



INVITATION TO TENDER 18-25
SEWERMAIN REHABILITATION 2018

MASTER MUNICIPAL CONSTRUCTION DOCUMENTS - 2009
Platinum Edition

UNIT PRICE CONTRACT

June 1st, 2018



INVITATION TO TENDER 18-25

SEWERMAIN REHABILITATION 2018

TABLE OF CONTENTS

The complete Contract Documents consist of the following parts:

1. The Master Municipal Construction Documents (Tender Package) consisting of the following parts (**included in this tender package**):
 - Invitation to Tender
 - Instructions to Tenderers, Part I
 - Form of Tender
 - Appendix 1 -- Schedule of Quantities and Prices
 - Appendix 2 -- Preliminary Construction Schedule
 - Appendix 3 -- Experience of Superintendent
 - Appendix 4 -- Comparable Work Experience
 - Appendix 5 – Subcontractors
 - Appendix 6 – Tenderer's Current Projects Underway
 - Agreement - Draft
 - Schedule 1 – Schedule of Contract Documents
 - Schedule 2 – List of Contract Drawings
 - Appendix 7 – Safety Covenant
 - Appendix 8 – Prime Contractor Agreement
 - Supplementary General Conditions
 - Supplementary Specifications
2. Additional reference documentation consisting of the following parts (**not distributed in this tender package**) available at www.campbellriver.ca:
 - Supplementary Specifications, City of Campbell River, Design Standards 2010, Appendix A to Subdivision and Development Servicing Bylaw 3419
 - City of Campbell River, Approved Utility Product List April 2011
3. The balance of the Master Municipal Construction Documents, Platinum, 2009 edition. These documents are available in the "MMCD - General Conditions, Specifications and Standard Detail Drawings" (**not distributed in this tender package**).



INVITATION TO TENDER 18-25

SEWERMAIN REHABILITATION 2018

The City of Campbell River invites tenders for the Sewermain Rehabilitation 2018 project which includes the following generalized scope of work:

Work under this contract consists of the investigation and rehabilitation of approximately 1315.2 lineal meters of existing 200mm-250mm diameter sanitary sewer mains through the use of Cured-In-Place Pipe (CIPP) lining method. Work will also include investigation of approximately 100 service laterals and rehabilitation of approximately 130 lineal meters of service laterals through the use of Cured-In-Place Pipe (MLCIPL) lining method.

This work will include provision and execution of an approved traffic management plan and all necessary restorations.

This Tender is available electronically by downloading it from BC Bid or the City's website at:
<http://www.campbellriver.ca/business-economy/do-business-with-the-city/bidopportunities>

A mandatory site meeting will **NOT** be held.

This Tender is scheduled to close at:

Tender Closing Time:	3:00 p.m. local time
Tender Closing Date:	Thursday June 21st, 2018 <i>There will NOT be a Public Opening for this Tender</i>
Delivered to:	City of Campbell River City Hall 301 St. Ann's Road 1 st Floor Reception Desk Campbell River, BC V9W 4C7 ATTN: Clinton Crook Purchasing & Risk Management Officer
Tender Enquiries:	Clinton J. Crook, SCMP, CPSM Purchasing & Risk Management Officer Email: purchasing@campbellriver.ca Telephone: 250.286.5766



INVITATION TO TENDER 18-25

SEWERMAIN REHABILITATION 2018

RECEIPT CONFIRMATION FORM

As receipt of this document, and to directly receive any further information, addendums, etc. regarding this competition, please return this form to:

ATTN: Clinton J. Crook, SCMP, CPSM
Purchasing & Risk Management Officer
Email: purchasing@campbellriver.ca
Fax: 250.286.5763

Company Name: _____

Address: _____

City: _____

Province/State: _____ Postal/Zip Code: _____

Telephone No: _____ Fax No: _____

Contact Person: _____

Title: _____

Email: _____

**CITY OF CAMPBELL RIVER
INVITATION TO TENDER 18-25
SEWERMAIN REAHBILIATION 2018
INSTRUCTIONS TO TENDERERS PART I**

TABLE OF CONTENTS		Page
1	Introduction	IT 2
2	Tender Documents.....	IT 2
3	Submission of Tenders	IT 3
4	Additional Instructions to Tenderers	IT 4

INSTRUCTIONS TO TENDERERS - PART I

(TO BE READ WITH "INSTRUCTIONS TO TENDERERS - PART II"
CONTAINED IN THE EDITION OF THE PUBLICATION
"MASTER MUNICIPAL CONSTRUCTION DOCUMENTS" AND APPLICABLE CITY OF CAMPBELL
RIVER BYLAWS SPECIFIED IN ARTICLE 2.2 BELOW)

Reference No.: TENDER 18-25

Contract: SEWERMAIN REHABILITATION 2018

Introduction

1

1.1 These Instructions apply to and govern the preparation of tenders for this *Contract*. The *Contract* is generally for the following work:

The City of Campbell River invites tenders for the Sewermain Rehabilitation 2018 project which includes the following generalized scope of work:

Work under this contract consists of the investigation and rehabilitation of approximately 1315.2 lineal meters of existing 200mm-250mm diameter sanitary sewer mains through the use of Cured-In-Place Pipe (CIPP) lining method. Work will also include investigation of approximately 100 service laterals and rehabilitation of approximately 130 lineal meters of service laterals through the use of Cured-In-Place Pipe (MLCIPL) lining method.

This work will include provision and execution of an approved traffic management plan and all necessary restorations.

1.2 Direct all tender inquiries regarding the *Contract*, to:

Clinton J. Crook, SCMP, CPSM
Purchasing & Risk Management Officer
Email: purchasing@campbellriver.ca
Telephone: 250.286.5766

Tender Documents

2

2.1 The tender documents which a tenderer should review to prepare a tender consist of all of the *Contract Documents* listed in Schedule 1 entitled "Schedule of Contract Documents". Schedule 1 is attached to the Agreement which is included as part of the tender package. The *Contract Documents* include the Drawings listed in Schedule 2 to the Agreement, entitled "List of Drawings".

- 2.2 A portion of the Contract Documents is included by reference. Copies of these documents have not been included with the tender package. These documents are the Instructions to Tenderers - Part II, General Conditions, Specifications and Standard Detail Drawings contained in the publication entitled "Master Municipal Construction Documents - General Conditions, "Specifications and Standard Detail Drawings" and relevant sections of Supplementary Specifications, City of Campbell River, Design Standards 2010, Appendix A to Subdivision and Development Servicing Bylaw 3419. Refer to Schedule 1 attached to the Agreement or, if no edition has been specified, then the applicable edition shall be the most recent edition as of the date of this *Contract*. All sections of this publication are by reference included in the *Contract Documents*.
- 2.3 Any additional information made available to Tenderers prior to the Tender Closing Time by the *Owner* or representative of the *Owner*, such as geotechnical reports or as-built plans, which is not expressly included in Schedule 1 or Schedule 2 to the Agreement, is not included in the *Contract Documents*. Such additional information is made available only for the assistance of tenderers who must make their own judgement about its reliability, accuracy or completeness and neither the *Owner* nor any representative of the *Owner* gives any guarantee or representation that the additional information is reliable, accurate or complete.

**Submission of
Tenders**

- 3**
- 3.1 Tenders must be submitted in a sealed opaque package, clearly marked on the outside with the above *Contract* Title and Reference No., and must be received on or before:

***Tender Closing Time:* 3:00 p.m. local time**

***Tender Closing Date:* Thursday June 21st, 2018**
There will NOT be a Public Opening for this Tender

Delivered to: City of Campbell River City Hall
301 St. Ann's Road
1st Floor Reception Desk
Campbell River, BC V9W 4C7
ATTN: Clinton Crook
Purchasing & Risk Management Officer

3.2 Late tenders will not be accepted or considered, and will be returned unopened.

3.3 Tender Submission

.1 Tenders **must** be submitted on the Tender Forms included in these tender documents. The addition to or changing of any words in these Tender Forms by the tenderer or the failure to comply with and complete all items may be cause for rejection without consideration of the tender.

.2 The Tender Submission **must** include acknowledgement of receipt of all issued addenda.

.3 The Tender submission **must** include:

- Appendix 1 – Schedule of Quantities and Prices – GST Excluded;
- Appendix 2 – Preliminary Construction Schedule;
- Appendix 3 – Experience of Superintendent;
- Appendix 4 – Comparable Work Experience;
- Appendix 5 – Subcontractors;
- Appendix 6 – Tenderers Current Projects Underway.

.4 The Tender Submission **must** include the specified financial security, in the form of the “Bid Security” as required in Section 5.2 of the Instructions to Tenderers Part II.

.4 The Form of Tender **must** bear the signature of a legal signing authority of the tenderer.

.5 Other than acknowledgement of receipt of addenda, or request for withdrawal or revision, documents submitted as part of a tender will **not** be considered if received by any of the Owner's facsimile machines.

.6 Except as expressly and specifically permitted in these Instructions to Tenderers, no Tenderers shall have any claim for any compensation of any kind whatsoever, as a result of participating in the tender, and by submitting a bid, each Tenderer shall be deemed to have agreed that it has no claim.

**Additional
Instructions to
Tenderers**

4

**Freedom of
Information**

4.1

The *Owner* is subject to the provisions of the Freedom of Information and Protection of Privacy Act. As a result, while Section 21 of the Act does offer some protection for third party business interests, the *Owner* cannot guarantee that any information provided to the *Owner* can be held in confidence. All tenders, after closing

		time and date become the property of the <i>Owner</i> .
Cost of Tender Submission	4.2	The <i>Owner</i> shall not be liable for a Tenderer's cost of submitting a tender.
Evaluation Criteria	4.3	(a) The <i>Owner</i> reserves the right to waive informalities in or reject any or all tenders or accept the tender deemed most favourable in the interests of the <i>Owner</i> . Tenders will be evaluated on the combination of information provided in the Form of Tender and Appendices, which may offer the best value and not necessarily the lowest price. The <i>Owner</i> reserves the right to conduct pre-selection meetings with Tenderers. The <i>Owner</i> further reserves the right to conduct post-selection meetings in order to correct, change or adapt the selected Tender to the wishes of the <i>Owner</i> . Acceptance of any tender may be subject to budgetary considerations and/or City of Campbell River Council approval, and/or the approval of other jurisdictions having authority.
Construction Association Policies	4.4 4.4.1	The <i>Owner</i> is not a member of the Public Construction Council of British Columbia, the British Columbia Construction Association or any other construction association.
	4.4.2	The <i>Owner</i> does not adopt or agree to be bound by "The Procedures and Guidelines Recommended For Use on Publicly Funded Construction Projects" produced by the Public Construction Council of British Columbia, September 1989, or any other procedure/guideline recommended, adopted or produced by any construction association in the tendering and award of the <i>Contract</i> of this project.
Good Neighbour Policy	4.5 4.5.1	The <i>Owner's</i> Good Neighbour Policy as adopted by City of Campbell River Council on April 15, 1997 shall apply to this contract.
	4.5.2	The Policy states: "That Contractors working on Municipal rights-of-way or on private land where new rights-of-way are being created, be required to provide written notice to the residents in the immediate area of the works, describing what is being constructed, when the works will occur, who to contact for more information and what precautions should be taken if necessary; and that the work-site be posted for safety reasons."
Mandatory Site Meeting	4.6	A Mandatory Site Meeting will NOT be held. Tenderers should make themselves familiar with the project site.
Addition\Deletion	4.7	Tenderers are advised that the <i>Owner</i> may, at its option, and subject to available funding and budgetary considerations, delete any <i>Work</i> described in the <i>Contract Documents</i> or may require that

optional work be added to the scope of *Work*.

Omissions and Discrepancies

- 4.8 The Tenderer must carefully examine the *Contract Documents* and the site of the proposed works, judging for and satisfying themselves as to the probable conditions to be encountered. Should a Tenderer find omissions from or discrepancies in the *Contract Documents*, or be in doubt as their meaning, the Tenderer should notify the Owner no later than 5 days prior to the tender closing, who may cause to send a written instruction to all Tenderers in the form of an addendum, which shall become part of the contract and shall be covered in the contract price. The Tenderer may not claim, after the submission of a tender, that there was any misunderstanding with respect to the conditions imposed by the documents. No oral interpretations made to a Tenderer as to the meaning of the *Contract Documents* shall be considered binding. Every request for an interpretation shall be made in writing, forwarded to the office referred to in paragraph 3.1 of the Instructions to Tenderers – Part I.

Amendment of Tenders

- 4.9
- 4.9.1 Delete Paragraphs 12.1 of the Instructions to Tenderers, Part II and replace with the following paragraphs 4.9.2 and 4.9.3:
- 4.9.2 A Tenderer may, without prejudice to itself, withdraw or revise a tender after it has been deposited with the *Owner*, provided the request for withdrawal or revision is filed with the *Owner* in writing before the time set for the Tender closing. Non-facsimile request(s) should be submitted in a sealed opaque envelope clearly marked with the contract name and reference number to the office referred to in paragraph 3.1 of the Instructions to Tenderers - Part 1. In the case of revision(s), a revised price will not be accepted, only the addition to or deduction from the tender price will be accepted. Written withdrawals or revisions must be signed by the same person or persons who signed the original Form of Tender.
- 4.9.3 In the case of facsimile or e-mail requests for withdrawal or revision, they will only be accepted if they are received by the *Owner's* Supply Management Department facsimile machine at 250.286.5763 or via e-mail at purchasing@campbellriver.ca before the scheduled tender closing time. Tenderers assume the entire risk that the facsimile and computer equipment and staff at the above office will receive the facsimile or e-mail containing the withdrawal or revision. The *Owner* assumes no risk or responsibility whatsoever that any facsimile or e-mail will be received as required and shall not be liable to any *Tenderer* if for any reason a facsimile or e-mail is not received.

For purposes of this paragraph 4.9.3, "received" means the request for withdrawal or revision is visible to the *Owner's* staff in its entirety, and is either in printed form or is capable of immediate reproduction in printed form.

Sub-Surface Conditions	4.10	A geotechnical assessment or a geotechnical exploration has not been completed. Tenderers shall make their own assessment of the soil and groundwater conditions.
Environmental Conditions	4.11	No environmental assessment has been completed on this project.
Working Hours	4.12	Work inside the <i>Owner's</i> Property shall be carried out between the hours of 7:00 a.m. and 10:00 p.m. seven (7) days a week unless other arrangements are made between the <i>Owner</i> and the <i>Contractor</i> .
Commencement And Completion of Work	4.13	The <i>Owner</i> requires that the <i>Work</i> under this Contract be completed as quickly as possible after <i>Contract</i> award, and within the following milestones: Substantial Performance of this <i>Contract</i> to be achieved within 105 days from Notice to Proceed.

Appendix 1 of this Form of Tender. Our *Tender Price* is based on the estimated quantities listed in the *Schedule of Quantities and Prices*, and excludes *GST*.

3 I (WE) CONFIRM:

3.1 that we understand and agree that the quantities as listed in the *Schedule of Quantities and Prices* are estimated, and that the actual quantities will vary.

4 I (WE) CONFIRM:

4.1 that the following Appendices are attached to and form a part of this tender:

4.1.1 the Appendices as required by paragraph 5.3 of the Instructions to Tenderers - Part II; and

4.1.2 the ***Bid Security*** as required by paragraph 5.2 of the Instructions to Tenderers – Part II stated as:

A tender must be accompanied by the *Bid Security* in the form of:

a a Bid Bond issued by a surety licensed to carry on the business of suretyship in British Columbia in a form reasonably satisfactory to the *Owner*; or

b cash, bank draft or letter of credit in a form acceptable to the *Owner*;

in an amount equal to 10% of the *Tender Price*.

5 I (WE) AGREE:

5.1 that this tender will be irrevocable and open for acceptance by the *Owner* for a period of 60 calendar days from the day following the *Tender Closing Date and Time*, even if the tender of another tenderer is accepted by the *Owner*. If within this period the *Owner* delivers a written notice ("*Notice of Award*") by which the *Owner* accepts our tender we will:

5.1.1 within 10 *Days* of receipt of the written *Notice of Award* deliver to the *Owner*.

Tenderer's Initial Owner's Initial

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- a a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the *Contract Price*, issued by a surety licensed to carry on the business of suretyship in the province of British Columbia, and in a form acceptable to the *Owner*; and
- b a *Construction Schedule*, as provided by GC 4.6.1; and as per *Supplementary General Condition 4.6.1*; and
- c a "clearance letter" indicating that the tenderer is in WCB compliance; and
- d a copy of the insurance policies as specified in GC 24 indicating that all such insurance coverage is in place; and
- e a Health and Safety Program Manual pertaining to the Work;
- f a Traffic Management Plan in accordance with Supplementary Specification 01 55 00.

5.1.2 As per General Condition 4.6.6, the Owner shall issue the Notice to Proceed within 14 days of receipt of the documentation required under item 5.1.1 above.

5.1.3 within 2 Days of receipt of written "*Notice to Proceed*", or such longer time as may be otherwise specified in the *Notice to Proceed*, commence the *Work*.

5.1.4 sign the *Contract Documents* as required by GC 2.1.2.

6 I (WE) AGREE:

6.1 that, if we receive written *Notice of Award* of this *Contract* and, contrary to paragraph 5 of this Form of Tender, we:

6.1.1 fail or refuse to deliver the documents as specified by paragraph 5.1.1 of this Form of Tender; or

6.1.2 fail or refuse to commence the *Work* as required by the *Notice to Proceed*,

Tenderer's Initial Owner's Initial

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then such failure or refusal will be deemed to be a refusal by me (us) to enter into the Contract and the *Owner* may, on written notice to me (us), award the *Contract* to another party. I (We) further agree that, as full compensation on account of damages suffered by the *Owner* because of such failure or refusal, the *Bid Security* shall be forfeited to the *Owner*, in an amount equal to the lesser of:

6.1.3 the face value of the *Bid Security*; and

6.1.4 the amount by which my (our) *Tender Price* is less than the amount for which the *Owner* contracts with another party to perform the *Work*.

7 I (WE) DECLARE THAT:

7.1 no person, firm or company other than the undersigned, has any interest in this tender or in the proposed *Contract* for which this tender is made;

7.2 this tender is made without any connection, knowledge, comparison of figures, or agreement with any other company, firm or person making a tender for the same work;

7.3 in tendering for this work, and when called upon to enter into an agreement with the *Owner*, I (we) will be bound to comply with all laws, statutes, and municipal bylaws pertaining to the work. The agreement will be governed by the laws of the province of British Columbia;

7.4 in submitting this tender I (we) did not rely upon any information provided by the *Owner*, or any of the *Owner's* employees or agents, relating to the conditions, contingencies, risks or other circumstances, local or otherwise, which might influence or affect the performance or the cost of the work, including, without limiting the nature of the ground, subsoil, substrata of the work site, the means of access to the work site, the quality, quantity, nature or location of the materials to be furnished or removed in performance of the work, and the conditions under which the labour force will be employed, except the extent that any such information is expressly set forth in the *Contract Documents*. I (we) have relied on our own examination of the work site and have informed ourselves as to all conditions, contingencies, risks, and circumstances, local or otherwise, which might influence or affect the performance or the cost of the work. I

Tenderer's Initial Owner's Initial

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(we) accept the site prior to the signing of the *Contract*.

8 WE AGREE:

8.1 The work shall be completed entirely in 105 *Days* from Notice to Proceed (The Designated Completion Period);

8.2 There shall be no exclusion of time from the Designated Completion Period for any reason OTHER than delays clearly attributable to the OWNER, its agents, employees or any Authorized Representatives.

9 I (WE) DECLARE THAT:

9.1 I (we) recognize that the lowest or any tender will not necessarily be accepted; and

9.2 I (we) recognize that the *Owner* reserves the right to reject all tenders or to accept the tender which best suits its long term objectives; and

I (we) recognize that the *Owner* reserves the right to accept or reject all or part of this Tender at any time during the period specified by paragraph 5.1 of this Form of Tender.

10 I (WE) DECLARE THAT:

10.1 I (we) do not (or any related company) have any family, ownership, and operating relationships with the City of Campbell River, or any elected official, staff or other officials holding public office in the City of Campbell River and agree that the *Owner* reserves the right to reject any tender that may be perceived to be in a conflict of interest.

11 I (WE) DECLARE THAT:

11.1 In this tender:

- (a) "Related Party of the Tenderer" means:
 - an officer or director of the Tenderer;
 - a shareholder of the Tenderer;
 - a corporation with a shareholder or director who is also a shareholder or director of Tenderer;
- (b) "Public Authority" has the same meaning as under the Community Charter.

Tenderer's Initial Owner's Initial

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11.2 I (we) hereby declare that neither the Tenderer nor a Related Party of the Tenderer:

- (a) has had a bid bond or performance bond retained or claimed against;
- (b) has breached a contract for works or services with the *Owner* or other Public Authority in British Columbia;
- (c) has been engaged in a legal action against the *Owner* or another Public Authority in British Columbia, or the elected or appointed officers and employees of the *Owner* or that other Public Authority, in relation to:
 - any other contract for works or services;
 - any matter arising from the exercise of the *Owner's* or the other Public Authority's powers, duties or functions under the Community Charter, Local Government Act or other enactment;
- (d) has been charged or convicted of an offence in relation to the performance of a contract for works or services with the *Owner* or other Public Authority;

within five years of the closing date of this Tender.

Tenderers who are unable to truthfully complete this declaration must provide full particulars of the relevant circumstances. Submission of a false declaration is grounds for rejection of a tender.

11.3 I (we) hereby declare that the *Owner* may in its absolute discretion reject a Tender submitted by a Tenderer if the Tenderer or a Related Party of the Tenderer:

- (a) has had a bid bond or performance bond retained or claimed against;
- (b) has breached a contract for work or services with the *Owner* or other Public Authority in British Columbia;
- (c) has been engaged in a legal action against the *Owner* or another public authority in British Columbia, or the elected or appointed officers and employees of the *Owner* or that other public authority, in relation to:
 - any other contract for works or services;
 - any matter arising from the exercise of the *Owner's* or the other public authority's powers, duties or functions

Tenderer's Initial Owner's Initial

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under the Community Charter, Local Government Act or other enactment;

- (d) has been charged or convicted of an offence in relation to the performance of a contract for works or services with the *Owner* or other Public Authority;

within five years of the closing date of this Tender.

11.4 I (we) hereby declare that in determining whether to reject a tender the *Owner* will consider whether:

- (a) the legal action is likely to affect the Tenderers ability to work with the *Owner*, its consultants and representatives, and;

whether the *Owner's* or other public authority's experience with the Tenderer indicates that the *Owner* is likely to incur increased costs including but not limited to staff and legal costs in the administration of this contract if it is awarded to the Tenderer.

12 I (WE) AGREE THAT:

12.1 I (we) agree that if any director, officer or employee, agent or other representative of a Tenderer makes any representation or solicitation to the Mayor, any Councillor, officer or employee of the City of Campbell River, other than those specifically designated in the Tender documents, with respect to this Tender, whether before or after the submission of the Tender, the City shall be entitled to reject or not accept the Tender.

Tenderer's Initial Owner's Initial

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MY (OUR) ADDRESS is as follows:

(Full Legal Name of Corporation, Partnership or Individual)

(address)

(city, province) (postal code)

Phone: _____

Fax: _____

E-mail: _____

This Tender is executed this _____ day of _____,
2018.

(Printed Name)

(Authorized Signatory)

Tenderer's Initial Owner's Initial

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Appendix 1

SCHEDULE OF QUANTITIES AND PRICES – GST EXCLUDED (See paragraph 5.3.1 of the Instructions to Tender – Part II)

(All prices and *Quotations* including the *Contract Price* shall include all *Taxes*, but shall not include *GST*, *GST* shall be shown separately)

ITEM NO.	MMCD REF.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	33 05 24 5.1	Mobilization and Demobilization	LS	1		
Subtotal (Item 1)						\$
2	01 55 00 1.5	Traffic Management Plan	LS	1		
Subtotal (Item 2)						\$
3	S. ISLAND HWY (SMH 2473 - 2740) Segment ID #1					
3.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	65.1		
	1.5.2	ii)Warranty Cleaning	m	65.1		
3.2	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	65.1		
	1.6.3	ii) Post-Lining Inspection	m	65.1		
	1.6.3	iii) Warranty Inspection	m	65.1		
3.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	4		
3.4	33 05 24 1.9.3	Flow Control	LS	1		
3.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	65.1		
3.6	33 05 24 1.9.9	Type B: Reinstate Conn.	each	4		
Subtotal (Item 3)						\$

Tenderer's Initial Owner's Initial

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4	OREGON ROAD (SMH 2535 -2537) Segment ID #2					
4.1	33 01 30.2	CLEANING OF SEWER (200mm)				
	1.5.2	i)Pre Cleaning	m	56.2		
	1.5.2	ii)Warranty Cleaning	m	56.2		
4.2	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	56.2		
	1.6.3	ii) Post-Lining Inspection	m	56.2		
	1.6.3	iii) Warranty Inspection	m	56.2		
4.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	1		
4.4	33 05 24 1.9.3	Flow Control	LS	1		
4.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	56.2		
4.6	33 05 24 1.9.9	Type B: Reinstate Conn.	each	1		
Subtotal (Item 4)						\$
5	S. ISLAND HWY (SMH 2458-2454) Segment ID #3					
5.1	33 01 30.2	CLEANING OF SEWER (200mm)				
	1.5.2	i)Pre Cleaning	m	68.9		
	1.5.2	ii)Warranty Cleaning	m	68.9		
5.2	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	68.9		
	1.6.3	ii) Post-Lining Inspection	m	68.9		
	1.6.3	iii) Warranty Inspection	m	68.9		
5.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	2		
5.4	33 05 24 1.9.3	Flow Control	LS	1		
5.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	68.9		
5.6	33 05 24 1.9.9	Type B: Reinstate Conn.	each	2		
Subtotal (Item 5)						\$

Tenderer's Initial Owner's Initial

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6	TWILLINGATE ROAD (SMH 2805-2517) Segment ID #4					
6.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	104.8		
	1.5.2	ii)Warranty Cleaning	m	104.8		
6.2	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	104.8		
	1.6.3	ii) Post-Lining Inspection	m	104.8		
	1.6.3	iii) Warranty Inspection	m	104.8		
6.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	12		
6.4	33 05 24 1.9.3	Flow Control	LS	1		
6.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	104.8		
6.6	33 05 24 - 1.9.9	Type B: Reinstate Conn.	each	12		
Subtotal (Item 6)						\$
7	TWILLINGATE ROAD (SMH 2517-2518) Segment ID #5					
7.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	182.9		
	1.5.2	ii)Warranty Cleaning	m	182.9		
7.2	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	182.9		
	1.6.3	ii) Post-Lining Inspection	m	182.9		
	1.6.3	iii) Warranty Inspection	m	182.9		
7.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	15		
7.4	33 05 24 1.9.3	Flow Control	LS	1		
7.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	182.9		
7.6	33 05 24 - 1.9.9	Type B: Reinstate Conn.	each	15		
Subtotal (Item 7)						\$

Tenderer's Initial Owner's Initial

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8	TWILLINGATE ROAD (SMH 2518-2519) Segment ID #6					
8.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	152.4		
	1.5.2	ii)Warranty Cleaning	m	152.4		
8.2	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	152.4		
	1.6.3	ii) Post-Lining Inspection	m	152.4		
	1.6.3	iii) Warranty Inspection	m	152.4		
8.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	13		
8.4	33 05 24 1.9.3	Flow Control	LS	1		
8.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	152.4		
8.6	33 05 24 1.9.9	Type B: Reinstate Conn.	each	13		
8.7	33 05 24 1.9.12	Type D: Investigate Service activity	each	4		
					Subtotal (Item 8)	\$
9	MCLEAN STREET (SMH 998-997) Segment ID #7					
9.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	99.6		
	1.5.2	ii)Warranty Cleaning	m	99.6		
9.2	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	99.6		
	1.6.3	ii) Post-Lining Inspection	m	99.6		
	1.6.3	iii) Warranty Inspection	m	99.6		
9.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	6		
9.4	33 05 24 1.9.3	Flow Control	LS	1		
9.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	99.6		

Tenderer's Initial Owner's Initial

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**CITY OF CAMPBELL RIVER
TENDER 18-25
SEWERMAIN REHABILITATION 2018
FORM OF TENDER**

9.6	33 05 24 1.9.9	Type B: Reinstate Conn.	each	6		
9.7	33 05 24 1.9.12	Type D: Investigate Service activity	each	2		
Subtotal (Item 9)						\$
10	PETERSEN ROAD (SMH 356-355) Segment ID #8					
10.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	107.5		
	1.5.2	ii)Warranty Cleaning	m	107.5		
10.2	33 01 30.1	CCTV INPSECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	107.5		
	1.6.3	ii) Post-Lining Inspection	m	107.5		
	1.6.3	iii) Warranty Inspection	m	107.5		
10.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	10		
10.4	33 05 24 1.9.3	Flow Control	LS	1		
10.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	107.5		
10.6	33 05 24 1.9.9	Type B: Reinstate Conn.	each	10		
10.7	33 05 24 1.9.12	Type D: Investigate Service activity	each	9		
Subtotal (Item 10)						\$
11	19TH AVENUE – 2000BLK (SMH 294-293) Segment ID #9					
11.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	46.8		
	1.5.2	ii)Warranty Cleaning	m	46.8		
11.2	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	46.8		
	1.6.3	ii) Post-Lining Inspection	m	46.8		
	1.6.3	iii) Warranty Inspection	m	46.8		

Tenderer's Initial Owner's Initial

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**CITY OF CAMPBELL RIVER
TENDER 18-25
SEWERMAIN REHABILITATION 2018
FORM OF TENDER**

11.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	4		
11.4	33 05 24 1.9.3	Flow Control	LS	1		
11.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	46.8		
11.7	33 05 24 1.9.9	Type B: Reinstate Conn.	each	4		
11.9	33 05 24 1.9.12	Type D: Investigate Service activity	each	2		
Subtotal (Item 11)					\$	
12	19TH AVENUE – 1900BLK (SMH 299-300) Segment ID #10					
12.1	33 01 30.2	CLEANING OF SEWER (200mm)				
	1.5.2	i)Pre Cleaning	m	57.3		
	1.5.2	ii)Warranty Cleaning	m	57.3		
12.2	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	57.3		
	1.6.3	ii) Post-Lining Inspection	m	57.3		
	1.6.3	iii) Warranty Inspection	m	57.3		
12.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	3		
12.4	33 05 24 1.9.3	Flow Control	LS	1		
12.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	57.3		
12.6	33 05 24 1.9.9	Type B: Reinstate Conn.	each	3		
12.7	33 05 24 1.9.12	Type D: Investigate Service activity	each	2		
Subtotal (Item 12)					\$	
13	19TH AVENUE – 1900BLK (SMH 300-301) Segment ID #11					
13.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	67.4		
	1.5.2	ii)Warranty Cleaning	m	67.4		

Tenderer's Initial Owner's Initial

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13.2	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	67.4		
	1.6.3	ii) Post-Lining Inspection	m	67.4		
	1.6.3	iii) Warranty Inspection	m	67.4		
13.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	9		
13.4	33 05 24 1.9.3	Flow Control	LS	1		
13.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	67.4		
13.6	33 05 24 1.9.9	Type B: Reinstate Conn.	each	9		
13.7	33 05 24 1.9.12	Type D: Investigate Service activity	each	1		
Subtotal (Item 13)						\$
14	19TH AVENUE – 1900BLK (SMH 301-302) Segment ID #12					
14.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	64.0		
	1.5.2	ii)Warranty Cleaning	m	64.0		
14.2	33 01 30.1	CCTV INPSECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	64.0		
	1.6.3	ii) Post-Lining Inspection	m	64.0		
	1.6.3	iii) Warranty Inspection	m	64.0		
14.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	3		
14.4	33 05 24 1.9.3	Flow Control	LS	1		
14.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	64.0		
14.6	33 05 24 1.9.9	Type B: Reinstate Conn.	each	3		
Subtotal (Item 14)						\$

Tenderer's Initial Owner's Initial

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15	19TH AVENUE – 1900BLK (SMH 3489-299) Segment ID #13					
15.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	12.5		
	1.5.2	ii)Warranty Cleaning	m	12.5		
15.2	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	12.5		
	1.6.3	ii) Post-Lining Inspection	m	12.5		
	1.6.3	iii) Warranty Inspection	m	12.5		
15.3	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	1		
15.4	33 05 24 1.9.3	Flow Control	LS	1		
15.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	12.5		
15.6	33 05 24 1.9.9	Type B: Reinstate Conn.	each	1		
15.7	33 05 24 1.9.12	Type D: Investigate Service activity	each	1		
					Subtotal (Item 15)	\$
16	PIER STREET (SMH 902-803) Segment ID #14					
16.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	97.5		
	1.5.2	ii)Warranty Cleaning	m	97.5		
16.2	33 01 30.1	CCTV INPSECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	97.5		
	1.6.3	ii) Post-Lining Inspection	m	97.5		
	1.6.3	iii) Warranty Inspection	m	97.5		
16.3	33 01 30.1	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	9		
	1.5.2	ii) Post-Lining Inspection	each	9		
	1.5.2	iii) Warranty Inspection	each	9		
16.4	33 05 24 1.9.3	Flow Control	LS	1		

Tenderer's Initial Owner's Initial

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**CITY OF CAMPBELL RIVER
TENDER 18-25
SEWERMAIN REHABILITATION 2018
FORM OF TENDER**

16.5	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	97.5		
16.6	33 05 24 1.9.7	Type A: Repair intrusion connection	each	1		
16.7	33 05 24 1.9.9	Type B: Reinstate Conn.	each	8		
16.8	33 05 24 1.9.12	Type D: Investigate Service activity	each	3		
16.9	33 05 27 1.9.2	Type E: Service Lateral MLCIPL	m	81		
Subtotal (Item 16)						
17	PIER STREET (SMH 803-804) Segment ID #15					
17.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	70.1		
	1.5.2	ii)Warranty Cleaning	m	70.1		
17.3	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	70.1		
	1.6.3	ii) Post-Lining Inspection	m	70.1		
	1.6.3	iii) Warranty Inspection	m	70.1		
17.4	33 01 30.3	CCTV PIPELINE INSPECTION - LATERAL				
	1.5.2	i) Pre-Lining Inspection	each	5		
	1.5.2	ii) Post-Lining Inspection	each	2		
	1.5.2	iii) Warranty Inspection	each	2		
17.5	33 05 24 1.9.3	Flow Control	LS	1		
17.6	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	70.1		
17.8	33 05 24 1.9.9	Type B: Reinstate Conn.	each	2		
17.9	33 05 24 1.9.12	Type D: Investigate Service activity	each	1		
17.10	33 05 27 1.9.2	Type E: Service Lateral MLCIPL	m	10.6		
Subtotal (Item 17)						\$

Tenderer's Initial Owner's Initial

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18	PIER STREET (SMH 804-805) Segment ID #16					
18.1	33 01 30.2	CLEANING OF SEWERS (200mm)				
	1.5.2	i)Pre Cleaning	m	74.7		
	1.5.2	ii)Warranty Cleaning	m	74.7		
18.3	33 01 30.1	CCTV INSPECTION OF PIPELINES				
	1.6.3	i) Pre-Lining Inspection	m	74.7		
	1.6.3	ii) Post-Lining Inspection	m	74.7		
	1.6.3	iii) Warranty Inspection	m	74.7		
18.4	33 01 30.3	CCTV INSPECTION - LATERAL				
	1.5.2	i) CCTV Inspection	each	4		
	1.5.2	ii) Post-Lining Inspection	each	4		
	1.5.2	iii) Warranty Inspection	each	4		
18.5	33 05 24 1.9.3	Flow Control	LS	1		
18.6	33 05 24 1.9.8	Full Segment CIPP (200mm)	m	74.7		
18.7	33 05 24 1.9.9	Type B: Reinstate Conn.	each	4		
18.8	33 05 24 1.9.12	Type D: Investigate Service activity	each	3		
18.9	33 05 27 1.9.2	Type E: Service Lateral MLCIPL (100mm)	m	5		
18.10	33 05 27 1.9.2	Type E: Service Lateral MLCIPL (150mm)	m	18		
Subtotal (Item 18)						\$
19	MISCELLANEOUS					
19.1	33 01 30.2 1.5.4	Root Cutting (optional)	Hr	30		
19.2	33 05 24 3.8.5	Chemical Grouting (optional)	m	10		
19.3	33 05 24 1.9.10	Interface Seal (optional)	each	10		
Subtotal (Item 19)						\$

Tenderer's Initial Owner's Initial

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SUMMARY

Sub-Total Item 1	\$
Sub-Total Item 2	\$
Sub-Total Item 3	\$
Sub-Total Item 4	\$
Sub-Total Item 5	\$
Sub-Total Item 6	\$
Sub-Total Item 7	\$
Sub-Total Item 8	\$
Sub-Total Item 9	\$
Sub-Total Item 10	\$
Sub-Total Item 11	\$
Sub-Total Item 12	\$
Sub-Total Item 13	\$
Sub-Total Item 14	\$
Sub-Total Item 15	\$
Sub-Total Item 16	\$
Sub-Total Item 17	\$
Sub-Total Item 18	\$
Sub-Total Item 19	\$
Sub-Total:	\$
GST (5%):	\$
Total:	\$

Tenderer's Initial Owner's Initial

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Appendix 3
EXPERIENCE OF SUPERINTENDENT
(See paragraph 5.3.3 of the Instructions to Tenderers - Part II)

Name: _____

Experience:

1. Dates: _____

Project Name: _____

Responsibility: _____

References: _____

2. Dates: _____

Project Name: _____

Responsibility: _____

References: _____

3. Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Tenderer's Initial Owner's Initial

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Appendix 4

COMPARABLE WORK EXPERIENCE
(See paragraph 5.3.4 of the Instructions to Tenderers - Part II)

PROJECT	OWNER/ CONTRACT NAME	PHONE NUMBER	WORK DESCRIPTION	VALUE (\$)

Tenderer's Initial Owner's Initial

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Appendix 6

TENDERERS CURRENT PROJECTS UNDERWAY

PROJECT	OWNER/ CONTRACT NAME	PHONE NUMBER	WORK DESCRIPTION	VALUE (\$)	% COMPLETE

Tenderer's Initial Owner's Initial

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Draft Agreement

Between Owner and Contractor

THIS AGREEMENT made in duplicate this _____ day of _____, 2018.

Reference No.: TENDER 18-25

Contract: SEWERMAIN REHABILITATION 2018

BETWEEN: CITY OF CAMPBELL RIVER

(the "Owner")

AND: TBD

(the "Contractor")

The Owner and the Contractor agree as follows:

ARTICLE 1 THE WORK - START/COMPLETION DATES

- 1.1 The Contractor will perform all Work and provide all labour, equipment and material and do all things strictly as required by the Contract Documents.
- 1.2 The Contractor will commence the Work in accordance with the Notice to Proceed. The Contractor will proceed with the Work diligently, will perform the Work generally in accordance with the construction schedules as required by the Contract Documents and will achieve Substantial Performance of the Work within 105 Days of being issued a Notice to Proceed subject to the provisions of the Contract Documents for adjustments to the Contract Time.
- 1.3 Time shall be of the essence of the Contract

ARTICLE 2 CONTRACT DOCUMENTS

- 2.1 "Contract Documents" consist of the documents listed or referred to in Schedule 1, entitled "Schedule of Contract Documents", which is attached and forms a part of this Agreement, and includes any and all additional and amending documents issued in accordance with the provisions of the Contract Documents. All of the Contract Documents shall constitute the entire Contract between the Owner and the Contractor.
- 2.2 The Contract supersedes all prior negotiations, representations or agreements, whether written or oral, and the Contract may be amended only in strict accordance with the provisions of the Contract Documents.

ARTICLE 3 CONTRACT PRICE

- 3.1 The price for the Work ("Contract Price") shall be the sum in Canadian dollars of the following:
 - 3.1.1 the product of the actual quantities of the items of Work listed in the Schedule of Quantities and Prices which are incorporated into or made necessary by the Work and the Lump Sums listed in the Schedule of Quantities and Prices; plus
 - 3.1.2 all lump sums, if any, as listed in the Schedule of Quantities and Prices, for items relating to or incorporated into the Work; plus
 - 3.1.3 any adjustments, including any payments owing on account of Changes and agreed to Extra Work, approved in accordance with the provisions of the Contract Documents.

- 3.2 The *Contract Price* shall be the entire compensation owing to the *Contractor* for the *Work* and this compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, overhead, financing, and all other costs and expenses whatsoever incurred in performing the *Work*.

ARTICLE 4 PAYMENT

- 4.1 Subject to applicable legislation and the provisions of the *Contract Documents*, the *Owner* shall make payments to the *Contractor*.
- 4.2 If the *Owner* fails to make payments to the *Contractor* as they become due in accordance with the terms of the *Contract Documents* then interest calculated at 2% per annum over the prime commercial lending rate of the Royal Bank of Canada on such unpaid amounts shall also become due and payable until payment. Such interest shall be calculated and added to any unpaid amounts monthly.

ARTICLE 5 RIGHTS AND REMEDIES

- 5.1 The duties and obligations imposed by the *Contract Documents* and the rights and remedies available hereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.
- 5.2 Except as specifically set out in the *Contract Documents*, no action or failure to act by the *Owner*, *Contract Administrator* or *Contractor* shall constitute a waiver of any of the parties' rights or duties afforded under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach under the *Contract*.

ARTICLE 6 NOTICES

- 6.1 Communications among the *Owner*, the *Contract Administrator* and the *Contractor*, including all written notices required by the *Contract Documents*, may be delivered by hand, e-mail, fax, or by pre-paid registered mail to the addresses as set out below:

The *Owner*: City of Campbell River
301 St. Ann's Road
Campbell River, BC
V9W 4C7
Attention: Mr. David Dougherty, Capital Works Supervisor
E-mail: david.dougherty@campbellriver.ca

The *Contractor*: **TBD**

The *Contract Administrator*: City of Campbell River
301 St. Ann's Road
Campbell River, BC
V9W 4C7
Attention: Mr. David Dougherty, Capital Works Supervisor
E-mail: david.dougherty@campbellriver.ca

- 6.2 A communication or notice that is addressed as above shall be considered to have been received:
- 6.2.1 immediately upon delivery, if delivered by hand; or
- 6.2.2 immediately upon transmission if sent and received by fax or e-mail; or
- 6.2.3 after 5 *Days* from date of posting if sent by registered mail.

- 6.3 The *Owner* or the *Contractor* may, at any time, change its address for notice by giving written notice to the other at the address then applicable. Similarly if the *Contract Administrator* changes its address for notice then the *Owner* will give or cause to be given written notice to the *Contractor*.
- 6.4 The sender of a notice by fax or e-mail assumes all risk that the fax or e-mail will be received properly, and the provisions of paragraph 12.5 of the Instructions to Tenderers, Part II apply to the sender.

ARTICLE 7 GENERAL

- 7.1 This *Contract* shall be construed according to the laws of British Columbia.
- 7.2 The *Contractor* shall not, without the express written consent of the *Owner*, assign this *Contract*, or any portion of this *Contract*.
- 7.3 The headings included in the *Contract Documents* are for convenience only and do not form part of this *Contract* and will not be used to interpret, define or limit the scope or intent of this *Contract* or any of the provisions of the *Contract Documents*.
- 7.4 A word in the *Contract Documents* in the singular includes the plural and, in each case, vice versa.
- 7.5 This agreement shall ensure to the benefit of and be binding upon the parties and their successors, executors, administrators and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first written above.

Contractor:

TBD

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(WITNESS)

Owner:

City of Campbell River

(AUTHORIZED SIGNATORY)

(WITNESS)

SCHEDULE 1

CITY OF CAMPBELL RIVER

Schedule of Contract Documents

The following is an exact and complete list of the *Contract Documents*, as referred to in Article 2.1 of the *Agreement*.

NOTE: The documents noted with "*" are contained in the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings", 2009 PLATINUM edition. All sections of this publication are included in the *Contract Documents*.

The documents noted with "***" are available at www.campbellriver.ca

- a) Agreement;
- b) Addenda;
- c) Supplementary General Conditions;
- d) General Conditions*;
- e) Supplementary Specifications;
- f) Specifications*;
- g) Drawings listed in Schedule 2 to the Agreement;
- h) Supplementary Detail Drawings;
- i) Standard Detail Drawings*;
- j) Executed Form of Tender;
- k) Instructions to Tenderers;
- l) All other Contract Drawings;
- m) Supplementary Specifications, City of Campbell River, Design Standards 2010, Appendix A to Subdivision and Development Servicing Bylaw 3419**;
- n) City of Campbell River: Approved Utility Product List***;

Appendix 7

SAFETY COVENANT

BETWEEN:

_____ of
(Company Name (Print legibly))

(Address)

(City) (Postal Code)

(Phone no.) (Fax no.)

hereinafter referred to as the "Contractor"

AND:

CITY OF CAMPBELL RIVER

hereinafter called the "Owner"

WHEREAS:

The Contractor covenants and agrees that when performing any work for the Owner, whether directly as a contractor or indirectly as a sub-contractor, it will adhere to all of the requirements of the Occupational Health and Safety (OHS) Regulation, B.C. Reg. 296/97, as may be amended from time to time, that are applicable to the work being performed, and as well will comply with the provisions of the *Workers Compensation Act, R.S.B.C., 1996, c.492*, as amended (the 'Act').

Without limiting the generality of the foregoing, the Contractor agrees:

- 1) Before commencing any work for the Owner, the Contractor will consult the OHS Regulation and will determine which provisions of the OHS Regulation is applicable to the work that the Contractor is to perform. The Contractor will strictly comply with all applicable OHS Regulations when performing the work.
- 2) Before commencing any work for the Owner, the Contractor will review and familiarize itself with any existing policies or procedures developed by the Owner in relation to the work. If in the opinion of the Contractor, by following a policy or procedure that the Owner has established in relation to the work, the Contractor, or an employee of the Contractor or of the Owner, or any other worker, is put at increased risk, the Contractor must request a written change of policy or procedure from the Owner, applicable only to the work the Contractor is to perform, before proceeding with the work. The Owner reserves the right to refuse to amend its policies or procedures in response to any such request where the Owner, after such consultation with WorkSafe BC as the Owner considers necessary, determines that the Owner's policy or procedure does not increase the risk to any worker at the location of the work to be performed, and determines that the

- Contractor's request is unreasonable, or is unnecessary for the protection of workers at the location of the work.
- 3) To have read every section of the OHS Regulation that pertains to the job at hand, to ensure that it understands the pertinent OHS Regulation and its application to the supervisor(s) and to all of the workers at the location of the work, and to ensure that each worker under the Contractor's supervision follows the applicable OHS Regulation. To assist Contractors with this task, the City of Campbell River directs them to consult with WorkSafe BC directly, to access the WorkSafe BC Regulations and Policies available on the WorkSafe BC website.
- 4) To understand, comply with and, to the full extent of the Contractor's lawful authority, to enforce all of the following provisions of the OHS Regulation as they pertain to the job at hand and to the workers employed by the Contractor, and to provide to the owner, at any time upon request, evidence of compliance with the following:
- a) Rights & Responsibilities – Occupational Health & Safety Program (Part 3, including investigations, inspections, written instructions, records and statistics, adequate supervision, complete understanding by the workforce of the right and responsibility to refuse unsafe work)
 - b) General Conditions (Regulation – Part 4)
 - c) Chemical and Biological Substances (Regulation – Part 5)
 - d) Substance Specific requirements (Regulation – Part 6)
 - e) Noise, Vibration, Radiation and Temperature (Regulation – Part 7)
 - f) Personal Protective Clothing and Equipment (Regulation - Part 8)
 - g) Confined Space Entry (Regulation – Part 9)
 - h) Lock-out (Regulation – Part 10)
 - i) Fall Protection (Regulation – Part 11)
 - j) Tools, Machinery and Equipment (Regulation – Part 12)
 - k) Ladders, Scaffolds and Temporary Work Platforms (Regulation – Part 13)
 - l) Cranes and Hoists (Regulation – Part 14)
 - m) Rigging (Regulation – Part 15)
 - n) Mobile Equipment (Regulation – Part 16)
 - o) Traffic Control (Regulation – Part 18)
 - p) Electrical Safety (Regulation – Part 19)
 - q) Construction, Excavation & Demolition (Regulation – Part 20)
 - r) Forestry Operations (Regulation – Part 26)
 - s) Evacuation and Rescue (Regulation – Part 32)
 - t) Occupational First Aid (Regulation – Part 33)
 - u) Coordination of Multiple Employer Workplaces (Regulation – Part 20, s. 20.3)

PROVISIONS OF THE *WORKERS COMPENSATION ACT* – PART 3 SPECIFIC TO CONTRACTORS ON A WORKSITE:

- i. Division 3 – General duties of Employers, Workers and Others (Sections 115, 116, 117, 118, 119, 120, 121, 122, 123, 124);
 - ii. Division 4;
 - iii. Division 10.
- 5) The *Workers Compensation Act* stipulates that the Owner (the City of Campbell River) is required to enforce any observed infraction of the Act or Regulation. The Contractor accepts that the City of Campbell River will be conducting periodic checks of the Contractor during the Contractor's work for the City of Campbell River and will be asking the Contractor to comply with the Act/Regulation in the event that any contravention is observed. If a contravention is observed and not corrected, the Contractor may be asked to leave the worksite and may result in termination of the contract for the work.

- 6) For the purposes of streamlining large construction projects and multiple employer worksites, the Owner reserves the right to designate a “prime contractor” amongst contractors who are working on a job-site together. A designated person employed by the “prime contractor” – appointed by the Owner - will act as the coordinator of the other contractors on that job-site and will ensure that each of the contractors on the job site are following all of the Act and WorkSafe BC Regulations as well as site-specific policies and procedures. This includes having in place an approved WorkSafe BC Safety Program and a list of the qualified persons amongst the other contractors who have been designated to be responsible for each of the other contractor’s site health and safety activities.
- 7) In the event that a prime contractor has been designated, it is the responsibility of the Contractor to inquire who the “prime contractor” is for the worksite and to comply with the requirements for a multiple employer worksite where a prime contractor has been designated, as set out in the preceding section.

NOTE:

- a) Payment of WorkSafe BC Assessments by any Contractor does not obviate the responsibility of the contractor to any of the foregoing.
- b) The foregoing constitutes requirements of the Prevention Division of WorkSafe BC for any workplace in the Province of British Columbia and constitutes the Owner’s expectations of contractors.

The Contractor covenants and agrees that when performing any work for the Owner, whether directly as a contractor or indirectly as a sub-contractor, it will adhere to all of the requirements of the B.C. Employment Standards Act (RSBC 1996), as may be amended from time to time, that are applicable to the work being performed, including but not limited to:

- 1) Section 36 (2); an employer must ensure that each employee has at least 8 consecutive hours free from work between each shift worked.
- 2) Section 39; despite any provision of this Part, an employer must not require or directly or indirectly allow an employee to work excessive hours or hours detrimental to the employee’s health or safety.

THIS Covenant made the _____ day of _____, 2018, in

_____ in the Province of British Columbia.
(City)

CONTRACTOR:

Company Name

Authorized Signatory

Appendix 8

PRIME CONTRACTOR AGREEMENT

1. The Contractor shall, for the purposes of the Workers Compensation Act, and for the duration of the Work of this Contract:
 - .1 be the "prime contractor" for the "Work site", and
 - .2 do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with the Act and its regulations, as required to ensure the health and safety of all persons at the "Work site".
- .2 The Contractor shall direct all Subcontractors, Sub-subcontractors, Other Contractors, employers, Workers and any other persons at the "Work site" on safety related matters, to the extent required to fulfill its "prime contractor" responsibilities pursuant to the Act, regardless of:
 - .1 whether or not any contractual relationship exists between the Contractor and any of these entities, and
 - .2 whether or not such entities have been specifically identified in this Contract.

As per the requirements of the Workers Compensation Act Part 3, Division 3, Section 118(1-3) which states:

Coordination of multiple-employer Workplaces

118(1) In this section:

"multiple-employer Workplace" means a Workplace where Workers of 2 or more employers are Working at the same time;

"prime contractor" means, in relation to a multiple-employer Workplace,

- (a) the directing contractor, employer or other person who enters into a written agreement with the owner of that Workplace to be the prime contractor for the purposes of this Part, or
- (b) if there is no agreement referred to in paragraph (a), the owner of the Workplace.

(2) The prime contractor of a multiple-employer Workplace must

- (a) ensure that the activities of employers, Workers and other persons at the Workplace relating to occupational health and safety are coordinated, and
- (b) do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with this Part and the regulation in respect to the Workplace.

(3) Each employer of Workers at a multiple-employer Workplace must give to the prime contractor the name of the person the employer has designated to supervise the employer's Workers at that Workplace.

The Contractor covenants and agrees that when performing any work for the Owner, whether directly as a contractor or indirectly as a sub-contractor, it will adhere to all of the requirements of the B.C.

Employment Standards Act (RSBC 1996), as may be amended from time to time, that are applicable to the work being performed, including but not limited to:

- 3) Section 36 (2); an employer must ensure that each employee has at least 8 consecutive hours free from work between each shift worked.
- 4) Section 39; despite any provision of this Part, an employer must not require or directly or indirectly allow an employee to work excessive hours or hours detrimental to the employee's health or safety.

I fully understand and accept the responsibilities of the prime contractor designation in accordance with the Workers Compensation Act and the B.C. Employment Standards Act while contracted by the *City* on

project location: _____ and will abide by all Workers Compensation Board Regulation requirements.

Date: _____

Project: _____

Company Name: _____

Authorized Signatory: _____

Printed Name: _____

Witness Signatory: _____

Printed Name: _____



SUPPLEMENTARY GENERAL CONDITIONS

**TO BE READ WITH "General Conditions"
CONTAINED IN THE PLATINUM EDITION (printed 2009) OF THE PUBLICATION
"MASTER MUNICIPAL CONSTRUCTION DOCUMENTS"**

Reference No.: TENDER 18-25

Contract: SEWERMAIN REHABILITATION 2018

TABLE OF CONTENTS

	<u>Page</u>
1 Definitions	SGC 2
2 Documents	SGC 2
4 Contractor	SGC 2
6 Other Contractors	SGC 4
9 Valuation of Changes and Extra Work	SGC 5
10 Force Account	SGC 5
13 Delays	SGC 5
18 Payment	SGC 5
21 Workers Compensation Regulations	SGC 6
24 Insurance	SGC 6
25 Maintenance Period	SGC 6

DEFINITIONS

1.0

1.67.1

(delete clause 1.67.1 and replace as follows)

"Substantial Performance" means the stage of completion of all of the *Work*, as certified by the *Payment Certifier*, when:

- a) the *Work* is ready for use or is being used for its intended purpose; **and**
- b) the total of the incomplete, defective and deficient *Work* can be completed at an estimated cost of no more than:

3% of the first \$500,000 of the *Contract Price*
2% of the next \$500,000 of the *Contract Price*
1% of the balance of the *Contract Price*

1.79

(add new clause 1.79 as follows)

"(amend clause X.XX as follows)" preceding a supplementary clause means this clause provides additional information or restrictions to the referenced clause in the Master Municipal Construction Documents, Volume II.

1.80

(add new clause 1.80 as follows)

"(add new clause X.XX as follows)" preceding a supplementary clause means this clause provides additional requirements or information not found in the Master Municipal Construction Documents, Volume II.

1.81

(add new clause 1.81 as follows)

"(delete clause X.XX and replace as follows)" preceding a supplementary clause means this clause replaces the referenced clause in the Master Municipal Construction Documents, Volume II, in its entirety.

1.82

(add new clause 1.82 as follows)

"Payment Certifier" has the meaning set out in SGC 18.6.6.

1.83

(add new clause 1.83 as follows)

"Provide" or "Provision of" means supply and placement of an item.

1.84

(add new clause 1.84 as follows)

"Engineer" shall mean the *Owner's* engineer appointed to provide technical support during the course of the *Work*.

1.85

(add new clause 1.85 as follows)

"Critical Path Method" (CPM) means the method of scheduling a project as follows:

The essential technique for using CPM is to construct a model of the project that includes:

- (1) A list of all activities required to complete the project (typically categorized within a work breakdown structure),
- (2) The time (duration) that each activity will take to completion, and
- (3) The dependencies between the activities.

Using these values, CPM calculates the longest path of planned activities to the end of the project, and the earliest and latest that each activity can start and finish without making the project longer. This process determines which activities are "critical" (i.e., on the longest path) and which have "total float" (i.e., can be delayed without making the project longer). This determines the shortest time possible to complete the project. Any delay of an activity on the critical path directly impacts the planned project completion date (i.e. there is no float on the critical path). A project can have several, parallel, near critical paths. An additional parallel path through the network with the total durations shorter than the critical path is called a sub-critical or non-critical path.

DOCUMENTS 2.0

Interpretation 2.2.5

(add new clause 2.2.5 as follows)

The Contract Drawings shall not be used for the construction of the Work unless Issued For Construction by the *Contract Administrator*.

CONTRACTOR 4.0

Protection of Work, Property and the Public 4.3.7

(add new clause 4.3.7 as follows)

The *Contractor* shall locate, mark and protect from damage or disturbance, any and all stakes, survey pins, monuments and markers at the *Place of the Work*.

All survey stakes, pins, monuments or markers which, in the opinion of the *Owner*, have been damaged or disturbed shall be made good following construction by a registered B.C. Land Surveyor at the *Contractor's* expense.

Good Neighbour Policy 4.3.8

(add new clause 4.3.8 as follows)

The *Owner's* Good Neighbour Policy as adopted by City of Campbell River Council on April 15, 1997 shall apply to this contract. The Policy states: "That *Contractors* working on Municipal rights-of-way or on private land where new rights-of-way are being created, be required to provide written notice to the residents in the immediate area of the works, describing what is being constructed, when the works will occur, who to contact for more information and what precautions should be taken if necessary; and that the work-site be posted for safety reasons".

Damage to Improvements and Utilities 4.3.9

(add new clause 4.3.9 as follows)

The *Contractor's* Work shall be confined to the *Owner's* premises, including statutory right-of-ways easements and construction permit limits, whenever possible. The *Contractor* shall not enter upon or place materials on other private premises except by written consent of the individual *Owners* and shall save the *Owner* harmless from all suits and actions of every kind and description that might result from use of private property.

Use of Working Site 4.3.10

(add new clause 4.3.10 as follows)

The *Contractor* shall confine his equipment, storage of materials and operation of Work to the limits indicated by law, permits, or direction of the *Contract Administrator*, and shall not unreasonably encumber the premises with his materials. The *Contractor* shall comply with the

Contract Administrator instructions regarding signs, advertisements, fires and smoking.

The working site shall at all times be kept free of rubbish and unnecessary hazards to persons, materials, and equipment.

**Local, Emergency
Traffic and
Property Access**

4.3.11

(add new clause 4.3.11 as follows)

Local traffic shall be provided access to private properties at all times.

Emergency traffic such as Police, Fire, and Disaster Units shall be provided reasonable access at all times. The *Contractor* shall be liable for any damage which may result from his failure to provide such reasonable access.

**Traffic
Management Plan**

4.3.12

(add new clause 4.3.12 as follows)

The *Contractor* shall submit a Traffic Management Plan in accordance with Part 5.1.1 f of the Form of Tender and Supplementary Specification 01 55 00.

**Temporary
Structures and
Facilities**

4.4.3

(add new clause 4.4.3 as follows)

The *Contractor* shall provide clean sanitary latrine accommodations for the use of his employees as may be necessary to comply with the requirements and regulations of the Ministry of Health and other bodies having jurisdiction. The *Contractor* shall permit no public nuisance.

Fair Wages

4.8.2

(add new clause 4.8.2 as follows)

The *Contractor* attests to compliance with Section 5 of the Skills Development and Fair Wage Act in projects where the provincial contribution to a Municipal project exceeds \$250,000.

**Test and
Inspections**

4.12.4

(delete clause 4.12.4 and replace as follows)

The Contractor shall as part of the Work perform, or cause to be performed, all tests, inspections and approvals of the Work as required in the Contract Documents or as required by the Contract Administrator as part of the Quality Control. Any reference in the specifications to inspection and testing shall mean that the Work described in the specification must be inspected and approved in a manner approved by the Contract Administrator. The Contractor shall only employ or engage, as an agent or consultant for testing, a person approved by the Owner. Where the specification indicates that the Contract Administrator will arrange for testing, the Contractor continues to be solely responsible for testing of the Work. The Contract Administrator may perform additional tests for the Owner's sole benefit. The costs of these additional tests will be the responsibility of the Owner.

**Truck Routes and
Disposal Sites**

4.17.1

(add new clause 4.17.1 as follows)

In hauling of material to and from the work site, the routes to be followed by trucks shall be confined to designated arterial and collector roads as shown on the road classification plan as issued by the City. Where a dumpsite can only be accessed by way of a local road, the route shall be the shortest possible way from an arterial or collector road, and shall be agreed to by the *Contract Administrator* in advance of the work. The *Contractor* shall be responsible for road cleanup along all trucking routes used in association with the work.

The cost of this cleanup shall be paid by the *Contractor* and considered incidental to the work. It should be noted that a "Soil Deposition Permit" is required for any dumpsite within the City of Campbell River. The *Contractor* shall be responsible for obtaining and securing a legal dumpsite. All costs associated with that dumpsite shall be the responsibility of the *Contractor* and shall be considered incidental to the *Work*.

**Disposal of Wood
Debris, Organic
Debris, and/or
Waste Excavated
Material** 4.18.1

(add new clause 4.18.1 as follows)

Prior to disposal of any wood debris, organic debris and/or waste excavated material, the *Contractor* shall submit a disposal management strategy in accordance with all applicable Laws, Bylaws and Regulations to the *Contract Administrator* for approval. Subject to the *Contract Administrator's* approval, the *Contractor* shall ensure that all wood debris, organic debris and/or waste excavated material that is removed from the work site is managed in accordance with this approved disposal management strategy. The *Contractor* shall be required to employ acceptable methods of disposal, approved disposal site location(s), and shall be required to obtain and submit copies of all relevant permits and/or approvals prior to the disposal of any wood debris, organic debris and/or waste excavated material

Regardless of the aforementioned, the *Owner* reserves the right to disallow any or all of the *Contractor's* proposed disposal management strategy if it is determined that they will result in undesirable environmental impacts.

**OTHER
CONTRACTORS** 6.0

**Coordination and
Connection** 6.2.2

(add new clause 6.2.2 as follows)

If the performance of any Contract for the project is likely to be interfered with by the simultaneous execution of some other Contract or Contracts, the *Contract Administrator* shall decide which *Contractor* shall cease Work temporarily and which *Contractor* shall continue, or whether the Work under the Contracts can be coordinated so the Contracts may proceed simultaneously. The *Owner* shall not be responsible for any damages suffered or extra costs incurred by the *Contractor*, resulting directly or indirectly from the award or performance or attempted performance of any other Contract or Contracts on the project, or caused by any decision or omission of the *Contract Administrator* respecting the order of precedence in the performance of the Contracts other than for the extension of time.

**VALUATION OF
CHANGES AND
EXTRA WORK**

9.0

Valuation Method

9.2.1.3

(add new clause 9.2.1.3 as follows)

Should a lump sum method be used for determination of the value of a *Change*, the *Contractor* shall determine the value of the *Change* by calculating the cost for each item contained within the *Change* and applying a 10% mark up on all costs associated with the *Change* for Overhead and Profit. All costs are required to be supported by documentation satisfactory to the *Contract Administrator* and all applicable rates are to be satisfactory to the *Contract Administrator*.

FORCE ACCOUNT

10.0

**Force Account
Costs**

10.1.1.4

(delete 10.1.1.4 and replace as follows)

Force Account Work performed by a *Subcontractor* shall be paid for in the lesser of: (i) the amount as provided by subparagraphs (1), (2) and (3) of this GC, plus a markup of 5%, or (ii) the actual amount the *Contractor* pays the *Subcontractor* including a markup of 10% on such actual cost to cover all overhead and profit.

DELAYS

13.0

**Liquidated
Damages for Late
Completion**

13.9.1.1

(delete 13.9.1.1 and replace as follows)

as a genuine pre-estimate of the *Owner's* increased costs for the *Contract Administrator* and the *Owner's* own staff caused by such delay an amount of \$1,000 per day or pro rata portion for each calendar day that actual *Substantial Performance* is achieved after the *Substantial Performance Milestone Date*; plus

PAYMENT

18.0

Holdbacks

18.4.1

(delete 18.4.1 and replace as follows)

The *Owner* will retain a holdback but will not establish a Holdback Trust Account pursuant to Section 5 of the *Builders Lien Act*.

**Substantial
Performance**

18.6.5

(delete clause 18.6.5 and replace as follows)

The *Owner* will release any builder's lien holdback on the 56th day following the date of *Substantial Performance*, or other date as required by law, but the *Owner* may holdback the amounts for any deficiencies or filed builders liens as provided in GC 18.4.2, GC 18.4.3 and 18.4.4, or the Maintenance Period Financial Security if not received by this date.

Payment Certifier

18.6.6

(delete clause 18.6.6 and replace as follows)

The *Contract Administrator*, as defined herein, shall be the *Payment Certifier* responsible under Section 7 of the *Builders Lien Act* for certifying *Substantial Performance* of the *Work* of the *Contractor*, but not the *Work* of *Subcontractors*. The *Contractor* shall co-operate with and assist the *Contract Administrator* by providing information and assistance in as timely manner as the *Contract Administrator* considers necessary to carry out the duties of the *Payment Certifier* for the Contract.

The *Contractor* shall be the *Payment Certifier* responsible under Section 7 of the *Builders Lien Act* for certifying *Substantial*

Performance of the Work of each Subcontractor. Prior to certifying completion for a Subcontractor, the Contractor shall consult with the Contract Administrator and obtain the Contract Administrator's comments on the status of completion by the Subcontractor, including any deficiencies or defects in the Subcontractor's Work noted by the Contract Administrator. The Contractor will indemnify and save the Owner harmless from any and all liability the Owner may have to anyone arising out of the certification by the Contractor of Substantial Performance for that Subcontractor.

Notwithstanding any other provision of the Contract, no payments will be due or owing to the Contractor so long as a Lien filed by anyone claiming under or through the Contractor remains registered against the Project or any lands, or interest therein, on which Work for the project was performed. Failure of the Contractor to remove all Liens promptly will entitle the Owner to damages.

**WORKERS
COMPENSATION
REGULATIONS 21.0**

**Contractor is
"Prime Contractor" 21.2.2**

(add new clause 21.2.2 as follows)
If the Work is being completed as part of a project for which the Owner already has a Prime Contractor designated then the Contractor will be responsible to ensure that they assume direction from the Prime Contractor as per the requirements of the Workers Compensation Act Part 3, Division 3, Section 118(1-3).

INSURANCE 24.0

Required Insurance 24.1.7

(add new clause 24.1.7 as follows)
The Contractor shall ensure the following are additional named insured under this contract:

- The City of Campbell River
- MJP & Associates

**MAINTENANCE
PERIOD 25.0**

**Correction of
Defects 25.1.4**

(add new clause 25.1.4 as follows)
The Owner is authorized to make repairs to defects or deficiencies if, ten days after giving written notice, the Contractor has failed to make or undertake with due diligence the required repairs. However, in the case of emergency where, in the opinion of the Owner, delay is not reasonable, repairs may be made without notice being sent to the Contractor. All expenses incurred by the Owner in connection with repairs made pursuant to GC 25 shall be paid by the Contractor and may be deducted from the Maintenance Security, or other holdbacks. The Contractor shall promptly pay any shortfall.

**Maintenance
Period Financial
Security 25.4.1**

(add new clause 25.4.1 as follows)
within 10 days of the issue of the Certificate of substantial Performance deliver to the Owner, a Maintenance Period Financial Security in the form of cash, or a clean, irrevocable Letter of Credit in a form acceptable to the Owner in the amount of 5% of the Contract Price, issued by a major Canadian chartered bank which has a

branch in Campbell River BC, payable to the Owner within the Maintenance Period.



SUPPLEMENTARY SPECIFICATIONS

TO BE READ IN CONJUNCTION WITH THE "MASTER MUNICIPAL CONSTRUCTION DOCUMENTS"

Reference No.: TENDER 18-25

Contract: SEWERMAIN REHABILITATION 2018

- General**
- 1.1
- a) Payments will be made on the basis of the unit prices bid in the Tender, and in accordance with Article 18 of the General Conditions.
 - b) The unit prices bid, unless specifically noted otherwise, shall include the supply of all *LABOUR, PLANT, MATERIAL* and *PRODUCT* equipment necessary to construct *THE WORK* in accordance with the specifications.
 - c) The prices bid for supply and installation shall be full compensation for supplying, hauling, installing, cleaning, testing, and placing in service together with all other work subsidiary and incidental thereto for which separate payment is not provided elsewhere.
 - d) Other materials on site, whether existing structures, vegetation, topsoil, gravel, sand or other excavated or piled materials, are the property of the *OWNER* or of the owner of the land on which *THE WORK* is located. Only those materials specifically noted in the specification or on drawings, as belonging to the *CONTRACTOR* shall become the *CONTRACTOR's* property.
 - e) Where there are excess excavated materials, unsuitable materials excavated or materials of any kind that are excavated but not used in *THE WORK*, such materials are not the property of the *CONTRACTOR* unless authorized in writing by the *CONTRACT ADMINISTRATOR* or specified to be disposed of by the *CONTRACTOR*.
- Unit Price Contracts**
- 2.1
- a) Payments will be made on the basis of the following:
 - .1 Unit Price items in the Schedule of Quantities and Unit Prices. Where payment terms are listed in the Schedule of Quantities and Prices, these will take precedence over those payment terms listed elsewhere in the Contract Documents.
 - .2 Changes in *THE WORK* for items not covered by unit prices, in accordance with Article 7 - *CHANGES IN THE WORK* of the General Conditions.

- b) For each item in the Schedule of Quantities and Unit Prices, the *Contract Administrator* will, in cooperation with the *Contractor*, measure the quantity of the item completed at the end of the payment period and this will be shown as a percentage of the work completed against the appropriate value for the lump sum assigned to the respective line item.
- Mobilization and Demobilization** 3.1 a) Mobilization and demobilization shall include the *Contractor's* costs of mobilization at the beginning of the project; and the costs of demobilization at the end of the project.
- b) Included in mobilization are such items as bonding, insurance, permits, moving personnel, materials and equipment to the site, setting up temporary facilities, First-Aid, Site Safety, temporary utilities and all preparation for performing *THE WORK*.
- c) Included in demobilization are preparation and submission of operation and maintenance manuals, As-Constructed Record Drawings, comprehensive Bill Of Materials, removal of all personnel, materials and equipment; and cleanup of the site and *THE WORK*.
- d) The lump sum price bid for this work shall be relative to the costs involved but shall not exceed ten percent of the Tender Price.
- e) Payment will be made as follows, as approved by the *CONTRACT ADMINISTRATOR*:
- I. 60% of the lump sum bid will be included in the first progress payment certificate;
 - II. 40% of the lump sum bid will be included in the final progress payment certificate.
- The *CONTRACT ADMINISTRATOR* may at his discretion recommend partial payment if mobilization or demobilization is not complete.
- f) With respect to Division 1 General Requirements, payment will be made as specified for demobilization and mobilization. The costs of other items specified under General Requirements shall be considered, as incidental to *THE WORK*; and separate payment will not be made for any other items of General Requirements.
- Dust Control** 4.1 During the performance of *THE WORK*, the *CONTRACTOR* is to at all times keep the worksite and such immediate surrounding areas which it may utilize free from waste materials, debris or rubbish and is to employ adequate dust control measures. Water shall be the only material acceptable for dust suppression. If accumulation of such materials, debris, rubbish or dust constitutes a nuisance or safety hazard or is otherwise objectionable in any way, as reasonably determined by the *OWNER* or *CONTRACT*

ADMINISTRATOR, the *CONTRACTOR* is to promptly remove it. If any claim, suit, losses, or action is brought by a person affected by the transportation of materials, equipment, goods or wastes to and from the worksite, the *CONTRACTOR* shall defend, indemnify and hold harmless all indemnified parties.

**Underground
Utilities**

- 5.1 It is the *CONTRACTOR'S* responsibility wherever necessary to determine location of existing pipes, valves, conduits, vaults, or other underground structures. Wherever it is necessary to explore and excavate to determine the location of the existing underground structures, the *CONTRACTOR*, at his own expense, shall make explorations and excavations for such purposes. The *CONTRACTOR* shall notify the *CONTRACT ADMINISTRATOR* or his representative of any conflicts.

The *CONTRACTOR* shall, at his own expense, provide for the uninterrupted flow of all watercourses, sewers, drains, and any other utility encountered during the work. Water control and siltation control shall be under the direction of a qualified environmental monitor engaged by the *CONTRACTOR*.

When any existing mains and/or service pipes, utility ducts, vaults or other utility structures are encountered, the *CONTRACTOR* shall support them to the satisfaction of the *CONTRACT ADMINISTRATOR* so as to protect them from injury. The *CONTRACTOR* shall, at his own expense, at once repair and make good any injury which may occur to any mains, service or utility pipes or ducts, or facilities, or to any electrical conductor, telephone, cable or natural gas facility or to any sidewalk, crosswalk as a result of this operation.

Support of power, telephone poles, underground mains, wiring and light standards required to complete the work, shall be the responsibility of the *CONTRACTOR* and completed in accordance with utility company standards. The *CONTRACTOR* shall schedule the work with the appropriate utility company in advance, so as not to delay the work. All costs associated with the work shall be considered incidental and no separate payment be made for this item.

**Construction
Surveys**

- 6.1 The *CONTRACTOR is responsible for all survey layout, including stakes, hubs, and grade control.*

The *CONTRACTOR* shall survey and layout the work including, but not limited to, as-built invert elevations, offsets and stations of all grade changes, miscellaneous appurtenances, and all existing utilities exposed during construction.

The *CONTRACTOR* shall provide all stakes, hubs, nails, flagging, and including the supply of casual labour for checking of the work, as required by the *CONTRACT ADMINISTRATOR*. The *CONTRACTOR* shall provide the *CONTRACT ADMINISTRATOR* with records of the actual surveys, and "as-built" information pick-up.

No separate or additional payment will be made for this work.

**General
Coordination**

- 7.1 The *CONTRACTOR* shall work cooperatively with B.C. Hydro, Telus, Shaw and Fortis to locate private utility ducting.

No additional payment shall be made for this work.

**Supplementary
Specifications**

- 8.1 The following Supplementary Specifications are complementary to the MMCD.

Section	Title
01 11 00	Summary of Work
01 31 01	Project Meetings
01 55 00	Traffic Management Plan
33 01 30.3	CCTV Pipeline Inspection - Laterals
33 05 24	Cured in Place Pipe Liner
33 05 27	CIPP Lateral Lining by MLCIPL

SUMMARY OF WORK

1. GENERAL

.1 Work Covered by Contract Documents

- .1 Work under this contract consists of the investigation and rehabilitation of approximately 1315.2 lineal meters of existing 200mm-250mm diameter sanitary sewer mains through the use of Cured-In-Place Pipe (CIPP) lining method. Work will also include investigation of approximately 100 service laterals and rehabilitation of approximately 130 lineal meters of service laterals through the use of Cured-In-Place Pipe (MLCIPL) lining method.
- .2 The work is to be delivered in 16 distinct segments over 9 locations as defined by man-hole to man-hole sections of relevant sewer main pipe, complete with live service laterals.
- .3 The project locations are set within primarily residential neighborhoods with some mixed commercial areas and a major collector road.

.2 Work Included

The work under this Contract includes the supply and install of all materials, equipment, labour and services necessary to perform CIPP lining. Work generally includes but is not necessarily limited to the following:

- .1 Preparation of necessary submissions
- .2 Mobilization/Demobilization to/from the site
- .3 Sewermain preparation including cleaning and video inspection (pre and post lining)
- .4 Service lateral preparation including cleaning and video inspection (pre and post lining)
- .5 Flow control (sewer and laterals), where required
- .6 Full segment lining by CIPP
- .7 Service lateral lining by CIPP from junction
- .8 Reinstatement of all service lateral connections
- .9 Surface restoration, site clean-up and demobilization
- .10 Preparation and submission of all required Project documentation

.3 CIPP Design Objectives for lining sanitary sewer pipe include:

- Maximizing the structural enhancement of the sewer by installing a close-fit CIPP.
- Rehabilitate sewer to meet or exceed existing hydraulic capacity.

- Reducing infiltration and exfiltration that may compromise long-term structural stability of the pipe.
- Preventing root intrusion.
- Minimizing disruption to the sewer function during the rehabilitation process.
- Minimizing the time required to complete the sewer rehabilitation.
- Minimizing disturbance to pavements, boulevards, and private property.
- Minimizing disruption to vehicular and pedestrian traffic.
- Minimizing the impact of construction on commercial, industrial, and institutional facilities.

Select CIPP and plan approach to rehabilitation toward maximizing the achievement of these design objectives.

End of Section 01 11 00

PROJECT MEETINGS

1. General

1.1 Administrative

- .1 The Contract Administrator will administer the pre-construction meeting, and regular progress meetings to be held weekly.
- .2 The Contractor's superintendent, and senior representatives of major sub-contractors to attend all meetings.
- .3 Representatives of Contractor, subcontractor and suppliers attending meetings to be qualified and authorized to act on behalf of the party each represents.
- .4 The Engineer or Contract Administrator will chair and record discussions and decisions, and circulate the minutes. The Contractor is to circulate the minutes to subcontractors and suppliers.
- .5 The Contractor is to notify the Contract Administrator in writing of any discrepancies or inconsistencies within 2 days of receipt of minutes for recording in next meeting. Failure to notify the Contract Administrator of discrepancies or inconsistencies within 2 days of receipt of minutes will be deemed acceptance of the minutes as recorded.

1.2 Preconstruction Meeting

- .1 Within 10 days of Notice to Award, the Contract Administrator will schedule a meeting to discuss administrative procedures and responsibilities.
- .2 Agenda includes the following:
 - a) Appointment of official representatives of participants in the Work.
 - b) Appointment of General Contractor as Prime Contractor.
 - c) Notice of Project, Insurances
 - d) Schedule of Work, progress scheduling.
 - e) Submittals.
 - f) Requirements for temporary facilities, offices, utilities, fences.
 - g) Traffic Management Plan
 - h) Environmental Protection Plan
 - i) Site Safety and Security.
 - j) Change Order procedures.
 - k) Record drawings.
 - l) Commissioning, acceptance, warranties.
 - m) Monthly progress payments, administrative procedures, holdbacks.
 - n) Appointment of inspection and testing agencies or firms.

1.3 Weekly Progress Meetings

- .1 The Contractor's superintendent and senior representatives of major subcontractors involved in the Work to be in attendance of weekly progress meeting to be held on site.
 - .2 Agenda includes the following:
 - a) Past period progress.
 - b) Next period progress.
 - c) Schedule of construction.
 - d) Anticipated changes in the work.
 - e) Approved changes in the work.
-

- f) Submittal/RFI/SI status
 - g) Operations staff scheduling.
 - h) Site safety.
 - i) General information pertaining to the work.
 - i. Quality control
 - ii. Site cleanliness
 - iii. Environmental protection
 - iv. Other
- .3 Submit for information only, at each regularly scheduled progress meeting:
- a) Totals of all personnel currently on site associated with the contract, broken down by trade and subcontractor including all staff.
 - b) Totals of all major equipment currently on site, over two thousand dollar replacement value, broken down by type and subcontractor.

1.4 Special Meetings

- .1 Special meetings may be held at the request of the Contract Administrator, Owner, or Contractor to discuss specific items.

1.5 Payment

- .1 All required attendance of the Contractor and/or Contractor's major subcontractors to all Progress Meetings and any required Special Meetings shall be incidental to the contract and no separate payment will be made.

END OF SECTION 01 31 01

1.0 GENERAL

- .4 ***(Delete and replace as follows)***
Give minimum 72-hour notice to Owner prior to beginning construction and comply in all respects with their requirements. The Contractor will be responsible for any and all local permits required to execute the work.
- .6 ***(Add)***
The Contractor is required to provide 24-hour written notice to all residents, homes and businesses including all units in a multifamily site for any service or vehicle access interruption.
- .7 ***(Add)***
The Contractor shall prepare, or cause to be prepared, a Traffic Management Plan (TMP) applicable to the following locations:
- Location 3- S. Island Hwy at Barlow Road.
 - Location 6- Petersen Road at 16th Ave. to 17th Ave.
 - Location 8- Tamarac Street at Island Hwy to 19th Ave.
 - Location 9- Island Hwy (Pier Street) at St. Ann's Road to 9th Ave.
- Refer to Contract drawing for location site plan information.
- The TMP shall be submitted to the Owner for approval and the approved TMP shall be implemented and maintained during the Work. Where a TMP is not required above, traffic control will be managed in accordance with the City of Campbell River Bylaws and OH&S guidelines and regulations.
- .8 ***(Add)***
The following provisions must be included in the TMPs:
- .1 Road closures on Island Highway (19A) and South Island Hwy are not permitted.
 - .2 Temporary lane closures at Location 9- Pier Street can only be conducted during night work (7:00pm to 6:00am).
 - .3 Two-way traffic on Island Highway (19A) and South Island Highway locations must be maintained at all times. Temporary Lane closures are permitted in non-rush hours. Rush hours are: 7:00am to 9:00am and 3:00pm to 6:00pm.
 - .4 Temporary intersection closure at Location 6- Petersen Road and 16th Avenue is permitted during non-rush hours. Rush hours are: 7:00am to 9:00am and 3:00pm to 6:00pm.
 - .5 Temporary Lane Closure at Location 9-Tamarac Street will require a MoTI permit.
 - .6 Safe pedestrian movement must be maintained.
 - .7 Pedestrian and cyclist traffic should be accommodated by maintaining the sidewalks and using fencing and other protection measures to

segregate this traffic and the construction activities. If the Contractor deems it necessary to close a section of sidewalk and eliminate non-motorized traffic through the work section, then a Pedestrian Management Plan must be submitted to the Owner in accordance with part 1.11 of this Section.

.9 **(Add)**

The TMPs shall:

- .1 Include an accurate road configuration, with road names, north arrow marker, speed limit and proposed extents of the Work.
- .2 Indicate placement and distance of signs, delineators, cones, barricades, position of certified TCP's and traffic control equipment.
- .3 Identify the number of lanes to be obstructed, along with taper lengths and widths of lanes.
- .4 Identify impacts to driveways and bus stops, intersections, turning isles, sidewalks, and bike lanes. Include measures to facilitate and maintain access.
- .5 Consider project specific restrictions (work hours etc.) as outlined in the Contract Documents.
- .6 Include a map of full detour routes including the above requirements along each route.
- .7 Illustrate on the TMP where Flow Control traffic rated ramps are required to divert flows for the work (where applicable).

.10 **(Add)**

The TMP to be submitted as per Item 5.1.1.f of the Form of Tender. The Contractor will not be permitted to start any of the Work until the TMP has been approved by the Owner.

.11 **(Add)**

If required, the Contractor shall prepare, or cause to be prepared, a Pedestrian Management Plan (PMP). The PMP shall be submitted to the Owner for approval and the approved PMP shall be implemented and maintained during the Work.

1.4 Traffic Control

.4.8 **(Delete and replace as follows)**

Maintain uninterrupted access / egress to / from all properties within or in the vicinity of the Work, unless authorized as part of the approved Traffic Management Plan or by the Contract Administrator.

.4.10 **(Delete first paragraph and replace as follows)**

Provide Traffic Control Personnel (TCP), trained and certified by the BC Construction Safety Alliance (BCCSA), and properly equipped for the following situations:

1.5 Payment

.1

(Delete and replace as follows)

Payment for all work performed under this Section will be on a lump sum basis. Payment shall be 30% upon preparing TMP(s) (and PMP(s)), securing permits and erecting traffic control devices; 60% distributed in monthly Progress Payments for traffic control persons and related control devices; and 10% upon Substantial Performance.

END OF SECTION 01 55 00

**CLOSED CIRCUIT TELEVISION
PIPELINE INSPECTION –SERVICE LATERALS**

- 1 GENERAL**
 - .1 Section 30 01 30.3 refers to those portion of the work that are unique to the requirements for inspecting new and existing service connections by mainline launched closed circuit television. This section must be referenced to and interpreted simultaneously with all other sections pertinent to the works described herein.

- 1.1 Related Work**
 - .1 Traffic Regulation Traffic and Highway Bylaw
 - .2 Cleaning of Sewers Section 33 01 30.2
 - .3 CCTV Pipeline Inspections Section 30 01 30.3
 - .4 Main and Lateral CIP lateral (MLCIPL) Section 33 05 27

- 1.2 References**
 - .1 These specifications must be referenced to and interpreted simultaneously with all other sections pertinent to the works described herein.
 - .2 Reference standards, specification or publications.
 - .1 Pipeline Assessment and Certification Program (PACP) Reference Manual
 - .3 Nomenclature
 - .1 CCTV Closed Circuit Television
 - .2 JPEG Joint Photographic Experts Group
 - .3 MPEG Movie Photographic Experts Group
 - .4 PACP Pipeline Assessment and Certification
 - .5 LACP Lateral Assessment and Certification Program

- 1.3 Work Regulations**
 - .1 Work to conform to all applicable regulations of WorkSafe BC. Confirm training compliance in the following:
 - .1 Confined space entry
 - .2 Ventilation
 - .3 Atmospheric monitoring
 - .4 Personal protective equipment
 - .2 Provide written confirmation to the Contract Administrator that workers have knowledge of confined space entry practices and of equipment required for confined space entry.

- 1.4 Scheduling of Work**
- .1 Schedule work to minimize interruptions to existing services.
 - .2 Maintain existing flow during inspection survey unless flow reduction measures required (see Clause 3.8)
- 1.5 Measurement for Payment**
- .1 All units of measurement for payment will be as specified herein unless shown otherwise in Form of Tender.
 - .2 Measurement for payment for sewer lateral CCTV inspection will be on a per unit basis ('each') as described in the Form of Tender. Payment will be made at the unit price bid in Form of Tender.
 - .3 Payment for flow control is incidental to this inspection work and will not be paid for separately. (see Clause 3.8 for flow reduction methods)
- 2.0 PRODUCTS**
- 2.1 Equipment - General**
- .1 Survey Vehicle to contain a separate area for viewing, recording and controlling the CCTV operation.
 - .1 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.
 - .2 All equipment utilized within the pipeline and lateral to be stored outside the viewing, recording and control area.
 - .3 Vehicle to be equipped with a telephone for communication with the Contract Administrator for the duration of the work.
 - .4 Electrical power for the system to be self contained. External power sources from public or private sources not permitted.
 - .2 Survey Equipment to have sufficient cables to view the lengths of pipe as specified.
 - .1 Survey unit to be a self-propelled crawler type camera in combination with a lateral launched camera.
 - .2 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 CCTV cables and lines used to measure the camera's 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.

- 2.2 Data generator and overlay**
- .1 Each camera 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 as indicated in 2.2.1.1 and 2.2.1.2.
- .1 Title Screen overlay:
- Project #
 - Contractor
 - City
 - Date
 - Lateral ID (Lateral Segment Reference)
 - Mainline ID
 - Start MH No.
 - End MH No
 - Use (sanitary/storm)
 - Address
 - Size
 - Material
 - Tap distance (m) in mainline
 - Survey distance (m) in lateral
- .2 Travelling Screen overlay:
- Lateral ID
 - Tap distance (m) in mainline
 - Survey distance (m) in lateral
 - Defect code and description
- 2.3 Camera equipment**
- .1 Camera to be capable of producing high quality colour imagery and provide complete inspections and view of all laterals and deficiencies.
- .1 Mainline camera to be "Pan & Tilt "and have the capability of panning the pipe at 360° with tilt capability of 270°.
- .2 Lateral camera to be self-leveling with pan and tilt capabilities.
- .3 Live picture to be visible with no interference and capable of registering a minimum number of 400 lines of resolution at the periphery.
- .4 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 and lateral.
- .5 Cameras 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.
- 2.4 Recording medium** .1 Digital video files shall be MPEG2 and conform to the following requirements:
- .1 Picture Size: NTSC 704 x 480 at 29.97 frames per second.
- 2.5 Materials** .1 Digital video files and images to be stored on portable hard drives.
- 3.0 EXECUTION**
- 3.1 CCTV Inspection** .1 CCTV operator to have received training by LACP.
- .2 Submit sample of inspection reports, video in digital format together with corresponding digital data file for review within one week of receipt of notice to proceed with contract. Submission to satisfy all of the specifications contained herein and the accepted report submission will be used as a benchmark for subsequent inspection report submissions.
 - .3 No inspection surveys to be carried out under this contract until an acceptable sample inspection report has been approved by the Contract Administrator.
 - .4 Flow in the pipeline not to exceed approximately 20% of the pipe diameter. Notify Contract Administrator of excessive flows, inspect using flow reduction method (See Clause 3.8).
 - .5 Eliminate steaming and fogging encountered during the inspection survey by introducing forced air flow by means of fan.
 - .6 Camera lens to remain free of grease or other deleterious matter to ensure optimal clarity.
 - .7 Inspections video image to be produced in MPEG2 format in either one or a combination of the following methods:
 - .1 Create separate digital file for each individual sewer lateral inspection report. Clearly identify the Lateral ID number on the electronic file name.
 - .8 Commence video recording as the lateral launch camera leaves the mainline camera to view condition of interface.

- .9 Note condition of mainline/lateral interface.
- .10 Set zero chainage at face of every manhole for the mainline pipe in order to accurately record the service lateral location.
- .11 Set zero chainage at the lateral interface for the start of each service lateral inspection.
- .12 Report and record on length of service lateral from interface to the property line.
- .13 Data generator to continuously electronically generate and clearly display on the viewing monitor and video recording a record of data in alpha-numeric form containing the following minimum information described in clauses 2.2.1.1 and 2.2.1.2.
- .14 Stop camera at each defect, change of condition of pipe and service connection to record defect in accordance with LACP codes.
- .15 Immediately notify Contract Administrator of any blockage or obstruction that will not allow passage of survey equipment.
- 3.2 Site Coding Sheets**
 - .1 Each pipeline length to be recorded according to the LACP (Lateral Assessment and Certification Program).
- 3.3 Camera Travel Speed**
 - .1 Maximum travelling speed of the camera in the service lateral to be 5m/min for all diameters.
- 3.4 Camera Position Chainage Device**
 - .1 Use a chainage device which enables the cable length to be accurately measured to indicate the location of the camera
 - .1 Chainage information to be transmitted electronically to control area and displayed on the monitor.
 - .2 Chainage device to be accurate to within 0.3 m up to the first 50 m and within $\pm 1\%$ for lengths exceeding 50 m.
 - .3 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.
 - .4 Provide 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.
- 3.5 Inspection Reporting Digital format**
 - .1 Submit digital reports and video recordings on a hard drive to Contract Administrator within 10 working days of completion of the field work on a continuous basis as the inspection area or

- pipeline types are finalized.
- 3.6 Cleaning**
- .1 Clean pipelines to Supplementary Specifications Section 33 01 30.2 immediately prior to CCTV inspection survey, unless otherwise specified in the contract documents.
 - .2 No cleaning is required for service laterals in this contract.
- 3.7 Root Cutting & Removal**
- .1 Remove roots to Section 33 01 30.2 for condition codes RB where required, to allow for CCTV equipment to pass.
- 3.8 Flow Reduction**
- .1 Reduce flow in pipeline to approximately 20% of pipe diameter to allow CCTV inspection of lateral by combination of the following:
 - .2 Schedule work for off peak flow times.
 - .3 Plug or block flow at upstream manhole.
 - .1 Plug designed to either plug all flow or impede flow (*“flow through”* plug) to the approximate 20% of pipe diameter.
 - .2 Obtain Contract Administrator’s approval prior to plugging or impeding any flow.
 - .3 Remove plug or blocks to slowly return flow to normal without surge or surcharging downstream pipeline.
 - .4 Temporary bypass pump flow around inspection section when Contractor demonstrates that off peak inspection, plugging and /or the use of sewer cleaning equipment cannot effectively reduce flow levels to specified levels. Bypass pump plugs to be flow through with hoses and pump of sufficient capacity to handle the peak flow. Hoses and couplings to be leak free. Flow to be pumped to downstream manhole on same system or run as inspection is to take place. Obtain Contract Administrator’s approval prior to setting up temporary bypass pump system.
- 3.12 Coding Accuracy**
- .1 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:
 - .1 header accuracy 95%
 - .2 detail accuracy 85%
 - .2 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. Contract Administrator to be entitled to review

the accuracy verification system and results and be present when the assessments are being conducted.

- .3 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.

END OF SECTION

CURED IN PLACE PIPE LINER

1.5 SUBMISSIONS

.1 *(Amend clause 1.5.6 to include)*

These calculations are to show the hydraulic capacity of the CIPP sewer will be equal to or greater than the existing sewer.

(Add the following clauses)

- .7 Submit Shop Drawings for Review for any modifications or reconstruction of access manholes required to facilitate liner installation.
- .8 Where required, provide written flow control plan for each section of sewer to be lined to the *Contract Administrator* for Review before performing the Work.

.2 *(Add Section 1.5.2 and the following clauses)*

Prior to commencing work, the *Contractor* shall submit to the *Contract Administrator* for Review a Construction Plan that provides the following information:

- .1 Liner and resin impregnation method, including location of wet out facility and details of wet out procedure.
- .2 Details on sewer flow control for all affected sections.
- .3 Details on liner installation methodology including limits on pressure required to hold liner in place during curing, maximum allowable tensile stress during pull-in and max/min temperature during cure cycle.
- .4 Details of all necessary monitoring to measure items .3 above and a written curing schedule identifying location of heat source gauges.
- .5 Total anticipated duration required to install CIPP liner and re-instate affected services on a section by section basis.
- .6 A comprehensive description as to how usage of styrene will be managed to ensure no adverse effects to the surrounding environment.

1.6 Records

.4 *(Add Section 1.6.4 and the following clauses)*

Submit a written Sewer Connection Report for each CIPP location to the *Contract Administrator* providing the following information for each sewer service including utility drains.

- .1 Location of connection (chainage from upstream manhole and clock reference).

- .2 Diameter of service connection lateral.
- .3 Material type of sewer connection.
- .4 Observed condition of connection.
- .5 Status of connection (active, inactive or unable to determine).
- .6 Property serviced including the address.

.5 (Add Section 1.6.5 and the following clauses)

Maintain the following Quality Control records of the work and provide to the *Contract Administrator* after completion of the work:

- .1 Summary of the resin impregnation process including:
 - .1 Volume of resin supplied and *proof* that resin used has not exceeded stated shelf life as recommended by the manufacturer
 - .2 Excess quantity of resin added during the wet out to account for polymerization and migration into the host pipe.
 - .3 Roller gap setting.
 - .4 Resin catalyst(s) used.
 - .5 Time and location of the wet out.
 - .6 Means taken to store and transport the resin impregnated CIPP from the wet out facility to the job site.
 - .7 Means of curing liners.
- .2 Continuous log of pressure maintained in the liner during the curing period.
- .3 Pulling force used to pull or winch CIPP into place in the host sewer and measured liner elongation.
- .4 Continuous log of temperature at boiler in and out and at all thermistors placed between the host pipe and the liner at all manholes during the initial cure, and cool down periods.
- .5 Monitoring and activities carried out in support of the styrene management plan.

**1.9 Measurement For
Payment**

.3 (Replace 1.9.3 with the following clause)

Flow control measures necessary for mainline and all sewer services will be measured on a unit basis and paid for at the Contract Unit Price for "Flow Control". Number of units to be paid for will be the total number of units supplied in accordance with this specification, accepted and measured by the *Contract Administrator*.

Only one unit of flow control will be paid for each sewer segment and will include all occurrences of mainline and sewer service flow control requirements for the entire location.

Where no flow control measures are undertaken, no payment will be made for this item of work.

.8 (Replace 1.9.8 with the following clause)

Liner installation will be measured on a length basis for each size and paid for at the Contract Unit Price for "Full Segment CIPP". Length to be paid for will be the total length of CIPP supplied and installed in accordance with this specification, accepted and measured by the *Contract Administrator*.

Full segment CIPP measurement will be made horizontally at grade, above the centreline of the pipe from centre to centre of manholes.

Eighty percent (80%) of the payment will be made upon satisfactory completion of the CIPP installation work. The remaining 20% of the payment will be made upon confirmation of the CIPP strength and delivery and acceptance of all required submissions, shop drawings, and reports.

.12 (Add 1.9.12 and the following clause)

.12 *Contractor* to confirm if unknown connection is active. *Contractor* to complete necessary die testing and any subsequent proofing to provide *Contract Administrator* of confirmation of status of unknown connection. Payment will be made on a per unit basis as per Schedule of Quantities and Prices.

**3.4 Verify Existing Sewer
Dimensions**

.2 (Add Section 3.4.2 and the following clause)

Advise the *Contract Administrator* of any condition that is contrary to the design conditions or assumptions made that

may affect either long or short term performance of the CIPP prior to liner design.

3.5 Preparation

.5 (Replace 3.5.5 with the following clause)

Review the Pre-Lining Inspection video with the *Contract Administrator* at least 24 hours before installing the CIPP and obtain approval to install the CIPP. The Pre-Lining Inspection shall confirm:

- .1 Necessary cleaning and pipe preparation work, including internal and external sewer repairs, have been satisfactorily completed.
- .2 Condition of the sewer pipe and service connections is consistent with the design conditions and the Specifications. Advise the *Contract Administrator* of any condition that is contrary to the design conditions or assumptions made that may affect either long or short-term performance of the CIPP prior to commencing lining.
- .3 Location, condition and operational status of all sewer services.
- .4 Review Sewer Connection Reports while reviewing the Pre-Lining Inspection.

3.6 Liner Installation

.5 (Add Section 3.6.5 and the following clause)

If required by the Construction Plan, install a pre-liner to preclude any deleterious reaction between the CIPP and preservatives in the wood stave pipe, which could include creosote or other deleterious substances.

.6 (Add Section 3.6.6 and the following clause)

Install liners by inversion methods in accordance with ASTM F1216 or by pull-in methods in accordance with ASTM F1743.

.7 (Add Section 3.6.7 and the following clause)

Full segment CIPP shall be cured by hot water or steam. Any other method will require approval of the *Contract Administrator* prior to commencing the Work.

.8 (Add Section 3.6.8 and the following clause)

Carry out workmanship in accordance with ASTM D5813.

.9 (Add Section 3.6.9 and the following clause)

Trim ends of CIPP neatly to fit flush with interior vertical surface and manhole benching and seal to make watertight. If required

by the Construction Plan, provide supplementary means of axial restraint to preclude excessive axial shrinkage.

.10 (Add Section 3.6.10 and the following clause)

Fill annular spaces where the CIPP does not make an adequate seal with the host pipe at manholes, termination points and sewer services due to broken or misaligned pipe with a resin mixture compatible with the CIPP.

.11 (Add Section 3.6.11 and the following clause)

Extend limits for internal point repairs a minimum of 300 mm in each direction beyond the limits of the defect to be repaired. Extend internal point repairs that terminate at sewer services a minimum distance of 300 mm beyond the limit of the service.

.12 (Add Section 3.6.12 and the following clause)

Ensure termination points of internal point repairs provide a smooth and uniform flow transition to the host pipe for the full circumference of the repair.

3.8 Service Reconnection

.1 (Amend Section 3.8.1 to include the following)

Reinstate all "active" and "unable to determine" service connections including CB leads and utility drains to 100% of the original cross sectional area.

The *Contractor* will re-opening service connections from within the lined sewer. The method of service reinstatement shall be submitted to and approved by the *Contract Administrator* prior to construction and must be an effectively proven method of protecting existing pipe, liners and connections from damage.

Openings cut from inside the lined sewer will at a minimum require a CCTV camera and remote controlled cutting device to carefully monitor cutting operations.

Openings cut from inside service connections must utilize new technology cutting systems capable of navigating small diameter PVC services, including pipe bends, and must be capable of opening pipe connections without damaging the host pipes.

Remove sharp edges from opening cut outs and provide a smooth rounded lip with brush finish.

.5 (Replace Section 3.8.5 with the following clauses)

.1 Fill voids between the CIPP and the host pipe at sewer service openings with a non-shrink, watertight cement grout or an appropriate polyurethane grout compatible

with the liner system, or other approved grouting product to form a smooth watertight connection.

- .2 Locations for sewer service grouting shall be identified by the *Contract Administrator* during review of Post Lining Video Inspection.
- .3 If the voids are due to the condition of the existing sewer service and host pipe, sewer service grouting shall be measured and paid for under sewer connection grouting – after lining. If the voids are due to the *Contractor's* method of reinstatement, deficiencies in the CIPP installation, or any other reason related to the *Contractor's* workmanship or method of operations, they shall be filled at the *Contractor's* expense.
- .4 Repair of defective or incomplete sewer service grouting shall be at the *Contractor's* own expense.
- .5 Ensure that all cut-outs for sewer connections are removed from the sewer and are prevented from being washed into the sewer system downstream of the repair location.

END OF SECTION 33 05 24

**CURED-IN-PLACE-PIPE LATERAL LINING BY MEANS OF A ONE-PIECE MAIN AND LATERAL
CURED-IN-PLACE LATERAL (MLCIPL)**

PART 1 – GENERAL

- 1.1 DESCRIPTION** .1 Section 33 05 27 refers to those portions of the work that are unique to the supply and installation of a resin impregnated one-piece Main and Lateral Cured-In-Place-Pipe Lateral (MLCIPL) liner for small diameter circular sewer service connection rehabilitation up to and including 200mm diameter. This section must be referenced and interpreted simultaneously with all other sections pertinent to the works described herein.
- 1.2 RELATED WORK** .1 Traffic Regulation - Traffic and Highway Bylaw.
.2 CCTV Pipeline Inspection - Laterals Section 33 01 30.3.
.3 Sewer Cleaning Section 33 01 30.2.
- 1.3 REFERENCES** .1 Reference standards, specification or publications.
.1 ASTM D790 Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Material.
.2 ASTM D2990 Standard Test Method for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics.
.3 ASTM D 3681 Test Method for Chemical Resistance of "Fibreglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe in a Deflected Condition
.4 ASTM D5813 Standard Specification for Cured-in-Place Thermosetting Resin Sewer Piping Systems.
.5 ASTM F1216 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube.
.6 ASTM F1743 Standard Practice for the Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP).
.7 ASTM F2019 Standard Practice for the Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP).
.8 ASTM F2561 Standard Practice for Rehabilitation of a Sewer Service Lateral and its Connection to the Main Using a One Piece Main and Lateral Cured-in-Place Liner.
- 1.4 MATERIAL CERTIFICATION** .1 All materials to conform to this specification, to the latest edition of the appropriate specifications of the American Society for Testing and Materials (ASTM) or other standards expressly specified. All provisions in ASTM and other specified standards pertaining to materials, workmanship, finish, inspection and rejection form part of these

specifications as far as they are applicable and providing that they are not inconsistent with this specification. This specification takes precedence over the ASTM specifications in case of a discrepancy or conflict. Materials incorporated into the Work but not specifically covered in the specifications are to be obtained from the Contract Administrator prior to installation.

- 1.5 WORK REGULATIONS** .1 Work to conform to all applicable regulations of Work Safe BC Confirm training compliance in the following:
- .1 Confined space entry procedures.
 - .2 Atmospheric monitoring and ventilation methods.
 - .3 Personal protective equipment.
 - .4 Interpretation of Material Safety Data Sheets (MSDS).
- 1.6 SUBMISSIONS** .1 The Contractor shall submit the following information at the time of tender submission:
- .1 Description of proposed lining product including the name of the manufacturer of the tube and resin together with relevant references to applicable ASTM procedures for product manufacture and product installation.
 - .2 Independent third party test data supporting values for long-term modulus of elasticity of proposed CIPP composite material in accordance with ASTM D2990. These tests must include a description of the composite verifying the type of resin, carrier material and corresponding reference numbers.
 - .3 Structural design calculations for liner thickness based on ASTM F1216 Appendix XI.
 - .4 Provide two (2) references for similar CIPP projects carried out in the past three years. References to include: The name of the municipality for which the liner installations were completed, contact name and telephone numbers of project manager.
 - .5 Statement as to whether the intended installation and curing method is for hydrostatic head, steam/pressure or Ultra-violet ray. Provide brief description of associated equipment.
- .2 Contractor to submit the following information at least ten (10) days prior to initiation of rehabilitation work:
- .1 Calculated values for maximum inversion head and curing head and/or maximum allowable tensile installation load for each section of CIPP liner.
 - .2 Resin curing schedule including anticipated temperature and cure times for the various stages of installation reflecting the proposed resin system, liner length, thickness and diameter.

- .3 The calculated resin volume for each 1.0 m length of lateral liner and corresponding material thickness. Calculations to include a minimum 7% allowance for polymerization and migration into cracks and joints.
 - .4 Written confirmation of safety training for field crews.
 - .5 Site sketch indicating proposed layout of bypass pumping system.
 - .6 Project schedule detailing a work plan time-line.
 - .7 Traffic management plan.
- .3 No CIPP liner installation shall take place prior to review and written acceptance of the aforementioned submissions by the Contract Administrator.
- 1.7 MATERIAL SAMPLES**
- .1 Provide a total of three (3) plate samples for this project as selected by the Contract Administrator. Sample to measure minimum of 300 mm in length and formed between suitable metal plates and clamped at representative installation pressure.
- 1.8 SCHEDULING**
- .1 Schedule work to minimize interruptions to existing services.
 - .2 Hours of work to comply with noise restriction bylaw unless granted exemption from governing authority.
- 1.9 MEASUREMENT FOR PAYMENT**
- .1 All units of measurement for payment will be as specified herein unless shown in the Form of Tender.
 - .2 Measurement for payment of service lateral lining will be paid at the unit price for the appropriate length of repair as described in the Form of Tender. The unit price shall include; pre-cleaning of the lateral, root, grease and/or debris removal, pre-lining CCTV inspection, installation of the MLCIPL liner and post-lining CCTV inspection.
 - .3 Payment for representative samples shall be incidental to the contract.
 - .4 Measurement for Payment for trimming of protruding services will be paid at the unit rate described in the Form of Tender.
- 1.10 INSPECTION AND TESTING**
- .1 Contractor to provide Contract Administrator free access to inspect the materials and wet-out procedure and render assistance together with confined space entry equipment to facilitate physical inspection of finished liner.
 - .2 Contractor to provide Contract Administrator 72 hours advance notice of wet-out operation. The wet-out shall not commence without the owners designated inspector in attendance unless waived in writing by the Contract Administrator.

- .3 Physical property values used in submitted structural calculations must be met prior to release of progress and final payments. Failure to achieve these values will require the re-submission of calculations using the physical properties determined by independent laboratory test results as per ASTM D 790.
 - .1 The material testing laboratory will be selected by the Contract Administrator. No other material tests results conducted by other than the designated material testing facility will be considered.
- .4 The minimal values for Flexural Strength and Flexural Modulus shall be in accordance with Table 1 of the corresponding ASTM Standard Practice for each liner technology. Failure to achieve these values will incur payment penalties.
- .5 Digital copy of the Time and Temperature (and where applicable pressure) curing logs to be presented within 72 hours of liner installation and prior to release of interim payments.

PART 2 – PRODUCTS

2.1 LINER TECHNOLOGY

- .1 The liner material shall be such that it will restore the structural integrity of the pipe and eliminate the potential for infiltrating ground water and exfiltration of contents. The completed liner shall contain only materials capable of withstanding the effects of conventional sanitary and storm sewage, the gases produced there from, grits and other materials normally transported in sanitary and storm sewage pipelines.
- .2 The following small diameter liner technologies specifically developed for the rehabilitation of sewer service laterals and generally conforming to the relevant ASTM rehabilitation methods below are acceptable under these specifications:
 - .1 Cured-in-place (Felt liners) Inversion Method –ASTM F1216- 07b *Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of Resin-Impregnated Tube.*
 - .2 Cured-in-place (Felt liners) Pull-in-place Method – ASTM F1743-96 *Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP).*
 - .3 Cured-in-place (Glass Reinforced Plastic) Pull-in-place Method – ASTM F2019 -03 *Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP)*

- 2.2 LINER MATERIAL**
- .1 Minimum material requirements for CIPP liners to conform to ASTM D5813.
 - .2 Liner material for lateral rehabilitation must provide the flexibility to line 45 degree bends and to conform to the following requirements:
 - .1 Consist of one or more layers of absorbent textile material such as; needle punched felt or knitted polyester
 - .2 Glass Reinforced Plastic material made of a minimum of 2 layers of corrosion resistant (E-CR) glass fibres in accordance with ASTM D 578.
- 2.3 RESIN**
- .1 The following resin materials and curing methods specifically developed for CIPP applications are approved for use under these specifications:
 - .1 Epoxy – two-part component, thermosetting resins consisting of Part A Bisphenol base resin and Part B aliphatic amine based catalyst cured by external source of heat including water or steam.
 - .2 Epoxy Vinyl Ester thermosetting resins consisting of base resin, a combination proven initiator of Perkadox 16 and Trignox C specifically designed for cure by external source of heat including water or steam.
 - .3 Premium isophthalic polyester resins consisting of base resin, a combination proven initiator of Perkadox 16 and Trignox C specifically designed for cure by external source of heat including water or steam.
 - .2 Resin used for impregnation to be consistent with the product identified in the ASTM D2990 testing performed by the resin manufacturer and submitted at the time of tender.
 - .3 Volume of resin to be consistent with the volume calculations submissions in accordance with ASTM F1216, Section 7.2 *Resin Impregnation* including an allowance between 5% to 10% for change in resin volume due to polymerization and migration.
- 2.4 RESIN IMPREGNATION**
- Resin impregnation of felt tubes to include vacuum system and pinch roller to ensure thoroughly saturated tube.
- 2.5 WORKMANSHIP AND FINISH**
- .1 The finished CIPP liner shall conform to Clause 6.2 *Workmanship* of ASTM D5813.
 - .2 The Contractor shall field measure the internal circumference of the sewers to determine the size of sewer lateral.
 - .3 Physical dimensions of the liner shall conform to Clause 6.3 *Dimensions* of ASTM D5813.

2.6 LINER DESIGN

- .1 Liner thickness calculations shall assume that all sections of MLCIPL sewer lateral to be rehabilitated are considered to be "*Fully Deteriorated Gravity Pipe Condition*". If the mainline pipe has been lined with a fully deteriorated structural liner then the mainline segment may be designed for hydrostatic buckling only. Designs will be based on the modified AWWA formula as detailed in Appendix XI of ASTM F1216 latest edition with the following minimum design assumptions:
 - .1 The total external pressure on the pipe shall include an allowance for an AASHTO HS20 concentrated live load.
 - .2 The minimum soil density utilized in computation of dead load shall be 1920 kg/m³.
 - .3 The height of the water above the pipe shall be based on the assumption that the groundwater table is 1.0 metre below the ground surface elevation.
 - .4 The ovality reduction factor shall be based on a minimum value of 3% unless a greater value is specified or warranted based on the Contractor's observation of the CCTV inspection, remote measuring method or physical measurement.
 - .5 The modulus of soil reaction (E's) shall be assumed to be 6900 kPa unless a higher or lower value is specified in these documents.
 - .6 The minimum factor of safety (N) to be utilized in the fully deteriorated design analysis shall be 2.
- .2 The long-term value for the flexural strength (E_L) shall satisfy the following:
 - .1 The projected value at 50 years of continuous application of the load based on the specific resin and fabric composite proposed for use as established by ASTM D2990.
- .3 A design check using Manning's formula shall be performed to confirm that the rehabilitated section will have a hydraulic capacity equal to or greater than the existing pipeline. The assumed value for Manning's "n" for the CIPP section shall be 0.013.
- .4 Liner design calculations signed and sealed by a Professional Engineer APEG BC.

PART 3 – EXECUTION

3.1 BYPASS PUMPING

- .1 Contractor to provide notice of work to residents minimum 1 week prior to commencing (date on letter).
- .2 Contractor shall install temporary bypass pumping system around the designated sewer sections in accordance with pre-submitted arrangement and as designated by the Contract Administrator.

- .3 Pumps and bypass lines shall be of adequate capacity to accommodate pre-determined flows as specified in the contract documents.
- .4 Contractor to take all necessary precautions to prevent spills to the environment or back-up of sewerage onto private property. In the event of a spill, the Contractor shall be responsible for immediate clean-up operation and remediation of damaged property.
- .5 Contractor shall report any spills and back-ups to Contract Administrator immediately.

3.2 PREPARATION

- .1 Flush and clean sewer lateral of all debris, roots and ponding water before liner installation. Cleaning of sewers to be carried out in accordance with Standard Supplemental Specification for "Cleaning of Sewers" Section 33.01.30.2.
- .2 Conduct pre-installation CCTV inspection in accordance with Standard Supplementary Specifications for CCTV inspection of Sewers - Section 33.01.30.3.
- .3 Submit copy of CCTV inspection to Contract Administrator for review prior to proceeding with lining.
- .4 Pre-measure and document the location of all defects within the lateral and record overall distance from clean-out to sewer main interface.
- .5 Notify Contract Administrator of any unforeseen obstructions or anomalies observed in the pre-installation CCTV inspection.
- .6 Notify effected property owners 24 hours in advance of disruption of service. Information notice to be pre-approved by Contract Administrator.

3.3 LINER INSTALLATION

- .1 Notify Contract Administrator 48 hours in advance of resin impregnation of lateral liners.
- .2 Wet-out lateral lining material in accordance with manufactures recommendation. Felt material to be impregnated under vacuum and resin distributed through pinch roller.
- .3 Install lateral liner in accordance with applicable ASTM standard as referenced in Section 1.2 *References* of this specification.
- .4 Length of liner to be installed will be determined by the Contract Administrator for each individual service lateral and may include full-length, from the mainline to the property line or partial distances up the lateral in 1.0m increments as

deemed appropriate.

- .5 The MLCIPL to be complete with integrated one-piece mainline section of a minimum of 600mm in length centered on the service lateral.
- .6 The curing and cool-down process to follow the ASTM Standard Practice under which the liner is installed. Specifically the curing process will follow the resin manufacturer's recommendation to achieve; initial cure, post-cure at the manufacturer's recommended temperature.
- .7 Present curing data to the Contract Administrator following each liner installation.
- .8 Maintain documented record of resin batch mix procedure for each later liner including the following data:
 - .1 Identification of the repaired sewer lateral (address)
 - .2 Type of host pipe material
 - .3 Diameter of host pipe
 - .4 Length of pipe sections between joints
 - .5 Depth of pipe to surface (at clean-out)
 - .6 The total volume or weight of base resin, catalyst and accelerant for each sewer lateral.
 - .7 Start and finish time of cure for each repair.
 - .8 Temperature and pressure for each cure

3.4 FIELD CURED SAMPLES

- .1 Prepare three (3) flat plate samples using the same textile tube material and resin system as used for rehabilitation lateral and lateral to main. Apply the same pressure on the metal plates as per installation of lateral liner. Samples must be of sufficient size to produce a minimum of five (5) test specimens in accordance with ASTM D 790.
- .2 Remove CIPP pipe samples and present to Contract Administrator immediately following each sample liner preparation and cure.

**3.7 POST INSTALLATION
CCTV INSPECTION**

- .1 Conduct post installation CCTV inspection of lateral within 48 hours of liner installation in accordance with Supplemental Section 33 01 30.3 . Submit copy of inspection report to Contract Administrator.

3.8 ACCEPTANCE

- .1 Acceptance of each sewer lateral liner will be determined based on the following:
 - .1 Material tests of field cured samples shall have the minimum values as stated in ASTM F1216 – Section 7 – Table 1 (CIPP Structural Properties) and meet the claimed physical material properties used in the submitted structural calculations.

- .2 Review of resin volume impregnation records.
- .3 Installation and curing logs including:
 - .1 Installation, curing and cool-down heads.
 - .2 Curing temperatures and pressures for compliance with applicable ASTM standards.
- .4 Review of post installation CCTV inspections reports.

END OF SECTION

GENERAL NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE MMCD PLATINUM EDITION, THE CITY OF CAMPBELL RIVER DESIGN STANDARDS (2010), SPECIFICATIONS AND DRAWINGS UNLESS OTHERWISE NOTED ON THE ISSUED FOR CONSTRUCTION DRAWINGS. IF A CONFLICT IS ENCOUNTERED BETWEEN THE CONTRACT SPECIFICATIONS, DRAWINGS OR THE ABOVE MENTIONED DOCUMENTS, THE MOST STRINGENT WILL APPLY.
2. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE CITY OF CAMPBELL RIVER BYLAWS AND OH&S GUIDELINES AND REGULATIONS. PROVIDE A TRAFFIC MANAGEMENT PLAN FOR REVIEW AND APPROVAL IN ADVANCE OF WORK AS PER SUPPLEMENTAL SPECIFICATION 01 55 00.
3. DURING CONSTRUCTION, ENSURE THAT ALL OH&S REGULATIONS ARE FOLLOWED. PROVIDE COPY OF ALL WORKSAFE BC REPORTS TO CONTRACT ADMINISTRATOR.
4. CONTACT BC-1 CALL AT (1-800-474-6886) FOR EXTERNAL UTILITY LOCATES A MINIMUM 5 WORKING DAYS PRIOR TO WORK.
5. CONFIRM ALL EXISTING SANITARY SERVICES FOR WORK AREA BY VERIFYING USING CAMERA AND DYE TEST METHODS (NOTE: MANY OF THE SITES DO NOT HAVE PROPERTY LINE INSPECTION CHAMBERS). IF CONFLICT ARISES, CONTACT THE CONTRACT ADMINISTRATOR IN ADVANCE OF WORK.
6. NOTIFY RESIDENTS WHO WILL BE DIRECTLY AFFECT BY THE CONSTRUCTION 72 HOURS IN ADVANCE OF WORK COMMENCING.
7. ARRANGE (72 HOURS IN ADVANCE) WITH CITY OPERATIONS-WATER DEPARTMENT TO ISOLATE THE WATER SERVICES, WHERE POSSIBLE, TO MITIGATE SERVICE USAGE DURING WORK.
8. ARRANGE (72 HOURS IN ADVANCE) WITH CITY OPERATIONS-WATER DEPARTMENT THE USE OF HYDRANTS USING AN APPROVED DOUBLE BACK FLOW PREVENTER ASSEMBLY.
9. ALL DIMENSIONS AND ELEVATIONS SHOWN ON DRAWINGS ARE IN METERS UNLESS OTHERWISE NOTED. MAIN ISOLATION AND BYPASS PUMPING EQUIPMENT AND LAYOUT WHERE CROSSING TRAFFIC IS TO BE SUPPORTED WITH SUITABLE TRAFFIC RATED RAMPS AND SUPPORTED BY TRAFFIC CONTROL.

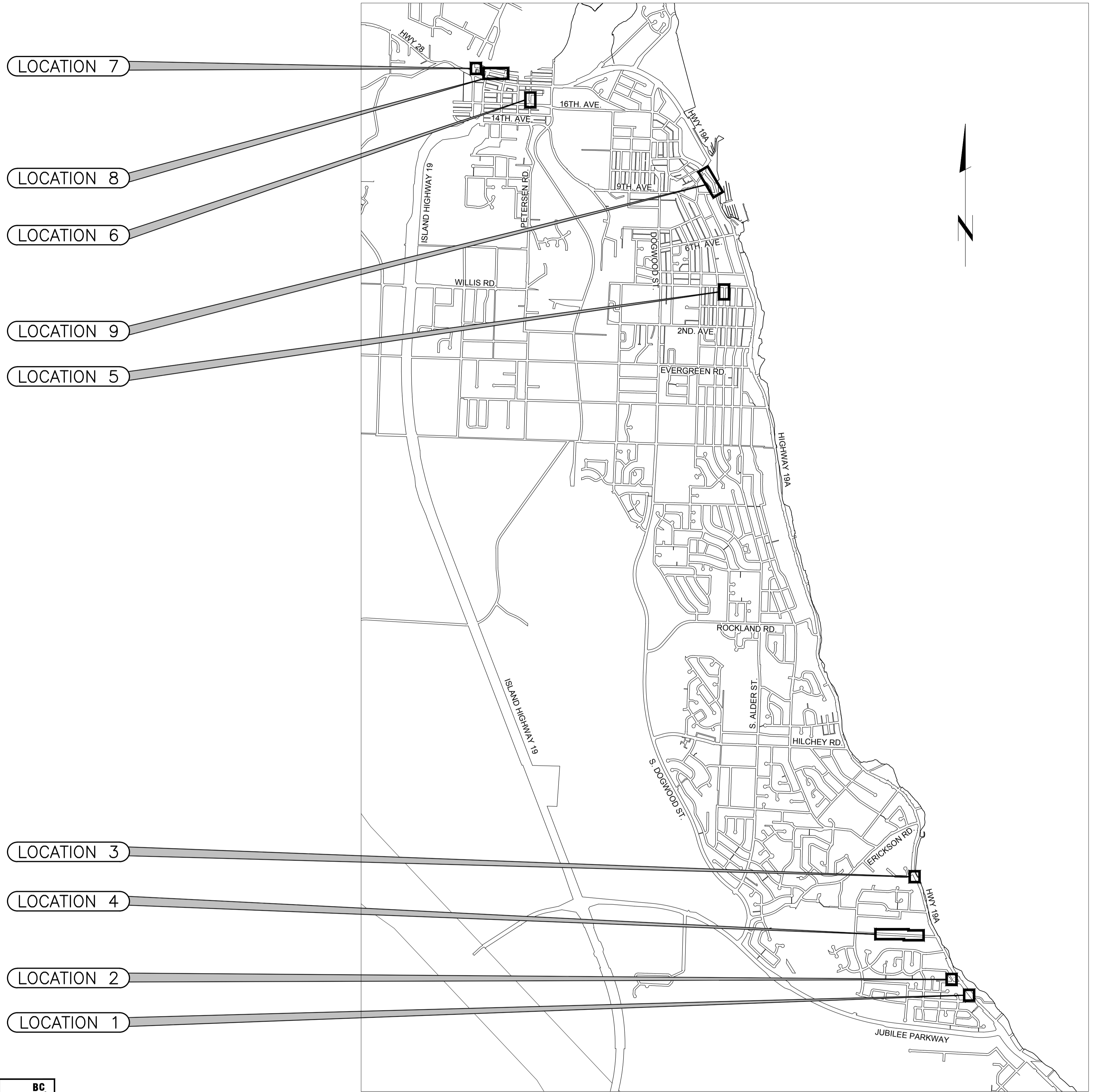
UTILITY NOTES:

1. THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE COMPILED FROM MULTIPLE SOURCES AND RECORDS AND CAN NOT BE GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXISTENCE, LOCATION, ELEVATION AND MATERIAL OF ALL SUCH UTILITIES AND OR STRUCTURES WITHIN 50m OF THE WORK AREA AND IS RESPONSIBLE FOR NOTIFYING THE APPROPRIATE COMPANY, DEPARTMENT OR OWNER PRIOR TO CARRYING OUT INTENDED WORKS.
2. IF GAS MAINS ARE PRESENT WITHIN THE PROJECT AREA, FORTIS BC IS TO BE NOTIFIED AND LINES ARE TO BE LOCATED USING FORTIS BC AND WORKSAFE BC PROCEDURES PRIOR TO ANY MECHANICAL EXCAVATIONS BELOW EXISTING GRADE.

ENVIRONMENTAL NOTES:

1. USE BEST PRACTICES, IN ACCORDANCE WITH BRITISH COLUMBIA'S ENVIRONMENTAL BEST MANAGEMENT PRACTICES (BMP) GUIDELINES AND REGULATIONS. MAKE ADJUSTMENTS TO WORK ACTIVITIES DURING PERIODS OF HEAVY RAIN EVENTS TO MINIMIZE THE POSSIBILITY OF SEDIMENTS FROM ENTERING THE STORM DRAINAGE SYSTEM. LISTED ARE SOME BMP'S FOR TYPICAL USE:
 - CHECK ALL EQUIPMENT FOR FLUID LEAKS PRIOR TO ENTERING THE WORK AREA.
 - NO EQUIPMENT RE-FUELING TO OCCUR IN THE WORK AREA UNLESS SPILL PROTECTION MEASURE ARE IN PLACE.
 - A SPILL KIT IS TO BE MAINTAINED ONSITE THROUGHOUT THE DURATION OF THE CONSTRUCTION PERIOD.
 - SURFACE WATER IS TO BE MANAGED WITHIN THE WORK AREA TREATED DISCHARGE. THIS MAY INCLUDE ONSITE DETENTION AND/OR CULVERT FILTRATION.
 - COVER EXPOSED SOILS IN INCLEMENT WEATHER WITH MEASURES TO MINIMIZE SEDIMENT SUCH AS TARPES, HYDRO-SEEDING, ORGANIC LEAK MULCH.
 - STOCKPILE SOILS AWAY FROM DRAINAGE INLETS /CULVERTS AND ENSURE PILES ARE COVERED IF LEFT FOR MORE THAN 48HRS OR FORECAST IS INCLEMENT.
2. PLACE BERM OR FILTER FABRIC TRAPS AT ALL INLET STRUCTURES WITHIN THE CATCHMENT OF THE WORK.
3. INSTALL SILT FENCING WHERE APPLICABLE TO REDUCE SEDIMENT MIGRATION.
4. ADHERE TO ALL CONDITIONS OF CURRENT CITY OF CAMPBELL RIVER ENVIRONMENTAL BYLAWS.
5. DISCHARGE OF SEDIMENT LADEN WATER INTO THE SANITARY SYSTEM IS NOT PERMITTED.

Drawing #	Location ID	Segment ID	Main ID	SMH	to SMH	Length	Street	xStreet
2	1	1	2513	2740	2473	65.1m	S. Island Highway	#3648 to #3680
2	2	2	2541	2535	2537	56.2m	Oregon Road	Washington Drive
2	3	3	2529	2458	2454	68.9m	S. Island Highway	Barlow Road
3	4	4	2565	2805	2517	104.8m	Twillingate Road	#370 to #306
4	4	5	2566	2517	2518	182.9m	Twillingate Road	#306 to #192
4	4	6	2567	2518	2519	152.4m	Twillingate Road	#192 to #90
4	5	7	727	997	998	99.6m	McLean Street	4th. Avenue to #362
5	6	8	557	356	355	107.5m	Petersen Road	16th. Avenue to 17th. Avenue
5	7	9	536	293	294	46.8m	19th. Avenue	Island Highway to Enns Road
6	8	10	542	300	299	57.3m	19th. Avenue	#1981 to Tamarac Street
6	8	11	543	300	301	67.1m	19th. Avenue	#1981 to #1931
6	8	12	544	301	302	64.0m	19th. Avenue	#1931 to Spruce Street
6	8	13	-	3489	299	12.50m	19th. Avenue	Tamarac Street
7	9	14	894	902	803	97.5m	Island Highway	9th. Avenue to #918
7	9	15	895	803	804	70.1m	Island Highway	#918 to #930
7	9	16	896	804	805	74.7m	Island Highway	#930 to St. Anns Road



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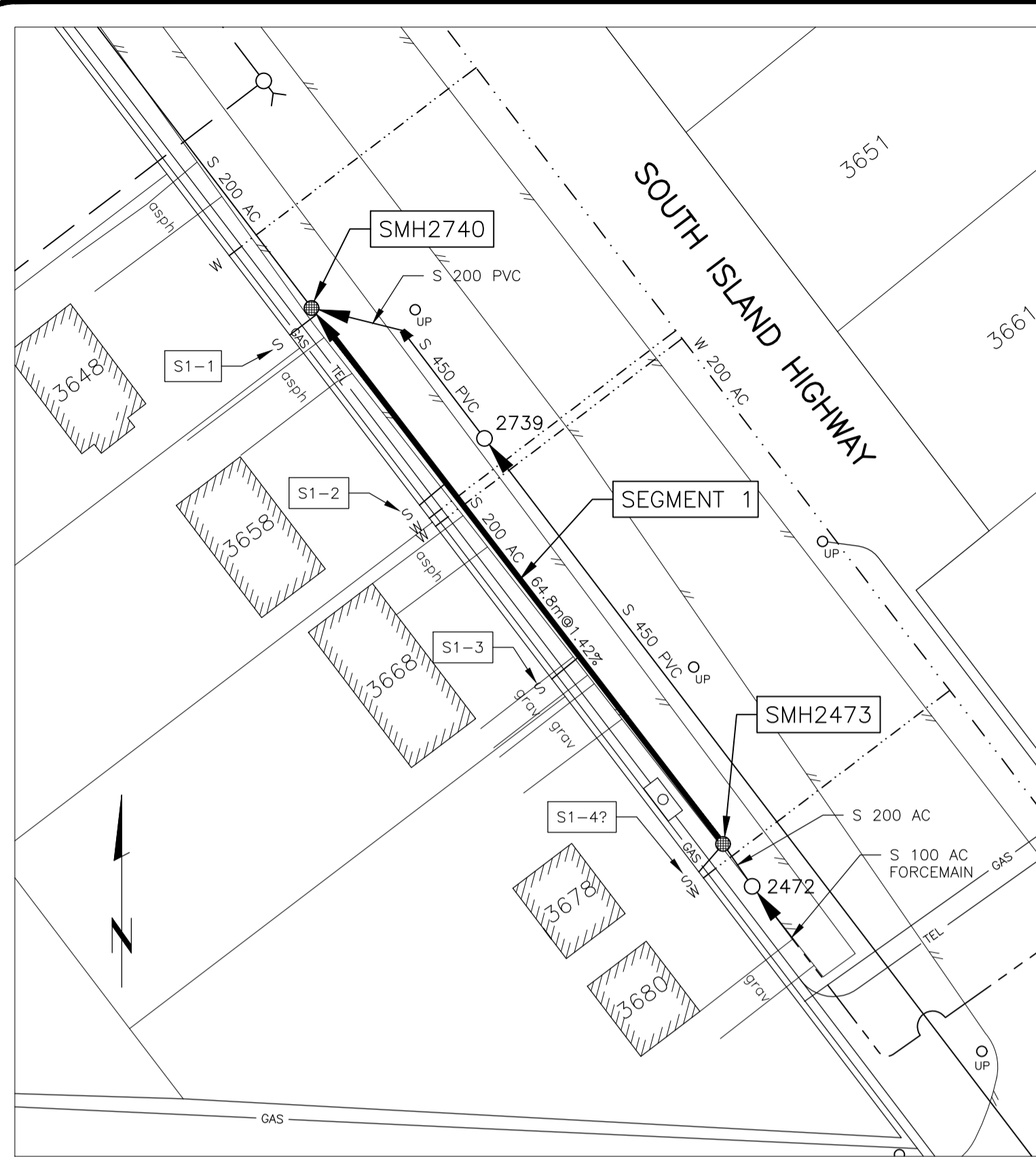
KEY MAP
N.T.S.

FOR TENDER

TEL U/G TELEPHONE BCH U/G HYDRO GAS NATURAL GAS		TEL BCH GAS		S SANITARY SEWER D STORM DRAIN W WATER MAIN P PAVEMENT C CURB & GUTTER SIDEWALK		S O.D. S.W.H. D.M.H. SIDE INLET TOP INLET HYD. W.V. U.P. U.P.		S O.D. S.W.H. D.M.H. SIDE INLET TOP INLET HYD. W.V. U.P. U.P.		DESIGNED: DD DRAWN: TB CHECKED: DD APPROVED: JH	SCALE: AS SHOWN DATE: FEB./2018 DATE: APRIL/2018 DATE: MAY/2018	City of Campbell River Capital Works Department	TITLE: 2018 SANITARY SEWER CIPP LINING KEY MAP AND GENERAL NOTES	DRAWING NO. 17-525 PROJECT: 14-06 SHEET 1 OF 7 REV. 1
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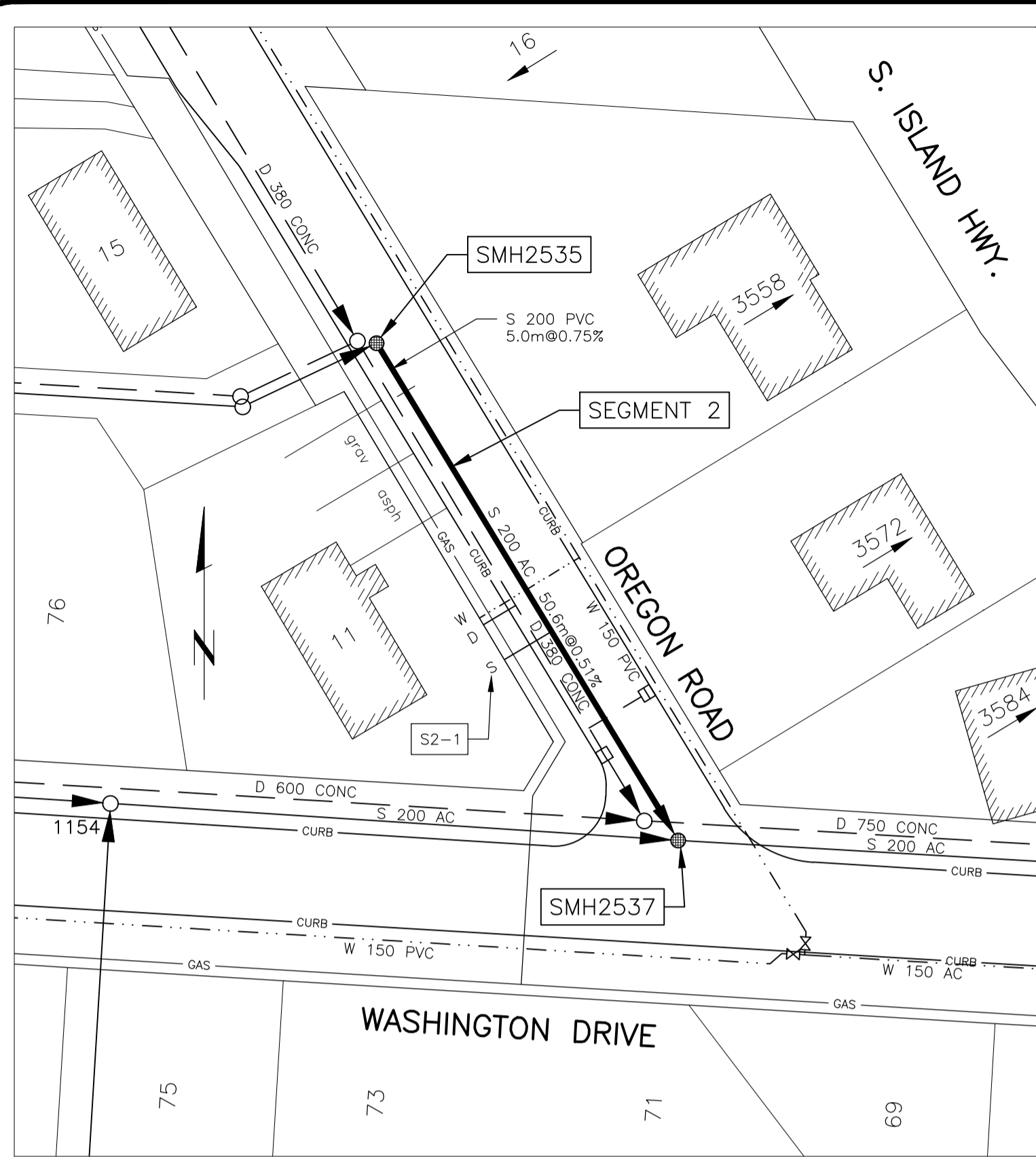
DRAWING PATH: G:\Capital Works\1-Projects\1-Current\14-06 SM ReplacementProjects\octfbd\2018\01-Design\B-Drawings\17-525.dwg Tab SHEET 1 TITLE May 31, 2018 3:03:13pm DESTROY PRINTS OF PREVIOUS REVISION



LOCATION 1 – SOUTH ISLAND HIGHWAY

SEGMENT	U/S MH – DEPTH	D/S MH – DEPTH	LENGTH	PIPE Ø	MATERIAL
1	SMH2473 – NA	SMH2740 – NA	65.1m	200mm	PVC/AC

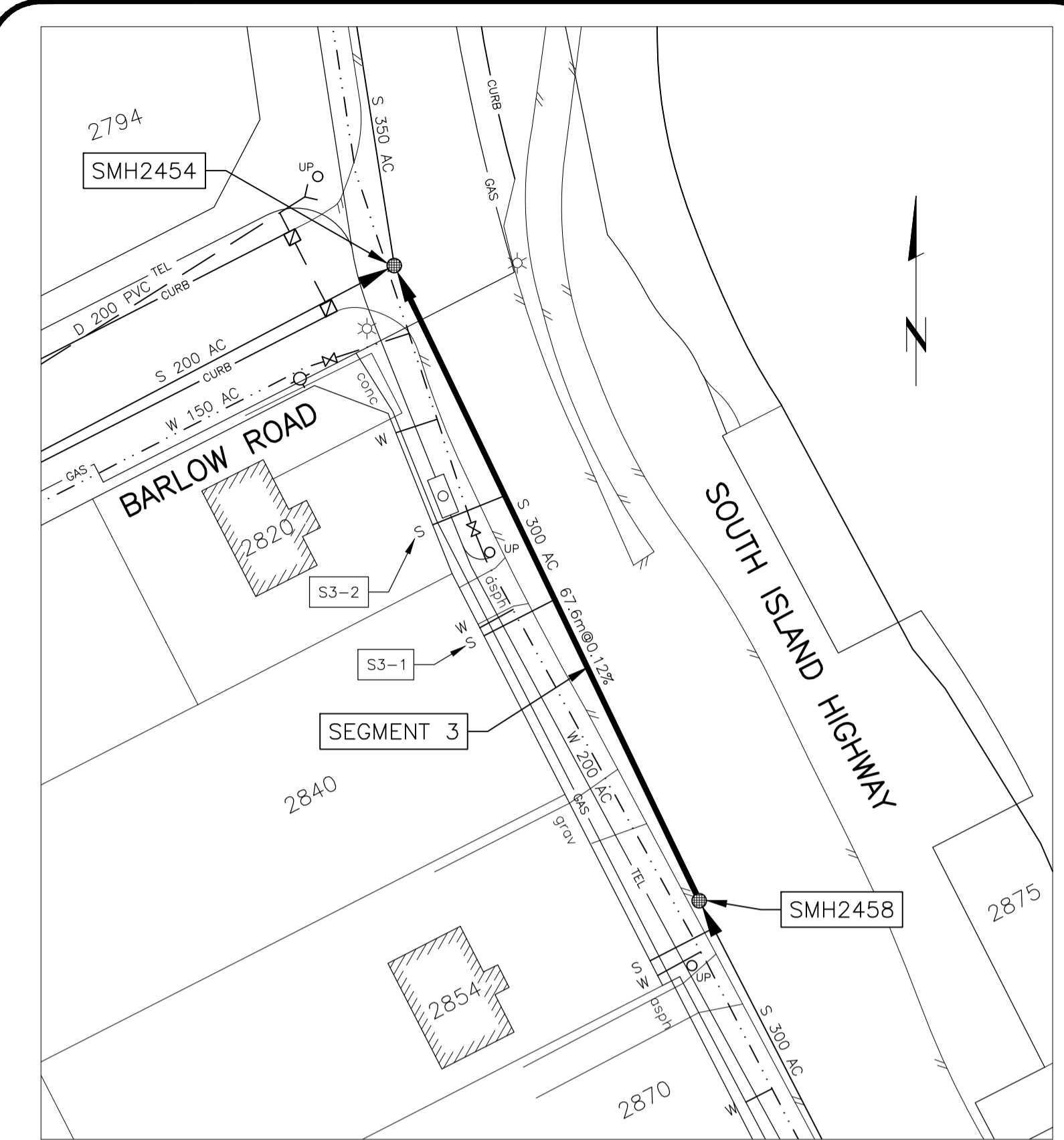
SEGMENT 1 – SMH2740 TO SMH2473 (U/S)						
ID#	DISTANCE	CLOCK REFERENCE	DIAMETER	Length to PL	KEY	REMARKS
S1-1	0.1m	2	100mm	3.4m	B	ACTIVE SERVICE
S1-2	21.0m	2	100mm	3.4m	B	ACTIVE SERVICE
S1-3	42.3m	2	100mm	3.4m	B	ACTIVE SERVICE
S1-4?	INTO MANHOLE?		100mm	3.2m	B	ACTIVE SERVICE



LOCATION 2 – OREGON ROAD

SEGMENT	U/S MH – DEPTH	D/S MH – DEPTH	LENGTH	PIPE Ø	MATERIAL
2	SMH2535 – NA	SMH2537 – NA	56.2m	200mm	PVC/AC

SEGMENT 2 – SMH2535 TO SMH2537 (D/S)						
ID#	DISTANCE	CLOCK REFERENCE	DIAMETER	Length to PL	KEY	REMARKS
S2-1	32.5m	2	100mm	5.3m	B	ACTIVE SERVICE



LOCATION 3 – SOUTH ISLAND HIGHWAY

SEGMENT	U/S MH – DEPTH	D/S MH – DEPTH	LENGTH	PIPE Ø	MATERIAL
3	SMH2458 – NA	SMH2454 – NA	68.9m	300mm	AC

SEGMENT 3 – SMH2458 TO SMH2454 (D/S)						
ID#	DISTANCE	CLOCK REFERENCE	DIAMETER	Length to PL	KEY	REMARKS
S3-1	33.0m	10	100mm	7.7m	B	ACTIVE SERVICE
S3-2	44.4m	10	100mm	7.9m	B	ACTIVE SERVICE

KEY NOTES:

- A REMOVE INTRUDING CONNECTION
- B RE-INSTATE ACTIVE SERVICE CONNECTION
- C PRE AND INSTALL INTERFACE SEAL
- D INVESTIGATE SERVICE ACTIVITY. CONTRACTOR TO DYE-TEST AND CONFIRM IF ACTIVE
- E PREP AND INSTALL FULL LENGTH CIPP IN SERVICE LATERAL FROM MAIN INTERFACE TO PROPERTY LINE (EXCLUDING PVC LATERALS) RE-OPEN IC'S AND CO'S WHERE ENCOUNTERED.

NOTE:

1. LOCATIONS AND DISTANCES TO SERVICE LATERALS ARE COMPILED FROM PROPERTY RECORDS AND VIDEO INSPECTIONS AND ARE APPROXIMATE ONLY. CONTRACTOR TO CONFIRM PRIOR TO CONSTRUCTION.
2. ALL SERVICES TO BE FLUSHED AND INVESTIGATED.
3. NO LINERS REQUIRED IN PVC SERVICE LATERALS.

INFORMATION SHOWN ON THIS DRAWING IS COMPILED FROM NUMEROUS SOURCES AND MAY NOT BE COMPLETE OR ACCURATE. THE CITY OF CAMPBELL RIVER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THIS DRAWING.



FOR TENDER

2018 SANITARY SEWER CIPP LINING
SOUTH ISLAND HIGHWAY AND OREGON ROAD



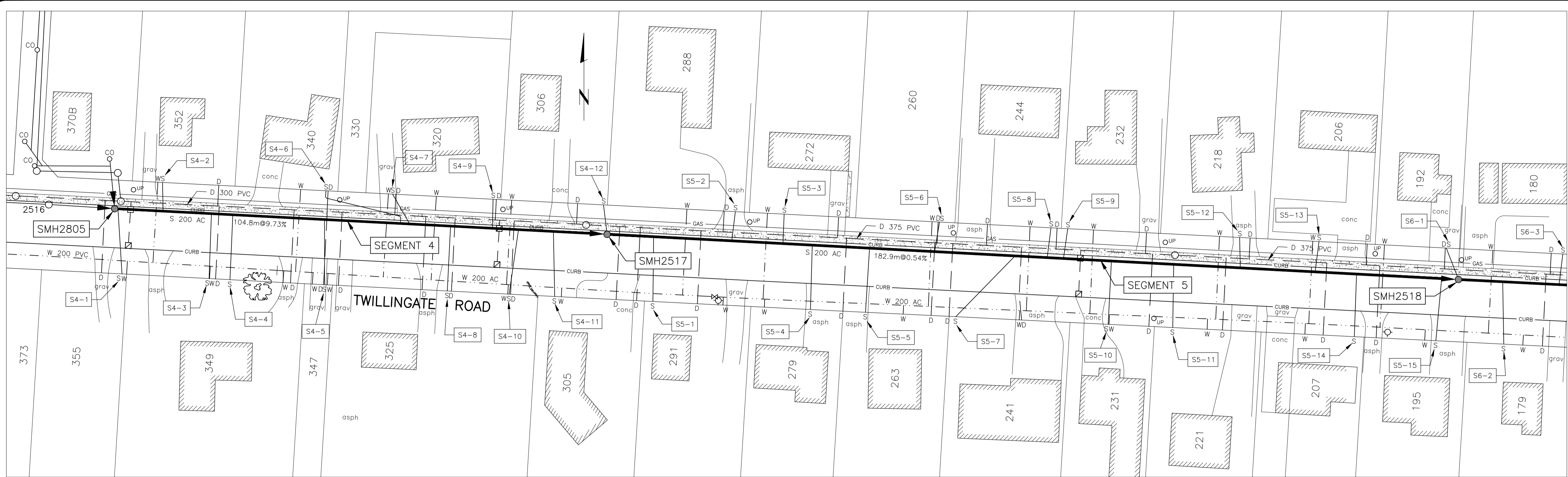
NO.	REVISION	ISSUED FOR TENDER	APP'D BY	DATE	CONSTR'D BY	DATE	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	
1		ISSUED FOR TENDER		D.D.		MAY 2018																			

DRAWING NO.	17-525
PROJECT:	14-06
SHEET 2 OF 7	
REV. 1	

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DESTROY PRINTS OF PREVIOUS REVISION



LOCATION 4 – TWILLINGATE ROAD

SEGMENT	U/S MH – DEPTH	D/S MH – DEPTH	LENGTH	PIPE Ø	MATERIAL
4	SMH2805 – NA	SMH2517 – NA	104.8m	200mm	AC

SEGMENT	U/S MH – DEPTH	D/S MH – DEPTH	LENGTH	PIPE Ø	MATERIAL
5	SMH2517 – NA	SMH2518 – NA	182.9m	200mm	AC

ID#	DISTANCE	CLOCK REFERENCE	DIAMETER	Length to PL	KEY	REMARKS
S4-1	0.2m	2	100mm	14.0m	B	ACTIVE SERVICE
S4-2	9.9m	10	100mm	6.2m	B	ACTIVE SERVICE
S4-3	20.3m	2	100mm	14.0m	D,B	
S4-4	24.9m	2	100mm	14.0m	D,B	
S4-5	44.6m	2	100mm	14.0m	B	ACTIVE SERVICE
S4-6	59.9m	9	100mm	12.5m	B	ACTIVE SERVICE
S4-7	62.9m	10	100mm	7.3m	B	ACTIVE SERVICE
S4-8	71.7m	2	100mm	14.0m	B	ACTIVE SERVICE
S4-9	80.7m	10	100mm	6.2m	B	ACTIVE SERVICE
S4-10	86.3m	2	100mm(PVC)	13.9m	B	ACTIVE SERVICE
S4-11	93.8m	2	100mm	13.9m	B	ACTIVE SERVICE
S4-12	INTO MANHOLE?		100mm	6.2m	D,B	ACTIVE SERVICE

ID#	DISTANCE	CLOCK REFERENCE	DIAMETER	Length to PL	KEY	REMARKS	ID#	DISTANCE	CLOCK REFERENCE	DIAMETER	Length to PL	KEY	REMARKS
S5-1	9.5m	2	100mm	13.9m	B	ACTIVE SERVICE	S5-10	107.9m	2	100mm	13.6m	B	ACTIVE SERVICE
S5-2	26.3m	10	100mm	6.3m	B	ACTIVE SERVICE	S5-11	121.3m	2	100mm	13.6m	B	ACTIVE SERVICE
S5-3	37.3m	10	100mm	6.3m	B	ACTIVE SERVICE	S5-12	135.6m	10	100mm	6.5m	B	ACTIVE SERVICE
S5-4	43.6m	1	100mm	13.9m	B	ACTIVE SERVICE	S5-13	151.7m	10	100mm	6.6m	B	ACTIVE SERVICE
S5-5	55.9m	2	100mm	13.9m	B	ACTIVE SERVICE	S5-14	160.6m	2	100mm	13.4m	B	ACTIVE SERVICE
S5-6	69.9m	12	100mm	6.3m	B	ACTIVE SERVICE	S5-15	178.9m	2	100mm	13.4m	B	ACTIVE SERVICE
S5-7	87.2m	2	100mm(PVC)	18.2m	B	ACTIVE SERVICE							
S5-8	94.1m	10	100mm	6.5m	B	ACTIVE SERVICE							
S5-9	97.6m	10	100mm	6.4m	B	ACTIVE SERVICE							

KEY NOTES:

- A REMOVE INTRUDING CONNECTION
- B RE-INSTATE ACTIVE SERVICE CONNECTION
- C PRE AND INSTALL INTERFACE SEAL
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- E PREP AND INSTALL FULL LENGTH CIPP IN SERVICE LATERAL FROM MAIN INTERFACE TO PROPERTY LINE (EXCLUDING PVC LATERALS) RE-OPEN IC'S AND CO'S WHERE ENCOUNTERED.

NOTE:

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FOR TENDER

2018 SANITARY SEWER CIPP LINING
TWILLINGATE ROAD

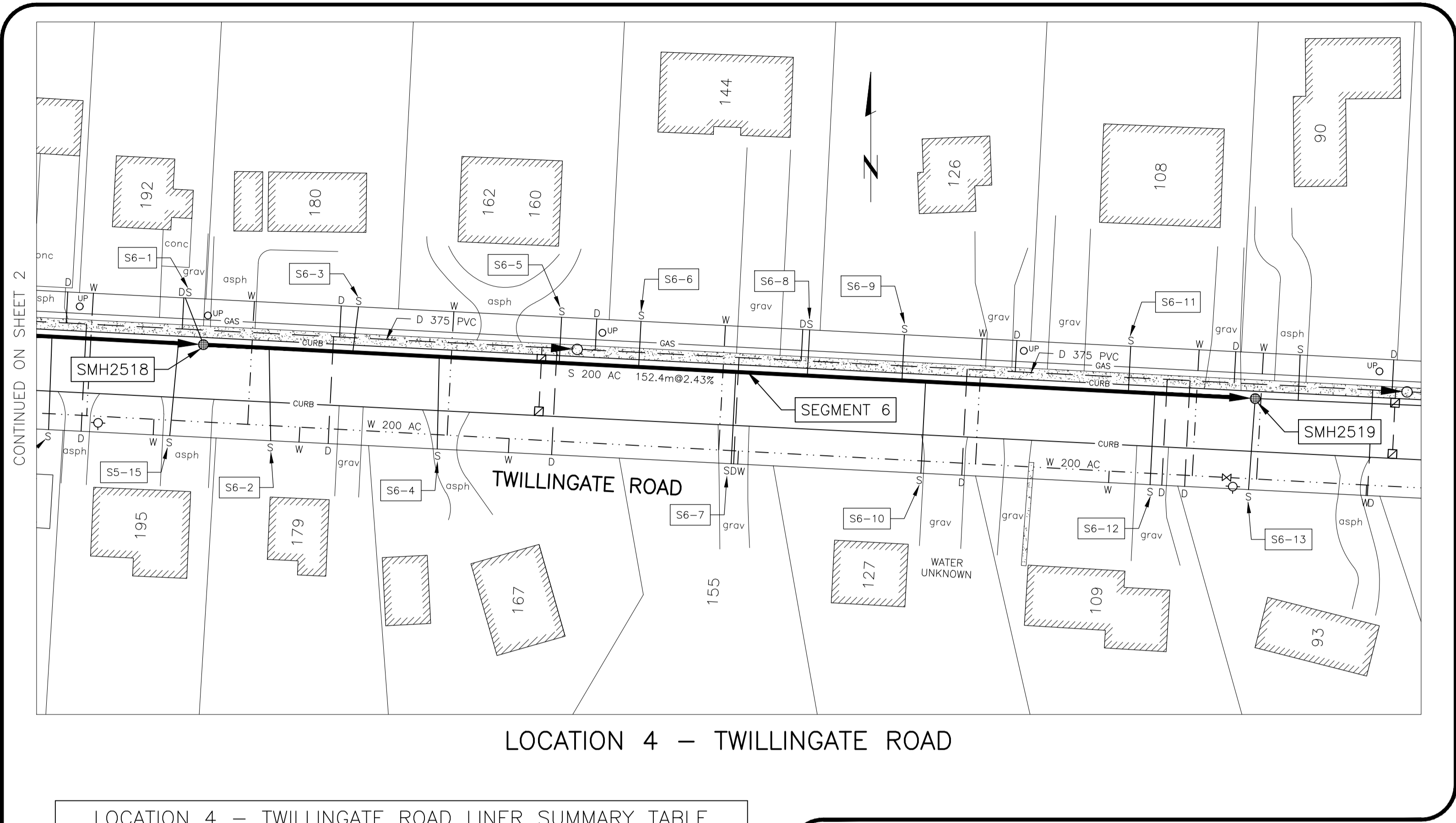
DRAWING NO. 17-525
PROJECT: 14-06
SHEET 3 OF 7
REV. 1

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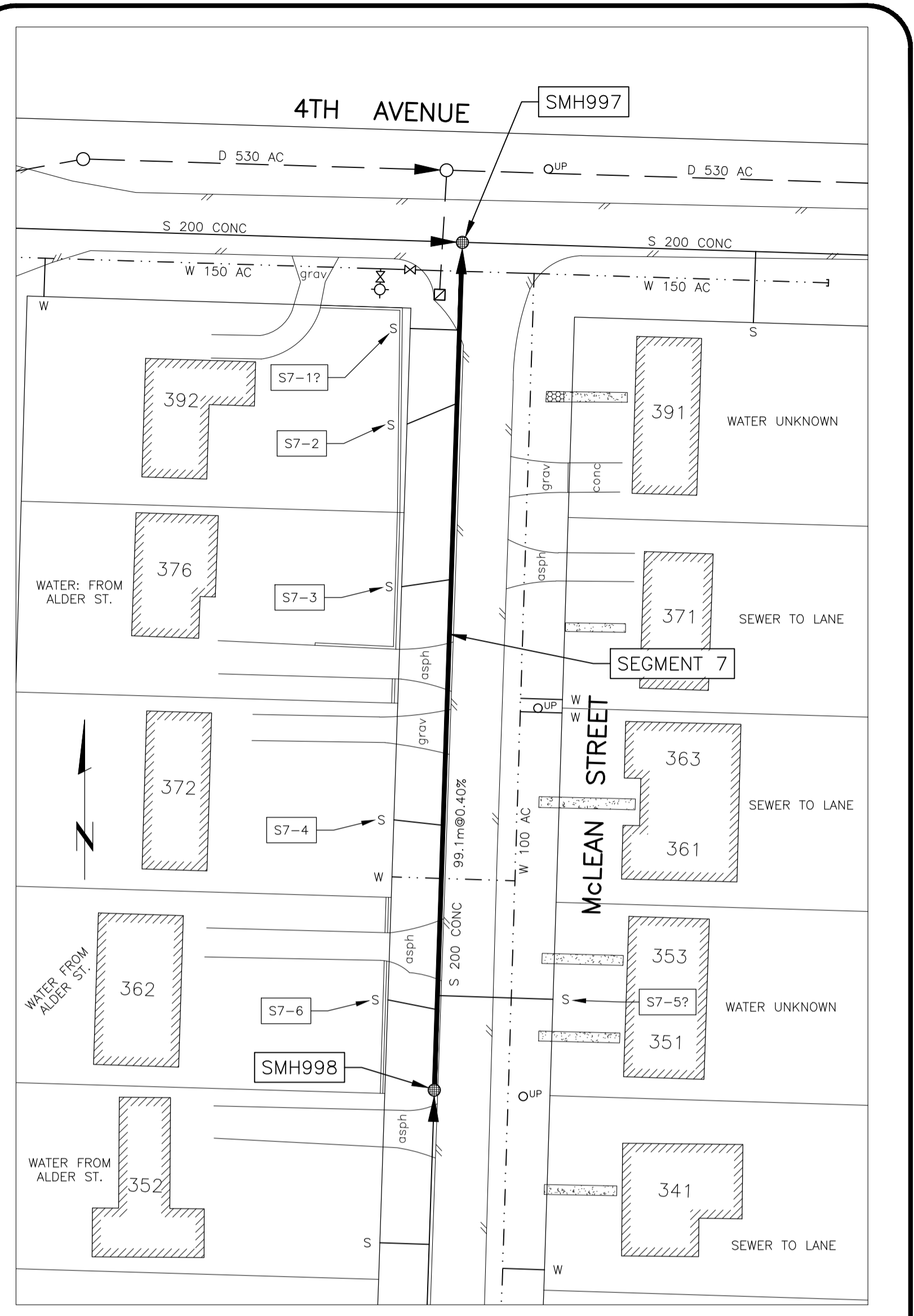
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TEL	U/G TELEPHONE	TEL	S	SANITARY SEWER	O.D.	OPEN DITCH	DESIGNED: DD	SCALE: 1:500
BCH	U/G HYDRO	BCH	D	STORM DRAIN	S.W.H.	SANITARY SEWER MANHOLE	DRAWN: TB	DATE: FEB./2018
GAS	NATURAL GAS	GAS	W	WATER MAIN	TOP INLET	CATCH BASIN	CHECKED: JH	DATE: APRIL/2018
			P	PAVEMENT	TOP INLET	FIRE HYDRANT	APPROVED: JH	DATE: MAY/2018
			C	CURB & GUTTER	HYD.	WATER VALVE		
			S	SIDEWALK	W.V.	UTILITY POLE		





LOCATION 4 – TWILLINGATE ROAD



LOCATION 5 – McLEAN STREET

LOCATION 4 – TWILLINGATE ROAD LINER SUMMARY TABLE

SEGMENT	U/S MH – DEPTH	D/S MH – DEPTH	LENGTH	PIPE Ø	MATERIAL
6	SMH2518 – NA	SMH2519 – NA	152.4m	200mm	AC

TWILLINGATE ROAD SERVICE LATERAL TABLE
SEGMENT 6 – SMH2518 TO SMH2519 (D/S)

ID#	DISTANCE	CLOCK REFERENCE	DIAMETER	Length to PL	KEY	REMARKS
S6-1	INTO MANHOLE?		100mm	6.6m	D,B	ACTIVE SERVICE
S6-2	9.0m	2	100mm	13.4m	B	ACTIVE SERVICE
S6-3	21.1m	10	100mm	6.6m	B	ACTIVE SERVICE
S6-4	33.6m	2	100mm	13.3m	B	ACTIVE SERVICE
S6-5	52.3m	9	100mm	6.6m	B	ACTIVE SERVICE
S6-6	63.7m	10	100mm	6.6m	D,B	
S6-7	78.8m	2	100mm(PVC)	13.3m	B	ACTIVE SERVICE
S6-8	88.9m	11	100mm	6.6m	D,B	
S6-9	102.5m	10	100mm	6.6m	B	ACTIVE SERVICE
S6-10	107.8m	2	100mm	13.3m	B	ACTIVE SERVICE
S6-11	136.2m	10	100mm	6.6m	B	ACTIVE SERVICE
S6-12	139.4m	2	100mm	13.2m	B	ACTIVE SERVICE
S6-13	INTO MANHOLE?		100mm	13.0m	D,B	ACTIVE SERVICE

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KEY NOTES:

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LOCATION 5 – McLEAN STREET LINER SUMMARY TABLE

SEGMENT	U/S MH – DEPTH	D/S MH – DEPTH	LENGTH	PIPE Ø	MATERIAL
7	SMH998 – NA	SMH997 – NA	99.6m	200mm	CONC

McLEAN STREET SERVICE LATERAL TABLE
SEGMENT 7 – SMH997 TO SMH998 (U/S)

ID#	DISTANCE	CLOCK REFERENCE	DIAMETER	Length to PL	KEY	REMARKS
S7-1?	UNKNOWN	UNKNOWN	UNKNOWN	5.8m	D,B	
S7-2	18.2m	2	100mm	6.3m	B	ACTIVE SERVICE
S7-3	38.9m	3	100mm	5.9m	B	ACTIVE SERVICE
S7-4	67.8m	2	100mm	5.8m	B	ACTIVE SERVICE
S7-5?	UNKNOWN	UNKNOWN	UNKNOWN	13.6m	D,B	
S7-6	89.8m	2	100mm	5.9m	B	ACTIVE SERVICE

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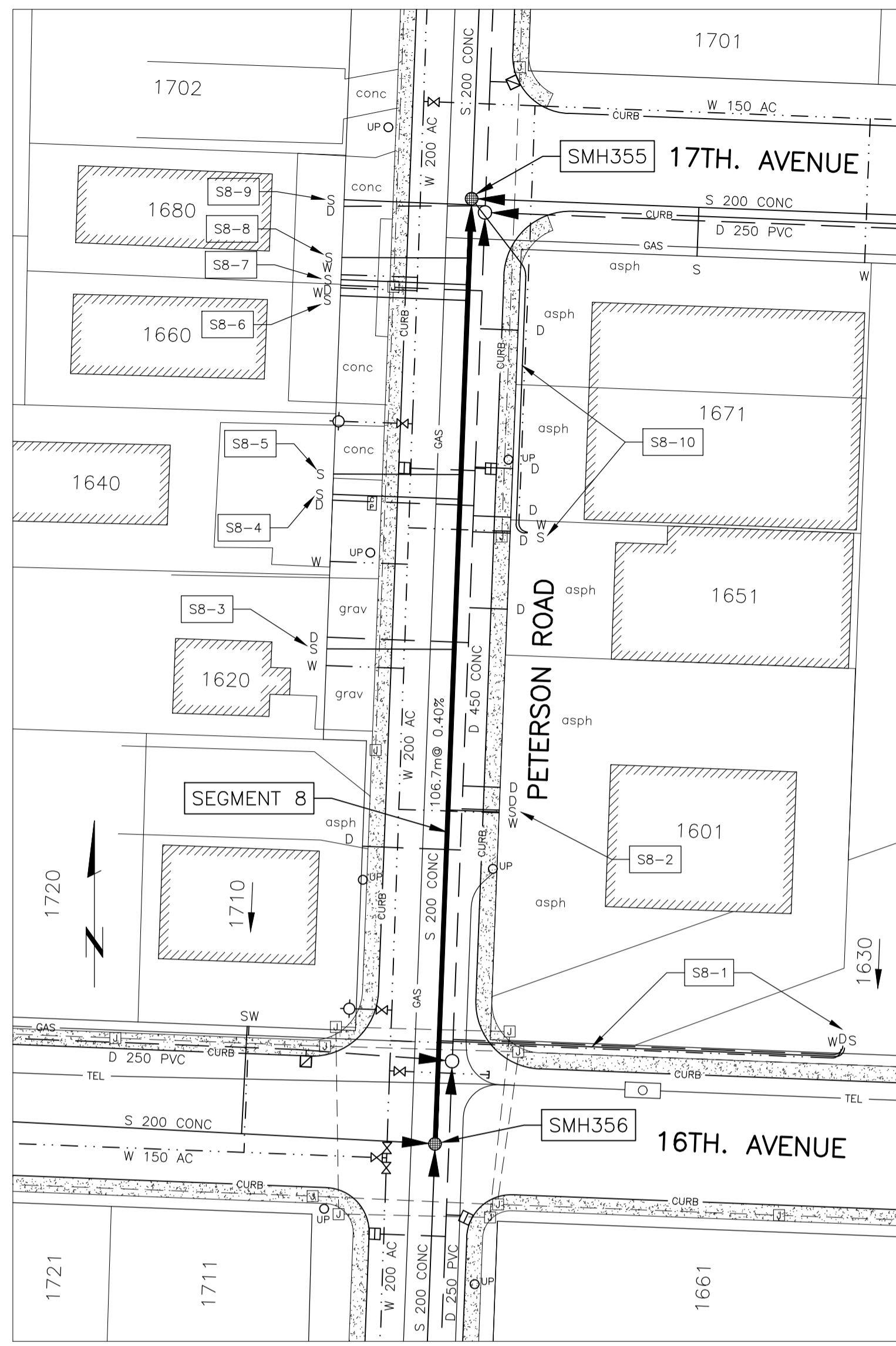
FOR TENDER

TEL U/G TELEPHONE BCH U/G HYDRO GAS NATURAL GAS	TEL BCH GAS	S SANITARY SEWER D STORM DRAIN W WATER MAIN P PAVEMENT C CURB & GUTTER SIDEWALK	S S.W.H. STORM DRAIN MANHOLE SIDE INLET TOP INLET HYD. FIRE HYDRANT W.V. WATER VALVE U.P. UTILITY POLE	O.D. OPEN DITCH S.W.H. STORM DRAIN MANHOLE SIDE INLET TOP INLET HYD. FIRE HYDRANT W.V. WATER VALVE U.P. UTILITY POLE	DESIGNED: DD DRAWN: TB CHECKED: DD APPROVED: JH	SCALE: 1:500 DATE: FEB./2018 DATE: APRIL/2018 DATE: MAY/2018	 City of Campbell River Capital Works Department	TITLE: 2018 SANITARY SEWER CIPP LINING TWILLINGATE ROAD AND McLEAN STREET	DRAWING NO. 17-525 PROJECT: 14-06 SHEET 4 OF 7 REV. 1
1 ISSUED FOR TENDER APP'D BY DATE CONST'D BY DATE EXISTING LEGEND DESIGN EXISTING LEGEND DESIGN EXISTING LEGEND DESIGN EXISTING LEGEND DESIGN									

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DESTROY PRINTS OF PREVIOUS REVISION



LOCATION 6 - PETERSEN ROAD

LOCATION 6 - PETERSEN ROAD LINER SUMMARY TABLE

SEGMENT	U/S MH - DEPTH	D/S MH - DEPTH	LENGTH	PIPE Ø	MATERIAL
8	SMH356 - 2.1m	SMH355 - 3.3m	107.5m	200mm	CONC

PETERSEN ROAD SERVICE LATERAL TABLE

SEGMENT 8 - SMH356 TO SMH355 (D/S)

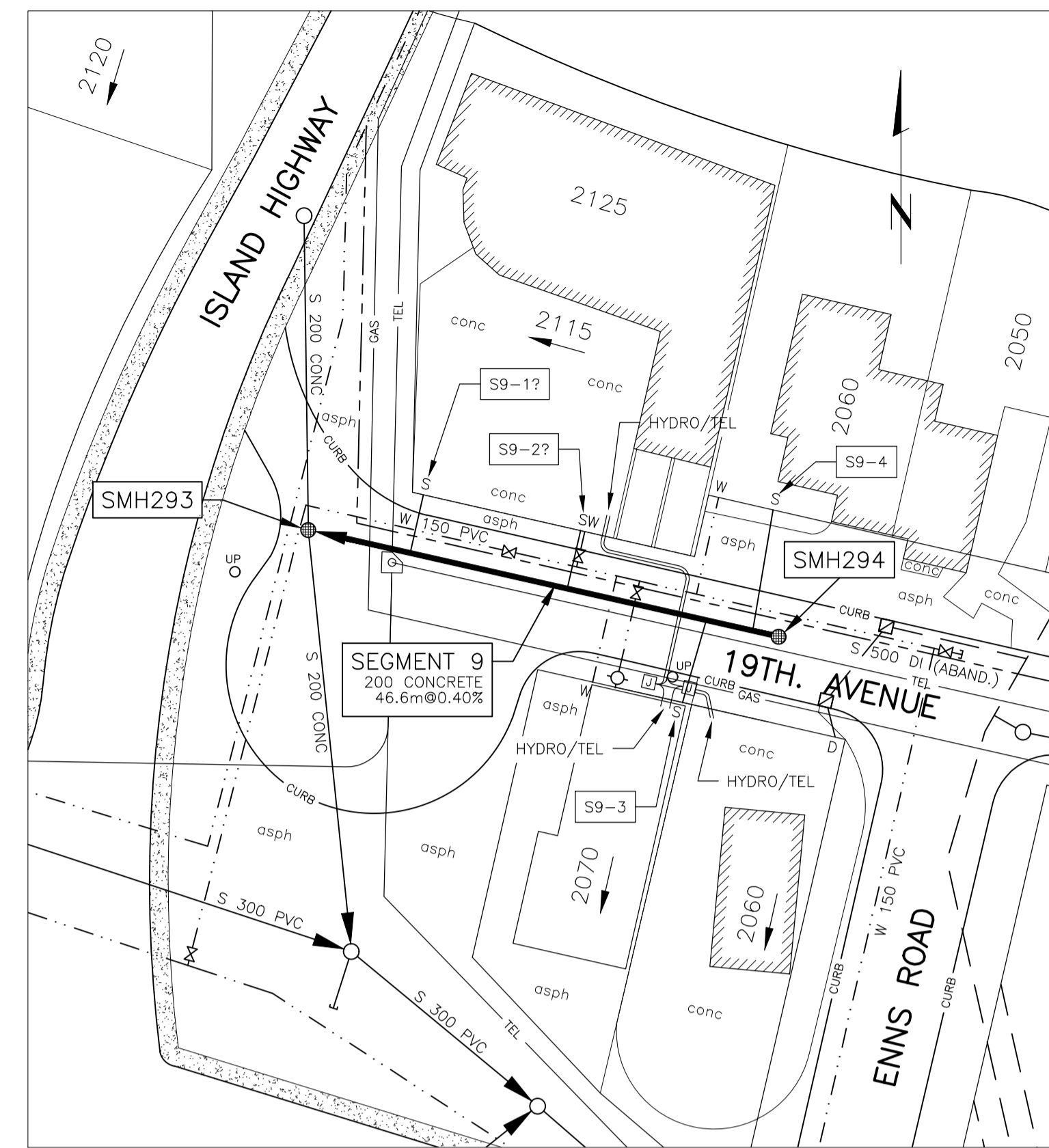
ID#	DISTANCE	CLOCK REFERENCE	DIAMETER	Length to PL	KEY	REMARKS
S8-1	11.1m	3	100mm(PVC)	45.0m	D	ACTIVE SERVICE
S8-2	UNKNOWN	UNKNOWN	100mm(PVC)	5.8m	D	ACTIVE SERVICE
S8-3	55.2m	10	100mm	14.3m	B	ACTIVE SERVICE
S8-4	UNKNOWN	UNKNOWN	150mm(PVC)	14.3m	D	
S8-5	74.9m	9	100mm	14.3m	D,B	
S8-6	UNKNOWN	UNKNOWN	150mm(PVC)	14.3m	D	
S8-7	UNKNOWN	UNKNOWN	150mm(PVC)	14.3m	D	
S8-8	99.3m	10	150mm	14.3m	D,B	
S8-9	106.4m	10	100mm	14.3m	D,B	
S8-10	INTO MANHOLE	N/A	100mm(PVC)	39.8m	D	ACTIVE SERVICE

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LOCATION 7 - 2000 BLOCK 19th. AVENUE

LOCATION 7 - 19th. AVENUE LINER SUMMARY TABLE

SEGMENT	U/S MH - DEPTH	D/S MH - DEPTH	LENGTH	PIPE Ø	MATERIAL
9	SMH294 - 1.7m	SMH293 - 2.0m	46.8m	200mm	CONC

2000 BLOCK 19th. AVENUE SERVICE LATERAL TABLE

SEGMENT 9 - SMH293 TO SMH294 (U/S)

ID#	DISTANCE	CLOCK REFERENCE	DIAMETER	Length to PL	KEY	REMARKS
S9-1?	11.1m	10	100mm	5.8m	B	ACTIVE SERVICE
S9-2?	26.7m	10	100mm	5.7m	B	ACTIVE SERVICE
S9-3	40.5m	2	100mm	8.3m	D,B	
S9-4	45.1m	10	100mm	11.8m	B	ACTIVE SERVICE



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2018 SANITARY SEWER CIPP LINING

PETERSEN ROAD AND 2000 BLOCK 19TH. AVENUE

DRAWING NO. 17-525
PROJECT: 14-06
SHEET 5 OF 7
REV. 1

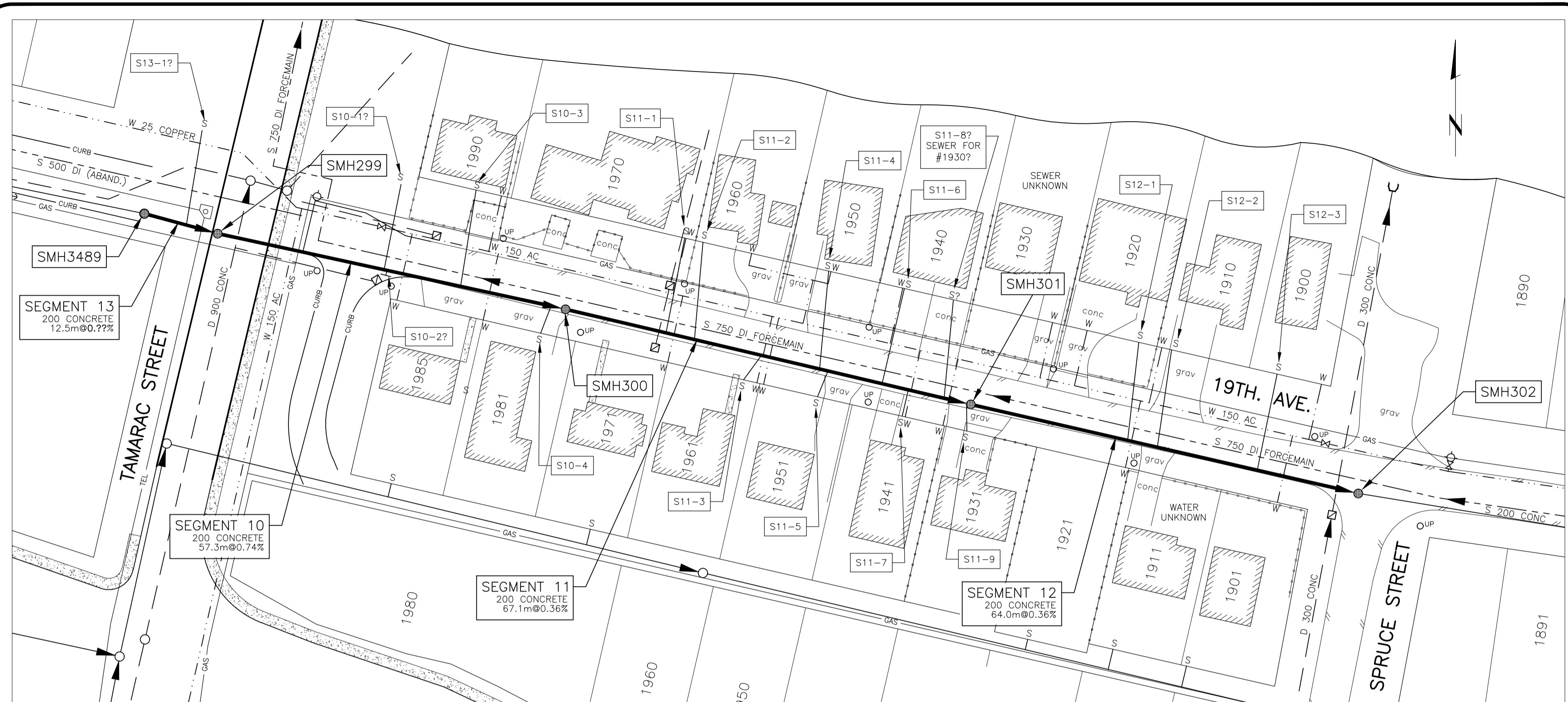
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DESIGNED: DD	SCALE: 1:500	<p>City of Campbell River Capital Works Department</p>
DRAWN: TB	DATE: FEB./2018	
CHECKED: DD	DATE: APRIL/2018	
APPROVED: JH	DATE: MAY/2018	

NO.	REVISION	APP'D BY	DATE	CONSTR'D BY	DATE	EXISTING	LEGEND	DESIGN
1	ISSUED FOR TENDER		D.D.	MAY 2018				

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
TEL	U/G TELEPHONE	TEL	SANITARY SEWER
BCH	U/G HYDRO	BCH	STORM DRAIN
GAS	NATURAL GAS	GAS	WATER MAIN
			PAVEMENT
			CURB & GUTTER
			SIDEWALK
			OPEN DITCH
			SANITARY SEWER MANHOLE
			CATCH BASIN
			FIRE HYDRANT
			WATER VALVE
			UTILITY POLE



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LOCATION 8 - 1900 BLOCK 19th. AVENUE

LOCATION 9 - 1900 BLOCK 19th. AVENUE LINER SUMMARY TABLE

SEGMENT	U/S MH - DEPTH	D/S MH - DEPTH	LENGTH	PIPE Ø	MATERIAL	SEGMENT	U/S MH - DEPTH	D/S MH - DEPTH	LENGTH	PIPE Ø	MATERIAL	SEGMENT	U/S MH - DEPTH	D/S MH - DEPTH	LENGTH	PIPE Ø	MATERIAL
10	SMH299	SMH300 - 2.0m	57.3m	200mm	CONCRETE	11	SMH300 - 2.0m	SMH301 - 2.4m	67.1m	200mm	CONCRETE	12	SMH301 - 2.4m	SMH302 - 2.1m	64.0m	200mm	CONCRETE
												13	SMH3489 - 3.0m	SMH299 - 3.5m	12.5m	200mm	CONCRETE

1900 BLOCK 19th. AVENUE SERVICE LATERAL TABLE

SEGMENT 10 - SMH300 TO SMH3489 (U/S)							SEGMENT 11 - SMH300 TO SMH301 (D/S)						SEGMENT 12 - SMH301 TO SMH302 (D/S)						SEGMENT 13 - SMH3489 TO SMH299 (D/S)											
ID#	DISTANCE	CLOCK REFERENCE	DIAMETER	Length to PL	KEY	REMARKS	ID#	DISTANCE	CLK REF	DIAMETER	Length to PL	KEY	REMARKS	ID#	DISTANCE	CLK REF	DIAMETER	Length to PL	KEY	REMARKS	ID#	DISTANCE	CLK REF	DIAMETER	Length to PL	KEY	REMARKS			
S10-1	27.4m	10	100mm	14.1m	D	UNKNOWN SERVICE	S11-1	15.9m	10	100mm	15.5m	B	ACTIVE SERVICE		20.7	2														
S10-2	28.0m	1	100mm	0	-	CAPPED SERVICE	S11-2	20.6m	10	100mm	15.7m	B	ACTIVE SERVICE	S12-1	25.2m	10	100mm	15.9m	B	ACTIVE SERVICE										
S10-3	40.0m	10	100mm	15.7m	B	ACTIVE SERVICE	S11-3	31.7m	2	100mm	4.9m	B	ACTIVE SERVICE	S12-2	30.1m	11	100mm	15.8m	B	ACTIVE SERVICE										
S10-4	54.9m	2	100mm	4.6m	B	ACTIVE SERVICE	S11-4	41.3m	10	100mm	15.8m	B	ACTIVE SERVICE		32.7m	9														
							S11-5	42.7m	2	100mm	4.5m	B	ACTIVE SERVICE	S12-3	46.6m	9	100mm	15.8m	B	ACTIVE SERVICE										
							S11-6	±51.6m	UNKNOWN	100mm(PVC)	15.7m	B	ACTIVE SERVICE	SEGMENT 13 - SMH3489 TO SMH299 (D/S)																
							S11-7	±56.0m	UNKNOWN	100mm(PVC)	4.4m	B	ACTIVE SERVICE	ID#	DISTANCE	CLK REF	DIAMETER	Length to PL	KEY	REMARKS										
							S11-8?	61.9m	9	100mm	15.8m	D,B	SERVICE FOR #1930?	S13-1	7.0m	10	100mm	15.0m	D,B	SERVICE FOR #UNKNOWN?										
							S11-9	66.5m	3	100mm	4.4m	B	ACTIVE SERVICE																	

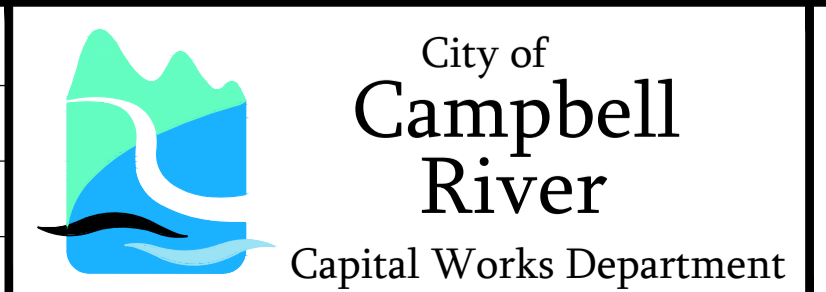


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2018 SANITARY SEWER CIPP LINING
1900 BLOCK 19th. AVENUE

DRAWING NO. 17-525
PROJECT: 14-06
SHEET 6 OF 7
REV. 1



DESIGNED: DD
SCALE: 1:500
DATE: FEB./2018
DRAWN: TB
DATE: APRIL/2018
CHECKED: DD
DATE: MAY/2018
APPROVED: JH

NO.	REVISION	APP'D BY	DATE	CONSTR'D BY	DATE	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN
1	ISSUED FOR TENDER		D.D.	MAY 2018													

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