



INVITATION TO TENDER ITT PS08014

SEWERS CCTV INSPECTION

Tenders are to be addressed to the City Clerk's Department and delivered to the Courier Delivery Drop-Off Office, 1st Floor, Vancouver City Hall, 453 West 12th Avenue, Vancouver, British Columbia, Canada, V5Y 1V4 prior to 3:00:00 P.M. City Hall Clock Time (as defined in Note 2 below), on Tuesday May 6, 2008 (the "Closing Time") and registered 11:00:00 A.M. Wednesday May 7, 2008.

NOTES:

1. Tenders are to be in sealed envelopes or packages marked with the Bidder's Name, the ITT Title and Number.
2. The Closing Time will be conclusively deemed to be the time shown on the clock at the Courier Delivery Drop-Off Office for this purpose.
3. DO NOT SUBMIT BY FAX

All queries related to this ITT shall be submitted
in writing to the attention of:

**Harinder Kainth,
Buyer,**

Fax: 604.873.7057 E-mail: purchasing@vancouver.ca

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
TABLE OF CONTENTS**

PART A - INSTRUCTIONS TO BIDDERS

Pages 5 - 10

- 1.0 Description of Requirement
- 2.0 Contract Term
- 3.0 Pricing
- 4.0 Inquiries and Clarifications
- 5.0 Conduct of the Contract
- 6.0 Inspection of Site
- 7.0 Submission of Tender
- 8.0 Bid and Performance Security
- 9.0 Conflict of Interest
- 10.0 Evaluation of Tenders
- 11.0 Solicitation
- 12.0 Acceptance and Rejection of Tenders
- 13.0 Award of Contract
- 14.0 Quantities
- 15.0 Brand Names
- 16.0 Alternates and/or Variations to Requirements
- 17.0 Environmental Responsibility
- 18.0 Named Sub-contractors
- 19.0 Freedom of Information and Protection of Privacy Act
- 20.0 Confidentiality
- 21.0 Special Conditions

PART B - GENERAL CONDITIONS

Pages 11 - 22

- 1.0 Definitions
- 2.0 Notices
- 3.0 Sub-contractors
- 4.0 Independent Contractor
- 5.0 Assignment
- 6.0 Time of the Essence
- 7.0 Laws, Permits and Regulations
- 8.0 Workplace Hazardous Materials Information System ("WHMIS")
- 9.0 Product Standards
- 10.0 Changes in Requirements
- 11.0 Delivery
- 12.0 Quality of Workmanship and Materials
- 13.0 Inspection
- 14.0 Warranty
- 15.0 Protection of Person and Property
- 16.0 Rectification of Damage and Defects
- 17.0 Clean Up
- 18.0 Indemnification
- 19.0 Termination
- 20.0 Insurance Requirements
- 21.0 WorkSafeBC Compliance
- 22.0 Character of Workers
- 23.0 Failure to Perform
- 24.0 Dispute Resolution
- 25.0 Payments
- 26.0 Taxes
- 27.0 Non-resident Withholding Tax

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
TABLE OF CONTENTS**

28.0 No Promotion of Relationship

PART C - SPECIAL CONDITIONS

Pages 23 - 24

- 1.0 Bid Bond and Performance Bond
- 2.0 Additional Evaluation Criteria
- 3.0 Additional Insurance Requirements

PART D - REQUIREMENTS

Pages 25 - 39

- 1.0 Scope of Contract
- 2.0 Proposed List of Projects
- 3.0 Location of Worksite
- 4.0 Tenderer to Investigate
- 5.0 References
- 6.0 Submission of Certification
- 7.0 Samples
- 8.0 Patents
- 9.0 Traffic Control
- 10.0 Public Convenience
- 11.0 City Cleaning and Flushing of Sewers
- 12.0 Contractor Liability for Camera Damage or Loss
- 13.0 Completion Dates and Work Schedules
- 14.0 Alternative Methods and Materials
- 15.0 Site Conditions
- 16.0 Pricing for Extra Work
- 17.0 Safety Criteria
- 18.0 Suspension of Work
- 19.0 City Engineer Sole Judge
- 20.0 Other's Rights
- 21.0 Contractors Role
- 22.0 Special TV Inspection
- 23.0 Sewer Flow Control
- 24.0 CCTV Inspection
- 25.0 Measurement for Payment

PART E - TENDER FORM

Pages PF 1 - 7

- 1.0 Compliance
- 2.0 References
- 3.0 Schedule of Quantities and Prices
- 4.0 Union Labour
- 5.0 Equipment
- 6.0 Staff Qualification
- 7.0 Experience
- 8.0 Delivery of CCTV Inspection Reports
- 9.0 Training Compliance, Rescue and Confined Space Procedures
- 10.0 Sub-contractors
- 11.0 Tenderer's Declaration
- 12.0 Acceptance of Tender

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
TABLE OF CONTENTS**

APPENDIX 1 - CERTIFICATE OF EXISTING INSURANCE

APPENDIX 1A - CERTIFICATE OF INSURANCE (FOR SUCCESSFUL CONTRACTOR)

APPENDIX 2 - PRIME CONTRACTOR AGREEMENT

APPENDIX 2A - PRE-CONTRACT HAZARD ASSESSMENT

APPENDIX 2B - CONFINED SPACE IDENTIFICATION AND HAZARD ASSESSMENT

APPENDIX 3 - 2008 PROPOSED TV INSPECTION JOBS

APPENDIX 4 - 2008 SEWER MAIN CCTV INSPECTION SITE LOCATIONS (DVD)

APPENDIX 5 - RESPONSE NOTIFICATION FORM

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART A - INSTRUCTIONS TO BIDDERS**

NOTE: The definitions set out in Section 1.0 of Part B - General Conditions apply throughout this ITT, including this Part A of this ITT, except where otherwise expressly stipulated or the context otherwise requires.

1.0 Description of Requirement

- 1.1 This Invitation to Tender ("ITT) identifies a business opportunity for the successful Tenderer(s) to supply close circuit television inspection of the sewers as set out herein for the City of Vancouver.
- 1.2 Tenderers are required to submit a Tender for the full Requirement only. Partial responses will be put aside and given no consideration.
- 1.3 Immediately upon receipt of this ITT, please advise by facsimile or e-mail whether or not you intend to submit a Tender by completing and submitting Appendix 5 - Response Notification Form to the fax or email address listed on the cover page of this ITT on or before the response notification deadline (as defined in Appendix 5 - Response Notification Form).

2.0 Contract Term

- 2.1 The term of Contract shall be on a specified project basis as described on the attached Appendix 3 - 2008 Proposed TV Inspection Jobs.
- 2.2 There may be additional work required on an as needed basis by the City Engineer.

3.0 Pricing

- 3.1 Pricing shall be held firm for length of the contract.
- 3.2 Prices quoted will be exclusive of all taxes, F.O.B. destination to the sites named herein, with all freight, unloading at destination, import duties, brokerage, royalties, handling, overhead, profit and all other costs included.

4.0 Inquiries and Clarifications

- 4.1 It is the responsibility of the Tenderer to thoroughly examine these documents and satisfy itself as to the full requirements of this ITT. Inquiries are to be in written form only, faxed or e-mailed to the contact person shown on the cover page. If required, an addendum will be issued to all Tenderers.

5.0 Conduct of the Contract

- 5.1 The Manager - Materials Management shall have the conduct of the ITT and the Contract.

6.0 Inspection of Site

- 6.1 Where applicable, Tenderers shall inspect the Work Site(s) and make allowances in its Tender for such conditions as in the sole opinion of the Tenderer are warranted. The City makes no representation or warranties as to the condition of the sites. No consideration will be given for extras resulting from conditions that would have been evident during a routine site visit.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART A - INSTRUCTIONS TO BIDDERS**

7.0 Submission of Tender

- 7.1 The response to this ITT with all accompanying schedules, appendices or addenda submitted by the Tenderer will be received up to the closing time on the date and in the place shown on the title page of this ITT (the "Closing Time"). The Tender shall be submitted on the forms provided in a sealed envelope or package, marked with the Tenderer's name and the ITT title and number.
- 7.2 Tenders received after the Closing Time or in locations other than the address indicated, will not be accepted and will be returned. The City may elect to extend the Closing Time.
- 7.3 The Tenderer shall submit four (4) copies of its Tender on the form provided (Part E - Tender Form) in accordance with the instructions stated herein.
- 7.4 The City's language used in its procurement documents and the responses thereto, shall be English.
- 7.5 The Tenderer must enter its corporate or legal business name on the final page of the Tender Form. The Tender Form must be signed in the place provided by an officer or employee having authority to bind the Tenderer to the terms and conditions of this ITT.
- 7.6 Amendments to a Tender may be submitted if delivered in writing prior to the Closing Time in a sealed envelope or package, marked with the Tenderer's name and the ITT title and number.
- 7.7 Tenders may be withdrawn by written notice only, provided such notice is received at the Purchasing Services office prior to Closing Time.
- 7.8 All costs associated with the preparation and submission of the Tender, including any costs incurred by the Tenderer after the Closing Time, will be borne solely by the Tenderer.
- 7.9 By submitting a Tender, the Tenderer acknowledges and agrees that the liability of the City in connection with the ITT, the conduct or outcome of the ITT, all related processes, decisions and procedures, and any and all duties and obligations in connection with all of the foregoing, is limited in the aggregate to the maximum of \$1,000 (for any and all claims by the Tenderer combined with any and all claims of all other Tenderers and any and all other claimants in connection with the ITT), and that if payment is made by the City into Court (or into trust, for the benefit of all Tenderers and other such claimants, with a law firm reasonably selected for the purpose) of the said sum of \$1,000, then:
- a) that will be sufficient to fully release and discharge the City from all further liability; and
 - b) the Tenderer will, upon the request from time to time of the City, execute and deliver a release (in such form as the requesting party may reasonably prescribe).

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART A - INSTRUCTIONS TO BIDDERS**

8.0 Bid and Performance Security

- 8.1 The Tenderer shall include with its Tender submission, a bid bond in the amount of 10% of the total Tender Price.
- 8.2 For Contracts having a value over one hundred thousand dollars (\$100,000), the Tenderer may be required to supply a performance bond in the amount of fifty percent (50%) of the total Contract price and other such sureties that may be set out in Part C - Special Conditions.

9.0 Conflict of Interest

- 9.1 By submitting a Tender, the Tenderer warrants that neither it nor any of its officers or directors, or any employee with authority to bind the Tenderer, has any financial or personal relationship or affiliation with any elected official or employee of the City or their immediate families which might in any way be seen by the City to create a conflict.

10.0 Evaluation of Tenders

- 10.1 Tenders will be evaluated on the basis of the overall best value to City based on quality, service, price and any other criteria set out herein including, but not limited to:
 - a) the Tenderer's ability to meet the Requirements, qualifications and competencies set out herein;
 - b) financial offer including but not limited to prices, operating and maintenance costs, warranty, and any life cycle considerations;
 - c) the Tenderer's business and technical reputation and capabilities; experience and where applicable, the experience of its personnel; financial stability; track record; and references of current and former customers;
 - d) equipment quality, configuration, age and condition; and
 - e) any other criteria set out in the ITT or otherwise reasonably considered relevant.
- 10.2 The City may elect to short list some of the Tenderers and require short listed Tenderers to provide additional information or details, including supplying samples, demonstrations, and/or additional technical literature. Samples of items, when required, must be submitted within the time specified and at no expense to the City. If not destroyed in testing, they will be returned at the Tenderer's request and expense.
- 10.3 Prior to Contract award, the Tenderer must demonstrate financial stability. Should the City so request, the Tenderer is required to provide annual financial reports or a set of financial statements prepared by an accountant and covering the last two (2) fiscal years.
- 10.4 The City may, prior to Contract award, negotiate changes to the scope of the work, the materials, the Specifications or any conditions with any one or more of the Tenderers without having any duty or obligation to advise any other Bidders or to allow them to

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART A - INSTRUCTIONS TO BIDDERS**

vary its prices as a result of changes to the scope of work, the materials, the specifications, or any conditions, and the City shall have no liability to any other Tenderer as a result of such negotiations or modifications.

- 10.5 All sub-contractors of the Tenderer will be subject to the same evaluation process. It is the responsibility of the Tenderer to guarantee that all its sub-contractors will comply with all the Requirements and terms and conditions set out therein.
- 10.6 Preference may be given to Tenders offering environmentally beneficial products or services.

11.0 Solicitation

- 11.1 If any director, officer, employee, agent or other representative of a Tenderer makes any representation or solicitation to any officer, employee, agent or elected official of the City with respect to the Tender, whether before or after the submission of the Tender, the City shall be entitled to reject or not accept the Tender.

12.0 Acceptance and Rejection of Tenders

- 12.1 Notwithstanding any other provision in the Tender documents, the City has in its sole discretion, the unfettered right to:
- a) accept any Tender;
 - b) reject any Tender;
 - c) reject all Tenders;
 - d) accept a Tender which is not the lowest Tender;
 - e) accept a Tender that deviates from the Requirements, Specifications or the conditions specified in this Tender;
 - f) reject a Tender even if it is the only Tender received by the City;
 - g) accept all or any part of a Tender; and
 - h) split the Requirement between one or more Tenderers.
- 12.2 All Tenders shall be irrevocable and remain open for acceptance for at least ninety (90) days after the Closing Time, whether or not another Tender has been accepted.
- 12.3 Any deviations from the Requirements, Specifications or the conditions specified in this ITT, must be clearly stated in the Tender. The City will determine what constitutes an acceptable Tender deviation. If no deviations are indicated in the Tender, the City will be entitled to interpret that the Tenderer offers to perform in full compliance of the Requirements, Specifications and conditions stated herein.
- 12.4 The City may waive any non-compliance with the ITT, the Specifications, or any conditions, including the timing of delivery of anything required by this ITT and may elect to retain for consideration Tenders which are non-conforming, which do not contain the content or form required by the ITT or because they have not complied with the process for submission set out herein.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART A - INSTRUCTIONS TO BIDDERS**

13.0 Award of Contract

- 13.1 Award of a Contract is contingent on funds being approved and the contract award being made by City Council, if applicable.
- 13.2 The City will notify the successful Tenderer(s) in writing that it has been awarded the Contract.
- 13.3 The purchase order terms and conditions will apply unless otherwise agreed in writing by the City.
- 13.4 The Tender, the ITT and such other documents including all amendments or addenda, shall form the basis for the Contract between the Contractor and the City. In the event of a conflict between any of the Contract Documents, the following documents will take precedence and govern over each other in the following order of priority from highest to lowest:
- a) The City's purchase order including the standard purchase order terms and conditions (which may be downloaded from www.city.vancouver.bc.ca/bid/);
 - b) Any mutually agreed to amendments between the Tenderer and the City;
 - c) The Tender; and
 - d) The ITT and any subsequent addenda.
- 13.5 Where the head office of the successful Tenderer is located within the City of Vancouver and/or where the successful Tenderer is required to perform any work at a site located within the City of Vancouver, the successful Tenderer is required to have a valid City of Vancouver business license prior to Contract execution.
- 13.6 The City is not under any obligation to award a Contract and may elect to terminate this ITT at anytime.

14.0 Quantities

- 14.1 The quantities stated herein are the City's best estimates of its requirements and should not be relied on. Actual quantities may vary.

15.0 Brand Names

- 15.1 Unless otherwise stated, if, and wherever, the Specifications state a brand name, make, name of manufacturer, trade name, or vendor catalogue number, it is for the purpose of establishing a grade or quality of material only. It is not intended to rule out competition from equal brands or makes. If, however, a product other than that specified is offered, it is the Tenderer's responsibility to name such a product in its Tender. Evidence of equality in the form of samples may be requested.

16.0 Alternates and/or Variations to Requirements

- 16.1 Except where stated otherwise herein, the Requirements describe what is considered necessary to meet the performance requirements of the City and Tenderers should bid in accordance with such Requirements, or if the Tenderer cannot meet the Requirements, the Tenderer may offer an alternative which they believe to be the equivalent.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART A - INSTRUCTIONS TO BIDDERS**

- 16.2 Tenderers shall clearly indicate any variances from the City's Requirements or conditions no matter how slight. The attachment of descriptive literature from which variations may be gleaned will not be considered as a sufficient statement of variations.
- 16.3 If in addition to bidding on goods and/or services that meet the Requirements, the Tenderer wishes to offer an alternative, the alternative Tender shall be submitted separately in the same format as the initial Tender.
- 16.4 The City is not obligated to accept any alternatives.
- 16.5 The City will determine what constitutes allowable variations.

17.0 Environmental Responsibility

- 17.1 The City is committed to preserving the environment. Tenderers shall provide environmentally sensitive products or services wherever possible. Where there is a requirement that the Contractor supplies materials, and where such materials may cause adverse effects, the Tenderer shall indicate the nature of the hazard in its Tender.
- 17.2 The Tenderer agrees to advise the City of any known alternatives or substitutes for such materials that would mitigate the effects of any adverse conditions on the environment.

18.0 Named Sub-contractors

- 18.1 The Tenderer agrees that the sub-contractors shown in its Tender are the sub-contractors that it proposes to use to carry out the Service. The Tenderer agrees to engage the listed sub-contractors and no others in its stead without prior written authorization of the City.

19.0 Freedom of Information and Protection of Privacy Act

- 19.1 The City is subject to the Province of British Columbia Freedom of Information and Protection of Privacy Act.

20.0 Confidentiality

- 20.1 Information about the City obtained by Tenderers must not be disclosed unless prior written authorization is obtained from the City.
- 20.2 The Contractor agrees that this obligation of confidentiality will survive the termination of the Contract between the Contractor and the City.

21.0 Special Conditions

- 21.1 Where Special Conditions are attached herein and there is a conflict, the Special Conditions shall take precedence over the Instructions to Tenderers and General Conditions set out in this ITT.

INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART B - GENERAL CONDITIONS

1.0 Definitions

The following words and terms, unless the context otherwise, shall have the meanings set out below. Words including the singular number include the plural and vice versa.

"Act of God" means a cataclysmic phenomenon of nature, including earthquake, flood or cyclone. Rain, snow, wind, high water or any other natural phenomenon, which might reasonably have been anticipated from historical records of the general locality of the City, shall be deemed not to be acts of God;

"City" means the municipal corporation, generally known as the City of Vancouver, as described under the Vancouver Charter;

"City's Designated Representatives" or "Contract Administrator" means the City's employees or representatives who are authorized in writing to deal with the Contractor on behalf of the City in connection with the goods and services or to make decisions in connection with the Contract;

"City Engineer" refers to the City of Vancouver General Manger of Engineering Services;

"Closing Time" means the closing date, time, and place as set out on the title page of this Quotation;

"Contract" means the agreement formed between the City and the Contractor as evidenced by the purchase order issued to the Contractor by the City;

"Contract Documents" means the purchase order, the Contractor's Tender, the ITT and such other documents as listed in the contract, including all amendments or addenda agreed between the parties;

"Contractor" means the successful Tenderer individual, partnership, corporation or combination thereof, including joint venturers who or which executes the resulting Contract;

"F.O.B." means all costs of freight, insurance, brokerage, customs duties and all other costs of delivery to the site named as F.O.B. will be borne by the Contractor and that ownership and title to all goods, materials, and equipment are transferred to the City when same are delivered by the Contractor to the City and the risk of loss or damage to the goods, materials and equipment transfers to the City only at such time as same are received and accepted by the City at the site named as "F.O.B.";

"GST" means the goods and services tax administered under the Excise Tax Act (Canada) and any successor tax or levy therefore in force from time-to-time;

"ITT" means this invitation to Tender including, but not limited to: Part A - Instructions to Tenderers; Part B - General Conditions; Part C - Special Conditions; Part D - Requirements; Part E - Tender Form; Appendix 1 - Certificate of Insurance; any additional attachments listed in the Table of Contents; and any amendments, addenda, and/or clarifications pertaining to this ITT that may be issued prior to the Closing Date;

"OHS Regulation" means the *Workers Compensation Act* (British Columbia), including without limitation, the Occupational Health & Safety Regulation (BC Regulation 296/97, as amended by BC Regulation 185/99) enacted pursuant to such Act, all as such Act or Regulations are amended or re-enacted from time to time.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART B - GENERAL CONDITIONS**

"PST" means British Columbia provincial sales tax and any successor tax or levies therefore in force from time-to-time;

Requirements or Services" means all of the Specifications, requirements and services set out in Part D and elsewhere in the ITT that describes the general requirements that the service, goods, materials, equipment and services must meet and the Contractor must provide;

"Security Clearance" means the security clearance required of the City from time to time for personnel being allowed access to any City Work Site;

"Specifications" means that part of the ITT consisting of general requirements and technical descriptions of the goods, materials, equipment, standards and workmanship.

"Tender" means the Tenderer's offer made on the Tender form set out on Part E of this ITT with all appendices or addenda submitted by the Tenderer in response to the ITT;

"Tenderer" means the individual, partnership, corporation or combination thereof, including joint venturers, who or which sign the Tender form set out in Part E of this ITT;

"Work" means all the labour, materials, equipment, supplies, services and other items necessary for the execution, completion and fulfilment of the Requirements;

"Work Site" means the site where the Services are being performed.

2.0 Notices

2.1 Any notice required to be given in regards to the Contract(s) shall be given in writing and served personally or mailed by registered mail addressed to the City, Attention Manager - Materials Management and to the Contractor at the address set forth in its Tender.

3.0 Sub-contractors

3.1 All sub-contractors are the responsibility of the Contractor.

3.2 The Contractor shall be held as fully responsible to the City for the acts and omissions of its sub-contractors and of persons directly or indirectly employed by the Contractor, as for the acts and omissions of persons directly employed by it.

3.3 The Contractor agrees to ensure performance by every sub-contractor with the terms and requirements of the Contract Documents.

3.4 The term "sub-contractor" as used in this ITT, includes all suppliers to the Contractor.

4.0 Independent Contractor

4.1 The Contractor, its sub-contractors, the officers, directors, shareholders, partners, personnel, affiliates and agents of the Contractor and its sub-contractors are not, nor are they to be deemed to be, partners, appointees, employees or agents of the City.

5.0 Assignment

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART B - GENERAL CONDITIONS**

5.1 The Contractor shall not assign, sublet or let out as task work any part of the Work, and shall not assign any interest herein or any right to payment hereunder without first having had and obtained the consent in writing of the City; which consent the City may elect to withhold. If the City should consent to any such assignment, subletting or letting out as task work of all or any part of the Work, the Contractor shall in no way be relieved from its responsibility for the fulfilment of the Work, but shall continue to be responsible for the same in the same manner as if all the Work had been performed by the Contractor.

6.0 Time of the Essence

6.1 For all requests made by the City pursuant to the Contract, time is of the essence. The acceptance of a late performance, with or without objections or reservations by the City, shall not waive the right to claim damages for such breach nor constitute a waiver of the requirement of timely performance of any obligation remaining to be performed.

7.0 Laws, Permits and Regulations

7.1 The laws of British Columbia shall govern the Contract.

7.2 All provisions of the International Sale of Goods Act are specifically excluded from application of this Contract.

7.3 In carrying out its obligations hereunder, the Contractor shall familiarize itself and comply with all applicable laws, bylaws, regulations, ordinances, codes, specifications and requirements of all regulatory authorities, and shall obtain all necessary licenses, permits and registrations as may be required by law.

8.0 Workplace Hazardous Materials Information System ("WHMIS")

8.1 The Contractor shall provide appropriate labels and material safety data sheets for WHMIS regulated products. No product containing asbestos shall be supplied at any time without written authorization.

9.0 Product Standards

9.1 All electrical items shall comply with the relevant sections, latest editions, of versions the Canadian Standards Association (CSA) standard C22.1, Canadian Electrical Code (CEC), Electrical Safety Branch - BC Amendments to CEC Regulations and Bulletins, the City's Electrical Bylaw, and the National Building Code.

10.0 Changes in Requirements

10.1 The City, without invalidating the Contract, may make changes to the Contract by altering, adding to or deducting from the Requirements. Subject to mutual agreement, the Contractor shall proceed with the amended Requirements, and the amended Requirements shall be executed under the provisions of the Contract.

10.2 The Contractor shall not make any changes from the terms of the Contract unless it shall first have received the written consent of the City, and no claims for additional compensation shall be valid unless the change was so ordered.

11.0 Delivery

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART B - GENERAL CONDITIONS**

- 11.1 Deliveries must be made between 8:00 a.m. and 3:00 p.m. Monday to Friday, excluding statutory holidays, unless other arrangements have been agreed in writing. A material safety data sheet ("MSDS") must accompany all shipments containing products regulated under WHMIS legislation.

12.0 Quality of Workmanship and Materials

- 12.1 The Contractor shall perform the services with the degree of care, skill and diligence normally applied in the performance of services of a similar nature and in accordance with sound current professional practices and conforming to the requirements set out in the ITT.
- 12.2 Materials, goods and equipment shall be the products of suppliers or manufacturers of established reputation engaged in the supply or manufacture of such materials or equipment.
- 12.3 Materials are to be applied in accordance with the manufacturer's directions and shall use the techniques and applications best suited for the type of material being used.

13.0 Inspection

- 13.1 All goods, materials and/or services are subject to inspection and approval upon delivery. The City has the right to refuse acceptance of goods that are not in accordance with the Specifications, Requirements or the Contractors' warranty (expressed or implied).
- 13.2 Acceptance or rejection of the goods, materials and/or services shall be made as promptly as practical, but failure to inspect and accept or reject the goods, materials and/or services shall not relieve the Contractor from responsibility for such goods, materials and/or services that are not in accordance with the Contract.
- 13.3 The City shall be the final judge of all goods, materials and/or services in respect of both quality and quantity and its decisions of all questions in dispute with regard thereto will be final. Materials, goods or equipment not accepted will be returned to the Contractor at the Contractor's expense.
- 13.4 The City will not be deemed to have accepted the goods, materials and/or services by virtue of a partial or full payment for them.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART B - GENERAL CONDITIONS**

14.0 Warranty

- 14.1 The Contractor warrants that the goods, materials and/or services supplied by the Contractor to the City will be in full conformity with the Specifications as well as samples, if any, then this is a sale by sample as well as by description within the meaning of the Sale of Goods Act (BC).
- 14.2 The Contractor further warrants that the goods are of merchantable quality, and fit for the intended use and will perform according to the requirements set out in the ITT.
- 14.3 Equipment and materials shall be new, free and clear of all liens, charges and encumbrances, the latest model, and shall be complete with all necessary accessories for operation. All equipment and materials shall be at the risk of the Contractor until delivered to and accepted by the City.
- 14.4 At a minimum, a one (1) year parts and labour warranty shall be provided on all goods and/or services provided under the Contract.
- 14.5 The Contractor warrants that its employees have the qualifications, experience, knowledge, skills and abilities necessary for the fulfilment of the Contracts.

15.0 Protection of Person and Property

- 15.1 The Contractor shall use due care that no persons are injured, no property damaged or lost, and no rights are infringed in the performance of the Requirements, and the Contractor shall be solely responsible for all loss, damages, costs and expenses in respect of any injury to persons, damage of property, or infringement of the rights of others incurred in the performance of the Requirements or caused in any other manner whatsoever by the Contractor, or its employees.
- 15.2 The Contractor shall effectively warn and protect the public and other personnel from any danger as a result of the Requirements being done.

16.0 Rectification of Damage and Defects

- 16.1 The Contractor shall rectify any loss or damage for which, in the opinion of the City the Contractor is responsible, at no charge to the City and to the satisfaction of the City. Alternatively, the City may repair the loss or damage and the Contractor shall pay to the City the costs of repairing the loss or damage forthwith upon demand from the City. Where, in the opinion of the City, it is not practical or desirable to repair the loss or damage, the City may estimate the cost of the loss or damage and deduct such estimated amount from the amount owing to the Contractor hereunder.

17.0 Clean Up

- 17.1 The Contractor shall at all times conduct the Requirements in an orderly and reasonably tidy manner, and shall at suitable intervals remove any accumulation of rubbish or refuse materials. At no time shall any person employed by the Contractor or by any of its sub-contractors discard any litter or garbage on or adjacent to the delivery site, except into a suitable container.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART B - GENERAL CONDITIONS**

18.0 Indemnification

- 18.1 The Contractor shall indemnify, hold and save harmless the City from and against all claims, losses, damages, costs, actions and other proceedings made, sustained, brought or prosecuted in a manner based upon, occasioned by or attributable to any injury, including death, property damage, infringement or damage arising from any act or omission of the Contractor, its employees, officers, volunteers, servants, sub-contractors, or agents or persons from whom the Contractor has assumed responsibility in the performance or purported performance.
- 18.2 The Contractor shall indemnify the City from and against any and all liability or expenses by way of legal costs or otherwise in respect of any claim which may be made for a lien or charge at law or in equity or to any claim or liability under the Builders Lien Act, or to any attachment for debt, garnishee process or otherwise.
- 18.3 The Contractor shall pay all royalties and license fees and shall save the City harmless from loss on account of suits or claims of infringement of patents in the performance of the Requirements.
- 18.4 The Contractor shall assume the defense of, and indemnify and hold harmless the City and its officers, employees and agents, from and against all claims relating to materials furnished and to inventions, copyrights, trade marks, or patents and rights thereto used by the Contractor in the execution of the Contract and in subsequent use and/or operation by the City.

19.0 Termination

- 19.1 The City will advise the Contractor by written notice of its intent to terminate the whole or any part of the Contract in any one of the following circumstances:
- a) If the Contractor fails to make delivery of the goods and/or services within the time specified, or fails to perform any other provisions, terms or conditions of the Contract within the time specified, or within a reasonable time if no time is specified;
 - b) In the event that the Contractor performs any act or does anything by which the City shall incur any liability whatsoever;
 - c) Any failure of the Contractor to meet the safety requirements of the Contract;
 - d) In the event that any creditor of the Contractor causes a writ of execution or similar writ or court order to be served upon the City requiring the City to pay any portion due to the Contractor under the Contracts; or
 - e) In the event that the Contractor is adjudged bankrupt or if it makes a general assignment for the benefit of creditors or if it becomes insolvent or if it should take the benefit of any Act that may be in force for bankrupt or insolvent debtors.
- 19.2 Upon termination of the Contract, the City shall have no obligation to the Contractor except for such goods and/or services as have been supplied up to the date of the termination of the Contract(s).

INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART B - GENERAL CONDITIONS

- 19.3 Upon termination of the Contract(s) in whole or in part, the City may procure similar goods and/or services and the Contractor shall be liable to the City for any excess costs for such similar goods and/or services. The Contractor shall not be liable for any excess costs if failure to perform arises by reason of strikes, lockouts, Acts of God or acts of the City. The City will not be liable where delivery sites are not available due to strikes, lockouts or Acts of God.

20.0 Insurance Requirements

- 20.1 The Tenderer is advised to refer to the Certificate of Insurance (Appendix 1A). This is type of certificate that the City would require should the Tenderer be selected as the successful Contractor.
- 20.2 Tenderers are to submit with the Tenders, a Certificate of Existing Insurance in the form set out in the attached Certificate of Existing Insurance (Appendix 1) as evidence of their existing insurance coverage. Appendix 1 may be amended where appropriate to add the types of insurance currently carried by the Tenderer which are not explicitly referenced on the Certificate.
- 20.3 Without limiting any of its obligations or liabilities under the Contract, the Contractor and its sub-contractors shall obtain and continuously carry during the term of the Contract at their own expense and cost, the following insurance coverage with minimum limits of not less than those shown in the respective items set out below.
- 20.4 All insurance policies shall be in a form and in amounts satisfactory from time-to-time and with insurers acceptable to the City's Director of Risk Management and shall provide the City with sixty (60) days prior written notice of material change, lapse or cancellation. Notice must identify the Contract title, number, policyholder, and scope of work.
- 20.5 The Contractor and each of its sub-contractors shall provide at its own cost any additional insurance which it is required by law to provide or which it considers necessary.
- 20.6 Neither the providing of insurance by the Contractor in accordance with the requirements hereof, nor the insolvency, bankruptcy or the failure of any insurance company to pay any claim accruing shall be held to relieve the Contractor from any other provisions of the Contract Documents with respect to liability of the Contractor or otherwise.
- 20.7 The insurance coverage shall be primary insurance as respects the City. Any insurance or self-insurance maintained by or on behalf of the City, its officers, officials, employees, servants or agents shall be excess of this insurance and shall not contribute with it.
- 20.8 Prior to commencement of this Contract, the Contractor shall provide the City with evidence of all required insurance to be taken out in the form of the attached Certificate of Insurance supported by a certified copy(s) of the policy(s). The Certificate of Insurance shall identify the Contract title, number, policyholder and scope of work and shall not contain any disclaimer whatsoever. At all times thereafter, during the term of this agreement, the Contractor shall covenant and agree to comply with all its insurance obligations described herein. Proof of insurance, in the form of a certificate of insurance or certified copies of all insurance policies shall be made

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART B - GENERAL CONDITIONS**

available to Risk and Emergency Management at any time during the term of the Contract upon request.

20.9 The Contractor shall provide in its agreements with its sub-contractors clauses in the same form as those found herein. Upon request, the Contractor shall deposit with the City's Director of Risk Management detailed certificate of insurance for the policies it has obtained from its sub-contractors and a copy of the insurance clauses so provided in the said agreements.

20.10 The Contractor shall obtain and maintain in full force and effect during the term of the Contract, insurance not less than that set out below and provide proof of such insurance provided by a company duly registered and authorized to conduct insurance business in the Province of British Columbia.

a) Commercial General Liability

Commercial General Liability insurance in sufficient amounts and description to protect the Contractor, its sub-contractors, the City and its respective officers, officials, employees, servants and agents against claims for damages, personal injury including death, bodily injury and property damage which may arise under this Contract.

The limit of commercial general liability insurance shall be not less than two million dollars (\$2,000,000) per occurrence inclusive for personal injury, death, bodily injury or property damage and in the aggregate with respect to products and complete operations.

The policy of insurance shall:

- i. be on an occurrence form;
- ii. add the City and its officials, officers, employees and agents as additional insureds;
- iii. contain a cross-liability or severability of interest clause;
- iv. extend to cover non-owned automobile, contingent employer's liability, blanket contractual liability, contractor's protective liability, broad form property damage, broad form completed operations and operations of attached machinery.

b) Motor Vehicle Liability Insurance

The Contractor shall ensure that vehicles owned and/or operated by the Contractor in connection with the Contract maintain Third Party Legal Liability Insurance in an amount not less than two million dollars (\$2,000,000) per occurrence. The deductible per occurrence shall not exceed two thousand five hundred dollars (\$2,500).

21.0 WorkSafeBC Compliance

21.1 Prior to commencing any services on the City's site, the Contractor must provide evidence that it is in good standing with WorkSafeBC. The Contractor is responsible for having the site secured in accordance with WorkSafeBC safety regulations and ensure

INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART B - GENERAL CONDITIONS

that no danger shall befall the public at any time during the performance of the Services.

- (a) *Payment of WorkSafeBC Assessments* - The Contractor agrees that it shall at its own expense procure and carry or cause to be procured and carried and paid for, full WorkSafeBC 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 right to set off the amount of the unpaid premiums and assessments for such WorkSafeBC coverage against any monies owing by the City to the Contractor. The City shall have the right to withhold payment under this Contract until the WorkSafeBC premiums, assessments or penalties in respect of work done or service performed in fulfilling this Contract had 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 the WorkSafeBC OHS Regulation.
- (c) *Prime Contractor's Obligations* - Without in any way limiting the Contractor's obligations under the WorkSafeBC OHS Regulation, 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 the WorkSafeBC OHS Regulation, and
 - (iii) Within **five (5) Business Days** of the City delivering 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 will ensure that all City and WorkSafeBC 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* - Prior to commencement of construction, the Contractor may be required to:
 - (i) Complete and file a "Notice of Project" with WorkSafeBC in compliance with Section 20.2 of the WorkSafeBC OHS Regulation,
 - (ii) Post the Notice of Project at the Site, and
 - (iii) Provide a copy of the Notice of Project to the City and confirm in writing that the Notice of Project has been posted at the Site.
- (f) *Initial Proof of WorkSafeBC Registration/Good Standing* - Within **five (5) Business Days** of the City delivering the Notice of Award to the Contractor, the Contractor will provide the City with the Contractor's and all Sub-Contractor's WorkSafeBC registration numbers.
- (g) *Subsequent Proof of WorkSafeBC Registration/Good Standing* - Within **five (5) Business Days** of the City delivering the Notice of Award to the Contractor, and

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART B - GENERAL CONDITIONS**

concurrently with making any application for payment under this Contract, the Contractor will provide the City with written confirmation that the Contractor and all Sub-Contractors are registered in good standing with WorkSafeBC and that all assessments have been paid to date of the Notice of Award or date of application for payment, as applicable.

- (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 the WorkSafeBC OHS Regulation (Section 119 of the *WCA*) as an "owner of a workplace". Despite the City's statutory obligations, the Prime Contractor now acknowledges and agrees that the Contractor may not rely on the "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) Business Days** of the City delivering 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 City Engineer prior to the City being obligated to issue the Notice to Proceed.

- (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 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 WorkSafeBC OHS Regulation or other failure to observe safety rules, regulations and practices 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.

22.0 Character of Workers

- 22.1 On the written request of the City, the Contractor will remove any employee, Sub-Contractor or agent for any reason including but not limited to the following:
 - a) Lack of or failure to obtain any required Security Clearance;
 - b) Intoxication;
 - c) Use of foul, profane, vulgar or obscene language or gestures;
 - d) Solicitation of gratuities or tips from any person for services performed under this Agreement;

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART B - GENERAL CONDITIONS**

- e) Wilful, negligent or reckless action in disregard of safety or sanitary requirements or regulations; or
- f) Any action which may constitute a public nuisance or disorderly conduct.

22.2 The Contractor will immediately comply with each such request and will then provide the City with all requested documentation verifying that the employee, Sub-Contractor or agent has been removed from further involvement with this Agreement.

23.0 Failure to Perform

23.1 Should the Contractor neglect to execute the Requirement properly or fail to perform any provision of the Contract, the City may, without prejudice to any other right or remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment due to the Contractor.

23.2 If the Contractor fails to perform any provision of the Contract due to reasons of strike, lockout or other work stoppages, the City may upon ten (10) days written notice to the Contractor terminate the Contract without prejudice to any other right or remedy the City may have.

24.0 Dispute Resolution

24.1 All claims, disputes or issues in dispute between the City and the Contractor shall be decided by mediation or arbitration, if the parties agree, or failing agreement, in a Court of competent jurisdiction within the Province of British Columbia and be governed by the laws of British Columbia.

24.2 In the event that the parties agree to arbitration pursuant to the above, the arbitration shall be governed by the rules of the British Columbia International Commercial Arbitration Centre, except that the arbitrator or arbitrators shall be agreed upon by the parties, and failing agreement by the parties, shall be appointed by a court of competent jurisdiction with the Province of British Columbia.

24.3 In the event that the parties agree to arbitration, the arbitration shall take place in the Lower Mainland, British Columbia and be governed by the laws of British Columbia.

24.4 The procedure set out in this section is not meant to preclude or discourage informal resolution of disagreements between the City and the Contractor.

25.0 Payments

25.1 The Contractor shall be paid net 30 days from receipt of invoice and acceptance of the goods and or services, whichever is the later, unless alternate payment terms have been agreed to between the Contractor and the City.

25.2 The Contractor may be required to accept payment by purchasing card (MasterCard). Preference may be given to a Bidder who has or is willing to expand their system to provide Level III reporting detail.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART B - GENERAL CONDITIONS**

26.0 Taxes

- 26.1 Unless otherwise provided herein, the Contractor shall pay all sales or excise taxes in force during the term of the Contract, provided that any increase or decrease in such taxes shall increase or decrease the amount due under the Contract(s).
- 26.2 Invoices shall show the appropriate amounts for GST and PST.

27.0 Non-resident Withholding Tax

- 27.1 Regulation 105(1) of the Canadian Income Tax Act requires that payments to non-residents for any services performed in Canada are subject to a Non-resident Withholding Tax of 15%. Exemption from this withholding tax is available in some circumstances, but the Contractor must apply directly to the Canada Revenue Agency (CRA) at least 30 days before commencing services.

28.0 No Promotion of Relationship

- 28.1 The Contractor must not disclose or promote its relationship with the City, including by means of any verbal declarations or announcements and by means of any sales, marketing or other literature, letters, client lists, press releases, brochures or other written materials 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 Contract). The Contractor undertakes not to use "VANOC", "Vancouver 2010", the official emblem, logo or mascot of the 2010 Games or any reference or means of promotion or publicity, without the express prior written consent of the City. Furthermore, the Contractor undertakes not to disclose or promote its relationship with the City in any communication or manner whatsoever as a basis to create an association, express or implied, between the Contractor and the IOC, the Olympics or the Olympic Movement.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART C - SPECIAL CONDITIONS**

1.0 Bid Bond and Performance Bond

1.1 The Tenderer shall include with its Tender:

- a. a Bid Bond valid for 60 calendar days after the Tender Closing Time in the amount of 10% of the total Tender Price in a form CCDC 220- Bid Bond (latest) as issued by the Canadian Construction Documents Committee, or as approved by the Director of Legal Services.

The Bid Bond will be forfeited if this Tender is accepted and the Tenderer declines to enter into a Contract for the performance of the Work within seven (7) calendar days following notification of acceptance of this Tender or

- b. a certified cheque or letter of credit on a chartered bank for a like amount.
- c. The tender security of the unsuccessful tenders will be returned without interest upon the execution of a contract with the successful Tenderer.

1.2 The successful Contractor maybe required, within ten (10) days from the date of acceptance, provide a Performance Bond in the amount of 50% of the total Contract Price. The surety(s), issued by a surety company licensed to transact business in British Columbia, must be in a form and contain terms satisfactory to the City's Director of Legal Services. Cash deposits, certified cheques and letters of credit (in a form satisfactory to the City's Director of Legal Services) in the amount of fifty (50%) percent of the total Contract price are acceptable in lieu of a Performance Bond. No interest will be paid to the Contractor on cash deposits.

2.0 Additional Evaluation Criteria

2.1 In addition to the evaluation criteria set out in Part A of this RFQ, the following criteria, which are not in any order of importance, will be taken into consideration during the City's evaluation of the Quotation:

- Qualification of staff assigned to the Contract;
- Proven experience in delivering similar projects within the last 2 years or otherwise reasonable time period;
- Quality and contents of sample CCTV inspection reports as requested in Part D, section 7.0;
- Ability to deliver "Work" within specified time frame.

3.0 Additional Insurance Requirements

3.1 In addition to the insurance set out in the General Conditions, the Contractor shall provide the following insurance in accordance with the terms set out in the General Conditions:

- a) All Risk Property Insurance

All risk installation floater protecting the Contractor and the City against all loses and damages for all materials, equipment and machinery, labour and supplies or any nature whatsoever, Work in progress, including property of the Insured or of others for which the Insured may have assumed responsibility, to

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART C - SPECIAL CONDITIONS**

be used in or incidental to the Work Site preparations, demolition or existing structures, erection and/or fabrication and/or reconstruction and/or repair of the project insured, commencing when the property becomes at the Insured's risk, at the Work Site, and while there awaiting, during and subsequent to erection and/or fabrication and/or repair and/or testing. The policy shall name the City of Vancouver as additional insured and loss payee for its interest.

b) Contractor's Equipment Insurance

"All Risk" insurance with Insurers acceptable to the City, covering all construction equipment, owned or rented, or for which the Contractor or any of his subcontractors may be responsible. 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. The Contractor or Subcontractor, as the case may be shall have the following clause included in such insurance policy:

c) Waiver of Subrogation:

It is understood and agreed that in the event of a loss and upon payment of claim hereunder, the Insurer will waive his 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 part, subsidiary, affiliated or associated firms.

INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS

1.0 Scope of Contract

- 1.1 The City is requesting close circuit television inspection of their sewers. The work includes TV inspection of approximately 25,000 metres of sewers (Appendix 3 - 2008 Proposed TV Inspection Jobs) which vary in size and condition. The Contractor shall be advised that the quantities shown in Part E 3.0, of the Tender Form are estimates only. The City requests the Contractor to inspect each sewer and produce a written report complete with indexed photos, DVD, videotape (if used for an intermediary image storage), along with corresponding digital data files and submit them to the Contract Administrator for review. The Work shall be done in accordance with the Contract Documents and to the satisfaction of the Contract Administrator. The Contractor shall coordinate the Work with City crews as and when required by the Contract Administrator. A City Designated Representative may accompany the TV inspection crew for observation.
- 1.2 The City expects the Work to be completed within a three (3) month period from the date of award.

2.0 Proposed List of Projects

- 2.1 Projects may be delayed or deleted because of changing priorities. The City Engineer reserves the right to add, delete or delay projects for this or any other reason. The Contractor will be advised in writing if there are any such changes, and every effort will be made to minimize such changes.

3.0 Location of Worksite

- 3.1 The sewers to be televised under this contract are located throughout the City of Vancouver. See Appendix 3 - 2008 Proposed TV Inspection Jobs and Appendix 4 - 2008 Sewer Main CCTV Inspection Site Locations (DVD).

4.0 Tenderer to Investigate

- 4.1 The Tenderer must through personal examination and investigation of the site(s) of the Work and such other means as he may prefer, satisfy himself as to the nature and requirements of the Work. The Tenderer is responsible for obtaining all information required for the preparation of his Tender and the complete execution of the Work. Drawings showing each sewer to be televised - Appendix 4 - 2008 Sewer Main CCTV Inspection Site Locations (DVD) will also be available for viewing at the Purchasing Services Counter 3rd Floor, East Tower, City Square, 555 West 12th Avenue, Vancouver, BC.

5.0 References

- 5.1 These specifications must be referenced to and interpreted simultaneously with all other Standards and Specifications pertinent to the works described herein.

Reference standards, specifications or publications:

- (a) Water Research Centre (WRc) publication Manual of Sewer Condition Classification (MSCC), Third Edition, 1993 including Addendum - February 1996.

Nomenclature:

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS**

- (a) NAAPI - North American Association of Pipeline Inspectors
- (b) CCTV - Closed Circuit Television
- (c) JPEG - Joint Photographic Experts Group
- (d) MPEG - Movie Photographic Experts Group
- (e) S-VHS - Super VHS format video
- (f) DVD - Digital Video Disk
- (g) MSCC - Manual of Sewer Condition Classification

6.0 Submission of Certification

- 6.1 For each CCTV operator working on the contract, the successful Contractor shall submit a copy of the CCTV operator's current NAAPI certification certificate to the Contract Administrator at least one week prior to the start of the Work.

7.0 Samples

- 7.1 The Tenderer shall include with their submission, samples of hard-copy CCTV inspection reports, which includes three (3) colour pipe photos, two (2) colour manhole photos, one (1) colour site photo together with corresponding digital data files on CD-R and digital video on DVD-R which were taken during typical sewer inspection. All samples submitted shall demonstrate compliance with the contract specifications and the quality of such samples will influence selection of the successful tender and will establish a benchmark for subsequent inspection report submissions. Any photos and videos taken during the contract which the City judges to be of poorer quality than this benchmark will be rejected and the Contractor will re-televise the sewers in question at the Contractor's expense.

8.0 Patents

- 8.1 The Contractor shall 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 material, plant, machinery, tool or appliance used therein or thereon, or in any way therewith.

9.0 Traffic Control

- 9.1 For all Work on City streets, lanes or sidewalks, all traffic control shall be provided by the Contractor, at the Contractor's expense, except where otherwise specifically provided for in this Contract. The Contractor shall 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).

The Contractor shall also provide, at the Contractors expense, erect and maintain all requisite barriers, fences or other proper protection and must provide and maintain such flag-persons, watch-persons and lights as may be necessary or as may be ordered by the City 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 City Engineers opinion) keep any roadway open for the use of the public, or for some restricted use specified by the City Engineer, for such width as the City Engineer may direct.

The Contractor shall, from the date of commencement to the date of completion of the Contractors Work on a given project, assume responsibility for the barricading and signing of hazards resulting from such works as utility trenches, out-of-grade utility-

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS**

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.

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 Contract Administrator shall have the power to order additional lights at the Contractor's expense if, in the Contract Administrator's opinion, they are or may be required.

Temporary "NO PARKING" signs will be supplied to the Contractor on a deposit basis. A refundable deposit of \$20 per sign will be required. The Contractor's on-site representative will be requested to sign for them when they are received and the deposit amount will then be withheld from the next progress payment. The repayment of the deposit will be included in the next progress payment after the signs are returned.

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

If inclement weather or other reasons force postponement of the Work, The Contractor shall remove or cover the signs; if any vehicles have been removed from the site, they shall be moved back with a minimum of inconvenience to the vehicle owners.

In the interest of public relations, vehicles should be towed out of the Work area to an adjacent site within 100 metres of the Work, where possible, and a reasonable effort should be made to locate the owners before tow trucks are called.

Parking Enforcement Branch or the Police are the only authorities for calling tow trucks. Providing the signing is adequate and the Contractor has contacted the Contract Administrator, the City will pay the costs of towing. Owners of vehicles unlawfully parked will be charged with towing and any other costs.

10.0 Public Convenience

- 10.1 In carrying out the Work, or any portion thereof, the convenience of the public must always be considered and provided for by the Contractor, who must not obstruct any street, thoroughfare or sidewalk longer than necessary. All pedestrian walkways must be maintained in a safe condition at all times. Any discontinuities likely to prove hazardous to the public and/or pedestrians must be either removed, barricaded or clearly and safely marked.

11.0 City Cleaning and Flushing of Sewers

- 11.1 The City performs regular sewer cleaning and flushing as a routine maintenance function. Most sewers to be televised will be found to be relatively clean and television inspection should proceed without need for further cleaning of the sewers.

In cases where the City deems it necessary to clean the sewer in order to properly inspect the sewer (e.g. where roots or other blockages must be removed, or to remove sediments concealing the pipe or otherwise preventing adequate sewer condition assessment) the City will flush, rod, drag and clean the sewer at no cost to the

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS**

Contractor. In such cases, the Contractor will make note of the location, and arrange to have the sewer cleaned by City forces. The Contractor shall continue to another location, returning at a later date to inspect the cleaned sewer and no extra cost shall be incurred by the City. The Contractor shall be paid only for the length of sewer successfully inspected. Sewers are to be inspected in an unflushed condition wherever possible. Sewer flow control, where necessary, will remain the responsibility of the City.

12.0 Contractor Liability for Camera Damage or Loss

12.1 The Contractor is to assume the full cost and responsibility for any damage or loss of his equipment, including the costs to recover camera equipment that becomes lodged in City sewers, or any damage to such equipment caused during recovery attempts. Sufficient measures to avoid damages or loss are to be taken by the Contractor, including substituting alternate technology for performing the inspection, subject to acceptance by the City. Loss by theft, fire, accident or negligence, will also be the Contractor's responsibility and the Contractor shall take appropriate precautions. Data losses will be replaced at the Contractor's cost, including repeating the inspection if necessary.

13.0 Completion Dates and Work Schedules

13.1 It is expected that all Work on Appendix 3 - 2008 Proposed TV Inspection Jobs, shall be completed and the results submitted (which include a written report, complete with indexed photos, DVD, videotape and corresponding digital data files) within 3 months from date of award. Extensions may be negotiated based on the volume of Special CCTV Inspections requested by the City as described in Part D, Section 22.0. Additional work requested by the Contract Administrator shall be completed within 30 days from the date of request. Video inspection of the sewers shall only take place at work sites Monday to Friday, between 7:00 A.M. and 3:30 P.M. unless otherwise approved by the Contract Administrator. For set up and other work related to the video inspection, the Contractor must note the restrictions to working hours under the City of Vancouver's Noise By-Law. The Contract Administrator may require weekend or extended hours or restrict regular hours where it is deemed to be in the interest of the public or for safety reasons. The Contractor shall advise the Contract Administrator of the proposed work hours and sequence of jobs at least 7 days in advance. The Contract Administrator will review such schedule and advise the Contractor of any schedule restrictions or co-ordination required with City crews. The City reserves the right to alter scheduling of the Work.

CCTV inspection reports for jobs from Appendix 3 - 2008 Proposed TV Inspection Jobs, complete with pipe photos, manhole photos, site photos, video (in DVD format) together with corresponding digital data files shall be submitted to the Contract Administrator within ten (10) working days from inspection date.

14.0 Alternative Methods and Materials

14.1 Use of methods or materials which do not conform to the Contract Documents shall not be permitted unless approved by the Contract Administrator.

15.0 Site Conditions

15.1 The sewers to be televised under this Contract may be located on private property, street right-of-way, parks, or sewer easements and vary in size and condition. The

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS**

Contractor is responsible for obtaining access to each site and must make every effort to minimize inconvenience to the public and private property owners. Where access cannot be legally obtained, the City shall delete such work from the Contract.

If existing manholes cannot be located or accessed, the Contractor shall advise the City of the problem and proceed with the Work at another site. The Contractor shall return at a later date to TV such sewers and no extra cost shall be incurred by the City. If major blockages, roots, or protruding connections prevent the Contractor from completing an inspection of a sewer section, the equipment shall be re-set up at the next manhole and the process attempted again. If the Work still cannot be completed, the Contractor shall advise the City of the problem and proceed to the next site. The Contractor shall be paid only for the length of sewer successfully inspected. The City may require the Contractor to re-inspect such sewers.

If flow conditions exceed the maximum allowable depths specified for TV inspection, the Contractor must return at another time to TV the sewer, at no extra cost to the City. The City may opt to provide pumps to bypass excessive flows where, in the City Engineer's opinion, minimum flows will never be acceptably low, or may relax the standard maximum flow depths.

The Contractor is advised to review Appendix 4 - 2008 Sewer Main CCTV Inspection Site Locations (DVD) and will also be available for viewing in Purchasing Services, 3rd Floor, East Tower, City Square, 555 West 12th Avenue, Vancouver, BC, regarding the accessibility, probable condition, traffic, and other conditions at each sewer site.

16.0 Pricing for Extra Work

16.1 Prices tendered shall remain in effect for 12 months after the date of award and shall be used to calculate payment to the Contractor for extra work requested by the Contract Administrator.

17.0 Safety Criteria

17.1 Work to conform to all applicable regulations of WorkSafe BC. The Contractor shall confirm training compliance in the following:

1. Confined space rescue;
2. Confined space entry;
3. Ventilation;
4. Atmospheric monitoring;
5. Self-contained breathing apparatus and
6. Personal protective equipment

The successful Contractor upon award of Contract must provide written confirmation and procedures to the Contract Administrator that workers have knowledge of confined space entry practices and of equipment required for confined space entry.

18.0 Suspension of Work

18.1 The City shall have the right, from time to time, to suspend operations in whole or in part, after giving the Contractor notice in writing to that effect. Such notice may be informal and shall be deemed to be sufficient if it indicates the nature or extent of the Work to be suspended or stopped and is signed by the Contract Administrator. In the event of such right being exercised so as to cause delay to the Contractor, then an

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS**

extension of time equal to such delay shall be allowed to complete the Contract, but no such delay shall vitiate or void this Contract, or any part thereof, or the obligation hereby imposed, or any concurrent or other bond of security for the performance of this Contract, nor shall the Contractor be entitled to any claim for damages. Upon the Contractor receiving written notice from the City that the suspended operations are to be resumed the Contractor shall forthwith resume the operations.

19.0 City Engineer Sole Judge

19.1 Should any discrepancies appear, or differences of opinion or misunderstandings arise, as to the meaning of the Contract or of the General Conditions, Statement of Requirements or plans, or as to any omissions there from, or misstatements therein, in any respect, or as to quality or dimensions, or sufficiency of the materials, plants or Work, or any part thereof, or as to the due and proper execution of the Work, or as to the measurement or quantity or valuation of any Works executed or to be executed under the Contract or as the Extras thereupon, or deductions there from, or as to any other questions or matters arising out of the Contract, the same shall be determined by the Contract Administrator, and the Contractor shall immediately, when ordered by the Contract Administrator, proceed with and execute the Work or Works, according to such decision.

20.0 Other's Rights

20.1 The Contractor shall cooperate with employees of the City, the City's contractors and any utility company constructing drainage spurs, catch basins and connections, sewers, water mains, light and power conduits, telephone cables, pipes and any other services. The prices Tendered shall cover such delays.

21.0 Contractors Role

21.1 The Contractor shall have complete control of the Work including site safety, and shall effectively direct and supervise the Work so as to ensure conformance with the Contract Documents. Subject to the City's rights as specifically set out in the Contract Documents to give directions regarding the Work, the Contractor shall have sole responsibility for construction means, methods, techniques, sequences and procedures and for coordinating the various parts of the Work.

21.2 The Contractor shall maintain good discipline and safe practice amongst his employees and subcontractors engaged in the Work. The Contractor shall not employ workers or subcontractors who are not skilled in the assigned task(s).

22.0 Special TV Inspection

22.1 The City may require the Contractor to TV sewers within a 24 hour period at various sites not identified in Appendix 3 - 2008 Proposed TV Inspection Jobs or while testing each connection to positively locate live wyes. In this event, the Contractor will be paid the hourly rate bid for TV inspection. Inspection reports complete with pipe photos, manhole photos, site photos and video (in DVD format) together with corresponding digital data files shall be submitted to the City Engineer within ten (10) working days of the inspection date.

23.0 Sewer Flow Control

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS**

- 23.1 During T.V. inspection the maximum depth of flow in the sewer shall not exceed approximately 1/3 of the pipe diameter.

Where depth of flow exceeds the maximum stated, the Contractor shall notify the Contract Administrator and at no extra cost to the City, reschedule work for off peak flow times. If, in the opinion of the Contact Administrator, flows will never be acceptably low, the City shall opt for one of the following:

- (a) allow TV inspection regardless of depth of flow;
- (b) provide and operate pumping equipment to bypass the flow during TV inspection, at a future time specified by the City;
- (c) direct plugging or blocking of the sewer by City forces to permit TV inspection.

24.0 CCTV Inspection

24.1 Preparation

The Contractor shall advise the City of proposed Work sites and schedule 7 days in advance. The City will make every attempt to meet the Contractor's schedule where flushing and cleaning are required, however, the Contractor shall have no claim against the City for failure to meet the proposed schedule.

24.2 Equipment

Survey Vehicle to contain a separate area for viewing, recording and controlling the CCTV operation.

- (a) Viewing and control area to be insulated against noise and extremes in temperature. External and internal sources of light to be controlled to ensure the light does not impede the view of the monitor screen. Proper seating accommodation to be provided to enable one person in addition to the operator to clearly view the monitor screen.
- (b) All equipment utilized within the pipeline to be stored outside the viewing, recording and control area.
- (c) Vehicle to be equipped with a telephone for communication with the Contract Administrator for the duration of the work.
- (d) Electrical power for the system to be self-contained. External power sources from public or private sources not permitted

24.3 Survey Equipment

Survey Equipment to have sufficient cables to view the lengths of pipe as specified.

- (a) Survey unit to be a self-propelled crawler type with a means of transporting the CCTV camera in a stable condition through the pipeline.
- (b) Each unit to carry sufficient numbers of guides and rollers such that, when surveying, all cables are supported away from pipe and manhole edges. All

INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS

CCTV cables and lines used to measure the cameras location within the pipeline shall be maintained in a taut manner and set at right angles, where possible, to run through or over the measuring equipment.

- (c) Each unit to interface with a data generator and appropriate software to record the alpha-numeric data associated with the pipeline condition and header reference location information.

24.4 Camera Equipment

Camera to be capable of producing high quality colour imagery and provide complete inspections and view of all laterals and deficiencies.

- (a) Camera to be "Pan & Tilt" and have the capability of panning the pipe at 360° with tilt capability of 270°.
- (b) Live picture to be visible with no interference and capable of registering a minimum number of 360 lines of resolution at the periphery.
- (c) Focus and iris adjustment to allow optimum picture quality to be achieved and to be remotely adjusted. The adjustment of focus and iris shall provide a focal range from 150mm in front of the camera's lens to infinity. The distance along the sewer in focus from the initial point of observation shall be a minimum of twice the vertical height of the sewer.
- (d) Camera to be waterproof with a self-contained lighting system capable of being remotely adjusted. Lights to provide an even distribution of light around the pipeline perimeter without the loss of contrast or flare out or picture shadowing.

24.5 Recording Equipment

- (a) Where video tape is to be the initial storage media prior to transfer to DVD the video playback is to be of S-VHS quality and provide a minimum of 320 recorded at the periphery, at standard VHS speed (SP mode).
- (b) Digital video captured files to conform to the following requirements:
 - 1. picture size: NTSC 704 x 480 at 29.97 frames per second.
 - 2. data / Bit Rate: MPEG2 at 5 M-bits/sec.

24.6 Materials

- (a) Where tapes are used as an intermediary image storage they are to be new- unused Super VHS format (S-VHS).
- (b) Digital video files are to be stored on new, unused DVD-R media.
- (c) Photographs to be colour, minimum image size 90mm x 70mm and reproduced on premium glossy photo quality paper when required, and as specified in the Contract Documents. Photographs to be stored as per clause 24.6(d).
- (d) Digital report data and photograph storage to be new un-used CD-R media.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS**

24.7 Execution

- (a) CCTV operators to be NAAPI certified.
- (b) Submit sample of inspection reports, complete with pipe photos, manhole photos, site photo and video (in DVD format) together with corresponding digital data files with the tender documents for review. Submission to satisfy all of the specifications contained herein and the accepted submission will be used as a benchmark for subsequent inspection report submissions.
- (c) No inspection surveys are to be carried out under this contract until an acceptable sample inspection report has been approved by the Contract Administrator.
- (d) Flow in the pipeline not to exceed approximately 1/3 of the pipe diameter. Notify Contract Administrator of excessive flows, video using flow reduction method. Refer to Part D, Section 23.1.
- (e) Hemispherical head or fisheye lens type cameras are not permitted.
- (f) Eliminate steaming and fogging encountered during the inspection survey by introducing forced air flow by means of fan.
- (g) Camera lens to remain free of grease or other deleterious matter to ensure optimal clarity.
- (h) Inspection video images are to be produced in MPEG2 format in either one or a combination of the following methods:
 - (i) video capture card and software designed to create and store real-time MPEG2 digital file direct to computer hard drive;
 - (ii) recording of all videos at standard VHS speed (SP mode) using S-VHS (Super VHS format).
 - (iii) by means of video capture card and software compress image and create MPEG2 digital file. Data compression bit rate to be set at a minimum of 5 M-bits/sec.
 - (iv) create a separate digital file and by means of chaptering software create a separate title for each individual manhole-to-manhole inspection report. Identify each report title on the DVD menu.
- (i) Set zero chainage at face of every manhole or on entrance into pipe or start of pipe culvert.
- (j) Report and record on full length of pipeline from inside face to inside face between manhole or outlet end of pipes and from one end of pipe culvert to the other.
- (k) Note condition of pipe joints at manhole walls at the beginning and end of each pipeline.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS**

- (l) Data generator to electronically generate and clearly display on the viewing monitor and video recording a record of the following minimum information prior to the start of each run:
 - (i) manhole (from-to) / pipe length reference numbers;
 - (ii) pipeline dimensions;
 - (iii) pipe material (i.e. vitrified clay, concrete, pvc etc.);
 - (iv) type of use of pipe (i.e. sanitary, storm or combined sewer);
 - (v) date of survey (yyyy.mm.dd);
 - (vi) road name/location;
 - (vii) direction of travel of survey equipment (U or D, upstream or downstream);
 - (viii) inspection (report) number;
 - (ix) verbal description of all the above on screen information.

- (m) Data Generator to continuously electronically generate, and clearly display on the viewing monitor and video recording, a record of the following minimum information during each run:
 - (i) automatic update of the camera's metre reading position from adjusted zero;
 - (ii) manhole/pipe length reference numbers;
 - (iii) type or use of pipe (i.e. sanitary, storm or combined sewer);
 - (iv) the unique inspection/report number of the run;
 - (v) display digital information such that it will not interfere with the video image on the screen.

- (n) Stop camera at each defect, change of condition of pipe and at each service connection to record said change or defect in accordance with WRc codes.

- (o) Add WRc code overlay to digital video at defects or connections in addition to continuously displayed data.

- (p) Pan each service connection (junction) such that the camera looks down the centreline of the service, pause for a minimum of five (5) seconds and note condition of the joint and/or pipe/service interface.

- (q) Immediately notify Contract Administrator of any blockage or obstruction that will not allow passage of survey equipment.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS**

- (r) Restart inspection survey from the opposite end of pipeline or culvert when blockage or obstruction is encountered unless directed by Contract Administrator.

24.8 Recording Resolution

A recording resolution test with use of a Marconi or RETMA resolution chart must be performed at the beginning of each video tape/DVD, day of inspection or when a substitute camera is introduced.

24.9 Camera Position

Position camera lens centrally in the pipeline to a tolerance of plus or minus 10% off the vertical centreline axis of the pipeline. For elliptical pipe the camera to be positioned 2/3 the height of the pipe measured from the invert.

Position camera lens looking along the longitudinal axis of pipeline except when viewing service connections or panning defects.

24.10 Camera Travel Speed

Travelling speed of the camera in the pipeline to be as follows:

- 0.1 m/s for pipeline of diameter less than 200 mm;
- 0.15 m/s for diameters 200 mm and larger but not exceeding 310 mm;
- 0.20 m/s for diameters exceeding 310 mm.

24.11 Camera Position Chainage Device

Use a chainage device which enables the cable length to be accurately measured to indicate the location of the camera.

- (a) Chainage information to be transmitted electronically to control area and displayed on the monitor.
- (b) Chainage device to be accurate to within 0.3m up to the first 50 m of pipe length and within plus or minus 1% for lengths exceeding 50 metres.
- (c) Chainage tolerance to be checked at the start of contract and a minimum of once every two weeks there after or every 5000 m of pipeline inspected, whichever is greater.
- (d) Provide an audit form showing dates and distances checked to meet both tolerance requirements. Chainage linear measurement to be checked by use of a cable calibration device or tape or electronic measurement between fixed points.

24.12 Site Coding Sheets

- (a) Each pipeline length to be recorded according to the MSCC. Any variation from the manual to be noted in the survey report.
- (b) Standard coding form shown on page 14 of MSCC to be modified as follows:
 - (i) line 2, field 8 (date) to be eight (8) characters in the format of yyyy.mm.dd (year,month, day);

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS**

- (ii) condition detail number (video count) to be six (6) characters in the format of hh.mm.ss (hours, minutes, seconds);
- (iii) note observations as to condition of service connections beyond mainline in remarks column using standard codes as per MSCC;
- (iv) survey purpose to be noted as X (other) in line 6, field 31 and stated in comments as either design, prior to paving or anchor rod (include site address for anchor rod);
- (v) billing type to be noted as H=Per Hour or M= Per Metre in line 1, field 5 (Div);
- (vi) job status to be noted COM=Complete or INC= Incomplete in line 1, field 6 (District);
- (vii) computed Structural Grading to be presented on coding form and shall include:
 - 1. Total score
 - 2. Peak score
 - 3. Internal Condition Grade (ICG) based on Peak Score

24.13 Photographs and/or Digital Images

- (a) Photograph all major pipeline defects as defined by condition codes: B, CC, CL, CM, CX, CXI, D, FC, FL, FM, H, IR, IG, JDL, JDM, JX, OB, OJM, OJL, RM, RT and X (not less than three per manhole-to-manhole section). In addition, the Contractor shall take digital colour photos of each manhole (flash picture), and the site (one only), or as directed by the Contract Administrator.
- (b) The following data, in alpha-numeric form, to be overlaid on pipeline photographs such that it will not interfere with defect condition reported:
 - (i) report/job number;
 - (ii) metre reading position (chainage);
 - (iii) manhole/pipe length reference numbers (from - to);
 - (iv) photograph number;
 - (v) WRc condition defect code;
 - (vi) date of survey (yyyy.mm.dd).
- (c) The following data, in alpha-numeric form, to be overlaid on manhole photographs such that it will not interfere with defect condition reported:
 - (i) report/job number;
 - (ii) manhole number;

INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS

- (d) The following data, in alpha-numeric form, to be overlaid on site photograph such that it will not interfere with defect condition reported:
 - (i) report/job number;
 - (ii) street name/job location.
- (e) Capture photographs and alpha-numeric data as a digital image in JPEG format. The report and photo numbers shall be incorporated in the file name as reference.
- (f) Co-ordinate photographs with the hard-copy report by reference number and inserting into the report following the relevant section of pipeline inspected.

24.14 Inspection Reporting Hard Copies & Digital Format

- (a) Submit reports to Contract Administrator within ten (10) working days of completion of the field work on a continuous basis as the inspection area or pipeline types are finalized.
- (b) Present machine printed (hard copy) and computer generated database reports according to the MSCC format as follows:
 - (i) each binder to commence with an index of all survey inspection reports contained within. The index shall list the report number, DVD/tape number, sewer location manhole (from-to), pipe size, pipe use and section length;
 - (ii) hard copy reports to be presented in tabular form in accordance with WRc MSCC;
 - (iii) reports to be presented in sections or drainage areas and/or by pipeline as type or as specified in the contract documents;
 - (iv) computer database file to contain identical survey report information as the printed report exclusive of photographs;
 - (v) digital information to be presented in tabular configuration in accordance with the NAAPI standard file format in Microsoft Access (.MDB) with the provision that the following information be included either as an extension of the NAAPI file format or in a separate table:
 - (i) Computed Structural Grading
 - Total Score
 - Peak Score
 - Internal Condition Grade (ICG) based on Peak Score;
 - (vi) provide CD-R of digital photographs. Disk to be labelled with photo and contract numbers.
 - (vii) include City supplied, scale drawings showing highlight inspected pipeline. Drawing to be attached to the hard-copy report for each section of sewer pipeline surveyed. A sketch shall be included where pipe routing is not clear, or where City drawings are incorrect;

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS**

- (c) Present reports in 215mm X 280mm three ring (D type) binder. Accompanying DVD-R and case will not be incorporated into the binder;
- (d) Attach computer disks in three hole plastic diskette sheet holder in back of binder.
- (e) Attach identical identification labels on the three ring binder, DVD-R (video files), S-VHS tapes (where tapes are used as an intermediary image storage) and CD-R (database and still images).
- (f) Where S-VHS tapes are used as an intermediary storage attach an index list, as described in section 24.14(b).1, to the tape case.
- (g) Provide additional copies of printed reports, if required, or as specified in Contract Documents
- (h) All dimensions and chainages in the reports to be metric.
- (i) Each DVD-R to include a digital index of all inspection reports and observations with a digital link to the video survey.
- (j) Provide a copy or original of the digital video player software depending on what the software licensing requirements are. Attach the applicable licensing requirements if so required.

24.15 Coding Accuracy

- (a) Coding accuracy to be a function of the number of defects or construction features not recorded (omissions) and the correctness of the coding and classification recorded. Coding accuracy to satisfy the following requirements:
 - (i) Header accuracy - 95%
 - (ii) Detail accuracy - 85%
- (b) Contractor to implement a formal coding accuracy verification system at the onset of the Work. Coding accuracy to be verified by the Contractor on a random basis on a minimum of 10% of the inspection reports. The Contract Administrator will be entitled to review the accuracy verification system and results and be present when the assessments are being conducted.
- (c) A minimum of two accuracy verifications to be performed for each operator for each working week. Coding not satisfying the accuracy requirements to be re-coded and the accuracy of the inspection report immediately proceeding and following the non compliant inspection to be verified. Process to be repeated until the proceeding and subsequent inspections meet accuracy requirements.
- (d) An operator failing to meet the accuracy requirements on a total of two occasions will not be permitted to code on the remainder of the project until they have successfully re-sat the NAAPI Level of Qualification for WRC Operators.

24.16 Co-ordination with City Crews

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART D - REQUIREMENTS**

- (a) The Contractor shall report daily to the Contract Administrator and Sewer Maintenance Superintendent to advise them of any blockage or obstruction preventing a complete sewer condition assessment (manhole to manhole).
- (b) Upon removal of the blockage or obstruction by City forces the Maintenance Superintendent will advise the Contractor who will return to re-inspect the sewer main.
- (c) The Contractor shall report daily to the Sewer Maintenance Superintendent to advise him of any sewers needing urgent maintenance and/or repairs.

25.0 Measurement for Payment

- 25.1 All units of measurement for payment will be specified herein unless shown otherwise in Tender Form.
- 25.2 CCTV pipeline inspection will be measured in lineal metres. Payment will be made at the unit price bid in Tender Form.
- 25.3 Measurement will be determined by calibrated electronic measure along the sewer from the inside wall of manhole to inside wall of manhole or end to end of sewer pipe for all sections except where a blockage or obstruction occurs.
- 25.4 For sections of pipe where a blockage or obstruction occurs, measurement will be from the start of inspection (inside wall of manhole to the point of abandonment of survey).
- 25.5 For sections of pipe with the WRc Condition code CU (camera underwater) that has a continuous distance greater than five (5) metres, the measurement above will be reduced by the distance in excess of the five metres.
- 25.6 'Special TV Inspections' (see Statement of Requirements, Section 22.1) payment will be made at the hourly price bid in the Tender Form.
- 25.7 Reports which are judged inadequate by the Contract Administrator due to lack of accuracy, detail, or required information shall be cause for non-payment to the Contractor of the fee for CCTV inspection of the sewer included in such report.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART E - TENDER FORM**

Tenderer's Name: _____
"Tenderer"

Address: _____

Telephone: _____ Fax: _____

Key Contact Person: _____

E-mail: _____ Incorporation Date: _____

To the City of Vancouver:

The undersigned Tenderer, having carefully read and examined the ITT including the Instructions to Tenderers, General Conditions, Special Conditions, and all addenda and having full knowledge of the Requirements described herein, does offer to provide the goods and/or services in accordance with the Specifications, terms and conditions set out in the ITT (except as noted herein) and in accordance with the pricing set out in the Tender form.

Required Documents:

Description	Required	Received
Bid Bond or Certified Cheque/Letter of Credit	Yes	
Certificate of Existing Insurance	Yes	
Hardcopy CCTV Inspection Report (c/w sample photos, corresponding digital data files on CD and digital video on DVD)	Yes	

If the above documents do not accompany the Tender at the time of opening, the Tender may or may not be put aside and given no further consideration.

To be Initialed at Tender Opening:

Manager, Materials Management or designate

Witness

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART E - TENDER FORM**

1.0 Compliance

1.1 By initialing each item, the Bidder acknowledges it has read and understands the Requirements, has submitted the required addenda, has identified deviations or alternatives, and provided an explanation of where it does not comply with the Requirements.

Section Title	Understand, Will Comply	Does Not Comply	Variations, Alternatives or Explanation for Non-Compliance
<u>Part A</u> Instructions to Bidders			
<u>Part B</u> General Conditions			
<u>Part C</u> Special Conditions			
<u>Part D</u> Specifications			
<u>Part E</u> Tender Form			

2.0 References

2.1 The following is a list of references for similar goods and/or services supplied by the Tenderer to other clients. The Tenderer agrees that the City may contact these references at its discretion. In addition, the City may also contact any other organization for the purposes of evaluating the Tenderer's company and Tender.

Name and Address of Company	Contact Name and Telephone Number	Brief Description of Work and Date Performed

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART E - TENDER FORM**

3.0 Schedule of Quantities and Prices

3.1 TELEWISE SEWERS, SUBMIT REPORT, PHOTOS, VIDEOTAPE (See Appendix 3 - 2008 Proposed TV Inspection Jobs)

Item	Est. Qty.	Description	Unit Price	Total
1	352 m	Under 200 mm Dia State minimum mm diameter capability: _____	\$ _____/m	\$ _____
2	13,645 m	200 mm - 300 mm Dia	\$ _____/m	\$ _____
3	5,282 m	Over 300 mm Dia - 450 mm Dia	\$ _____/m	\$ _____
4	6,186 m	Over 450 mm Dia - 900 mm Dia	\$ _____/m	\$ _____
5	345 m	Over 900 mm Dia	\$ _____/m	\$ _____
TOTAL:				

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART E - TENDER FORM**

3.2 SPECIAL TV INSPECTIONS

Item	Est. Qty.	Description	Unit Price	Total
1	200 hr	Part D Statement of Requirements, Section 22.0	\$ _____/hr	\$ _____
TOTAL:				

4.0 Union Labour

4.1 Will the Work under this Contract be performed by union labour?

Yes: _____ No: _____

5.0 Equipment

5.1 State the size, model and make of the equipment which will be used during the course of the work:

Equipment	Size	Model	Make

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART E - TENDER FORM**

6.0 Vendor Staff Qualifications

6.1 State the qualification(s) and training of the staff who will be assigned to this Contract:

6.2 List the name(s) of the Superintendent that your company will place on the project and their previous related experience:

6.3 What is the average number of employees your company will employ and maintain on the project?

7.0 Experience

7.1 Detail all relevant jobs and experiences in similar jobs and projects within a 2 year or reasonable time period.

**INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART E - TENDER FORM**

8.0 Delivery of CCTV Inspection Reports

8.1 State the number of months required to complete the scope of Work as proposed in Appendix 3 - 2008 Proposed TV Inspection Jobs.

8.2 State the number of working days required to submit inspection reports, complete with pipe photos, manhole photos, site photo's, video (in DVD format) and digital data file once the sewer has been inspected.

9.0 Training Compliance, Rescue and Confined Space Procedures

9.1 State training compliance for:

Confined Space Rescue	Yes: _____	No: _____
Confined Space Entry	Yes: _____	No: _____
Ventilation	Yes: _____	No: _____
Atmospheric Monitoring	Yes: _____	No: _____
Self Contained Breathing Apparatus	Yes: _____	No: _____
Personal Protective Equipment	Yes: _____	No: _____

9.2 If successful, the Contractor must provide written confirmation and procedures for confined space rescue and confined space entry upon award. State if this is possible.

Yes: _____ No: _____

10.0 Sub-contractors

10.1 Sub-contractors to be used in the performance of the Contract are listed below. (If no sub-contractors will be used, indicate "Not Applicable").

Company Name, Address	Contact Name	Telephone No.	Area of Responsibility

INVITATION TO TENDER NO. PS08014
SEWERS CCTV INSPECTION
PART E - TENDER FORM

11.0 Tenderer's Declaration

The undersigned Tenderer confirms that it has read and agreed to the conditions stated in the ITT and that any deviations have been clearly noted herein.

The Tenderer agrees that if this Tender is accepted within ninety (90) calendar days from the Closing Time, the undersigned Tenderer agrees to supply the City of Vancouver with all or any part of the items upon which prices are stated, at the price set opposite each item and to deliver the same at the designated point or points within the time specified, and in accordance with the Terms and Conditions set forth in the Tender.

Authorized Signatory for the Tenderer

Date

Name and Title (*please print*)

12.0 Acceptance of Tender

ACCEPTANCE

Date of Acceptance _____

The City hereby accepts the Tender for the supply and delivery of the goods and/or services described herein or that portion of the goods and/or services set out below at the prices and on the Terms and Conditions set forth in the tender:

City of Vancouver by its authorized signatory:

Approved for Director of Legal Services _____



**CERTIFICATE OF EXISTING INSURANCE
TO BE COMPLETED AND SUBMITTED ALONG WITH
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 has been issued to the Named Insured and is in full force and effect as of the effective date of the agreement described below.

NAMED INSURED *(must be the same name as the proponent/bidder and is either an individual or a legally incorporated company)*

BUSINESS TRADE NAME or **DBA DOING BUSINESS AS**

BUSINESS ADDRESS

DESCRIPTION OF OPERATION

3. **PROPERTY INSURANCE (All Risks Coverage including Earthquake and Flood)**

INSURER _____	Insured Values (Replacement Cost) -
TYPE OF COVERAGE _____	Building and Tenants Improvement \$ _____
POLICY NUMBER _____	Contents and Equipment \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____

4. **COMMERCIAL GENERAL LIABILITY INSURANCE (Occurrence Form)**

Including the following extensions:	INSURER _____
√ Personal Injury	POLICY NUMBER _____
√ Property Damage including Loss of Use	POLICY PERIOD From _____ to _____
√ Products and Completed Operations	Limits of Liability (Bodily Injury and Property Damage Inclusive) -
√ Cross Liability or Severability of Interest	Per Occurrence \$ _____
√ Employees as Additional Insureds	Aggregate \$ _____
√ Blanket Contractual Liability	All Risk Tenant's Legal Liability \$ _____
√ Non-Owned Auto Liability	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 _____	<i>If vehicles are insured by ICBC, complete and provide Form APV-47.</i>

6. **UMBRELLA OR** **EXCESS LIABILITY INSURANCE** **Limits of Liability (Bodily Injury and Property Damage Inclusive) -**

INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Self-Insured Retention \$ _____

7. **PROFESSIONAL LIABILITY INSURANCE**

INSURER _____	Limits of Liability
POLICY NUMBER _____	Per Occurrence/Claim \$ _____
POLICY PERIOD From _____ to _____	Aggregate \$ _____
	Deductible Per Occurrence/Claim \$ _____

If the policy is in a "Claims Made Form", please specify the applicable Retroactive Date: _____

8. **OTHER INSURANCE**

TYPE OF INSURANCE _____	Limits of Liability
INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____
TYPE OF INSURANCE _____	Limits of Liability
INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE

_____ Dated _____
PRINT NAME OF INSURER OR ITS AUTHORIZED REPRESENTATIVE, ADDRESS AND PHONE NUMBER



CERTIFICATE OF INSURANCE

Section 8 b) – 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

1. **THIS CERTIFICATE IS ISSUED TO:** City of Vancouver, 453 W 12th Avenue, Vancouver, BC, 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.
2. **NAMED INSURED:** *(must be the same name as the Permittee/Licensee or Party(ies) to Contract and is either an individual or a legally incorporated company)*

MAILING ADDRESS: _____

LOCATION ADDRESS: _____

DESCRIPTION OF OPERATION, CONTRACT, AGREEMENT, LEASE, PERMIT OR LICENSE: _____

3. **PROPERTY INSURANCE** naming the City of Vancouver as a Named Insured and/or Loss Payee with respect to its interests (All Risks Coverage including Earthquake and Flood) **INSURED VALUES: (Replacement Cost)**

INSURER: _____	Building and Tenants Improvement: \$ _____
TYPE OF COVERAGE: _____	Contents and Equipment: \$ _____
POLICY NUMBER: _____	Deductible Per Loss: \$ _____
POLICY PERIOD: From _____ to _____	

4. **COMMERCIAL GENERAL LIABILITY INSURANCE (Occurrence Form)** Including the following extensions: **LIMITS OF LIABILITY: (Bodily Injury and Property Damage Inclusive)**

<input checked="" type="checkbox"/> Personal Injury <input checked="" type="checkbox"/> Products and Completed Operations <input checked="" type="checkbox"/> Cross Liability or Severability of Interest <input checked="" type="checkbox"/> Employees as Additional Insureds <input checked="" type="checkbox"/> Blanket Contractual Liability <input checked="" type="checkbox"/> Non-Owned Auto Liability INSURER: _____ POLICY NUMBER: _____ POLICY PERIOD: From _____ to _____	Per Occurrence: \$ _____ Aggregate: \$ _____ All Risk Tenant's Legal Liability: \$ _____ 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 _____	<i>If vehicles are insured by ICBC, complete and provide Form APV-47.</i>

6. **UMBRELLA OR** **EXCESS LIABILITY INSURANCE** **LIMITS OF LIABILITY: (Bodily Injury and Property Damage Inclusive)**

INSURER: _____	Per Occurrence: \$ _____
POLICY NUMBER: _____	Aggregate: \$ _____
POLICY PERIOD: From _____ to _____	Self-Insured Retention: \$ _____

7. **OTHER INSURANCE (e.g. Boiler & Machinery, Business Interruption, Crime, etc.)** – Please specify Name of Insurer(s), Policy Number, Policy Period, and Limit

8. **POLICY PROVISIONS:**
Where required by the governing contract, agreement, lease, permit or license, it is understood and agreed that:
 - a) *The City of Vancouver, its officials, officers, employees, servants and agents have been added as Additional Insureds with respect to liability arising out of the operation of the Named Insured pursuant to the governing contract, agreement, lease, permit or license;*
 - b) *SIXTY (60) days written notice of cancellation or material change resulting in 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;*
 - c) *The insurance policy (policies) listed herein shall be primary with respect to all claims arising out of the operation of the Named Insured. Any insurance or self-insurance maintained by the City of Vancouver shall be in excess of this insurance and shall not contribute to it.*

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE _____

PRINT NAME OF INSURER OR ITS AUTHORIZED REPRESENTATIVE, ADDRESS AND PHONE NUMBER _____ **Dated:** _____

1.0 Definitions

- (a) "Owners" means City of Vancouver
- (b) "Prime Contractor" means a Contractor designated by the Owner (City) to be the Prime Contractor on a project with respect to occupational health and safety **ONLY**.

2.0 Responsibilities

Proof of Qualification to act as Prime Contractor.

- Contractor is to provide a copy of their WorkSafeBC "Clearance Letter", a signed copy of this Prime Contractor Agreement and all other documents requested by the City Engineer.
- The Prime Contractor is to notify the City of any changes of status with the WorkSafeBC during the course of the Contract.

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

- Ensure the health and safety of the workers on the project.
- Inform all other employers for the project that they are the Prime Contractor.
- Coordinate all occupational health and safety activities for the project.
- Do everything practicable to establish and maintain a system or process to ensure all employers at the workplace comply with the *Workers Compensation Act*, and the *WorkSafeBC OHS Regulation*.
- Review and complete a "Pre-Job Meeting Form" if the City Engineer requests.
- For construction projects, post the Notice of Project on the Work Site and to WorkSafeBC.
- See *WorkSafeBC OHS Regulation 20.2* for the general requirements of a Notice of Project.
- On a Work Site, where workers of 2 or more employers are working at the same time and the combined workforce is greater than 5, identify and designate a Qualified Coordinator to coordinate health and safety activities.
- On a Work Site, provide the information listed in *WorkSafeBC OHS Regulation 20.3(4)*.

Prime Contractor's Qualified Coordinator (Construction Only)

- Duties of the Qualified Coordinator are listed in *WorkSafeBC OHS Regulation Clause 20.3(3)* or page 13 of the City's Multiple Employer Workplace / Contractor Coordination Program (2003).

3.0 Designation

By signing this Prime Contractor Agreement, the Contractor accepts all responsibilities of a Prime Contractor as outlined in the City's Contractor Coordination Program (2003), *Part III* of the *Workers Compensation Act*, and *WorkSafeBC OHS Regulation*.

As a Contractor signing this Prime Contractor agreement with the City, you are agreeing that your company, management staff, supervisory staff and workers will comply with *WorkSafeBC Occupational Health and Safety Regulation* and *Part III* of the *Workers Compensation Act*.

Any WorkSafeBC violation by the Prime Contractor may be considered a breach of your Contract with the City resulting in possible termination or suspension of the Contract and/or any other actions deemed appropriate at the discretion of the City.

Any penalties, sanctions or additional costs levied against the City, as a result of the actions of the Prime Contractor 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 a representative of the Contractor for this Contract.

Contractor to accept all responsibilities of the Prime

Date: _____

Contract # _____

Name of Contractor _____

Qualified Coordinator's Name: (Construction Only) _____

Name/Signature of Authorized Representative/ Signatory of Prime _____

PRINT NAME and SIGN



Tender Title: Closed Circuit Television inspection of sewer pipes

Closing Date: May 6, 2008 Tender #: PS08014

Assessed by: Dave King / Barry Wilkinson Job Title: _____

Telephone: 604.871.6078 Date: March 7 2008

Owner: City of Vancouver

Location: Multiple city locations

Description of work: Inspection by closed circuit TV of a variety of 6” – 48” sewer pipes at approximately 400 locations throughout the city. Work will be initiated with a traffic control setup in many cases as the manholes in questions are located in a variety of locations, from sidewalks to medians to roadways. After establishing traffic control parameters, the contractors’ employee may be required to enter the manhole (confined space) to ensure the camera (mounted on a mobile tractor) is positioned in the start of the pipe run. The camera, hooked to a cable, is then sent through a section of pipe, and is removed either at the next manhole in the series, or pulled back through the pipe which it has just travelled via the cable it is attached to. The worker may have to enter multiple manholes, depending how easy it is to get the camera into the pipe within the chamber.

POTENTIAL SAFETY HAZARDS

1	Unsafe atmospheres in a confined space (see attached risk assessments)*
2	Motor vehicles (struck by)

All potential hazards must be addressed in accordance with the most recent version of the BC WCB Occupational Health and Safety Regulation.

For safety hazard 1, see attached documents:

Confined Space Identification and Hazard Assessment – Engineering Services – Sewers – Sewer manhole – connections > 15” (ID # 615)*


Confined Space Identification and Hazard Assessment – Engineering Services – Sewers – Sewer manhole – connections < 15” (ID # 551)*

* The successful bidder must establish their own protocol for emergency rescue. The rescue plan in the City of Vancouver risk assessments is not in effect for non-city personnel (contractors).



Confined Spaces

Page 1 of 3

	Confined Space Identification and Hazard Assessment	Assessed by Andrew Ross
		Date Assessed: Oct 17, 2003
	Engineering Services - Sewers - Sewer manhole Sewer manhole, connections 15 inch dia. or smaller (ID: 551)	Location: City Wide. Inventory includes about 22,000 sewer manholes in the City.

Not designed or intended for continuous occupancy	Enclosed or partially enclosed?	Limited or restricted entry or exit?	Large enough and configured to perform work?
yes	yes	yes	yes

Access Means, Dimensions	Single 22" or 24" diameter hole protected by steel manhole cover. Steel rungs imbedded into concrete descending to the bench at the bottom of the manhole.
Space Description and Dimensions	Typically 4 ft in diameter made from pre-cast concrete sections manholes ranging in height from 5 ft to 24 ft and average 12 ft. Max vol: 300 ft3. Sewer pipe connections are 15 inches in diameter or less.
Equipment	Steel rungs imbedded in concrete. Two or more connections entering or exiting the space. May be inspection ports to look up sewer mains at a higher grade than the bench and ramps to gradually drop sewage to the bench. Weirs, sluice gates or flapgates may be present.
Purpose/function	Connect sewer mains and allow access points to the sewer system. Points to block, divert or allow overflow in the system.

Rescue Pre-Plan

Basic information for VFRS	Space Type (NFPA 1006-36)	Internal Congested (y/n)	Hauling system required (y/n)	Victim lowering required (y/n)	Anchorage overhead (y/n)	Anchorage type
	CS TYPE 4	N	Y	N	N	
Comment	Contact Sewer dispatch 604 326 4680					

Rescue Plan

<https://citywire.city.vancouver.bc.ca/ConfinedSpace%5Fwa/index.cfm?fuseaction=CSR.rep...> 3/7/2008



Pre Entry Hazard Assessment

HAZARD	PRESENT		HAZARD RATING			REASON FOR HAZARD AND RATING
	NO	YES	LOW	MOD	HIGH	
Oxygen deficiency		X		X		Oxygen deficiency may be present from bacterial growth consuming oxygen. Variable air exchange in sewer contributes to changing oxygen levels.
Oxygen enrichment	X					
Chemical presence		X		X		Hydrogen sulfide and methane gas may be present from bacterial growth. Illegal dumping of solvents, ammonia, acids and other chemicals may be present. Variable air exchange determines presence and concentration of contaminants.
Fire/Explosion		X		X		Explosive atmospheres are rare but do occur. Methane gas from bacterial growth, illegal dumping of solvents like gas and paint thinner.
Biohazard aerosol		X	X			Bacterial and mold aerosols will be present in sewer spaces. Sensitive individuals may experience allergic reactions.
Ingestion/Skin contact		X	X			Hand to mouth or splashed contact of sewer to mouth could result in acute gut illnesses.
Noise/Vibration	X					
Heat/Cold stress	X					
Radiation or Laser	X					
Personal Confinement		X	X			Ladder access to space through manhole limits access. Siphons of other by-passes may be present in floor of manhole.
Mechanical Hazard	X					
Hydraulic/Pneumatic	X					
Process Hazard	X					
Traffic		X		X		Manholes usually in streets or intersections. Set up traffic control appropriate for conditions
Structural	X					
Engulfment		X	X			Uncontrolled flowing sewage or storm water in space. Flow rate dependant on time, location and rainfall. See comments at end of document.
Electrical	X					
Fall		X	X			Ladder rungs may be slippery. Falls over 10 feet may be possible.
Slip/Trip		X	X			Bench may be slippery
Visibility/Light		X	X			Low light conditions may make inspections difficult.
Hot/Cold surfaces	X					
Biohazards		X		X		Abandoned needles may be present
Insect/Animal		X	X			Rodents may be present.
Sharp objects		X		X		Broken glass or other sharp debris may be present in the space.
Other	X					

Additional Hazards - Inspection, tool removal less than 5 minutes

HAZARD	PRESENT	HAZARD RATING	REASON FOR HAZARD AND RATING

<https://citywire.city.vancouver.bc.ca/ConfinedSpace%5Fwa/index.cfm?fuseaction=CSR.rep...> 3/7/2008



	YES	LOW	MOD	HIGH	
Chemical presence	X	X			Ventilation of manhole will quickly dilute any air contaminants and slightly pressurize the space pushing chemical gases away from manhole
Personal Confinement	X	X			Ladder access with limited room to move at the bottom. Difficult for rescuers to attend to victim. Wearing harness for short entries will assist rescuers.
Engulfment	X	X			Pipe diameter is too small for worker to enter accidentally. Water depth designed to less than 50% of the pipe diameter, harness assists rescue in unlikely event of debilitating injury during short inspection.
Fall	X	X			Check rungs for weakness (rust, failed concrete). Always maintain 3 points of contact on rungs and use extra caution when wet.

Inspection, tool removal less than 5 minutes Hazard Assessment Summary

Lockout Required	Atmospheric Hazard	Ventilation Required	Fall Protection or Lifeline Required	Permit Required
No	Low	Yes	No	Yes

Additional Hazards - Work longer than 5 minutes - Inspect, tool removal, blocking

HAZARD	PRESENT				HAZARD RATING	REASON FOR HAZARD AND RATING
	YES	LOW	MOD	HIGH		
Chemical presence	X	X				Ventilation of manhole will quickly dilute any air contaminants and slightly pressurize the space pushing chemical gases away from manhole
Personal Confinement	X	X				Ladder access with limited room to move at the bottom. Wearing harness and lifeline minimizes hazard.
Engulfment	X	X				15 inch and smaller diameter sewer pipes are too small for a worker to accidentally enter. Harness and lifeline worn when longer periods of time are spent in manhole minimizes immersion hazard.
Fall	X	X				see comment under inspection task

Work longer than 5 minutes - Inspect, tool removal, blocking Hazard Assessment Summary

Lockout Required	Atmospheric Hazard	Ventilation Required	Fall Protection or Lifeline Required	Permit Required
No	Low	Yes	Yes	Yes

Air Quality Readings


Date	Reading for	Measurement	Gas Detector Serial No.	Reading by

Comments

Engulfment hazard. Sanitary sewers are designed for a max capacity (at breakfast and dinner times) of 50% full or less. Storm sewers are designed for 25% full for regular rainfall and 85% full during a 10 year storm event.

For problems or comments on the information, please contact Andrew Ross (CoV OHC) 604-871-6459



	Confined Space Identification and Hazard Assessment	Assessed by Andrew Ross
		Date Assessed: Nov 15, 2004
	Engineering Services - Sewers - Sewer manhole Sewer manhole, connections greater than 15 inch diameter (ID: 615)	Location: City Wide. City wide. Inventory includes 22,00 sewer manholes.

Not designed or intended for continuous occupancy	Enclosed or partially enclosed?	Limited or restricted entry or exit?	Large enough and configured to perform work?
yes	yes	yes	yes

Access Means, Dimensions	Single 22" or 24" diameter hole protected by steel manhole cover. Steel rungs imbedded into concrete descending to the bench at the bottom of the manhole.
Space Description and Dimensions	Typically 4 ft in diameter made from pre-cast concrete sections manholes ranging in height from 5 ft to 24 ft and average 12 ft. Max vol: 300 ft3. Sewer pipe connections are greater than 15 inches in diameter.
Equipment	Steel rungs imbedded in concrete. Two or more connections entering or exiting the space. May be inspection ports to look up sewer mains at a higher grade than the bench and ramps to gradually drop sewage to the bench. Weirs, sluice gates or flapgates may be present
Purpose/function	Connect sewer mains and allow access points to the sewer system. Points to block, divert or allow overflow in the system. Larger diameter mains are more likely to be storm drains with high flow rates in periods of rain.

Rescue Pre-Plan

Basic information for VFRS	Space Type (NFPA 1006-36)	Internal Congested (y/n)	Hauling system required (y/n)	Victim lowering required (y/n)	Anchorage overhead (y/n)	Anchorage type
	CS Type 4	N	Y	N	N	
Comment	Contact sewers dispatch 604 326 4680					

Rescue Plan

<https://citywire.city.vancouver.bc.ca/ConfinedSpace%5Fwa/index.cfm?fuseaction=CSR.rep...> 3/7/2008



Confined Spaces

Page 2 of 3

Pre Entry Hazard Assessment

HAZARD	PRESENT		HAZARD RATING			REASON FOR HAZARD AND RATING
	NO	YES	LOW	MOD	HIGH	
Oxygen deficiency		X		X		Oxygen deficiency may be present from bacterial growth consuming oxygen. Variable air exchange in sewer contributes to changing oxygen levels
Oxygen enrichment	X					
Chemical presence		X		X		Hydrogen sulfide and methane gas may be present from bacterial growth. Illegal dumping of solvents, ammonia, acids and other chemicals may be present. Variable air exchange determines presence and concentration of contaminants.
Fire/Explosion		X		X		Explosive atmospheres are rare but do occur. Methane gas from bacterial growth, illegal dumping of solvents like gas and paint thinner.
Biohazard aerosol		X	X			Bacterial and mold aerosols will be present in sewer spaces. Sensitive individuals may experience allergic reactions.
Ingestion/Skin contact		X	X			Hand to mouth or splashed contact of sewer to mouth could result in acute gut illnesses.
Noise/Vibration	X					
Heat/Cold stress	X					
Radiation or Laser	X					
Personal Confinement		X		X		Ladder access to space through manhole limits access. Siphons of other by-passes may be present in floor of manhole.
Mechanical Hazard	X					
Hydraulic/Pneumatic	X					
Process Hazard	X					
Traffic		X		X		Manholes usually in streets or intersections. Set up traffic control appropriate for conditions
Structural	X					
Engulfment		X		X		Uncontrolled flowing sewage or storm water in space. Flow rate dependant on local sewer usage and rainfall. Larger diameter pipe increases risk of engulfment with increasing water flows
Electrical	X					
Fall		X		X		Ladder rungs may be slippery. Falls over 10 feet may be possible.
Slip/Trip		X	X			Bench may be slippery
Visibility/Light		X	X			Low light conditions may make inspections difficult.
Hot/Cold surfaces	X					
Biohazards		X		X		Abandoned needles may be present
Insect/Animal		X	X			Rodents may be present.
Sharp objects		X		X		Broken glass or other sharp debris may be present in the space.
Other	X					

Additional Hazards - Inspection, non-air contaminating tasks

HAZARD	PRESENT	HAZARD RATING	REASON FOR HAZARD AND RATING
--------	---------	---------------	------------------------------

<https://citywire.city.vancouver.bc.ca/ConfinedSpace%5Fwa/index.cfm?fuseaction=CSR.rep...> 3/7/2008



Confined Spaces

Page 3 of 3

	YES	LOW	MOD	HIGH	
Chemical presence	X	X			Ventilation of manhole quickly dilutes any air contaminants and slightly pressurizes space to push sewer gases away from entry manhole
Personal Confinement	X	X			Ladder access with limited room to move at the bottom. Wearing harness and lifeline minimizes hazard
Engulfment	X	X			Manholes to 16 inch and larger pipes create a chance of engulfment if worker accidentally enters the pipe. Wearing a harness and lifeline eliminates this hazard.
Fall	X	X			Check rungs for weakness (rust, failed concrete). Always maintain 3 points of contact on rungs and use extra caution when wet.

Inspection, non-air contaminating tasks Hazard Assessment Summary

Lockout Required	Atmospheric Hazard	Ventilation Required	Fall Protection or Lifeline Required	Permit Required
Yes	Low	Yes	Yes	Yes

Air Quality Readings

Date	Reading for	Measurement	Gas Detector Serial No.	Reading by
------	-------------	-------------	-------------------------	------------

Comments

For problems or comments on the information, please contact Andrew Ross (CoV OHC) 604-871-6459
--

<https://citywire.city.vancouver.bc.ca/ConfinedSpace%5Fwa/index.cfm?fuseaction=CSR.rep...> 3/7/2008



PIPE ID	JOB #	PLAN #	STREET	FROM	TO	FROM MH	TO MH	LENGTH	DIA	TYPE	MATRL	INSTLD	LAST TV	LAST COND
FJCD5M	1	E10	FANNIN AV	E OF BELMONT	EAST	(MH 74.4)	(MH 75.6)	75.6	200	SAN		1929	2001	P
FJCD5N	2	E10	FANNIN AV	BELMONT	E OF BELMONT	(MH 35.5)	(MH 74.4)	74.4	200	SAN		1929	2001	P
FJCD7M	4	F10	BELMONT AV	E OF TOLMIE	SOUTH	(MH 34.1)	(MH 8.0)	8	150	SAN	VC	1930		
FJCD67	5	F10	BELMONT AV	147m W OF BLANCA	SE	(MH 92.4)	(MH 15.8)	15.8	300	SAN		1930		
FJCDLU	6	F10	BELMONT AV	MH W OF TOLMIE	W OF SASAMAT	(MH 34.1)	(MH 42.1)	34.1	200	SAN	VC	1930	1986	G
FJCDMC	7	F10	DRUMMOND DRIVE	BLANCA	E OF BLANCA	(MH 131.1)	(MH 29.0)	131.1	575	COMB	CONC	1955	1988	G
FJCDT2	8	F10	NW MARINE DRIVE	BLANCA	E OF BLANCA	(MH 106.4)	(MH 121.9)	106.4	200	SAN	VC	1930	1988	G
FJCD5D	9	F10	NW MARINE DRIVE	TOLMIE	E OF TOLMIE	(MH 122.8)	(MH 108.8)	122.8	200	SAN	VC	1930	1988	G
FJCD7R	10	F10	NW MARINE DRIVE	W OF TOLMIE	TOLMIE	(MH 121.9)	(MH 122.8)	121.9	200	SAN	VC	1930	1988	G
FJCD9D	11	G10	R.O.W. N OF 1ST	W OF TRIMBLE ST	TRIMBLE ST	(MH 117.3)	(MH 39.3)	117.3	300	STM	VC	1976	2002	P
FJCD8Y	12	J21	SW MARINE DRIVE	MH W OF MACDONALD	MACDONALD	(MH 78.0)	(MH 5.5)	78	250	COMB		1928		
FJBWV3	13	J21	SW MARINE DRIVE	MAGDONALD	E OF MACDONALD	(MH 57.6)	(MH 103.6)	57.6	550	COMB	VC	1932	1990	G
FJBWV2	14	J21	SW MARINE DRIVE	E OF MACDONALD	E	(MH 103.6)	(MH 79.9)	103.6	375	COMB	VC	1932	1990	G
FJBWVP	15	J21	50TH AVE	MAGDONALD	E OF MACDONALD	TIE-IN	(MH 115.2)	115.6	200	COMB	VC	1931	1990	G
FJBWVM	16	J21	W 50TH AV	E OF MACDONALD	E	(MH 115.6)	(MH 45.1)	45.1	200	COMB	VC	1931	1990	G
FJBWV5	17	J21	W 50TH AV	MAGDONALD	E OF MACDONALD	(MH 55.5)	(MH 94.4)	94.4	200	COMB	VC	1941	1990	G
FJCD2H	19	K15	LANE E OF VALLEY DRIVE	23rd AVE	OLIVER CRES.	(MH 44.2)	(MH 108.8)	108.8	250	COMB	VC	1950	1988	G
FJCD2J	20	K15	LANE S OF OLIVER CRES	W OF VALLEY DRIVE	VALLEY DRIVE	(MH 23.7)	(MH 96.3)	96.3	450	COMB	CONC	1950	1988	G
FJCD2N	21	K15	W 23RD AV	E OF VALLEY DRIVE	W OF VINE	(MH 44.2)	(MH 58.4)	58.4	375	COMB		1950	1988	G
FJCD2Z	22	K15	W 22ND AV	W OF VALLEY DRIVE	VALLEY DRIVE	(MH 49.5)	(MH 68.0)	68	200	COMB		1945	1988	G
FJCD24	23	K15	W 22ND AV	BALSAM	E OF BALSAM	(MH 58.2)	(MH 88.7)	88.7	300	COMB		1945	1988	G
FJCD2L	24	K15	LANE S OF OLIVER CRES	E OF VALLEY DRIVE	S OF 23rd AVE	(MH 84.1)	(MH 83.8)	83.8	250	COMB	VC	1950	1988	G
FJCD2ES	25	K15	W 23RD AV	W OF YEW	YEW	(MH 86.0)	(MH 85.0)	85	200	COMB	VC	1950	1988	G
FJCD2EO	26	K15	LANE S OLIVER CRES	W OF YEW ST IN LANE S OF 23rd	SW	(MH 83.8)	(MH 84.1)	84.1	200	COMB	VC	1950	1988	G
FJCD2F6	27	K15	W 21ST AV	VINE ST	EAST OF VINE	(MH 49.7)	(MH 95.7)	95.7	250	COMB	VC	1944	1988	G
FJCD2F1	28	K15	W 22ND AV	W OF YEW ST	YEW ST	(MH 87.5)	(MH 85.0)	85	200	COMB		1946	1988	G
FJCD2E2	29	K15	W 22ND AV	W OF VINE ST	VINE ST	(MH 88.7)	(MH 83.8)	83.8	375	COMB		1945	1988	G
FJCD2E1	30	K15	W 23RD AV	VINE ST	E OF VINE ST	(MH 79.6)	(MH 86.0)	86	300	COMB		1950	1988	G
FJCD2DG	31	K15	OLIVER CRESCENT	E OF VALLEY DRIVE	W OF VINE ST	(MH 108.8)	(MH 46.3)	46.3	200	COMB	VC	1950	1988	G
FJCD2F7	32	K15	W 21ST AV	W OF VINE ST	VINE ST	(MH 122.8)	(MH 49.7)	49.7	250	COMB	VC	1944	1988	G
FJCD2F3	33	K15	W 21ST AV	W OF YEW ST	YEW ST	(MH 95.7)	(MH 77.4)	77.4	250	COMB	VC	1944	1988	G
FJCD2F0	34	K15	W 22ND AV	VINE ST	E OF VINE ST	(MH 83.8)	(MH 87.5)	87.5	250	COMB		1946	1988	G
FJCD2EW	35	K15	W 23RD AV	W OF VINE ST	VINE ST	(MH 58.4)	(MH 79.6)	79.6	300	COMB		1950	1988	G
FJCD2E8	36	K15	W 21ST AV	VALLEY DRIVE	BALSAM	(MH 12.2)	(MH 108.7)	108.7	375	COMB		1944	1988	G
FJCD2E3	37	K15	W 22ND AV	VALLEY DRIVE	BALSAM	(MH 22.0)	(MH 58.2)	58.2	300	COMB		1945	1988	G
FJCD2DY	38	K15	W 22ND AV	E OF TRAFALGAR ST	W OF VALLEY DRIVE	(MH 62.5)	(MH 49.5)	62.5	200	COMB		1945	1988	G
FJCD2DM	39	K15	LANE S OF OLIVER CRES	VALLEY DRIVE	E OF VALLEY DRIVE	(MH 14.6)	(MH 84.1)	84.1	300	COMB	CONC	1950	1988	G
FJCD16H	40	K16	PUGET DRIVE	E OF PUGET DRIVE	W OF PATTON ST	(MH 51.2)	(MH 56.1)	51.2	375	COMB		1930	1988	G
FJCD17R	41	K16	MCBAIN AVE	W OF VALLEY DRIVE	VALLEY DRIVE	(MH 91.1)	(MH 14.3)	91.1	375	COMB	CONC	1952	1988	G
FJCD18U	42	K16	HAGGART ST	NW OF MCMULLEN AVE	MCMULLEN AVE	(MH 42.7)	(MH 107.3)	42.7	200	COMB		1953	1980	G
FJCD16I	43	K16	EDDINGTON DRIVE	PUGET DRIVE	E OF PUGET DRIVE	(MH 43.3)	(MH 51.2)	43.3	375	COMB		1930	1988	G
FJCD16F	44	K16	EDDINGTON DRIVE	PATON ST	E OF PATON ST	(MH 41.1)	(MH 95.4)	41.1	375	COMB		1930	1988	G
FJCD16V	45	K16	HAGGART ST	LANE S OF MCBAIN	S OF LANE S OF MCBAIN	(MH 32.3)	(MH 42.7)	32.3	200	COMB		1953	1980	G
FJCD16G	46	K16	EDDINGTON DRIVE	W OF PATON ST	PATON ST	(MH 56.1)	(MH 41.1)	56.1	375	COMB		1930	1988	G
FJCD19E	47	K16	VALLEY DRIVE	MCMULLEN AVE	S OF MCMULLEN AVE	(MH 12.2)	(MH 76.2)	76.2	200	COMB		1953	1988	G
FJCD180	48	K16	KING EDWARD AVE.	W OF VALLEY DRIVE	VALLEY DRIVE	(MH 98.0)	(MH 6.1)	98	1025	COMB	CONC	1947	1988	G
FJCD180	49	K22	BEECHWOOD ST	N OF 54TH AVE	54TH AVE	END	(MH 101.5)	13.1		COMB				
FJCEGU	50	L15	W 23RD AV	YEW ST	E OF YEW ST.	(MH 85.0)	(MH 121.9)	121.9	200	COMB	VC	1950	1988	G
FJCEGM	51	L15	W 21ST AV	YEW ST	E OF YEW ST.	(MH 77.4)	(MH 106.7)	106.7	250	COMB	VC	1944	1988	G
FJCEGL	52	L15	W 22ND AV	YEW ST	E OF YEW ST.	(MH 85.0)	(MH 121.9)	121.9	200	COMB		1946	1988	G
FJBV6Y	53	L22	W 57TH AV	MARGUERITE ST	E OF ADERA ST	(MH 21.3)	(MH 113.1)	113.1		COMB				
FJBV3N	54	L22	W 57TH AV	W OF ARBUTUS ST	ARBUTUS ST	(MH 67.2)	(MH 72.5)	72.5	450	COMB	CONC	1930	1990	G
FJBV3Q	55	L22	W 59TH AV	W OF ARBUTUS ST	ARBUTUS ST	(MH 37.2)	(MH 65.8)	65.8	375	COMB	CONC	1941	1990	G

FJBV5Q	56	L22	W 54TH AV	WILTSHIRE ST	MARGUERITE ST	(MH 130.0)	(MH 119.5)	119.5	900	COMB	CONC	1929	1980	G
FJBV4H	57	L22	MAPLE ST	LAINE S OF 54th AVE	LAINE N OF 57th AVE	(MH 124.7)	(MH 53.3)	124.7	250	COMB	VC	1932	1977	F
FJBV4U	58	L22	W 57TH AV	W OF WEST BOULEVARD	WEST BOULEVARD	(MH 80.2)	(MH 85.0)	85	200	COMB	VC	1930	1988	G
FJBV6V	59	L22	MARGUERITE ST	N OF 57TH AVE	57TH AVE	(MH 129.6)	(MH 114.0)	129.6	250	COMB		1944	1980	G
FJBV71	60	L22	MARGUERITE ST	S OF 54TH AVE	N OF 57th AVE	(MH 108.2)	(MH 129.6)	90.3	200	COMB		1944	1980	G
FJBV4Y	61	L22	ANGUS DRIVE	S OF 54TH AVE	SOUTH	(MH 118.9)	(MH 90.8)	118.9	375	COMB		1928	1980	G
FJBV45	62	L22	W 57TH AV	MAPLE ST	E OF MAPLE ST	(MH 54.3)	(MH 80.2)	80.2	200	COMB	VC	1930	1988	F
FJBV72	63	L22	W 54TH AV	MARGUERITE ST	ADERA ST	(MH 119.5)	(MH 109.1)	109.1	750	COMB	CONC	1929	1980	G
FJBV4X	64	L22	ANGUS DRIVE	MARGUERITE ST	128m N OF 57th AVE	(MH 97.0)	(MH 115.7)	90.8	375	COMB		1928	1980	G
FJBV4J	65	L22	W 54TH AV	MAPLE ST	WEST BOULEVARD	(MH 52.1)	(MH 72.5)	72.5	200	COMB	VC	1932	1993	F
FJCJQV	66	L22	WILTSHIRE ST	N OF 57TH AVE	57TH AVE	(MH 129.4)	(MH 5.4)	129.4	900	COMB		1926	1980	G
FJBV5R	67	L22	WILTSHIRE ST	54TH AVE	S OF 54TH AVE	(MH 130.0)	(MH 129.4)	130	900	COMB	BR/CON	1926	1980	G
FJBV4L	68	L22	W 54TH AV	ARBUTUS ST	E OF ARBUTUS ST	(MH 115.2)	(MH 35.4)	35.4	200	COMB	VC	1947	1993	F
FJB7CH	69	L23	ANGUS DRIVE	63RD AVE	64TH AVE	(MH 95.8)	(MH 98.8)	95.3	300	COMB		1926	1990	G
FJBUBL	70	L23	W 61ST AV	E OF ARBUTUS ST	W OF LABURNUM ST	(MH 76.5)	(MH 76.2)	76.2	375	COMB	CONC	1947	1990	G
FJBUNW	71	L23	ANGUS DRIVE	N OF 63RD AVE	63RD AVE	(MH 52.9)	(MH 95.3)	52.9	900	COMB		1926	1990	G
FJBUNV	72	L23	ANGUS DRIVE	62ND AVE	S OF 62ND AVE	(MH 50.8)	(MH 52.9)	50.8	900	COMB		1926	1990	G
FJBUNM	73	L23	W 61ST AV	ARBUTUS ST	E OF ARBUTUS ST	(MH 41.5)	(MH 76.5)	76.5	375	COMB	CONC	1947	1990	G
FJBUNU	74	L23	ANGUS DRIVE	WEST BOULEVARD	62ND AVE	(MH 101.9)	(MH 50.8)	101.9	900	COMB		1926	1990	G
FJCEK2	75	M15	LAINE S OF BALFOUR	CATIER ST	HUDSON ST	(MH 162.2)	(MH 10.7)	162.2	600	COMB		1960	1989	G
FJCEGJ	76	M15	HUDSON ST	LAURIER AVE	KING EDWARD AVE	(MH 77.2)	(MH 154.5)	154.5	750	COMB	CONC	1932	1989	G
FJCEKH	77	M15	HUDSON ST	L S OF BALFOUR AVE	LAURIER AVE	(MH 160.9)	(MH 77.2)	74.7	750	COMB	CONC	1932	1989	G
FJC1ON	78	M16	NANTON AV	E OF MARGUERITE ST	W OF ALEXANDRA ST	(MH 100.6)	(MH 88.4)	88.4	250	COMB	VC	1957	1989	G
FJC1OR	79	M16	W KING EDWARD AV	GRANVILLE ST	E OF GRANVILLE ST	(MH 94.8)	(MH 76.2)	94.8	300	COMB	VC	1931	1989	G
FJC1D9	80	M16	HUDSON ST	26TH AVE	LAINE S OF 26TH AVE	(MH 100.6)	(MH 57.0)	57	450	COMB	CONC	1946	1989	G
FJC2JG	81	M16	HUDSON ST	HUDSON ST	27TH AVE	(MH 57.0)	(MH 61.0)	61	375	COMB	CONC	1946	1989	G
FJC1DA	82	M16	HUDSON ST	27TH AVE	LAINE S OF NANTON AVE	(MH 61.0)	(MH 115.2)	115.2	450	COMB	CONC	1946	1968	G
FJC1D7	83	M16	HUDSON ST	N SIDE KING EDWARD AVE	S SIDE KING EDWARD AVE	(MH 154.5)	(MH 19.8)	19.8	600	COMB	CONC	1946	1989	G
FJC1E8	84	M16	W KING EDWARD AV	W OF CARTIER ST	CARTIER ST	(MH 76.2)	(MH 77.1)	76.2	375	COMB	VC	1931	1989	G
FJC1D8	85	M16	HUDSON ST	KING EDWARD AVE	26th AVE	(MH 19.8)	(MH 100.6)	100.6	600	COMB	CONC	1946	1989	G
FJBSIT	86	M25	SELKIRK ST	N OF 73RD AVE	73RD AVE	(MH 68.2)	(MH 78.9)	68.2	500	STM				
FJBLSM	87	M26	W 73RD AV	MONTCALM ST	E OF MONTCALM ST	END (46.6)	(MH 70.7)	46.6	300	COMB		1960	1976	G
FJC3PT	88	N14	W 19TH AV	LAINE E OF OAK ST	W OF LAUREL ST	(MH 68.3)	(MH 101.2)	68.3	375	COMB	CONC	1954	1989	G
FJC3TA	89	N14	W 19TH AV	W OF WILLOW ST	WILLOW ST	(MH 78.3)	(MH 3.0)	78.3	600	COMB	CONC	1954	1989	F
FJC3PN	90	N14	LAINE S OF 15TH AVE	WOLFE AVE	E OF WOLFE AVE	(MH 57.1)	(MH 31.7)	57.1	200	COMB		1963	1966	F
FJC3QS	91	N14	LAINE S OF 16TH AVE	W OF 17TH AVE	17TH AVE	(MH 55.2)	TIE-IN	55.2	200	COMB	VC	1951	1992	G
FJC3PU	92	N14	W 19TH AV	OAK ST	E OF OAK ST	(MH 29.9)	(MH 68.3)	29.9	375	COMB	CONC	1954	1989	G
FJC2FB	93	N15	LAINE S OF BALFOUR AVE	SELKIRK ST	E OF SELKIRK ST	(MH 155.5)	(MH 69.5)	155.5	875	COMB	CONC	1932	1968	G
FJC2FP	94	N15	W 23RD AV	W OF LAUREL ST	LAUREL ST	(MH 74.2)	(MH 2.7)	74.2	250	COMB		1960	1991	G
FJCEK0	95	N15	LAINE S OF BALFOUR	HUDSON ST	SELKIRK ST	(MH 160.9)	(MH 155.5)	160.9	875	COMB	CONC	1932	1968	G
FJC2G4	96	N15	LAINE S OF BALFOUR AVE	OSLER ST	OAK ST	(MH 157.0)	(MH 51.7)	157	875	COMB	CONC	1932	1995	G
FJC2P	97	N15	LAINE S OF 24TH AVE	E OF LAUREL ST	E OF LAUREL ST	(MH 59.1)	(MH 59.2)	59.1	200	COMB	VC	1941	1989	G
FJC2P0	98	N15	LAINE S OF 24TH AVE	E OF LAUREL ST	W OF WILLOW ST	(MH 59.2)	(MH 51.8)	51.8	200	COMB	VC	1941	1989	G
FJC2J6	99	N15	W 22ND AV	LAUREL ST	E OF LAUREL ST	(MH 36.9)	(MH 9.7)	36.9	575	COMB	CONC	1931	1986	G
FJC2FQ	100	N15	W 23RD AV	LAINE E OF OAK ST	W OF LAUREL ST	(MH 80.8)	(MH 74.2)	80.8	200	COMB		1960	1991	G
FJC1EF	101	N16	W 27TH AV	W OF SELKIRK ST	SELKIRK ST	(MH 79.2)	(MH 102.1)	79.2	200	COMB		1966	1975	G
FJC1E	102	N16	W 27TH AV	W OF WILLOW ST	W OF WILLOW ST	(MH 85.6)	(MH 22.3)	22.3	200	COMB	VC	1930	1988	F
FJC1G1	103	N16	KING EDWARD AVE	N SIDE KING EDWARD AVE	S SIDE KING EDWARD AVE	(MH 36.8)	(MH 12.2)	12.2	250	COMB	VC	1927	1989	F
FJC1I9	104	N16	LAINE S OF 27TH AVE	W OF WILLOW ST	WILLOW ST	(MH 46.0)	(MH 56.5)	46	200	COMB	VC	1944	1989	G
FJC1B	105	N16	W 27TH AV	LAUREL ST	E OF LAUREL ST	(MH 112.2)	(MH 85.6)	85.6	200	COMB	VC	1930	1988	F
FJC1B	106	N16	LAINE S OF 27TH AVE	LAINE E OF OAK ST	W OF WILLOW ST	(MH 9.8)	(MH 97.2)	97.2	200	COMB	VC	1944	1989	F
FJC1I7	107	N16	LAINE S OF 27TH AVE	W OF LAINE E OF OAK ST	W OF LAINE E OF OAK ST	TIE-IN	(MH 9.8)	9.8	200	COMB	VC	1944	1989	F
FJC1F9	108	N16	LAINE	LAINE S OF KING EDWARD	26th AVE	END (50.6)	(MH 48.8)	50.6	150	COMB	VC	1966	1974	G
FJC1FW	109	N16	W 26TH AV	W OF LAUREL ST	+/- 20m W OF LAUREL ST CL	(MH 4.1)	(MH 78.6)	78.6	250	COMB		1929	1989	F
FJC1F7	110	N16	W 26TH AV	OSLER ST	E OF OSLER ST	(MH 115.9)	(MH 58.0)	115.9	600	COMB		1966	1991	G
FJC1G5	111	N16	W 27TH AV	OAK ST	E OF OAK ST	(MH 106.7)	(MH 91.4)	91.4	375	COMB	VC	1930	1988	P

FJC0B7	112	N17	W 32ND AV	LAUREL ST	WILLOW ST	(MH 14.9)	85.6	375	COMB	CONC	CONC	1954	1995	G	
FJBZ32	113	N18	W 37TH AV	SELKIRK ST	SELKIRK ST	(MH 3.3)	3.3	250	COMB	CONC	CONC	1928	1995	G	
FJBZ3G	114	N18	W 38TH AV	E OF OSLER ST	LANE E OF OSLER ST	(MH 45.7)	71.6	200	COMB	VC	VC	1965	1999	F	
FJBZ31	115	N18	SELKIRK ST	W 37TH AV	LANE S OF W 37TH AV	(MH 3.3)	42.7	200	COMB	VC	VC	1928			
FJBZ3M	116	N18	OSLER ST	37TH AVE	38TH AVE	(MH 14.7)	89.3	600	COMB	CONC	CONC	1965	1967	G	
FJBZ4Z	117	N18	WILLOW ST	N OF 37TH AVE	37TH AVE	(MH 121.6)	57.6	300	COMB	VC	VC	1942	1993	G	
FJBZ50	118	N18	WILLOW ST	S OF 35TH AVE	N OF 37TH AVE	(MH 92.0)	121.6	300	COMB	VC	VC	1942	1993	G	
FJBZ4Y	119	N18	WILLOW ST	37TH AVE	S OF 37TH AVE	(MH 57.6)	46.6	300	COMB	VC	VC	1942	1986	G	
FJBZ3L	120	N18	W 37TH AV	W OF OSLER ST	OSLER ST	(MH 15.5)	15.5	250	COMB	CONC	CONC	1928	1995	G	
FJC620	121	N18	OSLER ST	38TH AVE	39TH AVE	(MH 89.3)	108.4	600	COMB	CONC	CONC	1965	1967	G	
FJBZ51	122	N18	WILLOW ST	N OF 35TH AVE	S OF 35TH AVE	(MH 91.7)	92	200	COMB	VC	VC	1942	1993	G	
FJCEBE	123	N7	ALBERNI ST	NICOLA ST	W OF NICOLA ST	(MH 59.0)	24.6	150	SAN	VC	VC	1969			
FJCE9E	124	N7	ALBERNI ST	W OF THURLOW	THURLOW	(MH 90.5)	90.5	200	COMB	VC	VC	1911	1973	G	
FJCE9Y	125	N7	US OF HARO ST	NICOLA ST	BROUGHTON ST	(MH 117.7)	121.9	375	SAN	CONC	CONC	1960	1973	G	
FJCEAV	126	N7	ROBSON ST	NICOLA ST	BROUGHTON ST	(MH 47.9)	116.1	250	STM	CONC	CONC	1912	1973	G	
FJCEAW	127	N7	LANE S OF ALBERNI ST	E OF CARDERO	W OF NICOLA ST	(MH 15.7)	65.5	150	COMB	VC	VC	1931	1973	G	
FJCEDK	128	N7	LANE S OF ALBERNI ST	W OF BUTE ST	BUTE ST	(MH 32.5)	32.5	300	STM	VC	VC	1963	1995	G	
FJCEBG	129	N7	ALBERNI ST	E OF NICOLA ST	E OF NICOLA ST	(MH 24.0)	9.8	300	STM	VC	VC	1969	1973	G	
FJCJ88	130	N7	BUTE ST	LANE N OF ROBSON	N OF ROBSON	(MH 100.7)	30.5	375	STM	CONC	CONC	1963	1995	G	
FJCJ87	131	N7	BUTE ST	N OF ROBSON ST	ROBSON ST	(MH 30.5)	15.2	375	STM	CONC	CONC	1963	1995	G	
FJCJ85	132	N7	BUTE ST	N OF ROBSON ST	ROBSON ST	(MH 15.2)	14.1	375	STM	CONC	CONC	1963	1995	G	
FJCEG2	133	N7	LANE S OF HARO ST	CARDERO ST	NICOLA ST	(MH 7.3)	117.7	450	SAN	CONC	CONC	1960	1973	G	
FJCEFZ	134	N7	CARDERO ST	LANE S OF ROBSON ST	LANE S OF HARO ST	(MH 9.1)	100	600	STM	CONC	CONC	1960	1973	G	
FJCEFY	135	N7	LANE S OF ROBSON ST	W OF CARDERO ST	CARDERO ST	(MH 66.6)	76.2	600	STM	CONC	CONC	1959	1986	G	
FJCEDR	136	N7	LANE S OF HARO	BROUGHTON ST	JERVIS ST	(MH 121.9)	141.1	375	SAN	CONC	CONC	1960	1986	G	
FJCEDL	137	N7	LANE SOUTH OF ALBERNI	W SIDE OF BUTE ST	E SIDE OF BUTE ST	(MH 21.2)	21.2	300	STM	VC	VC	1963	1995	G	
FJCE9M	138	N7	CARDERO ST	LANE S OF ROBSON ST	SOUTH	(MH 76.2)	END	9.1	600	STM	CONC	1960	1973	G	
FJCECX	139	N7	LANE S OF ALBERNI ST	LANE E OF JERVIS ST	EAST	(MH 11.4)	11.4	250	STM	VC	VC	1963	1995	G	
FJCEDJ	140	N7	LANE S OF ALBERNI ST	14.3m E OF CL OF JERVIS	EAST	(MH 32.5)	37.5	300	STM	VC	VC		1995	G	
FJCEAZ	141	N7	ALBERNI ST	BUTE ST	E OF BUTE ST	(MH 119.2)	119.2	200	COMB	VC	VC	1911	1979	G	
FJCJAN	142	N8	BURRARD ST	N OF NELSON ST	LANE S OF NELSON ST	(MH 31.4)	90.8	600	COMB	CONC	CONC	1963	1981	G	
FJC9YZ	143	N8	HORNBY ST	SMITHE ST	S OF SMITHE ST	(MH 50.2)	91.4	250	COMB	VC	VC	1957	1973	G	
FJCAZY	144	N8	BURRARD ST	LANE S OF ALBERNI ST	S OF ROBSON ST	(MH 18.9)	96.4	900	STM	CONC	CONC	1963	1988	G	
FJCAZW	145	N8	BURRARD ST	LANE S OF ALBERNI ST	ROBSON ST	(MH 21.9)	60	500	SAN	CONC	CONC	1909	1973	G	
FJCAZY	146	N8	LANE S OF ALBERNI ST	W OF BURRARD ST	BURRARD ST	(MH 27.7)	27.7	900	STM	CONC	CONC	1963	1988	G	
FJC9TU	147	N9	BURRARD ST	LANE S OF PACIFIC	SOUTH	(MH 31.2)	31.2	600	STM	CONC	CONC	1914	1973	G	
FJC9V4	148	N9	HORNBY ST	DAVIE ST	S OF DAVIE ST	TIE-IN	(MH 53.9)	53.9	200	STM	VC	VC	1912	1973	G
FJC9VK	149	N9	S OF COMOX ST	+/- 52m E OF THURLOW ST	EAST	(MH 58.0)	53	300	COMB	VC	VC	1960	1973	G	
FJC9WC	150	N9	LANE E OF HOWE	N OF HELMCKEN ST	HELMCKEN ST	(MH 94.3)	94.3	600	STM	CONC	CONC	1914	1994	G	
FJC9WH	151	N9	BURRARD ST	LANE S OF NELSON ST	COMOX ST	(MH 90.8)	46.6	600	COMB	CONC	CONC	1963	1981	G	
FJC9VI	152	N9	BURRARD ST	S OF HELMCKEN	SOUTH	(MH 7.0)	7	375	COMB	CONC	CONC	1960	1973	G	
FJC9T6	153	N9	PACIFIC ST	BURRARD ST	E OF BURRARD ST	(MH 47.2)	61.3	200	STM	VC	VC	1932	1981	G	
FJC9UD	154	N9	BURRARD ST	S OF HELMCKEN ST	SOUTH	(MH 22.9)	22.9	375	COMB	CONC	CONC	1960	1973	G	
FJCE7N	155	N9	PACIFIC ST	E OF THURLOW ST	W OF BURRARD ST	(MH 97.7)	72.8	200	STM	VC	VC	1927	1973	G	
FJCE7B	156	N9	HARWOOD ST	W SIDE OF THURLOW ST	CENTRE OF THURLOW ST	(MH 9.1)	9.1	250	STM	VC	VC	1957			
FJCE7C	157	N9	HARWOOD ST	THURLOW	E OF THURLOW	(MH 102.4)	102.4	250	STM	VC	VC	1946	1973	G	
FJCA08	158	N9	LANE E OF HOWE	N OF HELMCKEN ST	HELMCKEN ST	(MH 83.5)	83.5	450	STM	CONC	CONC	1914	1985	G	
FJCJ3C	159	N9	LANE E OF HOWE	MH S SMITHE ST	2ND MH S OF SMITHE ST	(MH 22.3)	22.3	450	STM	CONC	CONC	1914			
FJC9ZY	160	N8	LANE E OF HOWE ST	1ST MH S OF NELSON ST	2ND MH S OF NELSON ST	(MH 50.9)	50.9	600	STM	CONC	CONC	1914	1983	G	
FJC9ZM	161	N9	SEYMOUR ST	NELSON ST	HELMCKEN ST	(MH 160.0)	160	900	STM	CONC	CONC	1948	1992	G	
FJC9WI	162	N9	LANE E OF HOWE ST	DAVIE ST	S OF DAVIE ST	(MH 77.9)	77.9	600	STM	CONC	CONC	1913	1989	G	
FJC9SX	163	N9	HARWOOD ST	E OF THURLOW ST	BURRARD ST	(MH 98.3)	98.3	300	STM	VC	VC	1946	1973	G	
FJC9ZJ	164	N9	LANE E OF HOWE ST	N OF DRAKE ST	DRAKE ST	(MH 82.4)	82.4	600	STM	CONC	CONC	1913	1990	G	
FJC9WD	165	N9	LANE E OF HORNBY	DAVIE ST	S OF DAVIE ST	(MH 40.5)	40.5	200	STM	VC	VC	1934	1993	G	
FJC9VR	166	N9	LANE E OF HOWE ST	N OF DAVIE ST	DAVIE ST	(MH 64.2)	64.2	600	STM	CONC	CONC	1913	1995	G	
FJC9VJ	167	N9	S OF COMOX ST	W OF BURRARD ST	BURRARD ST	(MH 79.8)	79.8	375	COMB	CONC	CONC	1960	1973	G	

FJC9UM	168	N9	PACIFIC ST	N SIDE PACIFIC ST	S SIDE PACIFIC ST	(MH 12.5)	(MH 61.3)	12.5	200	STM	VC	1932	1973	G
FJC9TT	169	N9	THURLOW ST	N OF DAVIE ST	DAVIE ST	END (7.9)	(MH 130.1)	7.9	200	COMB	VC	1911	1973	G
FJC9TA	170	N9	BURRARD ST	LANE S OF NELSON ST	COMOX ST.	(MH 69.5)	(MH 53.9)	53.9	350	COMB	VC	1911	1973	G
FJC9SS	171	N9	THURLOW ST	BURNABY ST	LANE S OF BURNABY ST	(MH 57.0)	(MH 105.9)	57	200	STM	VC	1957	1984	G
FJBSV4	172	N25	HEATHER ST	1ST MH N OF SW MARINE DRIVE	SOUTH	(MH 4.0)	TIE-IN	4	300	STM	VC	1969		
FJCS51	173	O13	ROW W OF HEATHER ST	4TH MH S OF W 10TH AVE	5TH MH S OF W 10TH AVE	(MH 32.3)	(MH 3.7)	3.7	250	COMB	CI	1935		
FJCSB	174	O13	CITY HALL ROW S OF 10TH	1ST MH E OF CAMBIE ST	2ND MH EAST OF CAMBIE ST	(MH 1.2)	(MH 39.8)	39.8	300	COMB	VC	1936		
FJCS4M	175	O13	W 13TH AV	WILLOW ST	W OF HEATHER ST	(MH 87.5)	(MH 122.4)	122.4	250	COMB	VC	1912	1988	P
FJCS7V	176	O13	LANE S OF 12TH AVE	CAMBIE ST	E SIDE OF CAMBIE ST	TIE-IN	(MH 14.0)	14	250	COMB	VC	1963	1993	G
FJCS5M	177	O13	WILLOW ST	W 10TH AVE	SE OF W 10TH AVE	(MH 33.7)	(MH 24.7)	24.7	300	COMB	VC	1935	1987	G
FJCS5L	178	O13	ROW W OF HEATHER ST	1ST MH S OF 10TH AVE	2ND MH S OF 10TH AVE	(MH 47.1)	(MH 47.1)	47.1	300	COMB	VC	1935		
FJCS5K	179	O13	ROW W OF HEATHER ST	2ND MH S OF 10TH AVE	3RD MH S OF 10TH AVE	(MH 47.1)	(MH 33.2)	33.2	300	COMB	VC	1935		
FJCS5J	180	O13	ROW W OF HEATHER ST	3RD MH S OF 10TH AVE	4TH MH S OF 10TH AVE	(MH 32.3)	(MH 32.3)	32.3	300	COMB	VC	1935		
FJCS8F	181	O13	YUKON ST	10TH AVE	SIDE 10TH AVE	TIE-IN	(MH 10.1)	10.1	250	COMB	VC	1936	1993	P
FJCS8R	182	O13	LANE S OF BROADWAY	W OF CAMBIE	CAMBIE ST	(MH 17.8)	(MH 150.6)	17.8	300	COMB	VC	1906	1988	G
FJCS8M	183	O13	LANE S OF BROADWAY	YUKON ST	W OF ALBERTA ST	(MH 51.8)	(MH 107.0)	107	250	COMB	VC	1964	1981	G
FJCS83	184	O13	LANE S OF W 12TH AVE	1ST MH E OF CAMBIE ST	W OF YUKON ST	(MH 14.0)	(MH 102.4)	102.4	250	COMB	VC	1963	1993	G
FJCS3V	185	O14	W 16TH AV	AST ST	1ST MH E OF ASH ST	(MH 3.6)	(MH 79.2)	79.2	200	COMB	VC	1907		
FJCS3H	186	O14	W 16TH AV	1ST MH E OF ASH ST	2ND MH E OF ASH ST	(MH 79.2)	(MH 67.4)	67.4	200	COMB	VC	1907		
FJCS3V8	187	O14	W 16TH AVE	YUKON ST	EAST	(MH .9)	(MH 84.4)	84.4	250	COMB	VC		1989	P
FJCS3VC	188	O14	W 16TH AV	LANE E OF CAMBIE ST	YUKON ST	(MH 92.7)	(MH 2.1)	92.7	250	COMB	VC	1932	1990	G
FJCF9	189	O15	YUKON ST	21ST AV	US OF 21ST AVE	(MH 38.4)	TIE-IN	38.4	150	COMB	VC	1961		
FJC04	190	O15	L/S OF 22ND AVE	END	2ND MH E OF YUKON	END (9.4)	(MH 112.8)	9.4	150	COMB	VC	1937		
FJC2JR	191	O15	TUPPER ST	19TH AVE	LANE S OF 19TH AVE	(MH 156.5)	(MH 54.6)	54.6	200	COMB	VC	1931	1988	G
FJC2HN	192	O15	W 23RD AV	ASH ST	LANE W OF TUPPER	(MH 5.2)	(MH 110.0)	110	200	COMB	VC	1928	1991	G
FJC24	193	O15	W 22ND AV	W OF ASH ST	AST ST	(MH 69.8)	(MH 69.8)	69.8	200	COMB	VC	1931	1989	F
FJC2JX	194	O15	W 23RD AV	CAMBIE ST	LANE E OF CAMBIE ST	(MH 117.0)	(MH 39.6)	39.6	300	COMB	VC	1938	1981	G
FJC2KR	195	O15	W 20TH AV	CAMBIE ST	LANE E OF CAMBIE ST	(MH 112.9)	(MH 39.8)	39.8	375	COMB	CONC	1929	1981	G
FJC2KC	196	O15	YUKON ST	LANE S OF 21ST AVE	22ND AVE	(MH 17.3)	(MH 50.6)	50.6	200	COMB	VC	1930	1969	G
FJC2KA	197	O15	TUPPER ST	22ND AVE	N OF 24TH AVE	(MH 46.0)	(MH 145.7)	145.7	250	COMB	VC	1945	1981	G
FJC2K5	198	O15	W 22ND AV	CAMBIE ST	LANE E OF CAMBIE ST	(MH 99.7)	(MH 39.8)	39.8	375	COMB	CONC	1938	1981	G
FJC2K4	199	O15	LANE S OF 22ND AVE	LANE E OF CAMBIE ST	YUKON ST	(MH 85.1)	(MH 136.6)	136.6	250	COMB	VC	1938	1989	G
FJC2W	200	O15	LANE S OF 24TH AVE	1ST MH E OF ASH ST	2ND MH EAST OF ASH ST	(MH 62.9)	(MH 30.8)	30.8	200	COMB	VC	1940	1989	G
FJC2HE	201	O15	LANE S OF 24TH AVE	ASH ST	E OF ASH ST	(MH 74.4)	(MH 62.9)	74.4	200	COMB	VC	1941	1989	G
FJC2K0	202	O15	YUKON ST	23RD AVE	LANE S OF 23RD AVE	(MH 57.9)	(MH 135.9)	57.9	200	COMB	VC	1961	1981	G
FJC1GS	203	O16	W 28TH AV	ASH ST	LANE E OF ASH ST	(MH 140.8)	(MH 102.4)	140.8	200	COMB	VC	1930	1993	F
FJC1HM	204	O16	LANE E OF ASH ST	27TH AVE	28TH AVE	(MH 50.9)	(MH 102.4)	102.4	300	COMB	VC	1930	1989	G
FJC1HH	205	O16	W KING EDWARD AV	W OF ASH ST	ASH ST	(MH 71.3)	(MH 135.6)	71.3	200	COMB	VC	1948	1989	F
FJC1H1	206	O16	W 27TH AV	ASH ST	E OF ASH ST	(MH 79.9)	(MH 61.3)	79.9	200	COMB	VC	1930	1988	F
FJC14	207	O16	LANE E OF ASH ST	26TH AVE	LANE S OF 26TH AVE	(MH 50.9)	(MH 51.5)	51.5	375	COMB	VC	1930	1989	G
FJC1J7	208	O16	W 27TH AV	W OF YUKON ST	YUKON ST	(MH 41.5)	(MH 41.5)	63.1	250	COMB	VC	1930	1993	G
FJC1JW	209	O16	(ALIGN) LANE E OF ASH ST	N SIDE KING EDWARD AVE	S SIDE KING EDWARD AVE	(MH 23.9)	(MH 69.2)	22.9	200	COMB	VC	1945	1974	G
FJC1JP	210	O16	W KING EDWARD AV	LANE E OF CAMBIE ST	YUKON ST	(MH 154.5)	(MH 56.1)	154.5	600	COMB	VC	1930	1989	G
	211													
FJC1JH	212	O16	LANE E OF ASH ST	LANE S OF KING EDWARD	26th AVE	(MH 57.3)	(MH 50.9)	50.9	450	COMB	VC	1930	1974	G
FJC1JF	213	O16	W 26TH AV	LANE E OF CAMBIE ST	YUKON ST	(MH 76.8)	(MH 76.8)	77.1	200	COMB	VC	1931	1989	G
FJC1JE	214	O16	W 26TH AV	W OF YUKON ST	YUKON ST	(MH 76.8)	(MH 74.7)	76.8	250	COMB	VC	1931	1989	G
FJC1JD	215	O16	W 26TH AV	YUKON ST	E OF YUKON ST	(MH 74.7)	(MH 79.2)	74.7	300	COMB	VC	1930	1989	F
FJC1JC	216	O16	W 27TH AV	E OF ASH ST	LANE E OF ASH ST	(MH 61.3)	(MH 50.9)	61.3	250	COMB	VC	1930	1988	F
FJC1J8	217	O16	W 27TH AV	LANE E OF CAMBIE ST	E OF LANE E OF CAMBIE ST	(MH 91.4)	(MH 63.1)	91.4	250	COMB	VC	1930	1993	G
FJC1JM	218	O16	W KING EDWARD AV	YUKON ST	E OF YUKON ST	(MH 56.1)	(MH 89.0)	56.1	600	COMB	VC	1930	1989	F
FJC1H9	219	O16	W 26TH AV	W OF ASH ST	ASH ST	(MH 63.0)	(MH 38.7)	63	200	STM	VC	1941	1985	G
FJC1GR	220	O16	W 29TH AV	E OF ASH ST	LANE E OF ASH ST	(MH 114.0)	(MH 103.2)	114	200	COMB	VC	1930	1993	G
FJC1H1	221	O16	W KING EDWARD AV	HEATHER ST	E OF HEATHER ST	(MH 70.7)	(MH 71.3)	70.7	200	COMB	VC	1948	1989	F
FJC1J6	222	O16	W 27TH AV	YUKON ST	E OF YUKON ST	(MH 41.5)	(MH 76.8)	41.5	250	COMB	VC	1930	1989	G
FJC1J3	223	O16	LANE E OF ASH ST	LANE S OF 26TH AVE	27TH AVE	(MH 51.5)	(MH 50.9)	50.9	375	COMB	VC	1930	1989	G

FJC1J1	224	O16	LANE E OF ASH ST	28TH AVE	29TH AVE	(MH 102.4)	(MH 103.2)	103.2	250	COMB	VC	1930	1974	G
FJC1HE	225	O16	LANE S OF KING EDWARD	WILLOW ST	W OF HEATHER ST	(MH 52.4)	(MH 114.0)	114	200	COMB	VC	1942	1989	G
FJC1LZ	226	O16	LANE E OF ASH ST	KING EDWARD AVE	LANE S OF KING EDWARD	(MH 69.2)	(MH 57.3)	57.3	450	COMB	VC	1930	1974	G
FJC1J5	227	O16	TALISMAN AV	E OF YUKON ST	EAST	(MH 76.8)	(MH 76.81)	76.8	300	COMB	VC	1930	1989	G
FJC0AM	228	O17	HEATHER ST	CENTRE OF 33RD AV	SOUTH	(MH 7.9)	END (12.5)	12.5	200	COMB		1962		
FJC0AI	229	O17	E SIDE CAMBIE ST	N SIDE W 33RD AVE	CENTRE 33RD AV	TE-IN (16.8)	(MH 37.6)	16.8	150	COMB		1968		
FJBJZV	230	O18	ASH ST	N OF 37TH AVE	37TH AVE	(MH 85.6)	(MH 13.7)	85.6	375	COMB	CONC	1958	1990	G
FJBJZT	231	O18	ASH ST	W 37TH AVE	1ST MH S OF W 37TH AVE	(MH 101.5)	(MH 104.6)	101.5	300	COMB	VC	1958	1958	G
FJBJZJ	232	O18	ASH ST	S OF MCGUIGAN	SE TO BEND ON ASH ST	(MH 106.4)	(MH 85.6)	106.4	300	COMB	CONC	1958	1990	G
FJBJZG	233	O18	MANSON ST	37TH AVE	S OF 37TH AVE	(MH 96.0)	(MH 103.6)	96	450	COMB	CONC	1958	1990	G
FJBYOV	234	O19	MANSON ST	1ST MH N OF 39TH AVE	39TH AVE	(MH 103.6)	(MH 122.5)	103.6	450	COMB	CONC	1958	1989	G
FJCBWL	235	O7	THURLOW ST	EVELEIGH ST	SOUTH	(MH 5.5)	(MH 32.6)	32.6	200	COMB	VC	1939	1981	G
FJCBXG	236	O7	W HASTINGS ST	E OF THURLOW ST	W OF BURRARD ST	(MH 111.5)	(MH 49.5)	49.5	875	SAN	CONC	1930	1980	G
FJCFOK	237	O7	LANE S OF PENDER ST	W OF HORNBY ST	HORNBY ST	(MH 71.7)	(MH 47.4)	47.4	900	STM	CONC	1963	1995	G
FJCBY9	238	O7	LANE S OF HASTINGS ST	HORNBY ST	W OF HOWE ST	(MH 21.6)	(MH 76.5)	76.5	450	STM	CONC	1962	1984	G
FJCBXI	239	O7	HASTINGS ST	THURLOW ST	E OF THURLOW	(MH 3.1)	(MH 111.5)	111.5	875	SAN	CONC	1930	1980	G
FJCBXD	240	O7	LANE S OF PENDER ST	BURRARD ST	E OF BURRARD ST	(MH 110.0)	(MH 85.3)	85.3	900	STM	CONC	1963	1995	G
FJCBXO	241	O7	MELVILLE ST	W OF BURRARD ST	BURRARD ST	(MH 96.6)	(MH 11.9)	96.6	450	COMB	CONC	1950	1980	G
FJCB18	242	O8	LANE S OF PENDER ST	HORNBY ST	LANE E OF HORNBY ST	(MH 47.4)	(MH 51.6)	51.6	900	STM	CONC	1963	1986	G
FJCAYP	243	O8	W GEORGIA ST	W OF HORNBY ST	HORNBY ST	(MH 71.2)	(MH 31.5)	30.5	350	COMB		1909	1989	F
FJCAZA	244	O8	BURRARD ST	MELVILLE ST	S OF MELVILLE ST	(MH 56.1)	(MH 54.3)	54.3	750	COMB	CONC	1911	1994	G
FJCB0H	245	O8	BURRARD ST	ALBERNI ST	S OF ALBERNI ST	(MH 75.3)	(MH 32.6)	32.6	900	COMB	CONC	1962	1989	G
FJCAZK	246	O8	BURRARD ST	GEORGIA ST	ALBERNI ST	(MH 15.5)	(MH 64.0)	64	600	COMB	CONC	1909	1973	G
FJCAZG	247	O8	BURRARD ST	ALBERNI ST	LANE S OF GEORGIA ST	(MH 64.0)	(MH 38.7)	38.7	600	SAN	CONC	1909	1973	G
FJCAZE	248	O8	BURRARD ST	N SIDE GEORGIA	SE TO S SIDE GEORGIA ST	(MH 94.5)	END (39)	39	375	COMB	VC	1931	1991	G
FJCAZD	249	O8	BURRARD ST	MELVILLE ST	N SIDE OF GEORGIA ST	(MH 4.0)	(MH 54.3)	94.5	375	COMB	VC	1931	1990	G
FJCAZC	250	O8	BURRARD ST	MELVILLE ST	GEORGIA ST	(MH 54.3)	(MH 52.4)	52.4	600	COMB	CONC	1909	1994	G
FJCAZB	251	O8	BURRARD ST	N OF GEORGIA ST	N SIDE OF GEORGIA ST	(MH 81.9)	(MH 18.9)	18.9	900	COMB	CONC	1962	1994	G
FJCAZ9	252	O8	BURRARD ST	MELVILLE ST	N OF GEORGIA ST	(MH 110.9)	(MH 81.4)	81.4	900	COMB	CON	1962	1994	G
FJCB3G	253	O8	W PENDER ST	W OF SEYMOUR ST	SEYMOUR ST	(MH 58.3)	(MH 19.8)	19.8	250	COMB	CONC	1910	1972	G
	254		OW HAD BEEN SURVEYED IN EARLY 2006 - TOM ANDERSON											
FJCAJK	255	O8	HORNBY ST	S OF GEORGIA ST	ROBSON ST	(MH 31.1)	(MH 138.1)	138.1	400	COMB		1912	1973	G
FJCAVB	256	O8	BURRARD ST	LANE E OF HORNBY ST	W OF HOWE ST	(MH 51.6)	END (33.2)	33.2	350	COMB		1909	1969	P
FJCAJX	257	O8	BURRARD ST	DUNSMUIR ST	MELVILLE ST	(MH 122.2)	(MH 56.1)	56.1	750	COMB		1911	1994	G
FJCAZE	258	O8	LANE E OF HORNBY	DUNSMUIR ST	S OF DUNSMUIR ST	(MH 34.1)	(MH 60.4)	60.4	300	COMB	VC	1929	1987	G
FJCI2D	259	O8	LANE E OF HORNBY	S OF DUNSMUIR	SOUTH	(MH 60.4)	(MH 51.5)	51.5	300	COMB	VC	1929	1987	G
FJCB4K	260	O8	LANE S OF PENDER ST	HOWE ST	LANE E OF HOWE ST	(MH 8.2)	(MH 42.6)	42.6	900	STM	CONC	1963	1988	G
FJCB4H	261	O8	LANE S OF PENDER ST	LANE E OF HORNBY ST	HOWE ST	(MH 51.6)	(MH 49.1)	49.1	900	STM	CONC	1963	1986	G
FJCB3P	262	O8	LANE S OF PENDER ST	LANE E OF HOWE ST	GRANVILLE ST	(MH 42.6)	(MH 58.7)	58.7	750	STM	CONC	1963	1987	G
FJCB2E	263	O8	PENDER ST	HOMER	HAMILTON ST	(MH 102.8)	(MH 84.4)	102.8	550	STM		1947	1979	G
FJCB0J	264	O8	BURRARD ST	LANE S OF GEORGIA	LANE S OF ALBERNI ST	(MH 38.7)	(MH 21.9)	21.9	600	SAN	CONC	1909	1973	G
FJCB0I	265	O8	BURRARD ST	S OF ALBERNI ST	N OF LANE S OF ALBERNI ST	(MH 32.6)	(MH 18.9)	18.9	900	COMB	CONC	1963	1988	G
FJCB3F	266	O8	W PENDER ST	W OF SEYMOUR ST	SEYMOUR ST	(MH 19.8)	(MH 21.0)	21	250	COMB		1907	1972	G
FJCAZE	267	O8	BURRARD ST	NW SIDE GEORGIA ST	SE	(MH 18.9)	(MH 15.5)	15.5	600	COMB	CONC	1962	1973	G
FJCAZ8	268	O8	BURRARD ST	MELVILLE ST	SE	(MH 56.1)	(MH 4.0)	4	375	COMB	VC	1931	1990	G
FJCAXP	269	O8	LANE E OF BURRARD ST	LANE E OF W PENDER ST	N OF DUNSMUIR ST	(MH 47.7)	(MH 29.6)	29.8	375	STM	CONC	1985	2003	P
FJCI32	270	O8	LANE E OF BURRARD ST	L/S OF L/S OF W PENDER ST	N OF DUNSMUIR ST	(MH 47.9)	(MH 31.9)	31.9	200	SAN	VC	1985	2003	P
FJCAZJ	271	O8	BURRARD ST	W GEORGIA ST	14.2m SW	(MH 64.6)	END (14.2)	14.2	250	COMB		2005	2005	P
FJCAJC	272	O8	LANE E OF HORNBY	2ND MH FROM N SIDE GEORGIA	SOUTH	(MH 51.6)	(MH 13.1)	13.1	300	COMB	VC	1929	1999	P
FJCB37	273	O8	ST. REGIS LANE	1ST MH S OF DUNSMUIR ST	2ND MH S OF DUNSMUIR ST	(MH 25.0)	(MH 35.1)	35.1	375			1949		
FJCAJY	274	O8	LANE E OF HOWE ST	1ST MH S OF ROBSON ST	2ND MH S OF ROBSON ST	(MH 61.9)	(MH 1.9)	1.9	200	STM		1914		
FJCAJX	275	O8	W GEORGIA ST	HORNBY ST	LANE E OF HORNBY ST	(MH 30.5)	(MH 51.8)	51.8	350	COMB		1909	1989	F
FJCAZT	276	O9	W GEORGIA ST	NE CORNER GEORGIA&HAMILTON	SOUTHEAST	(MH 10.0)	(MH 16.5)	16.5	300	STM		1933	1973	G
FJCB9X	277	O9	HOMER ST	1ST MH S OF ROBSON ST	SMITHE ST	(MH 137.8)	(MH 21.3)	137.8	250	STM	CONC	1912	1973	G
FJCAZM	278	O9	LANE E OF HOMER ST	1ST MH S OF ROBSON ST	2ND MH S OF ROBSON ST	(MH 23.8)	(MH 126.2)	23.8	200	STM	VC	1933		
FJBTCT	279	O9	ROW E OF HOMER ST	NELSON ST	NORTH	(MH 95.8)	(MH 55.5)	95.8	300	STM	CONC?	1976?	2002	P

FJC9WV	280	O9	ROBSON ST	LANE E OF GRANVILLE ST	SEYMOUR ST	(MH 44.2)	(MH 135.6)	44.2	300	STM	VC	1947	1973	G
FJC9WV	281	O9	LANE E OF HOWE ST	S OF ROBSON ST	N SIDE OF SMITHE ST	(MH 78.0)	(MH 59.9)	78	300	STM	VC	1914	1988	F
FJCJ3G	282	O9	SEYMOUR ST	SMITHE ST	1ST MH S OF SMITHE ST	(MH 41.6)	(MH 85.7)	41.6	250	SAN	VC	1911	1973	G
FJCA2D	283	O9	HAMILTON ST	N OF ROBSON ST	N SIDE OF ROBSON ST	(MH 37.9)	(MH 26.8)	37.9	500	STM	CONC	1948	1973	G
FJCA23	284	O9	MAINLAND ST	SMITHE ST	S OF SMITHE ST	(MH 64.0)	(MH 15.2)	64	375	SAN	CONC	1960	1973	G
FJCA03	285	O9	HOMER ST	N OF GEORGIA ST	N OF GEORGIA ST	(MH 79.9)	(MH 86.0)	79.9	250	STM	CONC	1948	1984	G
FJCA00	286	O9	LANE E OF HOWE ST	N SIDE SMITHE ST	S OF SMITHE ST	(MH 59.9)	(MH 22.3)	59.9	450	STM	CONC	1914	1991	G
FJC9YN	287	O9	SMITHE ST	LANE E OF GRANVILLE ST	SEYMOUR ST	END (42)	(MH 42.7)	42	250	STM		1911	1973	G
FJC9YJ	288	O9	SEYMOUR ST	N OF SMITHE ST	SMITHE ST	(MH 25.3)	(MH 42.7)	25.3	375	STM	CONC	1911	1982	G
FJC9XF	289	O9	MAINLAND ST	S OF SMITHE ST	SOUTH	(MH 15.2)	(MH 84.3)	15.2	450	SAN	CONC	1960	1973	G
FJCA31	290	O9	HOMER ST	N SIDE GEORGIA ST	S OF GEORGIA ST	(MH 86.0)	(MH 94.2)	86	375	STM	CONC	1948	1973	G
FJCA2F	291	O9	HAMILTON ST	N SIDE GEORGIA ST	N OF ROBSON	(MH 115.5)	(MH 16.2)	115.5	500	STM	CONC	1949	1973	G
FJCA3D	292	O9	HAMILTON ST	N OF GEORGIA ST	N SIDE OF GEORGIA ST	(MH 18.6)	(MH 115.5)	18.6	450	STM	CONC	1949	1973	G
FJCA38	293	O9	RICHARDS ST	S OF GEORGIA ST	N SIDE ROBSON ST	(MH 85.3)	(MH 11.8)	85.3	250	STM	VC	1911	1973	G
FJCA2S	294	O9	W GEORGIA ST	HAMILTON ST	E SIDE HAMILTON ST	(MH 115.5)	(MH 10.0)	10	300	STM		1933	1973	G
FJCA2H	295	O9	HAMILTON ST	S OF DUNSMUIR	N OF GEORGIA ST	(MH 64.6)	(MH 18.6)	64.6	450	STM	CONC	1949	1973	G
FJC9X6	296	O9	HOMER ST	NW SMITHE AND HOMER	SE	(MH 8.6)	(MH 21.8)	8.6	200	STM	VC	1925	1973	G
FJC2J5	297	P15	LANE S OF 22ND AVE	E OF YUKON ST	COLUMBIA ST	(MH 112.8)	(MH 10.4)	112.8	200	COMB	VC	1931	1981	G
FJC1JL	298	P16	W KING EDWARD AV	E OF YUKON ST	COLUMBIA ST	(MH 89.0)	(MH 20.7)	89	575	COMB	CONC	1930	1989	F
FJC1X	299	P16	NIGEL AVE	E OF YUKON ST	W OF MANITOBA ST	(MH 61.9)	(MH 61.3)	61.9	375	COMB	VC	1930	1990	G
FJCB6T	300	P8	W CORDOVA ST	W OF CAMBIE ST	CAMBIE ST	(MH 12.8)	(MH 17.9)	12.8	300	STM		1913		
FJCA65	301	P8	COLUMBIA ST	HASTINGS ST	LANE S OF HASTINGS ST	(MH 27.7)	(MH 38.1)	38.1	600	STM		1911	1977	G
FJCB4I	302	P8	COLUMBIA ST	LANE S OF CORDOVA ST	N SIDE HASTINGS	(MH 101.5)	(MH 46.0)	46	600	STM		1911	1977	G
FJCB65	303	P8	W CORDOVA ST	W OF ABBOTT ST	ABBOTT ST	(MH 83.2)	(MH 7.6)	83.2	200	STM		1946	1981	F
FJCBBU	304	P8	LANE S OF ALEXANDER ST	COLUMBIA ST	LANE E OF COLUMBIA ST	(MH 7.3)	(MH 125.6)	125.6	900	STM	CONC	1965	1987	G
FJCBBR	305	P8	LANE E OF COLUMBIA ST	LANE S OF ABBOTT ST	POWELL ST	(MH 125.6)	(MH 35.7)	35.7	750	STM		1965	1987	G
FJCBBS	306	P8	COLUMBIA ST	LANE S OF ALEXANDER ST	POWELL ST	(MH 7.3)	(MH 48.7)	48.7	600	STM	VC	1911	1977	G
FJCB4V	307	P8	COLUMBIA ST	LANE S OF POWELL ST	LANE S OF CORDOVA ST	(MH 42.6)	(MH 100.0)	100	1200	STM	CONC	1948	1977	G
FJCB4J	308	P8	COLUMBIA ST	N SIDE HASTINGS ST	S SIDE HASTINGS ST	(MH 46.0)	(MH 27.7)	27.7	600	STM		1911	1977	G
FJCB4T	309	P8	ABBOTT ST	LANE S OF HASTINGS ST	N SIDE PENDER ST	(MH 107.3)	(MH 39.3)	39.3	500	COMB		1908	1972	G
FJCB68	310	P8	ABBOTT ST	WATER ST	ALLEY S OF WATER ST	(MH 9.1)	(MH 48.8)	48.8	600	STM		1908	1985	G
FJCB6A	311	P8	ABBOTT ST	LANE S OF WATER ST	CORDOVA ST	(MH 48.8)	(MH 53.3)	53.3	600	STM	CONC	1908	1975	G
FJCB6C	312	P8	ABBOTT ST	CORDOVA ST	LANE S OF CORDOVA ST	(MH 53.3)	(MH 53.0)	53	500	STM	CONC	1908	1975	G
FJCB4X	313	P8	W PENDER ST	W SIDE BEATTY ST	W SIDE BEATTY ST	(MH 22.5)	(MH 44.8)	22.5	600	COMB	CONC	1947	1979	G
FJCA6J	314	P9	LANE E OF QUEBEC ST	S OF LANE S OF KEEFER ST	N OF UNION ST	(MH 32.3)	(MH 46.0)	32.3	250	COMB	VC	1925	1988	F
FJCA4D	315	P9	W PENDER ST	W SIDE CARRALL ST	E SIDE CARRALL ST	(MH 16.9)	(MH 130.5)	16.9	1025	STM	CONC	1947	1979	G
FJCA8A	316	P9	W PENDER ST	CARRALL ST	COLUMBIA ST	(MH 315.0)	(MH 16.9)	130.5	1025	STM	CONC	1947	1979	G
FJCA7O	317	P9	E PENDER ST	E OF QUEBEC ST	LANE E OF QUEBEC ST	(MH 64.8)	(MH 29.0)	29	400	SAN		1958	1993	G
FJCA7M	318	P9	COLUMBIA ST	LANE S OF HASTINGS ST	PENDER ST	(MH 38.1)	(MH 53.4)	53.4	600	STM		1911	1977	G
FJCA3T	319	P9	TAYLOR ST	1ST MH S OF EXPO BLVD	2ND MH S OF EXPO BLVD	(MH 64.6)	(MH 7.0)	64.6	500	STM		1954		
FJCB6E	320	Q11	LANE S OF E 1ST AVE	2ND MH E OF MAIN ST	EAST	(MH 31.4)	END (9.1)	9.1	200	COMB		1909		
FJCB00	321	Q11	E 1ST AV	LORNE ST	1ST MH E OF LORNE ST	(MH 79.2)	(MH 44.8)	44.8	200	STM		1961		
FJCB00	322	Q11	E 1ST AV	1ST MH E OF LORNE ST	2ND MH E OF LORNE ST	(MH 48.2)	(MH 43.0)	48.2	200	STM		1961		
FJCB0M	323	Q11	E 1ST AV	2ND MH E OF LORNE ST	SCOTIA ST	(MH 43.0)	(MH 75.0)	43	300	STM		1961		
FJCF0B	324	Q11	E 1ST AV	LORNE ST	1ST MH E OF LORNE ST	(MH 79.2)	(MH 93.0)	93	200	SAN		1961		
FJCB0R	325	Q11	E 1ST AV	1ST MH E OF LORNE ST	SCOTIA ST	(MH 93.0)	(MH 44.5)	44.5	200	SAN		1961		
FJCB0V	326	Q11	E 2ND AV	SCOTIA ST	E OF SCOTIA ST	(MH 94.5)	(MH 132.0)	94.5	200	SAN	VC	1961	1978	G
FJCB0W	327	Q11	E 2ND AV	SCOTIA ST	E OF SCOTIA ST	(MH 42.1)	(MH 94.5)	94.5	375	STM	CONC	1961	1978	G
FJCBFN	328	Q11	E 1ST AV	N SIDE 1ST AVE	SE TO S SIDE 1ST AVE	(MH 19.6)	(MH 17.1)	17.1	200	SAN	VC	1961	1994	G
FJCBG9	329	Q11	E 1ST AV	E OF SCOTIA ST	EAST	(MH 17.1)	(MH 22.9)	22.9	200	SAN	VC	1961	1994	G
FJCB82	330	Q11	E 1ST AV	WESTERN ST	E OF WESTERN ST	(MH 22.1)	(MH 22.3)	22.3	200	SAN		1961	1982	G
FJCB8F	331	Q11	E 1ST AV	N SIDE 1ST AVE (E OF SCOTIA ST)	S SIDE 1ST AVE (E OF SCOTIA ST)	(MH 11.2)	(MH 18.3)	18.3	300	STM	CI	1961	1994	F
FJCB6G	332	Q11	ROW E OD SCOTIA ST	1ST AVE	LANE S OF 1ST AVE	(MH 18.3)	(MH 30.2)	30.2	400	STM	CONC	1963	1994	G
FJCB0H	333	Q11	LANE E OF MAIN ST	LANE S OF 2ND AVE	N OF 4TH AVE	(MH 32.9)	(MH 58.2)	58.2	150	COMB	VC	1965	1994	G
FJCB6X	334	Q12	LANE E OF MAIN ST	5TH AVE	6TH AVE	(MH 87.2)	(MH 105.8)	105.8	200	SAN	VC	1962	1995	G
FJCB6X1	335	Q12	LANE E OF MAIN ST	5TH AVE	6TH AVE	(MH 87.2)	(MH 105.8)	105.8	250	STM	VC	1962	1995	G

FJC6XT	336	Q12	E 6TH AV	SCOTIA ST	E OF SCOTIA ST	(MH 47.5)	(MH 52.7)	200	COMB		1967	1967	F
FJC6YI	337	Q12	E 1ST AV	2ND MH W OF PRINCE EDWARD ST	1ST MH W OF PRINCE EDWARD ST	(MH 18.3)	(MH 40.2)	200	STM	VC	1961	1961	
FJC6YH	338	Q12	E 1ST AV	2ND MH W OF PRINCE EDWARD ST	1ST MH W OF PRINCE EDWARD ST	(MH 22.9)	(MH 40.2)	200	SAN	VC	1961	1961	
FJC7ZF	339	Q12	GREAT NORTHERN WA	1ST MH W OF CAROLINA ST	1ST MH E OF CAROLINA ST	(MH 114.9)	(MH 43.3)	500	STM	CONC	1965	1965	
FJC6XF	340	Q12	LANE S OF 7TH AVE	SCOTIA ST	1ST MH E OF SCOTIA ST	(MH 100.9)	(MH 24.7)	200	SAN		1966	1966	
FJCBDH	341	Q8	DUNLEVY AV	RAILWAY ST	LANE S OF RAILWAY ST	(MH 92.1)	(MH 47.0)	47	200	COMB	VC	1928	
FJCBBJ	342	Q8	GORE AV	LANE S OF POWELL ST	CORDOVA ST	(MH 39.3)	(MH 50.0)	50	400	COMB		1911	1967
FJCBBM	343	Q8	GORE AV	N SIDE POWELL ST	S SIDE POWELL ST	(MH 85.6)	(MH 16.8)	16.8	600	COMB		1948	1967
FJCBBG	344	Q8	LANE S OF CORDOVA ST	LANE E OF MAIN ST	GORE ST	(MH 19.2)	(MH 96.0)	96	600	STM		1967	1978
FJCBBU	345	Q8	POWELL ST	MAIN ST	LANE E OF MAIN ST	(MH 19.9)	(MH 41.5)	41.5	750	COMB		1965	1981
FJCBDT	346	Q8	JACKSON AV	S OF LANE S OF CORDOVA ST	S SIDE HASTINGS ST	(MH 18.3)	(MH 51.8)	51.8	300	COMB	VC	1912	1967
FJCBDJ	347	Q8	JACKSON AV	POWELL ST	CORDOVA ST	(MH 9.2)	(MH 93.3)	93.3	250	COMB		1912	1993
FJCBCF	348	Q8	HEATLEY AV	LANE S OF POWELL ST	CORDOVA ST	(MH 46.6)	(MH 60.4)	60.4	250	COMB	VC	1924	1983
FJCBD8	349	Q8	JACKSON AV	LANE S OF CORDOVA ST	S OF LANE S OF CORDOVA	(MH 45.7)	(MH 18.3)	18.3	300	COMB		1912	1967
FJCBBN	350	Q8	GORE AV	ALEXANDER ST	POWELL ST	(MH 9.3)	(MH 85.6)	85.6	400	COMB		1911	1967
FJCBBK	351	Q8	GORE AV	POWELL ST	LANE S OF POWELL ST	(MH 16.8)	(MH 39.3)	39.3	400	COMB		1911	1967
FJCBBI	352	Q8	GORE AV	CORDOVA ST	LANE S OF CORDOVA ST	(MH 50.0)	END (46.3)	46.3	400	COMB		1911	1967
FJCBDI	353	Q8	GORE AV	POWELL ST	HASTINGS ST	(MH 96.0)	(MH 73.2)	73.2	375	COMB		1911	1967
FJCBDG	354	Q8	DUNLEVY AV	CORDOVA ST	CORDOVA ST	(MH 129.8)	(MH 110.6)	110.6	350	COMB		1911	1967
FJCBD9	355	Q8	JACKSON AV	CORDOVA ST	LANE S OF CORDOVA ST	(MH 93.3)	(MH 45.7)	45.7	250	COMB		1912	1993
FJCA8K	356	Q9	LANE S OF UNION ST	LANE E OF STATION ST	GORE AVE	TIE-IN_103.6	(MH 156.3)	156.3	300	COMB	VC	1923	1967
FJCA95	357	Q9	DUNLEVY AV	LANE S OF UNION ST	PRIOR ST	(MH 55.8)	(MH 10.7)	55.8	500	STM	CONC	1969	1969
FJCA96	358	Q9	DUNLEVY AV	LANE S OF UNION ST	PRIOR ST	(MH 55.4)	(MH 16.2)	55.4	250	SAN	VC	1969	1969
FJCA97	359	Q9	DUNLEVY AV	UNION ST	LANE S OF UNION ST	(MH 43.1)	(MH 55.8)	43.1	500	STM	CONC	1969	1969
FJCA9D	360	Q9	DUNLEVY AV	N OF UNION ST	SOUTH	(MH 49.7)	(MH 36.0)	49.7	400	STM	CONC	1911	1966
FJCA9G	361	Q9	DUNLEVY AV	N SIDE KEEFER ST	KEEFER ST	(MH 8.8)	(MH 79.2)	8.8	350	STM	VC	1910	1966
FJCA9C	362	Q9	KEEFER ST	GORE AVE	W OF DUNLEVY AVE	(MH 95.4)	(MH 104.2)	104.2	250	COMB		1912	1967
FJCA92	363	Q9	KEEFER ST	DUNLEVY AVE	JACKSON AVE	(MH 79.2)	(MH 118.6)	118.6	250	COMB		1912	1967
FJCA91	364	Q9	KEEFER ST	E OF JACKSON AVE	PRINCESS AVE	(MH 122.2)	(MH 51.2)	122.2	250	COMB		1912	1967
FJCA9D	365	Q9	UNION ST	DUNLEVY AVE	E OF DUNLEVY AVE	(MH 108.8)	(MH 71.3)	71.3	250	COMB		1911	1967
FJCA92	366	Q9	GORE AV	LANE S OF HASTINGS ST	PENDER ST	(MH 39.6)	(MH 40.2)	40.2	375	COMB		1911	1967
FJCA91	367	Q9	GORE AV	LANE S OF PENDER ST	KEEFER ST	(MH 46.9)	(MH 95.4)	46.9	300	COMB	VC	1912	1967
FJCA9D	368	Q9	GORE AV	KEEFER ST	GEORGIA ST	(MH 95.4)	(MH 18.3)	95.4	250	COMB	VC	1912	1967
FJCA9Y	369	Q9	GORE AV	GEORGIA ST	LANE S OF GEORGIA ST	(MH 41.1)	(MH 50.0)	41.1	300	COMB	VC	1911	1967
FJCA9X	370	Q9	GORE AV	LANE S OF GEORGIA ST	UNION ST	(MH 50.0)	(MH 141.1)	50	400	COMB		1911	1967
FJCA9V	371	Q9	GORE AV	LANE S OF PENDER ST	KEEFER ST	(MH 38.7)	(MH 8.8)	38.7	200	STM	VC	1969	1969
FJCA9R	372	Q9	GORE AV	KEEFER ST	LANE S OF KEEFER ST	(MH 51.5)	(MH 52.1)	51.5	250	STM	VC	1969	1969
FJCA9P	373	Q9	GORE AV	LANE S OF KEEFER ST	GEORGIA ST	(MH 52.1)	(MH 67.7)	52.1	300	STM	VC	1969	1969
FJCA9N	374	Q9	GORE AV	GEORGIA ST	LANE S OF GEORGIA ST	(MH 69.5)	(MH 78.0)	69.5	250	SAN	VC	1969	1969
FJCA93	375	Q9	JACKSON AV	PENDER ST	KEEFER ST	(MH 73.2)	(MH 5.5)	73.2	250	SAN	VC	1911	1967
FJCA5L	376	Q9	UNION ST	LANE E OF STATION ST	GORE AVE	(MH 103.6)	(MH 141.1)	141.1	450	COMB		1911	1967
FJCA9M	377	Q9	LANE	LANE S OF GEORGIA ST	UNION ST	(MH 59.7)	(MH 18.3)	59.7	500	STM	CONC	1969	1969
FJCA90	378	Q9	LANE S OF UNION ST	GORE AVE	DUNLEVY AVE	(MH 156.3)	(MH 80.8)	80.8	150	COMB	VC	1933	1972
FJCA9W	379	Q9	GORE AV	LANE S OF PENDER ST	KEEFER ST	(MH 38.4)	(MH 8.8)	38.4	200	SAN	VC	1969	1969
FJCA9S	380	Q9	GORE AV	KEEFER ST	LANE S OF KEEFER ST	(MH 53.6)	(MH 50.3)	53.6	200	SAN	VC	1969	1969
FJCA9Q	381	Q9	GORE AV	LANE S OF KEEFER ST	GEORGIA ST	(MH 50.3)	(MH 69.5)	50.3	200	SAN	VC	1969	1969
FJCA90	382	Q9	GORE AV	GEORGIA ST	LANE S OF GEORGIA ST	(MH 67.7)	(MH 59.7)	67.7	500	STM	CONC	1969	1969
FJCA9F	383	Q9	DUNLEVY AV	KEEFER ST	SOUTH	(MH 79.2)	(MH 17.7)	79.2	350	STM	VC	1910	1966
FJCA98	384	Q9	DUNLEVY AV	UNION ST	LANE S OF UNION ST	(MH 42.4)	(MH 55.4)	42.4	250	SAN	VC	1969	1969
FJBW9K	385	R21	E 51ST AV	W OF WINDSOR ST	WINDSOR ST	(MH 58.5)	(MH 93.6)	93.6	300	COMB		1953	1991
FJBW9M	386	R21	E 51ST AV	PRINCE ALBERT ST	E OF PRINCE ALBERT ST.	(MH 88.1)	(MH 58.8)	88.1	250	COMB		1963	1991
FJBW9B	387	R21	LANE S OF 48TH AVE	APPARENT INT OF SHERBROOKE	EAST	(MH 43.3)	(MH 71.3)	71.3	200	COMB	VC	1968	1989
FJBW9J	388	R21	E 51ST AV	WINDSOR ST	E OF WINDSOR ST	(MH 93.6)	(MH 88.1)	88.1	200	COMB		1953	1991
FJBW9I	389	R21	SHERBROOKE ST	N SIDE 49TH AVE	49TH AVE	(MH 11.0)	(MH 101.2)	11	250	COMB		1968	1989
FJBW9L	390	R21	E 51ST AV	E OF PRINCE ALBERT ST	W OF WINDSOR ST	(MH 58.8)	(MH 58.5)	58.8	250	COMB		1953	1991
FJBW9D	391	R21	LANE S OF WAVERLEY ST	ROSS ST	E OF ROSS ST	(MH 47.5)	(MH 106.7)	106.7	200	COMB	VC	1968	1989

FJBWAW	392	R21	CULLODEN ST	N OF 51ST AVE	51ST AVE	(MH 70.7)	(MH 16.8)	70.7	200	COMB	1954	1995	G
FJBW91	393	R21	E 51ST AV	W OF ROSS ST	ROSS ST	(MH 66.8)	(MH 95.1)	66.8	200	COMB	1953	1991	G
FJBWAV	394	R21	CULLODEN ST	S OF LANE S OF 49TH AVE	N OF 51ST AVE	(MH 66.5)	(MH 70.7)	66.45	200	COMB	1954	1995	G
FJBWBC	395	R21	LANE S OF WAVERLEY ST	W OF INVERNESS	EAST	(MH 106.7)	(MH 43.0)	43	200	COMB	1968	1989	G
FJBWBF	396	R21	LANE S OF 48TH AVE	E OF LANE E OF ELGIN(?) ST	EAST	(MH 79.6)	(MH 43.3)	79.6	200	COMB	1968	1989	G

Appendix 4 is supplied on a separate DVD-ROM to be picked up by the Proponent from the Purchasing Office located at:

Suite 320, 555 West 12th Ave, Vancouver, BC, V5Z 3X7

Please visit http://vancouver.ca/bid/bidopp/ITT/ITT_PS08014.htm for more details.



CORPORATE SERVICES GROUP
Materials Management
Purchasing Services

Invitation to Tender
No. PS08014
Sewers CCTV Inspection

To acknowledge your intent to submit a Tender, and to ensure that you receive the required information, please submit this form to the person identified below before 5:00 P.M., Friday May 2, 2008.

Philip Lo
Administrative Assistant
City of Vancouver
Fax: (604) 873-7057
Email: purchasing@vancouver.ca

Your details:

Proponent's Name: _____
"Proponent"

Address: _____

Telephone: _____ Fax: _____

Key Contact Person: _____

E-mail: _____ Incorporation Date: _____

Our company WILL / WILL NOT submit a Tender for
"ITT PS08014 - Sewers CCTV Inspection"
By the closing date (Tuesday May 6, 2008, at 3:00:00 P.M.)

Authorized Signatory and Name of Company (Please print)

E-mail Address (Please print)

Date