Connections	ASTM C700 ASTM C425
Ductile Iron	CL. 50, 51, 52	100 - 600 mm	Mains & Conn.s Connections	AWWA C151 AWWA C104 AWWA C111
PRESSURE PIPE AND FITTINGS				
PVC	SCH. 40 SCH. 80 DR. 41	75 - 100 mm	Mains	CSA B137.3 ASTM D1785 ASTM 2241
PVC Solvent Cement	SCH. 40, SCH. 80 DR 41	75 - 100 mm	Fittings	CSA B137.3 ASTM D2564
PVC	CL. 150 (DR 18) CL. 100 (DR 25)	100 - 300 mm	Mains & Conn.s Connections	CSA B137.3 AWWA C900 AWWA M23

MATERIAL	CLASS	SIZE	USE	STANDARD
PVC	CL. 150 (DR 18) CL. 100 (DR 25)	100 - 300 mm	Fittings	CSA B137.3 AWWA C907
Ductile Iron	CL. 52	100 - 600 mm	Mains & Conn.s Connections	AWWA C110 AWWA C104 AWWA C111

- .2 All other materials require the approval of the Engineer.
.3 All joints shall be sealed with rubber gaskets which shall be in accordance with the following specifications:

MATERIAL	STANDARD SPECIFICATION
Concrete Pipe	ASTM C443M
Vitrified Clay Pipe	ASTM C-425, CSA A603 M
Ductile Iron Pipe	AWWA C111
PVC Gravity	CSA B182.2, ASTM D3212 ASTM F477
PVC Pressure	ASTM D3139

2.3 Backfill and Bedding

- .1 All materials under this section shall be constructed according to the dimensions and material specifications as stated in these Specifications and/or as shown on the City of Vancouver Sewer Standard drawings indicated below:
- 8.0 - Typical Trench Section Sewers Side-by-Side
 - 11.0 - Typical Sewer Service Connection and Catch Basin Lead

2.4 Mechanical Sewer Couplings

- .1 Prior to commencing construction, the Contractor shall obtain the of the **WRITTEN APPROVAL** Engineer for the type of sewer that will be used for installation of the Works. After obtaining this approval, the

Contractor will not be permitted to substitute alternative sewer couplings unless the subsequent written approval of the Engineer is obtained.

- .2 **NON-COMPLIANCE OF THE ABOVE CLAUSE SHALL BE CAUSE FOR THE COMPLETE REJECTION OF THE INSTALLED WORKS.**

.3 **Scope**

- .1 This section covers the specifications for flexible coupling assemblies to join plain end sewer pipe, and to adapt various plain end pipe materials and sizes to each other in sizes 100 mm and up to and including 375 mm in diameter.
- .2 This specification gives minimum requirements for materials, chemical properties, physical properties, testing procedures, finishes, and markings.

.4 **Definitions**

- .1 COUPLING shall mean the complete assembly, and shall include the gasket, clamps, bushings, shear rings, and any other part required to make a leak proof joint meeting these specifications.
- .2 GASKET shall mean the sleeve used to join two pipes.
- .3 CLAMP shall mean the complete assembly used to secure the gasket to the pipe being joined.
- .4 BUSHING shall mean a cylinder of material used to make up any difference between the inside diameter of the gasket and the outside diameter of the pipe being joined.
- .5 SHEAR RING shall mean an assembly used to increase the shear resistance of the coupling.
- .6 All references to Standards such as CSA and ASTM in this specification shall mean the latest revision.

.5 **General Requirements**

- .1 The coupling shall make a joint between sections of pipe with outside diameters in the range specified in the following table which shall not fail or leak when tested in accordance with Clause 2.4.6.2 of these specifications.

PIPE O.D. SIZE RANGE			
NOMINAL DIAMETER	VIT CLAY 1 (mm)	VIT CLAY 2 (mm)	CAST IRON/ PLASTIC (mm)
100 mm	127 - 137	137 - 147	107 - 114
150 mm	183 - 196	196 - 203	159 - 168
200 mm	239 - 258	254 - 264	206 - 222
250 mm	293 - 320	--	260 - 272
300 mm	359 - 371	--	310 - 325
375 mm	418 - 462	470 - 490	380 - 396

- .2 Gaskets and bushings shall be one piece and shall be manufactured from an elastomeric material which meets the chemical and physical requirements of Clause 2.4.6 of these specifications.
- .3 Clamps and tightening mechanisms shall be of 300 series stainless steel conforming to ASTM A 167. Clamps and tightening mechanisms shall withstand 1.5 times the torque required to maintain an effective seal when tested in accordance with Clause 2.4.6.2 of these specifications without defect or distortion. They shall withstand a minimum torque of 56.8 N.m (60 inch pounds).
- .4 The coupling shall be free from porosity and air pockets, and its surface shall be smooth and free from pitting, cracks, blisters, air marks or any other imperfections which could affect its performance in service.
- .5 Gaskets shall not have centre stops.
- .6 No part of the coupling shall protrude into the waterway at a joint.

.6 Detailed Requirements

.1 General

- .1 All couplings shall meet or exceed the requirements of the latest issue of CSA Standard B 602-M90 - Mechanical couplings for drain water, vent pipe, and sewer pipe. In addition to compliance with the above specification, all couplings shall meet the shear resistance test specified in Clause 2.4.6.2 of these Specifications. The Contractor may be required to supply evidence that the sewer couplings comply with these Specifications. The Contractor shall bear all expenses incurred to provide the City with this evidence.

.2 Shear Resistance Test

- .1 The joint made by a coupling shall have sufficient resistance to shear to meet the following test.
- .2 The two lengths of pipe shall be joined using a coupling in accordance with the manufacturer's specifications. The two joined lengths of pipe shall be supported on blocks at three locations. One length shall be supported on two blocks, one near the uncoupled end and the other immediately adjacent to the coupling. This length shall then be firmly restrained in position. The other coupled length shall be supported by a single block located at least 1.0 m from the coupling. A load of 2.7 kg/mm of nominal pipe diameter shall be uniformly applied over an arch of 120° and along a longitudinal length of 300 mm at the end, immediately adjacent to the coupling, of the pipe having only one support. Under this loading, the joint shall show no visible leakage or deflection of more than 0.04 mm/mm diameter from true alignment when an internal hydrostatic pressure of 30 kPa (3.05 m head of water) is applied for a period of 1 hour after the application of the shear load with the temperature of water, pipe and atmosphere within the range 16°C to 24°C.

.3 Coupling Length

- .1 All 100 mm and 150 mm diameter couplings shall be not less than 100 mm long.
- .2 All 200 mm and 250 mm diameter couplings shall be not less than 120 mm long.
- .3 All 300 mm and 375 mm diameter couplings shall be not less than 140 mm long.

.4 Bushings

- .1 Bushings supplied loose with a coupling are not acceptable.
- .2 Bushings shall be permanently fixed in position, in such a way that separation will not take place under any circumstances.
- .3 Only one bushing will be allowed on one end of the coupling. The opposite end of the coupling shall be sized to fit the pipe dimension shown in the previous table. The reduction in size of the inside diameter shall extend to one half of the length of the coupling.

.5 Shear Rings

- .1 Couplings without shear rings are not acceptable. Additionally, couplings with corrugated type shear rings are not acceptable.

.6 Marking

- .1 Each coupling shall be clearly marked with the manufacturer's name, size, and model number.

2.5 Castings

- .1 All castings shall be in accordance with the City's contract "Specifications for Sewers and Waterworks Grey Iron Castings". Four weeks prior to pick up at the City's Manitoba Works Yard, the Contractor responsible is to order castings by either faxing the request to (604)326-4751 or contacting Gary Lang at (604)326-4749. The Contractor is required to pick up all the required castings in one day.
- .2 All materials under this section shall be constructed according to the dimensions and material specifications as stated in these Specifications and/or as shown on the City of Vancouver Sewer Standard drawings indicated below:
- 21.0 - Manhole Cover No. 2 for Frame No. 13
 - 24.0 - Extension Ring for Manhole Frame No. 13 and Cover No.2
 - 26.0 - Manhole Frame No. 13

2.6 Service Connections

- .1 Storm sewer service connections to be 150mm minimum diameter. Sanitary sewer service connections to be 100mm minimum diameter. Normal laying length joint to joint to be 4.0m.
- .2 Manufactured connections to mainline concrete pipe to be made using sanded PVC pipe male end stub with integral bell. Stub to be grouted into neatly cored hole in pipe wall. Grout to be Portland cement based grout.
- .3 Manufactured wye connections to PVC mainline pipe to be made with extrusion molded PVC or fabricated PVC fittings manufactured to ASTM D3034 and CSA B182.2.
- .4 In-situ installation of tees and wyes into concrete, vitreous clay, or PVC mainline pipe shall be made with approved PVC saddle installed to the manufacturers specifications into a neatly cored hole in the pipe wall.
- .5 Sewer service connections to be constructed in accordance with and as shown on City of Vancouver Standard Drawing S-53.

3.0 EXECUTION

3.1 General

- .1 In making preparation for installation of mainline sewers, manholes, service connections, catch basins, catch basin leads, and other sewer related structures, the Contractor shall be required to perform the following items of Work:

3.2 Pre-construction
Photos

- .1 Before commencing any construction work as described in the plans and specifications, the Contractor shall provide photographs of pre-existing conditions of the area that will be disturbed during construction operations. Photographs must be obtained as follows:
 - .1 Every 10 metre interval in easements;
 - .2 Every 20 metre interval in paved areas;
 - .3 Wherever any tree or structure may be damaged due to construction activity; and,
 - .4 Any other location as directed by the Engineer.
- .2 Contractor to supply these photographs prior to beginning construction to the Engineer. The photographs shall be taken with a 35 mm camera, developed in 5" x 7" colour prints, and catalogued in albums.

3.3 Preparation

- .1 Clean pipes and fittings of debris and water before installation. Carefully inspect materials for defects before installing. Remove defective materials from site.

3.3 Existing Utilities

- .1 Measurements and locations of utilities and structures shown on the Construction Drawings are compiled from the most reliable data available, but **ARE NOT GUARANTEED TO BE ACCURATE OR COMPLETE**. All such measurements and locations and any plans or descriptions, verbal or otherwise, are intended only as an aid to the Contractor.
- .2 Prior to commencing any work, the Contractor shall contact the owners of water, gas, electrical power, central steam heat, and telephone utility ducts and mains to obtain the following:
 - .1 up-to-date information on the location of their underground mains and services within the Site area;
 - .2 all special procedures required when working in the vicinity of underground mains and services;
 - .3 instructions for emergency action to be taken in the event of damage to these mains and services; and,
 - .4 the contact name and phone number of an utility inspector, if required.

- .3 It shall be the responsibility of the Contractor to locate all existing mains and services such as water, gas, electricity, telephone, sewers, drains and culverts, to preserve and protect them from damage during the work, and to arrange for their relocation if required. No payment will be made to the Contractor for the cost of finding these mains and services or the delay incurred by checking and adjusting lines and/or grades to avoid conflict with these mains and services. The Contractor shall notify the Engineer of any conflict between existing mains and services and the Work described in the Contract Documents in order for the Engineer to revise the Work accordingly. The Contractor will be responsible for the cost of adjusting or relaying any previously completed existing work as a result of conflicting utilities. If relocation of existing mains and services is required by any direct conflict between these mains and services and the Work in the Contract Documents which, in the opinion of the Engineer, cannot be avoided by adjustments in the location of the Work, the cost of the relocation shall be borne by the Owner.
- .4 The Contractor will be responsible for recording the location of existing, re-routed and/or abandoned underground utilities and supplying this information to the Engineer.
- 3.4 Cutting of Pavement**
- .1 The Contractor shall continuously cut existing pavement to its full depth along neat straight lines with a cutting tool to confine the width of the pavement to be disturbed. The Contractor shall not disturb the pavement beyond the maximum trench width defined on the Drawings or contained herein, or unless approved otherwise by the Engineer.
- 3.5 Excavation - General**
- .1 Do trenching in accordance with Section 02223 – Excavating, Trenching, Backfill, and Surface Restoration.
- .2 Trench alignment and depth as shown on Contract Drawings.
- .3 Where trench excavation involves the removal of solid bedrock, consolidated glacial till or hardpan, boulders, loose rock, buried concrete pavements, concrete rubble and foundations, suspected contaminated soils, the Contractor must contact the Engineer immediately.
- .4 Existing sewer services shall be permitted to discharge into the trench excavation during new sewer installation; however, in no case, unless approved by the Engineer, shall urban runoff be allowed to enter the excavation during construction.
- .5 All water pumped or drained from the Work shall be disposed of in a suitable manner satisfactory to the Engineer, without damage to the construction Works, other property, structures, or persons.

- .6 WRITTEN PERMISSION FROM THE CITY OF VANCOUVER IS REQUIRED BEFORE ANY LIQUID WASTE (EXCLUDING LIQUID WASTE FROM EXISTING SEWER SERVICES AND/OR CLEAN GROUNDWATER) MAY BE DISPOSED OF THROUGH EXISTING CITY SEWERS.**

3.6 Utility Crossings

.1 General

- .1** The Contractor shall excavate around and under all existing utility ducts and pipes with special care and shall support and maintain them in service throughout construction. Where it is necessary to cut, move or reconnect any existing utilities, the Contractor shall make appropriate arrangements with the respective utility owner.

.2 Crossing Over Existing Utility Lines

- .1** When crossing over an existing utility which is located within 300 mm below the bottom of the trench, the Contractor shall hand excavate and expose the existing utility. The existing utility shall be examined in the presence of the Engineer and the utility owner. Any damage to the existing utility shall be repaired to the satisfaction of the Engineer and the utility owner at the Contractor's expense.

.3 Crossing Under Existing Utility Lines

- .1** When crossing under an existing utility, the Contractor shall hand excavate around the existing utility. If necessary, and no details are provided on the Construction Drawings, the Contractor shall be responsible to notify the utility owner for approval of the Contractor's proposed construction details for supporting the utility and advise the Engineer of such approved details.
- .2** The utility owner's inspector may be required to comment on any construction practices or requirements before further construction proceeds.

3.7 Connection to Existing System

- .1** Prior to the commencement of excavation, the Contractor shall prove the existing sewer pipe for line and elevation at the point or points of connection. Should any difference exist, he shall report such difference to the Engineer and cease construction pending instruction from the Engineer and the City of Vancouver.

- .2 WHERE THE CONTRACTOR IS PERMITTED TO PERFORM CONSTRUCTION PROCEDURES ON EXISTING SEWER MAINS, THE CITY OF VANCOUVER MUST BE ON-SITE PRIOR TO EXCAVATION WITHIN 1.5 METRES (5 FEET) OF THE EXISTING SEWER MAIN(S). IF THE CITY IS NOT ON-SITE DURING EXPOSURE OF THE SEWER MAIN(S), THE CONTRACTOR WILL BE LIABLE FOR ALL SEWER**

MAIN DEFICIENCIES THAT ARE SUBSEQUENTLY FOUND BY THE CITY.

3.8 Excavation Procedures

.1 General

- .1 The excavation shall not extend beyond the specified limits of excavation. The maximum width of the trench shall be as specified herein or on the construction drawings, from a point 300 mm above the top of the largest pipe to the trench bottom.
- .2 Where the width of excavation below the crown of the pipe extends beyond the specified limits either due to encountering unstable material or due to over-excavation for any other reasons, the anticipated external loading condition on the pipe shall be reviewed for compliance with the original design. If necessary, the Class of bedding and/or pipe shall be upgraded as required to meet the new design loading condition. Where the extended trench width results from an unstable soil condition beyond the Contractor's control, the cost of such upgrading shall be borne by the Owner. However, where the extended trench width results from unapproved over-excavation, the cost of such upgrading shall be borne by the Contractor. The appropriate method of upgrading shall be subject to the approval of the Engineer.
- .3 Trenches shall be excavated only as far in advance of the pipe laying operation as safety, traffic, and weather conditions permit and, unless approved otherwise by the Engineer, the excavation shall not exceed 30 metres in length. Before stopping work on any day, the Contractor shall, to the satisfaction of the Engineer, plate or make-safe the work site for both pedestrian and vehicular traffic.
- .4 Excavation shall be to the alignment and grades shown on the construction drawings and as set in the field by the construction survey. Vertical walls on all trenches shall be maintained. If, in the opinion of the Engineer, it is impossible or impractical to maintain vertical walls for certain trenches, a "Y" type of excavation will be permitted to a point 300 mm above the top of the pipe; trench walls below this point shall be maintained vertical by the use of appropriate shoring methods.
- .5 At locations where unsuitable soil is encountered, as determined by the Engineer, in the bottom of the trench (i.e., pipe foundation), the Contractor shall, upon approval of the Engineer, remove and replace such soil with approved compacted granular material or concrete cradling. The Engineer shall determine the depth to which unsuitable soil will be removed.

- .6 The grades shown on the construction drawings represent the invert elevations of the pipe. Since bedding below the pipe is required, the Contractor shall excavate the trench to a minimum depth of 150 mm below the bottom of the pipe or as specified herein or on the construction drawings. If the bottom of the excavation extends beyond the required depth, the over-excavation shall be refilled at the Contractor's expense with approved compacted granular material. The use of trench digging machinery will be permitted except where its operations will cause damage to trees, buildings, existing utilities, or existing structures above or below ground. At such locations hand methods shall be employed to avoid such damage.
 - .7 If the Work is stopped on the whole or at any part of the trench, and the trench is left open for an unreasonable length of time, as determined by the Engineer, in advance of the installation of the pipe, the Contractor shall, when directed by the Engineer, refill such trench or part thereof until he is ready to proceed with the installation of the pipe.
- .2 Excavation for Manholes, Catch Basins, and Other Related Structures**
- .1 The excavation for manholes, catch basins, and other related structures shall be made sufficiently large to permit the proper forming and pouring of base slabs and the placing of any pre-cast sections.
- .3 Bracing and Sheet piling**
- .1 Vertical trench timbering or sheet piling shall be placed in accordance with the requirements of the Workers' Compensation Board or as may be necessary to protect life and property adjacent to or on the site of the Works. The costs of such protection are to be included in the appropriate lump sum and unit prices. The Contractor shall be responsible for the adequacy of such bracing and shoring. **UNLESS OTHERWISE ACCEPTED BY THE ENGINEER, OR AS WCB RULES AND REGULATIONS DICTATE, VERTICAL TRENCH TIMBERING OR SHEETING SHALL BE PLACED SO AS NOT TO EXTEND BELOW THE SPRINGLINE OF THE LARGEST PIPE.** No timbering or sheet piling shall be left in without the written approval of the Engineer, and when removed the void left by the raised sheet piling shall be backfilled and thoroughly compacted.
 - .2 All bracing, shoring, and cribbing shall be removed from the trench as backfilling proceeds unless ordered left in place by the Engineer.
 - .3 Installation and removal of bracing, shoring and cribbing shall ensure that the integrity of bedding and initial backfill is maintained during removal operations.

.4 Disposal of Material

- .1 Unless otherwise directed by the Engineer, all excavated material shall be removed from the construction Site immediately following excavation from the trench. Side-casting is not permitted. A disposal area shall be located by the Contractor. The City shall reserve the right to direct excavated material to a local site of its choosing.
- .2 Any materials dropped or spilled during the hauling operations shall be promptly cleaned up by and at the expense of the Contractor, to the satisfaction of the Engineer.

**3.9 Method of Obtaining
Grade**

.1 General

- .1 The elevation of all sewers, structures and/or related appurtenances shall be determined by means of laser, transit/level, grade boards, lines, poles, plumb bobs or other means approved by the Engineer.
- .2 At all installations, when requested by the Engineer, an acceptable means of checking the grade and line of the sewer main, manhole or related structure shall be made available.

3.10 Preparation of Pipe Bedding .1

General

- .1 The foundation on which the bedding shall be placed shall consist of stable material. Unstable material shall be removed and replaced with approved material under the direction of the Engineer.
- .2 Bedding material shall be considered as material used to support the bottom of the sewer, manholes, or related structures. The bedding material shall be of uniform grade and shall not be finer than the foundation material.
- .3 The typical bottom of all trench excavations for pipes, manholes, and related structures shall be excavated to a depth of 150 mm below the bottom of the pipe or structure and refilled to the required grade and elevation for the full width of the trench with appropriate bedding material as specified herein and/or on the construction drawings.
- .4 For pipe bedding on rock foundations, the excavation depth shall be sufficient to provide a minimum clearance of 200 mm below the sewer, manhole, or related structure.
- .5 The bedding material shall be spread across the full width of the bottom of the trench in uniform layers not to exceed 150mm. The bedding material shall be carefully raked or screeded to the correct grade. Before the final raking or screeding, it shall be tamped by either mechanical or hand means to a compaction of not less than 95% Modified Proctor density. Compaction shall take place prior to pipe laying.

- .6 Bell or coupling holes shall be dug such that the full barrel of the pipe is supported throughout its length by the bedding material.

.2 Approval of Bedding Material

- .1 The Engineer shall be informed as to the source of the proposed bedding material. Furthermore, the Contractor shall be responsible to provide samples. No bedding material shall be placed without prior approval of the Engineer.
- .2 If, in the opinion of the Engineer, the bedding material from the proposed source does not meet, or cannot reasonably be processed to meet specified requirements, an alternative source must be located.
- .3 If the Contractor proposes to change a material source during construction, the Engineer shall be advised as soon as possible in advance of the proposed change so that sampling and testing of the new material may be completed. No material shall be placed without prior approval of the Engineer.
- .4 Acceptance of the bedding material does not preclude future rejection if it is subsequently found to lack uniformity, or if it fails to conform to the requirements specified herein or on the Construction Drawings, or if its field performance is found to be unsatisfactory.

.3 Concrete Bedding

- .1 Concrete bedding (or concrete cradling) may be required as specified on the contract drawings or as requested by the Engineer where soft or unstable ground conditions exist. Where used, concrete bedding takes the place of granular bedding and it shall be so placed that it gives uniform support to at least the bottom one-quarter of the pipe. The concrete may be placed in a wet consistency after the pipe has been laid to line and grade on concrete blocks and worked well under and around the pipe, or it may be placed in a dry consistency in the bottom of the trench and the pipe snugged into it to proper line and grade, or in any other way (on approval of the Engineer) that will achieve the desired results of maximum support.
- .2 There shall be a minimum of 100 mm of concrete under the pipe and the concrete bedding shall extend to the limits of the trench width.
- .3 Before placing the concrete, the trench bottom shall be cleaned of all loose and mucky material and water.
- .4 Do concrete work to Section 03300 – Cast-in-Place Concrete. Do not backfill over concrete within 24 h after placing.

3.11 Pipe Laying

.1 General

- .1 All necessary facilities and equipment shall be provided for by the Contractor for lowering and properly placing sections of pipe in the trench without damage. Furthermore, pipes shall be handled at all times with the greatest care and with equipment designed so that no damage occurs to any pipe or fittings. No pipe shall be laid which is damaged, cracked, checked or spalled, or has any other defect beyond the specification tolerances, and all such sections shall be permanently removed from the work Site. The Contractor will be held liable for all costs associated with replacing and removing defected pipes and fittings.
- .2 Handle pipe in accordance with manufacturer's recommendations. Do not use chains and cables passed through pipe bore so that weight of pipe bears upon pipe ends.
- .3 Lay and join pipe to manufacturer's instructions and specifications except as noted herein.
- .2 All pipes and/or materials shall be kept clean during and after laying by means approved by the Engineer. The ends of all pipes to be jointed and all coupling assemblies shall be wiped clean immediately before jointing the pipes.
- .3 Sewer pipe shall not be placed on bedding containing frozen, unsuitable, and/or unstable material.
- .4 Sewer pipe shall be laid to the alignment and grade shown on the approved construction plans. The pipe shall be laid from downstream to upstream with the bell end facing upstream.
- .5 Sewer pipe is to be laid such that the entire length of the pipe is supported by the bedding material.
- .6 All pipes shall be laid with the joints close and evenly abutting all around the pipe. A true even surface must be obtained along the invert of the joints. If, in the process of making the joints, previous lengths are moved or disturbed so as to cause the gasket to move or joint to break, the pipe joint shall be remade.
- .7 Walking on, or disturbing pipe in any manner, after the joints have been made, shall not be permitted.
- .8 No pipes shall be supported by blocks of any description or mounds of bedding material as a means of setting the pipe to line and grade.
- .9 At the end of each working day, the open ends of the pipes laid in the trench shall be protected with suitable bulkheads to prevent the entry of any foreign material into the pipes.

.2 Jointing Sewer Pipes

- .1 All sewer pipes shall be jointed strictly in accordance with the manufacturer's specifications and instructions.
- .2 Keep jointing materials and pipe joints free of dirt, mud, silt, gravel and other foreign materials. Remove disturbed or

dirty gaskets; clean, lubricate, and replace before joining is attempted.

- .3 Unless expressly ordered or permitted to be deflected, any pipe shall not be deflected either vertically or horizontally. If deflection is ordered or permitted by the Engineer, it shall not exceed one-half that recommended by the manufacturer of the pipe.
- .4 Cut pipes as required, as recommended by pipe manufacturer, without damaging pipe and leave smooth end at right angles to axis of pipe.
- .5 Support pipes with hand slings or crane as required to minimize lateral pressure on gasket and maintain concentricity until gasket is properly positioned.
- .6 Complete each joint before laying next length of pipe. Whenever any stoppage of work occurs, restrain pipes in an approved manner to prevent "creep" during down time.
- .7 Make watertight connections to manholes. Use shrinkage compensating grout when suitable gaskets are not available. Core neat circular holes in walls of existing manholes. Do not hammer or chip unless approved by Engineer.

.3 Floating Pipes

- .1 Precautions shall be taken to ensure that displacement of the pipe in the trench does not occur through soil displacement or floatation due to the presence of trench water. Pipe that has been displaced shall be removed from the trench and relaid.

.4 Service Connection and Catch Basin Leads

- .1 Sewer service connection and catch basin leads shall be constructed as shown and specified on the City Standard Drawings No. 11.0, 11.1, 11.2 and S-53 or as otherwise directed by the Engineer.
- .2 The specifications for the construction of service connection and catch basin leads shall be the same as for sewer mains.
- .3 Connections shall be provided only at the locations indicated on the construction drawings or as otherwise directed by the Engineer.
- .4 Wyes for future service connections will have leads to edge of the trench and will be capped with manufacturer's recommended watertight caps complete with rubber gaskets.
- .5 Pipe size, type, and class shall be as shown on the construction drawings and/or as specified herein. Tee, wyes, and bends shall be precast or preformed and shall be of the sizes and types specified on the construction drawings and/or herein. All connection pipe, tees, wyes, and bends shall be constructed with the same material.

- .6 Storm and sanitary sewer connections shall be laid side-by-side to the same invert at the property line unless otherwise approved or directed by the Engineer.
 - .7 Only long radius bends shall be used for connections. No changes in pipe direction or grade greater than recommended joint tolerances will be permitted.
 - .8 Unless approved or directed otherwise by the Engineer, sewer service connection trenches shall be excavated so that the trench line is at right angles to the road right-of-way. The grade of the service connection shall be uniform from a distance of 1.0 metre from the main sewer to the property line except in the case of a riser type service connection, where the uniform grade shall be from the end of the riser to the property line. All service connections and catch basin leads shall be constructed to a minimum grade of 2.0% unless approved otherwise by the Engineer. In no case, shall the grade of a service connection or catch basin lead be less than 1.25%.
- .5 Connections to Existing Sewer Mains**
- .1 **UNLESS SPECIFIED OTHERWISE BY THE ENGINEER OR IN THE CONTRACT DOCUMENTS, ONLY CITY OF VANCOUVER SEWER CREWS WILL BE ALLOWED TO PERFORM ANY CONSTRUCTION PROCEDURES TO EXISTING SEWER MAINS.**
 - .2 **WHERE THE CONTRACTOR IS PERMITTED TO PERFORM CONSTRUCTION PROCEDURES ON EXISTING SEWER MAINS, THE CITY OF VANCOUVER MUST BE ON-SITE PRIOR TO EXCAVATION WITHIN 1.5 METRES (5 FEET) OF THE EXISTING SEWER MAIN(S). IF THE CITY IS NOT ON-SITE DURING EXPOSURE OF THE SEWER MAIN(S), THE CONTRACTOR WILL BE LIABLE FOR ALL SEWER MAIN DEFICIENCIES THAT ARE SUBSEQUENTLY FOUND BY THE CITY.**
 - .3 Use prefabricated saddles or approved field connection materials and techniques to connect service pipes to existing mainline sewer pipes. Ensure joint structurally sound and watertight without encroachment into inner circle of mainline sewer pipe. Saddles are not permitted on 200mm or less combined sewers.
 - .4 Where feasible, make connections to existing non-reinforced or reinforced concrete mainline sewer pipe by coring or sawing circular holes in existing pipe walls. Where not feasible, make as follows:
 - .1 Break in pipe by drilling small diameter holes, spaced at approximately 50mm along pipe axis, using a drill or chipping gun. Use hammer to strike concrete

adjacent to centre holes to create small core, and similarly expand core to suit outside dimensions of stub.

- .2 Core dimensions to allow maximum 20mm clearance around stub at any point.
- .3 Trim stub to conform closely to shape of pipe interior when installed.
- .4 Insert stub into core, ensuring that no portion of stub protrudes beyond interior of pipe.
- .5 Prepare non-shrink, fast setting cementitious grout to "dry pack" consistency. Pack grout tightly into void between stub and pipe.
- .6 Hand finish interior and exterior grout services to smooth surface.
- .7 Allow sufficient time for strength development of grout prior to installation of connecting pipe or trench backfill.

.6 Connections to New Sewer Mains

- .1 All new connections shall be made with standard manufactured wye fittings. The wye shall be of the same material at the main line, except PVC SDR 35 pipe may be used for manufactured wyes on concrete pipe.

.7 Vertical Separation

- .1 The minimum vertical separation between sewers that cross shall be 0.3m, unless approved otherwise by the Engineer.

3.12 Backfilling Procedures

.1 General

- .1 Except for the case of using concrete cradles, caps, or encasements (where sufficient time must be allowed for concrete curing), all backfilling procedures shall be carried out promptly behind pipe laying; however, before placing any backfill, the sewer pipes, manholes, and other related structures must be checked for true elevation and alignment.
- .2 Unless the Engineer requests otherwise, all trench bracing, shoring, or cribbing shall be removed as backfilling progresses.
- .3 All backfilling shall be done in such a manner as not to damage or displace the pipe and structures.
- .4 For specifications on backfilling materials, equipment, and procedures, refer to Section 02223.
- .5 The Engineer shall be informed as to the source of the proposed backfilling materials. Furthermore, the Contractor shall provide samples or access for sampling of the backfilling materials at least two weeks prior to commencing construction.
- .6 If, in the opinion of the Engineer, the backfilling materials from the proposed source(s) do not meet, or cannot reasonably be processed to meet specified requirements, an alternative source(s) must be located.

- .7 If the Contractor proposes to change a material source during construction, the Engineer shall be advised as soon as possible in advance of the proposed change so that sampling and testing of the new material may be completed. No material shall be placed without prior approval of the Engineer.
- .8 Acceptance of the backfilling material(s) does not preclude future rejection if the material(s) are subsequently found to lack uniformity, or if the material(s) fail to conform to the requirements specified herein or on the Construction Drawings, or if the material(s) field performance are found to be unsatisfactory.
- .9 On completion of the laying, bedding, jointing and checking of a length of line, the whole width of the trench remaining above the bedding shall receive "haunching", "initial backfill", and "general backfill" as described below.
- .10 **IT IS ABSOLUTELY ESSENTIAL THAT THE PIPE ZONE MATERIALS (I.E., BEDDING, HAUNCHING, AND INITIAL BACKFILL) ARE CORRECTLY SELECTED, PLACED, AND COMPACTED IN ORDER TO ENSURE THE STABILITY AND STRENGTH OF THE PIPE/SOIL STRUCTURE.**

.2 Haunching

- .1 Haunching shall be hand placed and thoroughly tamped with approved iron tampers in 150 mm lifts to at least 95% Modified Proctor density. The haunching shall provide uniform longitudinal and side support. This material shall be brought up to at least 150 mm above the top of the largest diameter pipe within the trench. Refer to the Construction Drawings or City of Vancouver Standard Drawing No. 8.0 for the type of material to be used. The haunching material shall not be finer than the bedding material. This backfill material shall be free of large stones and/or frozen material.

.3 General Backfill

- .1 General backfill shall be carried out for the remainder of the trench by mechanical backfilling, tamped in 150 mm layers with approved iron tampers to at least 95% Modified Proctor density. Refer to the Construction Drawings or City of Vancouver Standard Drawing No. 8.0 for the type of material to be used. The general backfill material shall be free of large stones and/or frozen material.

.4 Backfill Around Manholes, C.B.'s, and Other Appurtenances

- .1 The Contractor shall backfill the excavations around all structures as described above for "general backfill" of trenches. If, however, pipes are present in such excavations, then "initial backfill" shall first be carried out as described above.

3.13 Sewer Testing - General

- .1 Upon completion of the sewer installation and backfilling procedures, the interior of the sewer shall be cleaned of all foreign material and shall be tested for alignment, infiltration, obstructions, cleanliness, and other visual defects. The Contractor shall provide for all labour, tools, rope, ball, lights, mirrors, and any other equipment necessary to examine all work as required by the Engineer and/or as set out herein. Ensure sewer system is completely finished and make arrangements with engineer for scheduling of testing.
- .2 The Contractor will be responsible for having all sewers, as requested by the Engineer, properly tested with approved equipment and trained labour.

**3.14 Flushing/Cleaning
Sewer System**

- .1 Upon completion of the construction of the whole sewer system, every manhole, catch basin, and other related structure shall be inspected by the Engineer to ensure that all gravel, sand, dirt, and other debris is removed before any flushing of the system is carried out.
- .2 Flushing with clean water shall be carried out on all service connection lines located between the mainline sewers, catch basins, and other related structures and then from manhole to manhole starting at the highest point on the system.
- .3 The Contractor will be responsible for making any arrangements necessary and paying the permit costs for the use of City water from City fire hydrants. The Engineer shall be notified at least two (2) days in advance of any flushing operations.
- .4 Provide Engineer with any required approvals prior to discharging flushing water.
- .5 Sewer flushing shall be done utilizing high-velocity sewer cleaning equipment which shall remove all foreign materials from the sewer mains. This equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two or more high-velocity nozzles. The nozzles shall be capable of producing the scouring action from 15 to 45 degrees in all size sewer mains designated to be cleaned. Equipment shall also include a high-velocity gun for washing and scouring manhole walls and floor. The gun shall be capable of producing flows from a fine spray to a solid stream. The equipment shall carry its own water tank, auxiliary engines, pumps, and hydraulically driven hose reel. The equipment shall be equipped with an approved backflow prevention device.

- .6 During sewer cleaning operations, satisfactory precautions shall be taken in the use of cleaning equipment. When hydraulically propelled cleaning tools (which depend upon water pressure to provide their cleaning force) are used, precautions shall be taken to ensure that the water pressure created does not damage or cause flooding of public or private property being served by the sewer. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant.
- .7 The designated sewer manhole sections shall be cleaned using high-velocity jet equipment. Selection of the equipment used shall be based on the conditions of sewer mains at the time the work commences (i.e. new condition/poor condition). The equipment and methods selected shall be satisfactory to the Engineer. The equipment shall be capable of removing dirt, grease, rocks, sand, and other materials and obstructions from the sewer mains and manholes. If cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be set up on the other manhole and cleaning again attempted. If, again, successful cleaning cannot be performed or the equipment fails to traverse the entire manhole section, it will be assumed that a major blockage exists and the cleaning effort shall be abandoned until the major blockage is repaired.
- .8 All dirt, sand, rocks, grease, and other solid or semi-solid material resulting from the cleaning operation shall be removed at the downstream manhole of the section being cleaned. Passing material from manhole to manhole will not be permitted.
- .9 All solids or semi-solids resulting from the cleaning operations shall be removed from the Site and disposed of by the Contractor. All materials shall be removed from the Site no less often than at the end of each workday. Under no circumstances will the Contractor be allowed to accumulate debris, etc. on the site of work beyond the stated time, except in totally enclosed containers and as approved by the Engineer.
- .10 Acceptance of the sewer line cleaning shall be made upon the successful completion of the television inspection as identified in Section 3.16 and shall be to the satisfaction of the Engineer. If the television inspection shows the cleaning to be unsatisfactory, the Contractor shall be required to re-clean and re-inspect the sewer main, at his/her expense, until the cleaning is shown to be satisfactory and approved by the Engineer.

**3.15 Inspection of the
Sewer System**

- .1 After flushing of the entire system has been completed, the whole system shall be drained adequately to allow the Engineer to inspect each manhole, catch basin, service connection, mainline sewer, and other related structures forming part of the complete sewer system.
- .2 All sewer lines shall be inspected by the Engineer (appropriate methods of inspection to be provided by the Contractor) to detect such defects as cracked or broken pipes, misaligned and/or obstructed sections of sewer, sagged or ponded sections of sewer, deformed sections of sewer (in the case of PVC pipe), and poorly installed joints.
- .3 The Contractor shall rectify all defects and other necessary work that the Engineer has discovered as a result of carrying out the inspection of the whole of the works. After any defects have been rectified, these sections of sewer shall be re-inspected, at the Contractor's expense, to the satisfaction of the Engineer. The repair procedures and materials subject to approval of Engineer. The Engineer reserves the right to require the Contractor to replace defective installations at the Contractor's sole cost.

**3.16 Testing of Sewers with
Closed Circuit Television**

- .1 **General**
 - .1 No earlier than 30 days after the completion of backfilling and installation of service connections, and after all flushing operations are complete and all manholes, catch basins, etc. have been inspected by the Engineer, the Contractor shall, at his/her cost, have the entire sewer system inspected with a closed circuit television camera.
- .2 **Sewer Flow Control**
 - .1 During TV inspection, the maximum depth of flow in the sewer shall not exceed the following:
 - .1 20% of pipe diameter for sewers of 150 mm to 250 mm diameter;
 - .2 25% of pipe diameter for sewers of 300 mm to 600 mm diameter; and,
 - .3 30% of pipe diameter for sewers of 675 mm diameter and up.
 - .4 Where depth of flow exceeds the maximum stated, the Contractor shall advise the Engineer and must return at a later time when flows are acceptably low. If, in the opinion of the Engineer, flows will never be acceptably low, the Engineer shall opt for one of the following:
 - .1 Allow TV inspection regardless of depth of flow;

- .2 Provide and operate pumping equipment to bypass the flow during TV inspection, at a future time specified by the Engineer; and,
- .3 Direct plugging or blocking of the sewer by the Contractor or City forces to permit TV inspection. The Contractor shall be liable for any flooding resulting from his/her actions.

.3 Equipment

- .1 Television and video equipment used for sewer inspection shall be employed only if approved by the Engineer. The system shall be capable of producing picture quality output and shall be a high-resolution, colour system.

.4 Camera Movement

- .1 The camera shall be moved at a rate not exceeding ten (10) metres per minute, stopping as necessary to properly document the sewer condition. If the camera will not pass through the entire sewer length, the Contractor shall attempt from the opposite manhole.

.5 Measurements

- .1 The importance of accurate distance measurements is emphasized.
- .2 Measurement for location of defects shall be above ground by means of a meter device. Marking on the cable, or the like, which would require interpolation for depth of manhole, will not be allowed. Accuracy of the distance meter shall be checked by use of a roll-a-tape or other suitable device.

.6 Documentation of Results

.1 TV Inspection Logs

- .1 Printed records shall be produced by the Contractor and shall clearly show the location of significant points and defects in the sewer, referenced to an adjacent manhole. The record shall be supplied to the Engineer. Reports which are judged inadequate by the Engineer due to lack of accuracy, detail, or required information shall be cause for rejection and the respective section of sewer will be re-televised by the Contractor at his/her additional expense. Each report shall also refer to the corresponding videotape number(s) and tape count. Furthermore, a sketch shall be included with the report when pipe routing is not clear, or when as-built drawings are incorrect.
- .2 The Contractor shall include the following information on the inspection logs:
 - .1 General Data
Date; report number; tape number; pipe diameter; tape count; pipe material; pipe use; manhole locations; sewer location; wye

locations; direction of camera travel; length of section; joint length; depth of flow; reason for inspection; weather; camera operator's name; and,

- .2 Comments regarding special problems encountered; signs of surcharging; recommended maintenance; weirs; orifices; special piping; age of sewer.

- .3 Manhole Data

Manhole numbers, depth, material, condition, infiltration.

- .4 Pipe Data

Cleanliness; alignment; % of joints leaking; open joints; offset joints; live services; dead services; protruding services; infiltration; broken pipe; collapsed pipe; cracks; dips; ponding; type of service connections; repaired sections; etc.

- .5 Ratings

Structural condition (ie. new, good, fair, or poor); Alignment (ie. good, fair, poor); and, Grade (i.e. good, fair, poor).

.2 Photographs

- .1 The Contractor shall take 35 mm colour photos at each of the following locations:

- .1 where sewer defects are shown on the TV monitor;
- .2 at not less than three locations throughout each manhole-to-manhole section;
- .3 at each manhole (flash picture);
- .4 the site showing the above ground centre line of the sewer from manhole to manhole (one only), and/or,
- .5 as directed by the Engineer.

- .2 The photos shall be appended to their corresponding printed logs and each photo shall be numbered and indexed on the logs.

.3 Videotape Recordings

- .1 The Contractor shall make colour VHS format videotape recordings of all sewer inspections, which shall become the property of the City. Each tape shall be fully recorded, numbered consecutively, and indexed on a 100 cm x 150 cm card, to be supplied with each tape. The index shall list each sewer location and the corresponding tape count. Each videotape shall be divided into sections and separated by leaders which shall display the sewer location, type, size, and date on screen. Tapes are to be submitted to the Engineer as they are filled.

**3.17 Deflection Testing of
Flexible Sewer Pipe**

- .1 A mandrel, as defined below, shall be pulled through the flexible sewer pipe to demonstrate that the pipe deflection does not exceed acceptable limits as defined in the ASTM standard D3034.
The device shall be pulled manually through the pipe **NOT SOONER THAN 30 DAYS AFTER THE COMPLETION OF BACKFILLING AND INSTALLATION OF SERVICE CONNECTIONS**. When closed circuit television inspection is required to be performed, the deflection testing shall be performed in conjunction with the television inspection. When done in conjunction with the television inspection, the mandrel shall be located in front of, and in clear view of, the television camera. To insure accurate testing, the sewer line must be thoroughly cleaned.
- .2 **IN ADDITION TO THE STANDARD 30 DAY RING DEFLECTION TEST, THE CONTRACTOR MAY BE REQUIRED, SHOULD THE ENGINEER DETERMINE THERE MAY BE SOME DEFLECTION, TO PERFORM ANOTHER RING DEFLECTION TEST FOR THE SAME SEWER UPON 365 DAYS COMPLETE INSTALLATION. THE CONTRACTOR WILL BE LIABLE FOR ALL COSTS ASSOCIATED WITH THIS ADDITIONAL TEST.**
- .3 The mandrel shall be cylindrical in shape, constructed with 9 evenly spaced arms and shall generally conform to Sewer Standard Drawing No. 43. The minimum diameter of the circle scribed around the outside of the mandrel arms shall be equal to the allowable computed deflected diameter, 0.1 mm. The contact length of the mandrel shall be measured between the points of contact on the mandrel arm. The mandrel shall be checked with a go/no-go proving ring. The proving ring shall have a diameter equal to the computed deflected diameter, 0.1 mm. An acceptable mandrel shall not pass through the proving ring. The proving ring shall be fabricated from 6 mm minimum thick steel. Furthermore, the Engineer may require the Contractor to prove both the mandrel and proving ring's adherence to these Specifications.
- .4 Standard City of Vancouver mandrels (dimensions as per ASTM D3034 specifications) shall be used for all deflection tests, unless otherwise directed by the Engineer. Other deflection testing equipment will be acceptable upon the approval of the Engineer (i.e. Deflectometer). Typical mandrel and proving ring dimensions for SDR 35 flexible sewer pipe are shown in the following table:

Nominal Pipe Size (mm)	Mandrel Arm Radius (mm)	Mandrel Contact Length (mm)	Proving Ring Inside Diameter (mm)
150	67.45	100	134.9
200	90.05	150	180.1
250	112.25	200	224.5
300	133.50	250	267.0
375	163.30	300	326.6

(Larger mandrels to the satisfaction of the Engineer)

- .5 Any section of pipe that does not allow the mandrel to pass shall be considered to have failed the deflection test.

3.18 Leakage Testing of Sewers .1 General

- .1 Unless requested otherwise by the Engineer, only sanitary sewers will require leakage testing. However, where storm sewers have been installed in areas of contaminated soils or contaminated ground water, they too shall be tested for leakage.
- .2 For the sections of sewers to be tested, all sewers, manholes, and services shall be water or air tested for exfiltration in the presence of the Engineer. Testing shall only be carried out after the pipe has been backfilled, and only on completed sections between manholes.

.2 Water Test

- .1 The exfiltration test shall include the testing of the sewer main, service connections and manholes in each section. The test section shall be sealed at its lower and upper ends by means of removable water tight plugs. The section shall be filled with water to a minimum height of 1.2 metres above the crown of the pipe at the highest point in the section or 1.2 metres above the elevation of the ground water, whichever is the higher. Air shall be allowed to escape from inspection chambers that have been plugged during the filling of the water.
- .2 Pressures in excess of 3 metres water head are not recommended. Damage resulting to the section being tested as a result of testing shall be repaired by the Contractor at his/her own expense. The test pressure shall be maintained for a minimum of 3 hours and, unless excess exfiltration requires further testing, a maximum of 8 hours.
- .3 The allowable leakage from the pipe shall be calculated by using the following formula:

$$\text{Allowable Leakage (Litres)} = (H * D * L) / 840$$

Where: H = Duration of test in hours;
D = Pipe diameter in millimetres; and,
L = Length of test section in metres.

- .4 Where service connections exist along the test section, the allowable leakage from the service connections, calculated by use of the above formula, shall be added to that of the main sewer to arrive at the total allowable leakage. No additional leakage allowance shall be made for manholes in the test section.
- .5 The above exfiltration limits shall constitute the maximum total allowable exfiltration from sewer mains, service wyes, service lines, manholes and appurtenant structures existing along the test sections of pipe.
- .6 Manholes shall be tested for leakage by filling the chamber to the underside of the roof slab with water. No measurable drop in one hour will constitute an acceptable test for manholes.
- .7 If a test section has an exfiltration amount in excess of the allowable, the Contractor shall replace or repair that section of sewer; such sections shall be retested until they meet the allowable leakage limits.

.3 Low Pressure Air Test

- .1 In lieu of the water test for exfiltration, the sewer main and service connections in each section may be tested by a low pressure air test. Manholes shall be tested by either the exfiltration test utilizing water or by a low pressure air test where specific approval of the test procedure has been approved by the Engineer.
- .2 Before the commencement of the test period the internal air pressure in the test section shall be maintained at 25kPa (3.6 psi) above the average ground water pressure for at least 5.0 minutes. The air pressure must be regulated to prevent the pressure inside the test section from exceeding 35 kPa (5.1 psi) above the average groundwater pressure.
- .3 The test period shall commence when the pressure decreases to 24.0kPa (3.48 psi) above the average groundwater pressure and shall end when the pressure decreases to 20.5kPa (2.97 psi) above the average groundwater pressure. During this test period additional air shall not be added to the test section.
- .4 If the test period is less than:
 - 2 minutes and 32 second for 100 mm pipe
 - 3 minutes and 50 seconds for 150 mm pipe
 - 5 minutes and 6 seconds for 200 mm pipe
 - 6 minutes and 22 seconds for 250 mm pipe
 - 7 minutes and 39 seconds for 300 mm pipe

8 minutes and 56 seconds for 350 mm pipe
9 minutes and 35 seconds for 375 mm pipe
10 minutes and 12 seconds for 400 mm pipe
11 minutes and 34 seconds for 450 mm pipe
12 minutes and 45 seconds for 500 mm pipe
13 minutes and 45 seconds for 525 mm pipe

The sewer shall be deemed to have failed the test and it shall be retested upon completion of repairs to any leaks.

.4 Individual Joint Test

- .1 In lieu of exfiltration testing and subject to approval of the Engineer, perform joint testing of installed pipe sections in accordance with ASTM C1103.
- .2 Insert approved joint testing device into pipeline, centering device over installed joint.
- .3 Inflate bladders to provide firm contact on pipe interior on each side of joint, thereby isolating joint from rest of pipeline.
- .4 Introduce between 30 to 70 kPa air pressure into joint.
- .5 If test pressure drops by less than 7 kPa in approximately 5 seconds, joint is acceptable. This test is considered a "Go/No Go" test.
- .6 If pipe joint fails test, reposition pipes, replace or repair and retest joint until test is acceptable.

END OF SECTION