



INVITATION TO TENDER 19-08

HWY 19A PHASE III WATERMAIN & FORCEMAIN

**MASTER MUNICIPAL CONSTRUCTION DOCUMENTS - 2009
Platinum Edition**

UNIT PRICE CONTRACT

March 12th, 2019



INVITATION TO TENDER 19-08

HWY 19A PHASE III WATERMAIN & FORCEMAIN

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
 - Appendix 9 – Letter of Acceptance – Base Course Gravel in Advance of Paving
 - 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 19-08

HWY 19A PHASE III WATERMAIN & FORCEMAIN

The City of Campbell River invites tenders for the Hwy 19A Phase III Watermain & Forcemain project which includes the following generalized scope of work:

Work under this Contract includes, but is not limited to, all supervision, construction, equipment, labour, material, permits and related items required for the replacement of approximately 700 metres of 250mm diameter PVC watermain and approximately 1,300 metres of 600mm diameter HDPE sewer forcemain.

Also included is the requirement to coordinate the necessary asphalt paving with the City's paving contractor, which is delivered under separate contract, and the requirement to reinstate existing pavement markings after paving work is complete.

This Tender is available electronically by downloading 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:	Wednesday April 3rd, 2019 <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
Tender Enquiries:	Clinton J. Crook, SCMP, CPSM Purchasing & Risk Management Officer Telephone: 250.286.5766 Email: purchasing@campbellriver.ca



INVITATION TO TENDER 19-08

HWY 19A PHASE III WATERMAIN & FORCEMAIN

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,

Senior Buyer

Email: purchasing@campbellriver.ca

Fax: 250.286.5741

Company Name: _____

Address: _____

City: _____

Province/State: _____ Postal/Zip Code: _____

Telephone No: _____ Fax No: _____

Contact Person: _____

Title: _____

Email: _____

CITY OF CAMPBELL RIVER
INVITATION TO TENDER 19-08
HWY 19A PHASE III WATERMAIN & FORCEMAIN
INSTRUCTIONS TO TENDERERS PART I

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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 19-08

Contract: HWY 19A PHASE III WATERMAIN & FORCEMAIN

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 Hwy 19A Phase III Watermain & Forcemain project which includes the following generalized scope of work:

Work under this Contract includes, but is not limited to, all supervision, construction, equipment, labour, material, permits and related items required for the replacement of approximately 700 metres of 250mm diameter PVC watermain and approximately 1,300 metres of 600mm diameter HDPE sewer forcemain.

Also included is the requirement to coordinate the necessary asphalt paving with the City's paving contractor, which is delivered under separate contract, and the requirement to reinstate existing pavement markings after paving work is complete.

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

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

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:* Wednesday April 3rd, 2019**
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

- 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 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 *Owner*.

Cost of Tender Submission

4.2

The *Owner* shall not be liable for a Tenderer's cost of submitting a tender.

Evaluation Criteria

4.3

(a) The *Owner* 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 *Owner*. 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 *Owner* reserves the right to conduct pre-selection meetings with Tenderers. The *Owner* further reserves the right to conduct post-selection meetings in order to correct, change or adapt the selected Tender to the wishes of the *Owner*. **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 *Owner* 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 *Owner* 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 *Contract* of this project.
- Good Neighbour Policy**
- 4.5
- 4.5.1 The *Owner’s* 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.
- Addition\Deletion**
- 4.7 Tenderers are advised that the *Owner* may, at its option, and subject to available funding and budgetary considerations, delete any *Work* described in the *Contract Documents* 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 investigation assessment has been completed and has been attached for information. See McElhanney Consulting Services Ltd. August 30, 2018 Geotechnical Assessment – Highway 19A Phase 3 report attached.

**Environmental
Conditions**

- 4.11 No environmental assessment has been completed for this project.

**Archaeological
Assessment**

- 4.12 An Archaeological Assessment has been completed by Baseline Archaeological Services Ltd. and is attached for information and related direction should any evidence of undiscovered archaeological remains be encountered during the course of construction.

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 Baseline *Construction Schedule*, 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 as specified in Supplementary Specification 01 55 00;
- g a Construction Environmental Protection Plan;
- h a Construction Sequencing Plan as per the General Construction Notes on Sheet C-1.

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

Tenderer's Initial Owner's Initial

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

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

Tenderer's Initial Owner's Initial

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influence or affect the performance or the cost of the work. I (we) accept the site prior to the signing of the *Contract*.

8 WE AGREE:

8.1 The work shall be completed entirely in 110 *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 under the Community Charter, Local Government Act

Tenderer's Initial Owner's Initial

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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 _____,
2019.

(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	MMCD Ref.	Description	Unit	Quantity	Unit Price	Amount
01 - GENERAL REQUIREMENTS						
<u>Supplementary Specifications 3.1</u>						
1	1.1.4	Mobilization & Demobilization, shall not exceed 10% of the Total Price, excluding GST	LS	1		
<u>01 53 01 Temporary Facilities</u>						
2	1.9.1	Sanitary Facilities, Site Storage, Loading and Hoardings	LS	1		
<u>01 55 00 Traffic Control, Vehicle Access and Parking</u>						
3	1.5.1	Traffic Control, Vehicle Access and Parking	LS	1		
<u>01 57 01 Environmental Protection</u>						
4	1.6	Temporary Erosion and Sediment Control	LS	1		
<u>01 62 00 Removals</u>						
5	1.2.1	Seawalk Asphalt Removal	SM	1745		
6	1.2.2	450mm Diam. HDPE Forcemain Removal	LM	190		
Sub-Total Page 9:						\$

Tenderer's Initial Owner's Initial

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**CITY OF CAMPBELL RIVER
TENDER 19-08
HWY 19A PHASE III WATERMAIN & FORCEMAIN
FORM OF TENDER**

Item	MMCD Ref.	Description	Unit	Quantity	Unit Price	Amount
31 - EARTHWORKS						
<u>31 22 16 Reshaping Granular Roadbeds</u>						
7	1.4.1	Asphalt Restoration Preparation (3 Driveways)	SM	90		
8	1.4.5	Temporary Gravel Running Surface	SM	2235		
<u>31 23 01 Excavating, Trenching and Backfilling</u>						
9	1.10.3	Over-Excavation, including Backfilling (Optional Work)	CM	100		
10	1.10.9	Pre-Locates of Key Utilities prior to Start of Construction	EA	5		
11	1.10.9	Pre-Locate all Existing Water Services - prior to start of watermain construction	EA	34		
<u>31 23 17 Rock Removal</u>						
12	1.6.4/5	Boulders and Rock Fragments - Blasting not Permitted (Optional Work)	CM	50		
<u>31 23 23 Control Density Fill</u>						
13	1.4.1	16 m of 150mm Diameter Pipe	CM	0.3		
14	1.4.1	1100m of 450mm Diameter Pipe	CM	177		
32 - ROADS AND SITE IMPROVEMENTS						
<u>32 11 16.1 Granular Subbase</u>						
15	1.4.2	Granular Subbase (Optional Work)	T	200		
<u>32 11 23 Granular Base</u>						
16	1.4.5	Granular Base (Optional Work)	SM	150		
<u>32 12 16 Hot-Mix Asphalt Concrete Paving</u>						
17	1.5.9	Coordination of Owner's Asphalt Contractor	LS	1		
Sub-Total Page 10:						\$

Tenderer's Initial Owner's Initial

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**CITY OF CAMPBELL RIVER
TENDER 19-08
HWY 19A PHASE III WATERMAIN & FORCEMAIN
FORM OF TENDER**

Item	MMCD Ref.	Description	Unit	Quantity	Unit Price	Amount
33 - UTILITIES						
<u>33 01 30.1 CCTV Inspection of Pipelines</u>						
18	1.6.2	CCTV Pipeline Inspection - Post Installation	LM	55		
<u>33 11 01 Waterworks - Imported Backfill</u>						
19	1.8.2	Pipe - 200mm Diam. C900 DR18, All Depths	LM	70.85		
20	1.8.2	Pipe - 250mm Diam. C900 DR18, All Depths	LM	639.5		
<u>33 11 01 Waterworks - Imported Backfill</u>						
21	1.8.3	Bend - 45° - 200mm Diam. HxH	EA	2		
22		Reducer - 200x250mm Diam. HXF	EA	1		
23		Gate Valve - 150mm Diam. FxH	EA	8		
24		Gate Valve - 200mm Diam. FxH	EA	4		
25		Gate Valve - 250mm Diam. FxH	EA	6		
26		Tee - 200x200x200mm Diam. FxFxH	EA	1		
27		Tee - 250x250x150mm Diam. HxFxF	EA	3		
28		Tee - 250x250x150mm Diam. HxHxF	EA	5		
29		Tee - 250x250x200mm Diam. HxFxF	EA	1		
30		Tee - 250x250x200mm Diam. FxFxF	EA	1		
31		Tee - 250x250x250mm Diam. FxHxF	EA	1		
Sub-Total Page 11:						\$

Tenderer's Initial Owner's Initial

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**CITY OF CAMPBELL RIVER
TENDER 19-08
HWY 19A PHASE III WATERMAIN & FORCEMAIN
FORM OF TENDER**

Item	MMCD Ref.	Description	Unit	Quantity	Unit Price	Amount
32	1.8.3	Tee - 200mm Diam. FxFxH	EA	1		
33		Tee - 200mm Diam. HxFxF	EA	1		
34		Cap - 150mm Diam. (Complete with 0.5m of 150mm Diam PVC DR18 Spigot)	EA	8		
35		Cap - 200mm Diam. (Complete with 0.5m of 200mm Diam PVC DR18 Spigot)	EA	1		
36	1.8.4	Service Connection - 19mm Diam.	EA	22		
37		Service Connection - 38mm Diam.	EA	2		
38		Service Connection - 50mm Diam.	EA	1		
39	1.8.9	Localised concrete encasement, support, anchor or thrust blocks	CM	9.5		
<u>33 11 01 Waterworks - Imported Backfill</u>						
40	1.8.13	Tie-In - 200mm Diam. - South End	EA	1		
41		Tie-In 200mm - North End (Valves and Tee Not Included)	EA	1		
<u>33 30 01 Sanitary Sewers - Imported Backfill</u>						
42	1.6.2	Pipe - 250mm Diam. PVC DR35, All Depths	LM	22		
43	1.6.7	Tie-In 250mm Diam. PVC to Existing Sanitary Sewer System	EA	2		
<u>33 34 01 Sewage Forcemains - Imported Backfill</u>						
44	1.8.2	Pipe - 150mm Diam. PVC DR18, All Depths	LM	9		
45		Pipe - 150mm Diam. HDPE DR21, All Depths	LM	12		
46		Pipe - 450mm Diam. HDPE DR21, All Depths	LM	13		
47		Pipe - 600mm Diam. HDPE DR21, All Depths	LM	1300		
Sub-Total Page 12:						\$

Tenderer's Initial Owner's Initial

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**CITY OF CAMPBELL RIVER
TENDER 19-08
HWY 19A PHASE III WATERMAIN & FORCEMAIN
FORM OF TENDER**

	MMCD Ref.	Description	Unit	Quantity	Unit Price	Amount	
48	1.8.3	Bends - 90° - 150mm Diameter PVC DR18	EA	1			
49		Bends - 90° - 450mm Diameter HDPE DR21	EA	1			
50		Bends - 45° - 600mm Diameter HDPE PExPE DR21	EA	4			
51		Gate Valve - 150mm Diameter FxH	EA	1			
52		Gate Valve - 150mm Diameter FxF	EA	1			
53		Gate Valve - 450mm Diameter FxH	EA	1			
54		Gate Valve - 600mm Diameter FxF	EA	1			
55		Blind Flange - 150mm Diameter	EA	1			
56		Blind Flange - 600mm Diameter	EA	2			
57		Saddle - 600mmx150mm Diameter Flange	EA	1			
58		Coupler - 150mm Diameter PVC to C.I.	EA	1			
<u>33 34 01 Sewage Forcemains - Imported Backfill</u>							
59		1.8.3	Tees - 600x600x450mm Diameter FxBWxF	EA	1		
60	Tees - 150mm Diameter FxBWxF		EA	1			
61	1.8.5	Air Valve Assembly	EA	2			
62		Low Point Drain including double block and bleed and Camlock	EA	2			
63	1.8.9	Localised concrete encasement, support, anchor or thrust blocks	CM	1.8			
64	1.8.10	Forcemain Tie-in - North End	LS	1			
65		Forcemain Tie-in - South End	LS	1			
Sub-Total Page 13:						\$	

Tenderer's Initial Owner's Initial

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**CITY OF CAMPBELL RIVER
TENDER 19-08
HWY 19A PHASE III WATERMAIN & FORCEMAIN
FORM OF TENDER**

Item	MMCD Ref.	Description	Unit	Quantity	Unit Price	Amount
<u>33 40 01 Storm Sewers - Imported Backfill</u>						
66	1.6.2	Pipe - 300mm Diam. PVC DR35 Ribbed	LM	8		
67		Pipe - 750mm Diam. PVC DR35 Ribbed	LM	25		
68	1.6.9	Tie-In 750mm Diam. PVC to Existing Stormwater Manholes	EA	2		
<u>33 44 01 Manholes and Catchbasins</u>						
69	1.5.1.1	Manhole Base, Lid, Slab, Cover and Frame - 1350mm Diam.	EA	2		
70	1.5.1.1	Manhole Base, Lid, Slab, Cover and Frame - 1200mm Diam.	EA	1		
71	1.5.1.2	Manhole Riser Section - 1350mm Diam.	LM	3.5		
72	1.5.1.4	Rebench Existing Manhole - 1050mm Diameter	EA	1		
Sub-Total Page 14:						\$

SUMMARY

Page 9:	\$
Page 10:	\$
Page 11:	\$
Page 12:	\$
Page 13:	\$
Page 14:	\$
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 _____, 2019.

Reference No.: TENDER 19-08

Contract: HWY 19A PHASE III WATERMAIN & FORCEMAIN

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 110 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. Jason Hartley, P.Eng., Capital Works Manager
E-mail: Jason.hartley@campbellriver.ca

The *Contractor*: **TBD**

The *Contract Administrator*: McElhanney Consulting Services Ltd.
1196 Dogwood Street
Campbell River, BC
V9W 3A2
Attention: Mr. Mark DeGange P.Eng.
E-mail: mdegagne@mcelhanney.com

- 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 _____, 2019, 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: _____

Appendix 9

ACCEPTANCE OF BASE COURSE FOR ASPHALT PAVING PLACEMENT

FORM MUST BE COMPLETED 36 HOURS PRIOR TO ASPHALT PLACEMENT

For contracted projects, Prior to the placement of asphalt pavement, representatives from the City the Contract Administrator, the General Contractor and Tayco Paving agree to the condition, surface elevations and quality of the road base as having met the required MMCD Specifications 31 22 16 and 32 11 23

Date: _____

Owner or Contract Administrator:

General Contractor Representative:

Tayco Paving Representative:

This acceptance does not relieve the General Contractor of their responsibilities for the surface elevations and/or condition or subsequent failure of materials below the asphalt pavement. Tayco Paving will continue to be responsible for the asphalt paving relating to the asphalt material and its placement.

The general conditions and specifications for the work will apply and take the precedence over this acceptance. The "Limiting Terms and Conditions" of Tayco Paving also take precedence over this acceptance.

An acceptable method of checking elevations will be used to ensure that the road base is graded to within the specified tolerances and is ready for asphalt placement. The intention of this survey is confirm the roadbed preparations meet with the contract requirements and to ensure that asphalt tonnage does not exceed Tayco's calculated estimated tonnage by more than 5%.

Conversion from square metres to tonnage will be calculated at the rate of 125 Kg per square metre for a 50mm thickness of asphalt.



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.: HWY 19A PHASE III WATERMAIN & FORCEMAIN

Contract: TENDER 19-08

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21	Workers Compensation Regulations	8
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25	Maintenance Period	9

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 2.2.4

(delete clause 2.2.4.1 and replace as follows)

the *Contract Documents* shall govern and take precedence in the following order with the Agreement taking precedence over all other *Contract Documents*:

- (a) Agreement
- (b) Addenda
- (c) Supplementary General Conditions
- (d) General Conditions
- (e) Supplementary Specifications
- (f) Supplementary Specifications, City of Campbell River Design Standards, 2010
- (g) Specifications
- (h) Drawings listed in Schedule 2 to the Agreement
- (i) Supplementary Detail Drawings
- (j) Standard Detail Drawings
- (k) Executed Form of Tender
- (l) Instructions to Tenderers
- (m) All other Contract Documents

2.2.4.5

(add new clause 2.2.4.5 as follows)

The *Contract Drawings* will be updated post Tender and will be Issued For Construction by the *Contract Administrator* prior to the commencement of the *Work*.

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 for approval prior to start of construction, as per item 5.1.1.f of the Form of Tender, within which the extent and duration of any detours and partial road closures associated with the *Work* are clearly identified. Two-way traffic shall be maintained at all times unless the *Contractor* has obtained the *Owner's* prior approval via a Road Closure Permit. The *Contractor* is cautioned that approval of any reduction to two-way traffic is not guaranteed and will be evaluated based on the demonstrated need for such a closure. Traffic control on all roads shall be in strict accordance with the Traffic Control Manual for Work on Roadways published by the Ministry of Transportation and Highways. The *Contractor* shall only use appropriately accredited personnel for traffic control.

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.

Construction Schedule

4.6.1

(delete clause 4.6.1 and replace as follows)

The Contractor shall, within the time set out in the *Form of Tender*, prepare and submit to the *Contract Administrator* a time-scaled construction schedule (the "*Baseline Construction Schedule*") prepared using the *Critical Path Method* (CPM). The schedule shall:

- .1 Show all significant construction activities, shop drawing submittals and procurement activities.
- .2 Show the dependencies between activities so that it may be established what effect the progress of any one activity has on the schedule.
- .3 Show completion time and all specific dates and sequencing requirements. Identify activities making up the critical path.
- .4 Show anticipated dates for all activities related to Hot-Mix Asphalt Concrete Paving.

Unless specifically approved by the Contract Administrator, show activities on the schedule with a duration not longer than 15 working days or an assigned value not greater than \$100,000 (except activities showing only submittal, fabrication or delivery of material or equipment). Divide activities which exceed these limits into more detailed components. The schedule shall include allowances made for legal holidays and normal weather conditions.

The *Baseline Construction Schedule* shall indicate completion of the *Work* in compliance with the *Milestone Dates*. The *Contractor* shall ensure that the *Baseline Construction Schedule* is in more detail than the *Preliminary Construction Schedule* so as to enable the *Contract Administrator* to compare actual construction progress during the performance of the *Work* with the *Baseline Construction Schedule* as adjusted pursuant to GC 4.6.2.

4.6.8 **(add new clause 4.6.8 as follows)**

The *Contractor* shall submit the *Adjusted Baseline Schedule* to the *Contract Administrator* with each Monthly Progress Claim.

4.6.9 **(add new clause 4.6.9 as follows)**

When the project requires Hot-Mix Asphalt Concrete Paving, the *Contractor* shall submit the *Adjusted Baseline Schedule* to the Owner's Asphalt Paving Contractor – Tayco Paving Ltd. on a monthly basis.

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.

Tests and Inspections

4.12.1 **(delete clause 4.12.1 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 specified 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 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.

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 clause 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 clause 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

13.9.2 **(add new clause 13.9.2 as follows)**
If the *Contractor* causes the scheduled date for paving to be missed as a result of an unapproved *Change* to the *Adjusted Baseline Schedule*, the *Contractor* shall be responsible for all direct and related costs to the *Owner* as a result of a *Contractor* caused *Delay* in paving. The *Owner* shall be responsible to demonstrate any related costs to the satisfaction of the *Contract Administrator*.

PAYMENT 18.0

Supporting Documentation 18.2.3 **(add new clause 18.2.3 as follows)**
The *Contractor* shall provide to the *Contract Administrator* the *Adjusted Baseline Schedule* as a pre-condition of the issuance of each *Payment Certificate*.

Holdbacks 18.4.1 **(delete clause 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
- McElhanney Consulting Services Ltd.
- GreatPacific Engineering & Environment
- Baseline Archaeological Services Ltd.

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 Period Financial 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, payable to the *Owner* within the Maintenance Period.



SUPPLEMENTARY SPECIFICATIONS

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

Reference No.: TENDER 19-08

Contract: HWY 19A PHASE III WATERMAIN & FORCEMAIN

- | | | |
|-----------------------------|-----|--|
| General | 1.1 | <ul style="list-style-type: none">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 <i>LABOUR, PLANT, MATERIAL</i> and <i>PRODUCT</i> equipment necessary to construct <i>THE WORK</i> 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 <i>OWNER</i> or of the owner of the land on which <i>THE WORK</i> is located. Only those materials specifically noted in the specification or on drawings, as belonging to the <i>CONTRACTOR</i> shall become the <i>CONTRACTOR's</i> property.e) Where there are excess excavated materials, unsuitable materials excavated or materials of any kind that are excavated but not used in <i>THE WORK</i>, such materials are not the property of the <i>CONTRACTOR</i> unless authorized in writing by the <i>CONTRACT ADMINISTRATOR</i> or specified to be disposed of by the <i>CONTRACTOR</i>. |
| Unit Price Contracts | 2.1 | <ul style="list-style-type: none">a) Payments will be made on the basis of the following:<ul style="list-style-type: none">.1 Unit Price items in the Schedule of Quantities and Unit Prices..2 Changes in <i>THE WORK</i> for items not covered by unit prices, in accordance with Article 7 - <i>CHANGES IN THE WORK</i> 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.
- 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 31 01	Project Meetings
01 33 00	Submittals and Reference Forms
01 34 00	Record Drawings
01 40 00	Quality Control
01 53 01	Temporary Facilities
01 55 00	Traffic Control, Vehicle Access & Parking
01 57 01	Environmental Protection
01 62 00	Removals
31 05 17	Aggregates and Granular Materials
31 22 16	Reshaping Granular Roadbeds
31 23 01	Excavating, Trenching and Backfilling
31 23 23	Controlled Density Fill
32 11 23	Granular Base
32 12 16	Hot-Mix Asphalt Concrete Paving
33 11 01	Waterworks
33 34 01	Sewerage Forcemains

PROJECT MEETINGS

SUPPLEMENTARY SPECIFICATIONS

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 When applicable, the *Contractor* is responsible to ensure that the *Owner's* Asphalt Paving Contractor – Tayco Paving Ltd. is invited to all regular progress meetings where any items related to any of the following: asphalt scheduling, coordination and installation will be reviewed.
- .6 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.
 - d) Schedule of Work, progress scheduling.
 - e) Submittals and Submittals Log
 - f) Paving Coordination with *Owner's Other Contractor*
 - 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.
 - o) Insurances.

PROJECT MEETINGS

SUPPLEMENTARY SPECIFICATIONS

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

SUBMITTALS AND REFERENCE FORMS

SUPPLEMENTARY SPECIFICATIONS

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1.0 GENERAL

1.1 Categories of Submittals

- .1 General requirements and detailed Specifications require various submissions to demonstrate that materials, equipment, methods, and work comply with the provisions and intent of the Contract Documents. Submittals fall into two general categories:
 - a) Submittals for Review.
 - b) Submittals for Information Only.
- .2 Provide submittals in accordance with this section and as specified in the various technical sections contained throughout the Specifications and Supplemental Specifications.
- .3 The *CONTRACT ADMINISTRATOR* may require additional submittals from the *CONTRACTOR* when, in the opinion of the *CONTRACT ADMINISTRATOR*, such additional submittals are warranted.

1.2 Administration

- .1 Submittals covered by these requirements include manufacturers' information and data sheets, descriptive data, certificates, product data, shop drawings, test procedures, test results, samples, requests for substitutions, all mechanical, electrical and electronic equipment and systems, fabricated items, piping and miscellaneous work-related submittals.
- .2 Adjustments made on shop drawings or other submittals by the *CONTRACT ADMINISTRATOR* are not intended to change the Contract Price. If adjustments affect the value of work, state such in writing to the *CONTRACT ADMINISTRATOR* prior to proceeding with the work.
- .3 Provide to *CONTRACT ADMINISTRATOR* for review the submittals specified. Submit all information promptly and in an orderly sequence so as to not cause delay in the *WORK*. Failure to submit in ample time is not considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.
- .4 Include the projected dates for Submissions of Submittals for Review in the Construction Schedule specified in Supplementary Specification 01 31 00S
- .5 Do not proceed with work affected by any submittal until review is complete. Normally, submittals for review and comment will be returned to the *CONTRACTOR* within 15 days, 30 days for substitution, exclusive of any time awaiting clarification or further information; however, the time for returns will necessarily vary and may exceed 15 days depending upon the complexity of the submittal, the number of submittals, and the express needs of the *CONTRACTOR*.
- .6 Review submittals prior to submission to the *CONTRACT ADMINISTRATOR*. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with the requirements of the *WORK* and the Contract Documents. Submittals not stamped, signed, dated and identified by the *CONTRACTOR* will be returned without being examined and will be considered rejected.
- .7 Clearly edit submittal documents to indicate only those items, models, or series of equipment, which are being submitted for review. Cross out or otherwise obliterate all extraneous materials.
- .8 Ensure that there is no conflict with other submittals.
- .9 Coordinate submittals among subcontractors and suppliers.
- .10 Coordinate submittals with the *WORK* so that work will not be delayed and schedule different categories of submittals, so that one will not be delayed for lack of coordination with another.

SUBMITTALS AND REFERENCE FORMS

SUPPLEMENTARY SPECIFICATIONS

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- .11 The *CONTRACTOR* is responsible for the accuracy and completeness of information submitted. Notify *CONTRACT ADMINISTRATOR* in writing of materials, equipment or methods of work which deviate from the Contract Documents. Notification in writing, to accompany submittal transmittal and noted under deviations.
- .12 The *CONTRACTOR*'s responsibility for errors, omissions and deviations in submission is not relieved by the *CONTRACT ADMINISTRATOR*'s review of submittals.
- .13 Keep one reviewed copy of each submission on site.
- .14 Detail all shop drawings and data sheets using the metric system. Prepare to a drafting standard equivalent to the Contract Drawings.
- .15 Shop drawings and data sheets indicating modified design requirements or design requirements not included in the Contract Documents require the seal of a qualified Professional Engineer, registered in the Province of British Columbia.

1.3 Transmittal Procedure

- .1 Accompany all submittals with transmittal form 01 33 00-A attached.
- .2 Use a separate form for each specific item, class of material, equipment, and items specified in separate, discrete sections, for which the submittal is required. Identify Contract Document, equipment numbers, equipment descriptors, drawing numbers, and Specification Sections for each submittal and item in each submittal.
- .3 Identify submittal documents common to more than one piece of equipment with all the appropriate equipment numbers.
- .4 Use a single form for submittals for various items when the items taken together constitute a manufacturer's package or are so functionally related that expediency indicates checking or review of the group or package as a whole.
- .5 Note a unique number, sequentially assigned, on the transmittal form accompanying each item submitted. Submittals will be classified according to categories agreed to by the *CONTRACTOR* and *CONTRACT ADMINISTRATOR*. Use the following format by category for submittal numbers: "XXX", where "XXX" is the sequential number assigned by the *CONTRACTOR*. Resubmittals will have the following format: "XXX-Y", where "XXX" is the originally assigned submittal number and "Y" is a sequential letter assigned for resubmittals, i.e., A, B, or C being the 1st, 2nd, and 3rd resubmittals, respectively. Submittal 25B, for example, is the second resubmittal of submittal 25.

1.4 Submittals for Review

- .1 All submittals, except where specified to be submitted for information only, to be submitted by the *CONTRACTOR* to the *CONTRACT ADMINISTRATOR* for review. Provide submittals for review for all equipment and material substitutions, alternatives or deviations from that specified.
- .2 Submittals which do not have all the information required to be submitted, including notation of all deviations from the Contract requirements, are not acceptable and will be returned without review.
- .3 Review by the *CONTRACT ADMINISTRATOR* is for the sole purpose of ascertaining conformance with the general design concept in accordance with the Specifications. This review does not mean that the *CONTRACT ADMINISTRATOR* approves the detail design inherent in the submittals, shop drawings and data sheets, responsibility for which remains with the *CONTRACTOR*, and such review does not relieve the *CONTRACTOR* of responsibility for errors or omissions in the shop drawings and data sheets or of responsibility for meeting all requirements of the Contract Documents. The *CONTRACTOR* is responsible for dimensions to be confirmed and correlated at the job-site, for information

SUBMITTALS AND REFERENCE FORMS

SUPPLEMENTARY SPECIFICATIONS

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- that pertains solely to fabrication processes or to techniques of construction and installation and for coordination of the *WORK* of all sub-trades.
- .4 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of the section under which the adjacent items will be supplied and installed. Indicate cross references to Contract Drawings and Specifications.
 - .5 Submit 3 copies of submittals, except where other quantities are specified, including shop drawings for each requirement requested in Specification sections and as the *CONTRACT ADMINISTRATOR* may reasonably request. Electronic submissions are acceptable in a PDF format as long as they are accompanied by the required transmittal form.
 - .6 Submittals for review will be returned to the *CONTRACTOR* with one of the four following notations:
 - a) If the review indicates that the material, or equipment complies with the Contract Documents, submittal copies will be marked "Reviewed". In this event, the *CONTRACTOR* may begin to implement the *WORK* method or incorporate the material or equipment covered by the submittal.
 - b) If the review indicates limited modifications are required, copies will be marked "Reviewed as Modified". The *CONTRACTOR* may begin implementing the *WORK* method or incorporating the material and equipment covered by the submittal in accordance with the noted corrections. Where submittal information will be incorporated in operation and maintenance data, provide a corrected copy.
 - c) If the review reveals that the submittal is insufficient or contains incorrect data, copies will be marked "Revise and Resubmit". Do not undertake work covered by this submittal until it has been revised, resubmitted and returned marked either "Reviewed" or "Reviewed as Modified".
 - d) If the review indicates that the material, equipment, or work method does not comply with the Contract Documents, copies of the submittal will be marked "Rejected - See Remarks". Submittals with deviations which have not been identified clearly may be rejected. Do not undertake the *WORK* covered by such submittals until a new submittal is made and returned marked either "Reviewed" or "Reviewed as Modified".
 - .7 After submittals are stamped "Reviewed" or "Reviewed as Modified", no further revisions are permitted unless re-submitted to the *CONTRACT ADMINISTRATOR* for further review.
 - .8 If upon review by the *CONTRACT ADMINISTRATOR*, no errors or omissions are discovered or if only minor corrections are made, 1 copy will be returned and fabrication and installation of work may proceed. If shop drawings and data sheets are rejected, noted copy and 1 unmarked copy will be returned and resubmission of corrected shop drawings and data sheets, through the same procedure indicated above, to be performed before fabrication and installation of work may proceed.
 - .9 The *OWNER* may deduct, from payments due to *CONTRACTOR*, costs of additional Engineering reviews incurred if shop drawings and data sheets are not corrected after one (1) review by *CONTRACT ADMINISTRATOR*.

SUBMITTALS AND REFERENCE FORMS

SUPPLEMENTARY SPECIFICATIONS

PAGE 4 of 13

1.5 Submittals for Information Only

- .1 Where specified, furnish submittals to the *CONTRACT ADMINISTRATOR* for information only at least 30 days prior to commencement of the work covered by the submittal. Submittals for information only will be used by the *CONTRACT ADMINISTRATOR* for general information and filed without comment. The *CONTRACT ADMINISTRATOR* retains the right to return submittals for information only if the submittal does not comply with the Contract Documents and general design criteria.
- .2 Submittals for information only are not subject to review procedures. They are to be provided as part of the *WORK* under the Contract and their acceptability determined under normal inspection procedures.
- .3 Submit 3 copies of information only submittals including product data, manufacturer's standard data sheets or brochures for requirements requested in Specification Sections and as the *CONTRACT ADMINISTRATOR* may reasonably request where shop drawings will not be prepared due to standardized manufacture of product.
- .4 Submit operation and maintenance information in accordance with Section 01 74 16S. Obtain from each manufacturer specific equipment record data, performance data and maintenance requirements.
- .5 Where specified submit engineering calculations sealed by a qualified Professional Engineer, for information only.

1.6 Request for Substitution

- .1 Make requests for substitution by written application accompanied with sufficient information as specified under Section 01 23 10S to permit the *CONTRACT ADMINISTRATOR* to identify the nature and scope of the request.
- .2 Follow submittal procedures and submit 3 copies of all information for each substitution request.
- .3 Upon receipt of written application for substitution from the *CONTRACTOR*, including the specific information specified, the *CONTRACT ADMINISTRATOR* will estimate the cost and time requirement of evaluating the request and present the estimates to the *CONTRACTOR*. The *CONTRACTOR* is advised that the estimates are based upon the best information available to the *CONTRACT ADMINISTRATOR* at the time; however, the actual cost, based on time and expense, will be documented and applied in the final analysis of the substitution request.
- .4 If the *CONTRACTOR* wishes the *CONTRACT ADMINISTRATOR* to continue the review of the request, advise the *CONTRACT ADMINISTRATOR* in writing and submit sufficient additional information as may be requested by the *CONTRACT ADMINISTRATOR*. No evaluation will take place until such time as the *CONTRACTOR* has agreed to the estimate in writing and has authorized the *CONTRACT ADMINISTRATOR* to deduct the cost of the evaluation from monthly progress payments due the *CONTRACTOR*.

2.0 PRODUCTS

- .1 Not Used

3.0 EXECUTION

- .1 Not Used

SUBMITTALS AND REFERENCE FORMS

SUPPLEMENTARY SPECIFICATIONS

01 33 00-A SUBMITTAL TRANSMITTAL FORM:

Submittal Description: _____ Submittal No.:¹ _____

Spec Section: _____

TO: ATTN:	Routing	Sent	Received
OWNER:	Contractor/CM		
PROJECT:	CM/DECS		
	DECS/CM		
CONTRACTOR:	CM/Contractor		

- We are sending you
- Attached
 - Under separate cover via
 - Submittals for Review (RVU)
 - Submittals for information only (INF)
 - Substitution (SUB)
 - Operation & Maintenance Information (O&M)

Remarks: _____

Item	Copies	Date	Section No.	Description	Review action ^a	Reviewer initials	Review comments attached

^a Attach additional sheets if necessary. REV= Reviewed; RAM= Reviewed as Modified; RAR= Revise and Resubmit; REJ= Rejected

Contractor

Certify either A or B:

- A. We have verified that the material or equipment contained in this submittal meets all the requirements, including coordination with all related work, specified (no exceptions).
- B. We have verified that the material or equipment contained in this submittal meets all the requirements specified except for the attached deviations.

No.

Deviation

Certified by:

 Contractor's Signature

¹See Clause 01 30 00S-1.3, Transmittal Procedure.

SUBMITTALS AND REFERENCE FORMS

SUPPLEMENTARY SPECIFICATIONS

01 33 00-D EQUIPMENT INSTRUMENTATION DATA RECORD FORM

GENERAL DATA

Equipment Number:		Equipment Location:	
Equipment Description:		Serial Number:	
Model Number:		Style Number:	
MANUFACTURER:			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		Fax #:	
MANUFACTURER's Contact		Phone #:	
VENDOR			
Street Address:			
City:		State/Province	Zip/Postal Code:
Phone #:		FAX #:	
VENDOR's Contact:		Phone #:	
Date I/S:	Date of Warr:	P.O. #:	Purchase Cost:

TECHNICAL DATA (Complete all areas where applicable)

Alternate to Specifications - Check () if Applicable		CSA Approved Classification	
Mounting:		Accuracy	
Power Requirements:			
Materials of Construction:			
Wetted Parts Material			

ADDITIONAL SPECIFICATIONS/NOTES

SUBMITTALS AND REFERENCE FORMS

SUPPLEMENTARY SPECIFICATIONS

01 33 00-E EQUIPMENT MECHANICAL DATA RECORD FORM

GENERAL DATA

Equipment Number:		Equipment Location:	
Equipment Description:		Serial Number:	
Model Number:		Style Number:	
MANUFACTURER:			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		Fax #:	
MANUFACTURER's Contact		Phone #:	
VENDOR			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		FAX #:	
VENDOR's Contact:		Phone #:	
Date I/S:	Date of Warr:	P.O. #:	Purchase Cost:

TECHNICAL DATA (Complete all areas where applicable)

Size:	Weight		
R.P.M.	Design BHP:	Impeller Diameter:	
Rotation/Discharge:	Bearing Lubrication:		
Bearing Numbers and Quantity:			
Applicable Tolerances:			
Oil/Air Filters			
PACKING/SEAL DATA			
Style:	Make:		
Size:	Cooling:		
Lubrication:	Lip Seals:		
Seal Type/Numbers:			
ADDITIONAL VALVE DATA			
Valve Seat Material:	Valve Seat Number:		
DRIVE DATA: COUPLING			
Make:	Size:		
Type:			
DRIVE DATA: V-BELT			
Make:	Belts:		
Driver:	Driven:		

SUBMITTALS AND REFERENCE FORMS

SUPPLEMENTARY SPECIFICATIONS

01 33 00-F EQUIPMENT ELECTRICAL DATA RECORD FORM

GENERAL DATA

Equipment Number:		Equipment Location:	
Equipment Description:		Serial Number:	
Model Number:		Style Number:	
MANUFACTURER:			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		Fax #:	
MANUFACTURER's Contact		Phone #:	
VENDOR			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		FAX #:	
VENDOR's Contact:		Phone #:	
Date I/S:	Date of Warr:	P.O. #:	Purchase Cost:

TECHNICAL DATA (Complete all areas where applicable)

GENERAL

Nominal Voltage	Phase:	Frequency:	kW:	kVA(r):
P.F.:	Amps:	Ambient Temperature:	Temperature Rise:	
Nominal Efficiency:	Insulation Class:	Insulation Type:	BIL:	
Weight:	Enclosure Type:	Enclosure Dimensions (H x W x D):		
CSA Approved Hazard Classification:	Class:	Division:	Group:	

ADDITIONAL MOTOR DATA

Synch RPM:	HP:	Frame:	LRA:	Service Factor:
Design Letter:	KVA Code:	Duty:	Guaranteed Minimum Efficiency @ Full Load:	
Winding Heater Volts:		Winding Heater Watts:		
Over Temp. Sensor Type:	DE Bearing:	ODE Bearing:		

ADDITIONAL TRANSFORMER DATA

Secondary Volts:	Winding Connection:	HV:	LV:
% Impedance (Z):	Type (ANN, ONAN, Etc.)		

ADDITIONAL BREAKER DATA

Interrupting Rating:	Momentary Rating:	Frame Size:
Thermal Trip Range:		Instantaneous Trip Range:

ADDITIONAL STARTER DATA

Overload Setting Range:			
Contacting Rating	Size:	HP:	Amps:

ADDITIONAL SPECIFICATIONS/NOTES

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SUBMITTALS AND REFERENCE FORMS

SUPPLEMENTARY SPECIFICATIONS

PAGE 11 of 13

01 33 00-G EQUIPMENT MAINTENANCE REQUIREMENT DATA RECORD FORM

GENERAL DATA

Equipment Number:		Equipment Location:	
Equipment Description:		Serial Number:	
Model Number:		Style Number:	
MANUFACTURER:			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		Fax #:	
MANUFACTURER's Contact		Phone #:	
VENDOR			
Street Address:			
City:		State/Province:	Zip/Postal Code:
Phone #:		FAX #:	
VENDOR's Contact:		Phone #:	
Date I/S:	Date of Warr:	P.O. #:	Purchase Cost:

GENERAL AND PREVENTATIVE MAINTENANCE REQUIREMENTS

MAINTENANCE REQUIREMENTS							
LUBRICANTS							
Recommended:							
Alternative:							

ADDITIONAL SPECIFICATIONS/NOTES

SUBMITTALS AND REFERENCE FORMS

01 33 00-H Spare Parts and Special Tools List (Form 2 of 2)

Manufacturers Part Number	Special Storage Requirements	Contractor Scheduled Delivery Date	ABR Acceptance Date/Name	District Receipt Date/Name

Note: Although presented on two 215 mm x 280 mm pages, Form 01750-A should be completed on a 280 mm x 432 mm page.

END OF SECTION 01 33 00

RECORD DRAWINGS

SUPPLEMENTARY SPECIFICATIONS

PAGE 1 of 1

1.0 Records during Construction

- .1 The *CONTRACTOR* shall keep one complete set of all construction drawings on the *SITE*.
- .2 On the *SITE* set of drawings, the *CONTRACTOR* shall record any changes that are made during the actual construction of the *WORK*. The purpose of recording these changes is to provide drawings of record at the end of the *WORK*.
- .3 The *CONTRACTOR* shall be responsible for the adequacy and the reliability of the information recorded on the drawings of record.
- .4 The *CONTRACTOR* shall record the location of any pipe that is abandoned in place on the Drawings of Record.
- .5 At the completion of the construction period, the *CONTRACTOR* shall turn over the set of construction record drawings that have been marked up with changes during the course of the *WORK* to the *CONTRACT ADMINISTRATOR* to permit the *CONTRACT ADMINISTRATOR* to prepare Drawings of Record for the *WORK*.

END OF SECTION 01 34 00

QUALITY CONTROL

SUPPLEMENTARY SPECIFICATIONS

PAGE 1 of 4

1.0 GENERAL

1.1 REQUIREMENTS INCLUDED

- .1 Inspection and testing, administrative and enforcement requirements.
- .2 Testing and mix designs.
- .3 Commissioning and testing of pipe system
- .4 Geotechnical testing of backfill materials and compaction testing.

1.2 INSPECTION SERVICES

- .1 The *OWNER* and the *CONTRACT ADMINISTRATOR* shall have access to the *WORK*. If parts of the *WORK* are in preparation at locations other than the Place of the *WORK*, access shall be given to such work whenever it is in progress.
- .2 Give timely notice (1-week advanced notice with 2 business days (48hrs) confirmation prior) requesting inspection if Work is designated for special tests, inspections or review by *CONTRACT ADMINISTRATOR*'s instructions, or the law of the Place of the *WORK*.
- .3 If the *CONTRACTOR* covers or permits to be covered Work that has been designated for special tests, inspections or reviews before such is made, uncover such Work, have the inspections or tests satisfactorily completed and make good such Work at the *CONTRACTOR*'s expense.
- .4 The *CONTRACT ADMINISTRATOR* may order any part of the *WORK* to be examined if such work is suspected to be not in accordance with the Contract Documents. If, upon examination, such work is found not in accordance with the Contract Documents, correct such work and pay the cost of examination and correction. If such Work is found in accordance with the Contract Documents, the *OWNER* shall pay the cost of examination and replacement.

1.3 QUALITY ASSURANCE TESTING BY OWNER

- .1 Independent Inspection/Testing Agencies may be engaged by the *OWNER* for the purpose of inspecting and/or testing portions of the *WORK* to confirm that specific requirements for materials and workmanship are being met. The *OWNER* is not responsible for ensuring *CONTRACTOR*'s Quality Control.
- .2 Provide equipment required for executing inspection and testing by the appointed agencies.
- .3 Employment of inspection/testing agencies does not relax the responsibility to perform Work in accordance with the Contract Documents.
- .4 If defects are revealed during inspection and/or testing, the appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and

QUALITY CONTROL

SUPPLEMENTARY SPECIFICATIONS

PAGE 2 of 4

irregularities as advised by *CONTRACT ADMINISTRATOR* at no cost to the *OWNER*. Pay costs for retesting and re-inspection.

- .5 Allow inspection/testing agencies access to the *WORK*, off site manufacturing and fabrication plants.
- .6 Cooperate to provide reasonable facilities for such access.
- .7 Notify the appropriate agency and *CONTRACT ADMINISTRATOR* in advance of the requirement for tests, in order that attendance arrangements can be made.
 - .1 one (1) week advanced notice with two (2) business days (48hrs) confirmation prior.
- .8 Submit samples and/or materials required for testing, as specifically requested in specifications or by the *CONTRACT ADMINISTRATOR*. Submit test results specifying that material requirements are being met. Submit with responsible promptness and in an orderly sequence so as not to cause delay in the *WORK*.
- .9 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.4 QUALITY CONTROL TESTING BY THE CONTRACTOR

- .1 The *CONTRACTOR* shall retain the services of an independent testing agency under supervision of a registered professional *CONTRACT ADMINISTRATOR*, and pay the cost of testing services for quality control including, but not limited to, the following:
 - .1 Concrete mix designs.
 - .2 Concrete testing.
 - .4 Any product testing that is required and is specified under various sections and specifications.
 - .5 Compaction testing shall be completed by the *CONTRACTOR* at the *CONTRACTOR*'s expense for quality control testing as prescribed in Section 31 23 01 Excavating, Trenching and Backfilling.
- .2 Testing shall be in accordance with pertinent codes and regulations, and with selected standards of the American Society for Testing and Materials (ASTM), Canadian Standards Association (CSA), and the Hydraulic Institute.
- .3 The *CONTRACTOR* shall promptly process and distribute all required copies of test reports and test information and related instructions to all of his Sub-Contractors and Suppliers to ensure that all necessary retesting and replacement of construction can proceed without delay.

QUALITY CONTROL

SUPPLEMENTARY SPECIFICATIONS

PAGE 3 of 4

- .4 The *CONTRACTOR* shall promptly provide the *CONTRACT ADMINISTRATOR* with copies of all test results.

1.5.1 REJECTED WORK

- .1 Remove defective Work, whether the result of poor workmanship, use of defective products or damage and whether incorporated in the *WORK* or not, which has been rejected by the *CONTRACT ADMINISTRATOR* as failing to conform to the Contract Documents. Replace or re-execute in accordance with the Contract Documents.
- .2 Make good other *CONTRACTOR*'s work damaged by such removals or replacement promptly.
- .3 If in the opinion of the *CONTRACT ADMINISTRATOR* it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, the *OWNER* may deduct from the Contract Price the difference in value between the Work performed and that called for by the Contract Documents, the amount of which shall be determined by the *CONTRACT ADMINISTRATOR*.

1.6 TESTS AND MIX DESIGNS

- .1 Furnish tests results and mix design as required by contract documents.
- .2 The costs of tests and mix designs beyond those called for in the Contract Documents or beyond those required by the law of the Place of Work shall be appraised by the *CONTRACT ADMINISTRATOR* and may be authorized as recoverable.

1.7 MOCKUPS

- .1 Prepare mock-ups for all piping, valves and fittings to ensure proper and accurate fit and alignment of all components.

1.8 MILL TESTS

- .1 Submit mill tests as required or indicated on the drawings.

1.9 MEASURE AND PAYMENT

- .1 Payment for quality control will be made on a Lump Sum basis.
 - .1 100% of the quotation bid will be distributed in equal monthly payments over the course of the project to cover quality control work, as approved by the *CONTRACT ADMINISTRATOR*. Test results / reports must be received prior to acceptance for payment.

2.0 PRODUCTS

Not Used

QUALITY CONTROL

SUPPLEMENTARY SPECIFICATIONS

PAGE 4 of 4

3.0 EXECUTION

Not Used

END OF SECTION 01 40 00

TEMPORARY FACILITIES

SUPPLEMENTARY SPECIFICATIONS

1.6 Hoarding .2 ***(Add clause 1.6.2 as follows)***

When not shown on *Contract Drawings* ensure adequate hoarding is in place to isolate the *CONTRACTOR's* lay down area and active *Work* area from public access.

1.9 Payment .1 ***(Delete Clause 1.9.1 and replace as follows)***

Payment for temporary facilities as a separate pay item includes all the requirements under 1.1 of this Section. Progress payment for Temporary Facilities as a separate lump sum will be 40% upon fully providing the facilities required, 50% in equal monthly payments to cover the maintenance of the facilities provided and the remaining 10% upon removal of the facilities upon completion of the project.

END OF SECTION 01 53 01

TRAFFIC CONTROL, VEHICLE ACCESS & PARKING

SUPPLEMENTARY SPECIFICATIONS

PAGE 1 of 2

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 minimum 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). The TMP shall be submitted to the *OWNER* for approval and the approved TMP shall be implemented and maintained during the *WORK*.
- .8 **(Add)**
The following provisions must be included in the TMP:
 - .1 Road closures on Highway 19A will not be permitted.
 - .2 Two-way traffic on Highway 19A must be maintained at all times.
 - .3 Safe pedestrian movement must be maintained at all times.
 - .4 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 and adjacent vehicle traffic. 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 TMP 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.

TRAFFIC CONTROL, VEHICLE ACCESS & PARKING

SUPPLEMENTARY SPECIFICATIONS

PAGE 2 of 2

- .6 Include a map of full detour routes including the above requirements along each route.
- .7 Be fully coordinated with the required construction sequencing plan
- .10 **(Add)**
The Highway 19A 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

ENVIRONMENTAL PROTECTION

1.6 Payment

.1 *(Delete clause 1.6.1 and replace with)*

Payment for all *Work* performed under this Section will be a lump sum as per the Schedule of Quantities and Prices. Payment shall be distributed equally in monthly Progress Payments.

END OF SECTION 01 57 01

REMOVALS

SUPPLEMENTARY SPECIFICATIONS

PAGE 1 of 1

1.0 GENERAL

- .1 Section 01 62 00S refers to the specific portions of the *WORK* related to the removal of existing asphalt Seawalk and 450mm HDPE sanitary forcemain as shown on the contract drawings.

1.1 REMOVALS

- .1 All debris to be removed from the site and disposed of at a suitable site obtained by the *CONTRACTOR* and approved by the *CONTRACT ADMINISTRATOR*.
- .2 *CONTRACTOR* to comply with all relevant Environmental Protection requirements when performing the *WORK*.
- .3 HDPE forcemain to be removed from site and disposed of at a disposal site approved by the *CONTRACT ADMINISTRATOR*.
- .4 The unit price for this work shall be inclusive of all related costs involved to undertake the *WORK*.

1.2 MEASUREMENT AND PAYMENT

- .1 Removal of the asphalt Seawalk will be made on a square meter basis as per the Schedule of Quantities and Prices
- .2 Removal of the HDPE forcemain will be made on a lineal meter basis as per the Schedule of Quantities and Prices

END OF SECTION 01 62 00

AGGREGATES AND GRANULAR MATERIALS

SUPPLEMENTARY SPECIFICATIONS

2.13 Crushed Aggregate Screening (CAS) (Add Clause 2.13 as follows)

Aggregate which is a by-product of crushed gravel processing, conforming to the following:

Sieve Designation	Percent Passing
9.5 mm	100
4.75 mm	80-100
2.36 mm	50-85
1.18 mm	25-50
0.300 mm	5-25
0.075 mm	2-8

The supply and placement of CAS materials will be considered incidental to the watermain installation in the areas where the Seawalk is required to be removed.

END OF SECTION 31 05 17

RESHAPING GRANULAR ROADBEDS

SUPPLEMENTARY SPECIFICATIONS

PAGE 1 of 1

1.4 Measurement and Payment (*Add Clause 1.4.5 as follows*)

Provide and maintain minimum 75mm thick compacted and graded 19mm crushed gravel temporary running surface for the duration of the project and until asphalt paving has taken place. Payment will be made on a per unit basis as per the Schedule of Quantities and Prices.

END OF SECTION 31 22 16

EXCAVATING, TRENCHING AND BACKFILLING

EXCAVATING, TRENCHING AND BACKFILLING

1.10 Measurement and
Payment

.9 *(Add clause 1.10.9 as follows)*

Pre-locating all existing water service locations, as well as existing storm and sanitary main crossings will be required prior to installing new service saddles or tees and payment will be made on a per unit basis as per the Schedule of Quantities and Prices.

END OF SECTION 31 23 01

CONTROLLED DENSITY FILL

SUPPLEMENTARY SPECIFICATIONS

PAGE 1 of 1

1.4 Measurement and Payment

.1 *(Add to clause 1.4.1 as follows)*

Payment for the controlled density fill will be by theoretical cubic metre in place and calculated based on the area of the inside of the pipes multiplied by the length of the pipe to be infilled. The price bid for "Infill of Abandoned pipe with Controlled Density Fill" will be for the supply and placement of the concrete slurry and all work associated with closing water valves, cutting pipe, and all other associated work.

3.1 General

(Delete clause 3.1.1 and replace with the following)

The controlled density fill that is described in this clause will be for infilling the existing abandoned pipes as noted on the drawings. The controlled density fill will be comprised of concrete/gravel slurry and is to be designed to achieve 1 MPA. The slurry is to completely fill all voids in the abandoned pipes. The contractor is advised that the pipe may have to be cut in certain areas to ensure that the voids are completely filled. The contractor is to supply a design mix for the slurry at least one week prior to it being used.

END OF SECTION 31 23 23

GRANULAR BASE

1.4 Measurement and
Payment

.5 *(Add clause 1.4.5 as follows)*

Payment for gravel driveway restoration will be for 100mm compacted and graded 19mm minus crushed gravel per square metre as per the Schedule of Quantities and Prices.

END OF SECTION 32 11 23

-
- 1.5 Measurement and Payment
- .7 **(Add to this clause)**
Saw cutting along the permanent reinstatement lines as per the trench and pavement reinstatement detail (sheet 2) for pipe laying work is not permitted.
- .9 **(Add clause 1.5.9 as follows)**
Supply and installation of all Hot-Mix Asphalt Concrete Paving will be by *Other Contractor* for which the *Contractor* will be responsible for scheduling, coordinating and supporting all of the necessary *Work* effort to ensure the Hot-Mix Asphalt Concrete Paving is installed in accordance with the *Baseline Construction Schedule*. Payment for all related efforts will be lump sum as per the Schedule of Quantities and Prices.
- 3.13 Scheduling and Coordination
- .1 **(Add clause 3.13.1 as follows)**
Scheduling and Coordination of the Owner's Paving Contractor shall include as a minimum, the following tasks:
- .1 Invite the Owner's Paving Contractor to all project meetings where asphalt paving and any related tasks will be discussed including the Pre-Construction Meeting set by the Contract Administrator
- .2 Establish and maintain point of contact with the Owner's Paving Contractor Project Manager and Paving Superintendent
- .3 Maintain ongoing dialogue with the Owner's Paving Contractor during the course of the project and advise of any anticipated changes in schedule dates for paving as part of the monthly issuance of the *Adjusted Baseline Schedule*
- .4 Confirm all parties roles and responsibilities related to Appendix 9 - Base Course Acceptance are understood and executed in full conformance with the contract requirements
- .5 In the event that the Environment Canada 7-Day Weather Forecast for Campbell River, BC suggests *Abnormal Weather* is likely to conflict with the scheduled date for paving, the *Contractor* shall immediately notify the *Contract Administrator* and the Owner's Paving Contractor and seek direction from the *Contract Administrator* on any necessary adjustments to paving dates.
- .6 In the event that the outside temperature on the scheduled dates for paving falls below the requirements of item 3.5.3.1 of Specification 32 12 16, the *Contract Administrator* will advise if paving is to proceed or be rescheduled.

WATERWORKS

SUPPLEMENTARY SPECIFICATIONS

PAGE 1 of 1

1.8 Measurement and
Payment

.2 (add to clause 1.8.2 the following)

Restoration of the watermain installation to include hydroseeding of all disturbed grassed areas in accordance with 32 92 19, and supply and placement of crushed aggregate screening (CAS) material as a temporary finished surface for the Seawalk. CAS to be supplied and placed in accordance with 31 05 17 of this specification.

.4 (Delete clause 1.8.4 and replace with the following)

Payment for service connection includes mainline saddles where specified, corporation stops, curb stops, service pipes all related fittings and appurtenances specified and/or shown on Standard Detail Drawings W2a or W2b, and/or as shown on the water service details as shown on the *CONTRACT DRAWINGS*. Payment includes all applicable work described in 1.8.2 of this section.

Measurement for service connections will be for each complete service installed, with no regard to length of service pipe installed.

3.23 Connections to existing
water mains

.2 (Add new clause 3.23.2 as follows)

Where the *CONTRACTOR* is to connect to existing water mains the *CONTRACTOR* is responsible for coordinating and completing the "tie-in procedure" with the City Water Crew and *SITE INSPECTOR* in attendance, as arranged by the *CONTRACT ADMINISTRATOR*. The steps to be followed in the "tie-in procedure" are as presented on the attached **Water System Tie-In Verification Schedule (WW-03)**, as may be amended based on the mechanical fittings employed in the *WORK*.

END OF SECTION 33 11 01

SEWERAGE FORCEMAINS

- 1.8 Measurement and Payment .5 ***(Delete clause 1.8.5 and replace with the following)***
Payment for test points, air release/air-vacuum and combination air valves, low point drain as separate items includes all materials, works and appurtenances shown on the Contract Drawings including:
- a) Air Valve Chambers includes all 600x600x600 HDPE tees, flanges, specials, couplings, stainless steel piping, cast-in-place and pre-cast manhole sections, frames and covers and all other appurtenances shown on the Details 3 and 3A, sheet 6 of 7.
 - b) Low Points drains includes 600x600x600 HDPE tees, flanges, specials, couplings, stainless steel piping, cast-in-place and pre-cast manhole sections, frames and covers and all other appurtenances shown on the Details 4, 4A and 4B, sheet 6 of 7.
- 3.16 Connections to Existing Mains .3 ***(Add clause 3.16.3 as follows)***
The *CONTRACTOR* is responsible to prepare a “**Forcemain Tie-In Plan**” with necessary inputs from the *OWNER*’s Sanitary Operations Staff prior to any of the tie-in work being undertaken. The “**Forcemain Tie-In Plan**” should fully contemplate all system changes required to undertake the affected tie-ins and should detail all parties’ roles and responsibilities and any related timing. It should be noted that timing of the related tie-in work will be determined by system low flow conditions. No work to complete forcemain connections to existing mains will commence without prior written approval from the *CONTRACT ADMINISTRATOR*

File: _____
Date: _____

**Water System Tie-In
Verification Schedule**

1. Project: _____
2. Location: _____
3. Pipe Size and Material Type: _____
4. Sketch of Connection Attached:
5. Bend or Coupler Details (make, model, etc) _____

6. Recommended Bolt Torque: _____
7. Recommended Pipe Gap: _____
8. Verification:
 - 8.1. Pipe Gap Measured: _____ mm
 - 8.2. Slope
 - 8.2.1. Pipe 1 Slope: _____ °
 - 8.2.2. Pipe 2 Slope: _____ °
 - 8.2.3. Deflection Across Joint (a-b): _____ °

<u>Personnel Present</u>	
Contractor – Pipe Layer	_____
– Foreman	_____
City Public Works Crew	
– Lead Hand	_____
– Labourer	_____
City Inspector –	_____
Consultant –	_____
Inspector –	_____

- 8.3. Working area pipe ends deburred, cleaned and checked for smoothness
- 8.4. Read and follow installation instructions
- 8.5. Check correct gasket size
- 8.6. Pipe gaskets lubricated
- 8.7. Center coupling
- 8.8. tighten bolt(s) until coupling is held at 10-20 ft-lbs
- 8.9. Gradually tighten to manufacturer’s recommended torque value, alternate between opposite sides keeping all parts centered (65 ft-lbs or 80 ft-lbs <5 deg. C)
- 8.10. Live pressure test, energize and check all joints for leaks
- 8.11. Re-check torque values after pressurization, record values
- 8.12. Measure end of bolt to nut distance clockwise facing nut starting at 12° o’clock,
Record values:

✓	Initials

Bolt #	Torque (ft-lbs)	End Distance (mm)	Bolt #	Torque (ft-lbs)	End Distance (mm)
1			7		
2			8		
3			9		
4			10		
5			11		
6			12		

8.14. Review connection for leaks

8.15. To be completed by Contractor

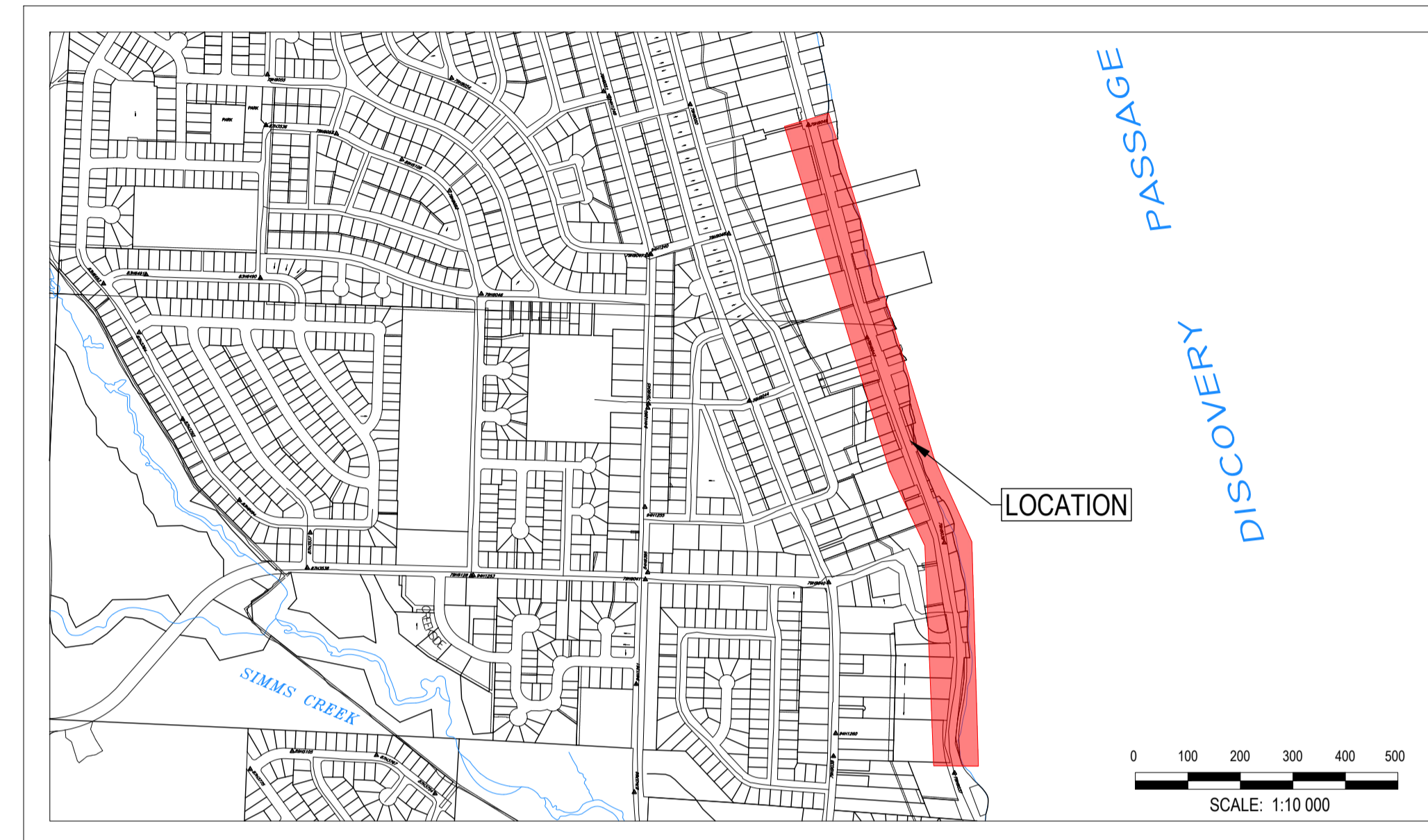
8.16. Received by City of Campbell River

Signed _____

Signed _____

CLIENT: **CITY OF CAMPBELL RIVER**
TENDER 18-13

DESCRIPTION: **HIGHWAY 19A - ROCKLAND ROAD TO L.S.#6**
WATERMAIN AND SANITARY FORCEMAIN
UPGRADE
CAMPBELL RIVER, BC



PROJECT LOCATION

MCSL Project No.: **2221-49145**

City Project No.: **CCR19-501**



City of
Campbell
River



McElhanney
McElhanney Consulting Services Ltd.

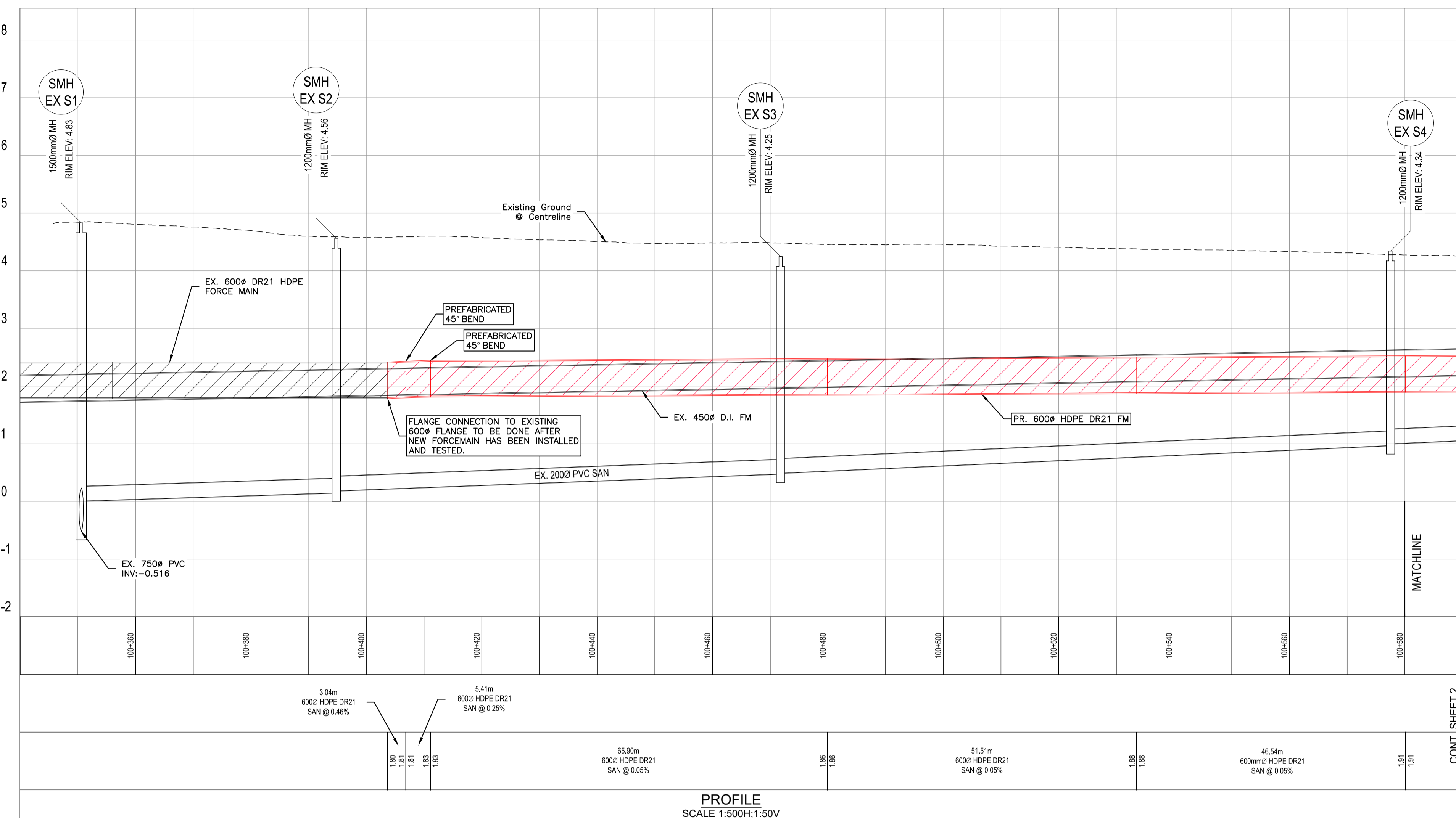
1196 DOGWOOD STREET
 CAMPBELL RIVER, BC. V9W 3A2

PH (250) 287-7799

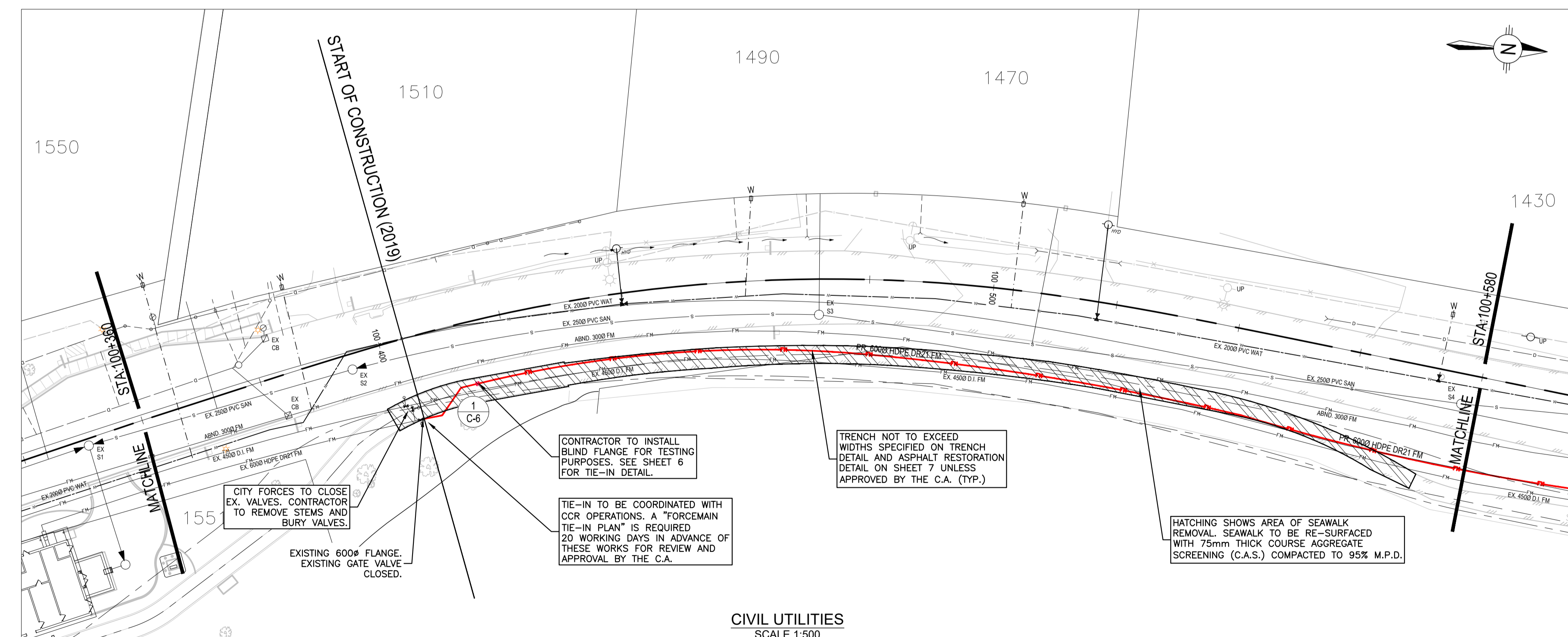
ISSUED FOR TENDER
MARCH 4, 2019

DRAWING INDEX		REVISION									
No.	LOCATION/DESCRIPTION	0	1	2	3	4	5	6	7	8	9
C-1	CIVIL UTILITIES - PLAN AND PROFILE STATIONS 100+360 - 100+580										
C-2	CIVIL UTILITIES - PLAN AND PROFILE STATIONS 100+580 - 100+880										
C-3	CIVIL UTILITIES - PLAN AND PROFILE STATIONS 100+880 - 101+180										
C-4	CIVIL UTILITIES - PLAN AND PROFILE STATIONS 101+180 - 101+440										
C-5	CIVIL UTILITIES - PLAN AND PROFILE STATIONS 101+440 - 101+705										
C-6	SANITARY FORCEMAIN DETAILS										
C-7	MISCELLANEOUS DETAILS										

PROJECT:
 MCSL 2221-49145
 City CCR19-501



PROFILE
SCALE 1:500H;1:50V



CIVIL UTILITIES
SCALE 1:500

GENERAL CONSTRUCTION NOTES:

- ALL WORKS TO BE COMPLETED IN CONFORMANCE WITH CITY OF CAMPBELL RIVER STANDARDS AND SPECIFICATIONS (CURRENT EDITION AND MMCD VOLUME II PLATINUM BOOK).
- ALL TRENCHING TO BE CARRIED OUT IN CONFORMANCE WITH WORKSAFE BC REGULATIONS FOR SIDE SLOPE AND SHORING. FOR ANY UTILITY TRENCHES REQUIRING SHORING AND/OR SLOPING, CONTRACTOR IS REQUIRED TO SUBMIT A PLAN TO THE CONTRACT ADMINISTRATOR FOR APPROVAL IN ADVANCE OF ANY RELATED EXCAVATION.
- ALL UTILITY TRENCHES TO BE AS PER DETAIL ON SHEET 7.
- THE LOCATIONS SHOWN FOR EXISTING UTILITIES ARE BASED ON MUNICIPAL RECORDS, 'AS BUILT' DRAWINGS AND LIMITED FIELD SURVEY. THIS INFORMATION MAY NOT BE ACCURATE OR COMPLETE. WHERE UTILITIES ARE SHOWN ON PROFILE, THE ELEVATIONS ARE ASSUMED. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL CONFIRM THE LOCATION AND ELEVATIONS OF ALL PIPES OR OTHER UTILITIES AT CROSSINGS AND CONNECTION LOCATIONS, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES. THE CONTRACTOR SHALL UTILIZE BC1 CALL SERVICE TO ASSIST LOCATING ALL EXISTING UTILITIES IN THE AREA OF CONSTRUCTION. IN ADDITION, THE CONTRACTOR SHALL EXERCISE CAUTION WHILE EXCAVATING IN ORDER TO AVOID DAMAGE TO THE EXISTING INFRASTRUCTURE.
- UPON AWARD OF CONTRACT THE CONTRACTOR MUST CONTACT BC-HYDRO, TELUS, FORTISBC, AND SHAW CABLE WITH A CONSTRUCTION SCHEDULE. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK AT OR AROUND EXISTING UTILITY POLES, AND SHALL COORDINATE WITH THE APPROPRIATE AGENCY, AND BE RESPONSIBLE FOR THE RELOCATION OR MAINTENANCE/PROTECTION OF ALL UTILITY POLES AND GUY WIRES. ALL COSTS TO BE BOURNE BY THE CONTRACTOR AND WILL BE DEEMED INCIDENTAL TO THE WORK.
- ASPHALT RESTORATION TO BE AS PER DETAIL ON SHEET 7.
- CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION SURVEY LAYOUT. MC ELHANEY WILL PROVIDE DIGITAL FILE FOR LAYOUT PURPOSES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM LOCAL MONUMENTS/CONTROL PRIOR TO TENDER AND CONSTRUCTION.

SANITARY AND STORM SEWER NOTES:

- EXISTING SEWER SYSTEMS TO REMAIN ACTIVE DURING CONSTRUCTION AND ABANDONED ONLY WHEN THE NEW SYSTEM IS COMMISSIONED.
- ALL SANITARY AND STORM SEWER PIPES 200mmØ AND GREATER SHALL BE PVC DR35 (UNLESS OTHERWISE NOTED). ALL SANITARY AND STORM SEWER PIPES LESS THAN 200mmØ SHALL BE PVC DR28 (UNLESS OTHERWISE NOTED).
- ALL STORM SEWER MANHOLES TO BE 1050mmØ c/w PRE-BENCHED BASE UNLESS OTHERWISE NOTED.
- ALL SANITARY SEWER MANHOLES TO BE 1050mmØ c/w PRE-BENCHED BASE UNLESS OTHERWISE NOTED.
- ALL NEWLY CONSTRUCTED SANITARY SEWER LINES AND STORM SEWER DRAINS TO BE VIDEO INSPECTED ON COMPLETION OF INSTALLATION. VIDEO TO BE PROVIDED TO C.A. FOR REVIEW AND ACCEPTANCE PRIOR TO ASPHALT RESTORATION WORKS.
- ALL SANITARY FORCEMAIN PIPES SHALL BE HDPE DR21 (UNLESS OTHERWISE NOTED).
- SANITARY FORCEMAIN JOINTS SHALL BE BUTT FUSED, WHERE NUMEROUS SERVICE CROSSINGS IMPROVE LENGTH PIPE INSTALLATION, CONTRACTOR MAY CUT PIPE INTO SHORTER LENGTHS AND USE ELECTROFUSION COUPLERS WITH WRITTEN APPROVAL FROM THE C.A. SEE NOTES ON SUBSEQUENT SHEETS.
- ALL STORM AND SANITARY SEWER LENGTHS ARE MEASURED FROM INSIDE FACE TO INSIDE FACE OF MANHOLES. GRADES ARE CALCULATED FROM CENTRE TO CENTRE OF MANHOLES.
- ALL CATCHBASIN LEADS SHALL BE 200mmØ AS PER CCR STANDARDS, WHERE ONE CB DRAINS TO ANOTHER CB PRIOR TO CONNECTION TO A STORM SEWER, THE LEAD FROM THE DOWNSTREAM CB TO THE STORM SEWER SHALL BE 250mmØ.
- ALL PIPE BEDDING TO BE IN ACCORDANCE WITH MMCD GRADATION TABLES.

ENVIRONMENTAL PROTECTION NOTES:

- THE CONTRACTOR SHALL ENSURE THAT ALL ENVIRONMENTAL PROTECTIONS TO ELIMINATE DOWNSTREAM SEDIMENT TRANSPORT ARE IN PLACE PRIOR TO THE START OF CONSTRUCTION AND REMAIN IN PLACE FOR THE DURATION OF THE CONTRACT. THE CONTRACTOR SHALL OBTAIN A COPY OF AND FOLLOW THE PROCEDURES IN ACCORDANCE WITH THE CITY OF CAMPBELL RIVER ENVIRONMENTAL PROTECTION BY-LAW.
- THE CONTRACTOR SHALL PREPARE AND RECEIVE APPROVAL FOR AN ENVIRONMENTAL PROTECTION PLAN PRIOR TO START OF WORK AS DIRECTED IN FORM OF TENDER WITHIN 10 DAYS OF RECEIPT OF NOTICE OF AWARD.

CONSTRUCTION SEQUENCING:

- THE CONTRACTOR SHALL PROVIDE A SEQUENCING WORK PLAN THAT IS SEPARATE TO, BUT CONSISTENT WITH, THE REQUIRED SUBMITTAL OF THE TRAFFIC MANAGEMENT PLAN WITHIN 10 DAYS OF RECEIPT OF NOTICE OF AWARD.
 - PLANNED STARTING LOCATIONS AND WORK ZONES COMPLETE WITH ESTIMATED WORK DURATIONS WITHIN EACH WORK ZONE.
 - REQUIRED DETAILS AND TRAFFIC MANAGEMENT REQUIREMENTS WITHIN EACH WORK ZONE.
 - THE CONTRACTOR MUST INSTALL, TEST AND COMMISSION THE FORCEMAIN BEFORE STARTING ANY WORK ON THE NEW WATERMAIN. NO WATERMAIN SHALL COMMENCE WITHOUT WRITTEN PERMISSION FROM THE CONTRACT ADMINISTRATOR.
- THE SEQUENCING PLAN MUST INCLUDE DETAILS THE CONNECTION OF THE FORCEMAIN - 'FORCEMAIN TIE-IN PLAN', INCLUDING EXPECTED DURATIONS AND REQUIRED ASSISTANCE FROM THE CITY STAFF. THE 'TIE-IN' PLAN NEEDS TO BE COORDINATED WITH CITY STAFF TO ENSURE PROPER TIMING OF PUMPING STATION SHUTDOWNS AND FORCEMAIN AND WATERMAIN. SUBMIT 'FORCEMAIN TIE-IN PLAN' FOR APPROVAL 20 WORKING DAYS PRIOR TO COMPLETING THE WORK.
- THE SEQUENCING PLAN MUST INCLUDE DETAILS OF THE CONNECTION OF THE NEW WATERMAIN TO THE EXISTING SYSTEM - 'WATERMAIN TIE-IN PLAN', INCLUDING EXPECTED DURATIONS AND REQUIRED ASSISTANCE FROM THE CITY STAFF. THE 'TIE-IN' PLAN NEEDS TO MEET THE REQUIREMENTS OF MMCD SECTION 33 11 01 INCLUDING THE SUBMISSION OF APPROPRIATE PRODUCT DATA USING THE SPECIFIED FORM (WW-03). SUBMIT 'WATERMAIN TIE-IN PLAN' AT LEAST 5 WORKING DAYS PRIOR TO INITIATING THE WORK.

TRAFFIC MANAGEMENT NOTES:

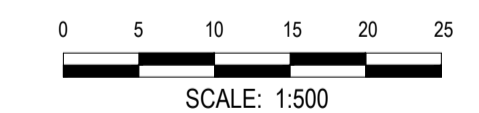
- THE CONTRACTOR WILL NOT BE PERMITTED TO CLOSE THE ROADWAY DURING THE COURSE OF CONSTRUCTION AND TRAFFIC IS TO BE MAINTAINED IN BOTH DIRECTIONS AT ALL TIMES UNLESS OTHERWISE PERMITTED BY THE CONTRACT ADMINISTRATOR.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A TEMPORARY SIDEWALK THAT IS TO BE DELINEATED FROM BOTH DRIVE LANS WITH ALL NECESSARY SIGNAGE.
- THE CONTRACTOR IS WHOLLY RESPONSIBLE FOR MAINTAINING ALL TEMPORARY RUNNING SURFACES AND WILL BE REQUIRED TO RESPOND WITHIN 2 HOURS SHOULD ANY TEMPORARY RUNNING SURFACES DETERIORATE BEYOND AN ACCEPTABLE LEVEL AS DETERMINED BY THE CONTRACT ADMINISTRATOR.
- THE CONTRACTOR IS REQUIRED TO PREPARE A TRAFFIC MANAGEMENT PLAN (TMP) AS DIRECTED IN FORM OF TENDER AND SUBMIT FOR APPROVAL WITHIN 10 DAYS OF RECEIPT OF NOTICE OF AWARD.
- CONTRACTOR TO NOTIFY ALL EMERGENCY SERVICE AGENCIES OF THE SUBSEQUENT WORK ZONE AREA. SPEED REDUCTIONS AND DETOURS THAT MAY AFFECT TRAFFIC FLOW.
- CONTRACTOR TO ERCT ALL APPROPRIATE CONSTRUCTION ZONE SIGNAGE AND USE FLAG PERSONNEL TO MAINTAIN SAFE AND EFFICIENT TRAFFIC FLOW THROUGH AND AROUND THE WORK SITE.
- CONTRACTOR TO VERIFY THAT SITE SAFETY FOR VEHICLE OPERATORS AND PEDESTRIANS IS MAINTAINED FROM THE END OF EACH WORK DAY THROUGH THE NIGHT UNTIL THE START OF THE NEXT WORK DAY USING FLASHING BEACONS, BARRICADES, SIGNAGE, DELINEATORS ETC. IN ACCORDANCE WITH CURRENT CONSTRUCTION ZONE SIGNAGE STANDARDS.
- ENSURE CONTINUOUS AND SAFE ACCESS FOR VEHICLES AND PEDESTRIANS TO ALL LOTS/PROPERTIES DURING CONSTRUCTION.
- ALL DRIVEWAYS DISTURBED DURING CONSTRUCTION TO BE REPLACED TO ORIGINAL CONDITION. QUANTITIES FOR SURFACE RESTORATION ASSOCIATED WITH THE SANITARY SEWER, WATER MAIN AND STORM DRAIN HAVE BEEN CALCULATED ASSUMING THE LIMIT OF EXCAVATION NOTED ON THE DRAWINGS. CONTRACTOR MAY ONLY EXCAVATE OUTSIDE THE LIMIT OF EXCAVATION NOTED ON THE DRAWINGS WITH THE ENGINEER'S WRITTEN PERMISSION. CONTRACTOR TO PROVIDE ADEQUATE TRENCH SHORING TO ENSURE TRENCHING REMAINS WITHIN THE LIMITS SPECIFIED. UNAUTHORIZED EXCAVATION OUTSIDE THE APPROVED LIMITS RESULTING IN ADDITIONAL SURFACE RESTORATION WILL NOT BE COMPENSATED.
- CONTRACTOR TO COMPLY WITH ALL CURRENT CITY BY-LAWS REGARDING VEHICLE INSURANCE, PERMITS & LICENSING.

WATERWORKS NOTES

- CONTRACTOR WILL BE RESPONSIBLE FOR DAMAGES TO ANY WATER SERVICES CAUSED BY POOR CONNECTION PRACTICES, I.E., SAND AND/OR GRAVEL INTRODUCED INTO WATER SYSTEM.
- FOR WATERMAIN SHUT DOWNS, THE CONTRACTOR MUST NOTIFY THE CONTRACT ADMINISTRATOR (MINIMUM 5 WORKING DAYS NOTICE REQUIRED) WHO WILL LIAISE WITH THE CITY'S WATER DEPARTMENT. ALL REQUIRED WATERMAIN ISOLATIONS TO BE COMPLETED BY THE CITY'S WATER DEPARTMENT. ONCE APPROVAL TO PROCEED HAS BEEN ISSUED, THE CONTRACTOR IS TO NOTIFY ALL AFFECTED WATER CUSTOMERS IN WRITING, OF SCHEDULED WATER MAIN SHUT DOWNS. NOTIFICATION OF 72 HOURS MINIMUM IS REQUIRED.
- ALL WATERMANS 1500 OR GREATER SHALL BE C900 DR19 PVC.
- OPTIONAL WORK IF OBSERVED GROUND CONDITIONS REQUIRE, AS DETERMINED BY THE C.A., ALL METAL PIPES AND APPURTENANCES REQUIRE CATHODIC PROTECTION AS PER SECTION 2.46 OF THE CITY OF CAMPBELL RIVER STANDARDS.
- NON-BONDED FITTINGS(S) REQUIRE A DEDICATED 8kg ANODE.
- INSTALLATION TO MEET DETAIL W119.
- ALL NEW WATERMANS TO BE TESTED, DISINFECTED AND FLUSHED IN ACCORDANCE WITH CURRENT ANWA STANDARDS. MMCD SECTION 33 11 01, AND CCR SUPPLEMENTAL SPECIFICATION PRIOR TO TIE-IN TO EXISTING WATERMANS.
- BIOLOGICAL TESTING OF NEW WATERWORKS IS TO BE DONE PRIOR TO COMMISSIONING OF NEW MAINS USING PROCEDURES OUTLINED BY THE PROVINCIAL MINISTRY OF HEALTH.
- MINIMUM VERTICAL SEPARATION BETWEEN A WATERMAIN AND ANY PIPE SHALL BE 0.3m. WHERE WATERMAIN CROSSES OVER STORM/SANITARY WITH LESS THAN 0.5m VERTICAL SEPARATION, WRAP ALL WATERMAIN JOINTS WITHIN 3.0m OF CROSSING. WHERE WATERMAIN CROSSES UNDER STORM/SANITARY, WRAP ALL WATERMAIN, STORM AND SANITARY JOINTS INCLUDING TEES, BENDS, REDUCERS, VALVES ETC. WITHIN 6.0m OF CROSSING. WRAP ALL WATERMAIN JOINTS WITH LESS THAN 3.0m HORIZONTAL SEPARATION TO ANY PIPE. JOINT WRAP SHALL MEET OR EXCEED THE B.C. MINISTRY OF HEALTH REQUIREMENTS FOR WATERMAIN JOINT PROTECTION AND ANWA/MNS STANDARD C209 (CANUS 'JointWrap' COLD APPLIED PIPE JOINT SLEEVE, OR EQUAL).
- WATERMAIN TO HAVE 1.3m COVER TO ALLOW ADEQUATE CLEARANCE FOR ELECTRICAL DUCTS. CONTRACTOR TO ENSURE HYDRANTS ARE ADEQUATE FOR THIS DEPTH.
- WATER SERVICE SIZE TO BE 190 UNLESS NOTED OTHERWISE.
- THRUST BLOCKS SHALL BE PROVIDED ON ALL TEES, CROSSES, REDUCERS, BENDS AND CAPS IN ACCORDANCE WITH DRAWINGS CR-W1 AND CR-W1a. THRUST BLOCKS SHALL BE DESIGNED TO WITHSTAND THE MAXIMUM THRUST GENERATED AT SUCH LOCATIONS. S.S. HYDRANT TIE RODS MAY BE USED IN LIEU OF THRUST BLOCKS IN ACCORDANCE WITH THE MMCD STANDARD DETAIL DRAWING W4. ANY SUBSTITUTION OF RESTRAINING RODS AND RINGS BY THE CONTRACTOR MUST BE DESIGNED BY A PROFESSIONAL ENGINEER SUBJECT TO THE SPECIFIED WATER PRESSURES AND SOIL LOADS DEFINED IN CR-W1a, AND APPROVED BY THE CONTRACT ADMINISTRATOR.
- CONTRACTOR IS TO NOTIFY THE CITY AND ENGINEER A MINIMUM OF 5 WORKING DAYS PRIOR TO WATERMAIN TIE-IN.
- APPLICATION FOR WATERMAIN ACTIVATION TO BE SUBMITTED BY ENGINEER TO CITY MINIMUM 5 BUSINESS DAYS IN ADVANCE.
- TIE-INS ARE TO BE WITNESSED BY THE PROJECT INSPECTOR OR ENGINEER USING THE CCR WW-03 PROCEDURE. CCR WATER DEPARTMENT MUST BE IN ATTENDANCE WITH NOTIFICATION GIVEN A MINIMUM OF 5 DAYS IN ADVANCE OF PLANNED TIE-INS.
- THE CITY MUST BE IN POSSESSION OF THE WHA WATERWORKS CONSTRUCTION PERMIT PRIOR TO CONSTRUCTION. CONTRACTOR TO MAINTAIN COPY ON SITE. WORK ON CITY LAND PERMIT NOT REQUIRED.

DATUM NOTES

- ELEVATIONS ARE GEODETIC AND BASED ON:
 - MONUMENT 79H9039, ELEVATION 5.398m
 - LOCATED AT THE NORTH OF THE INTERSECTION OF ROCKLAND RD AND HWY 19A.



ISSUED FOR TENDER

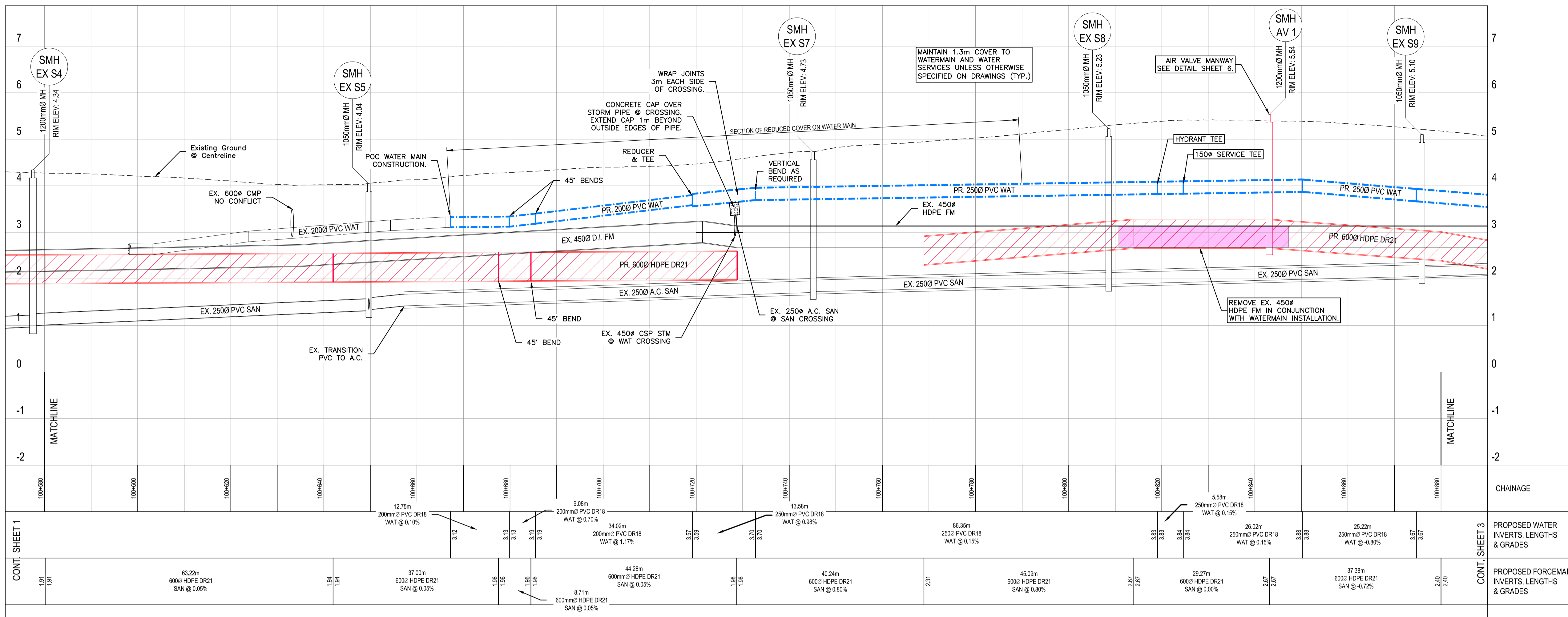
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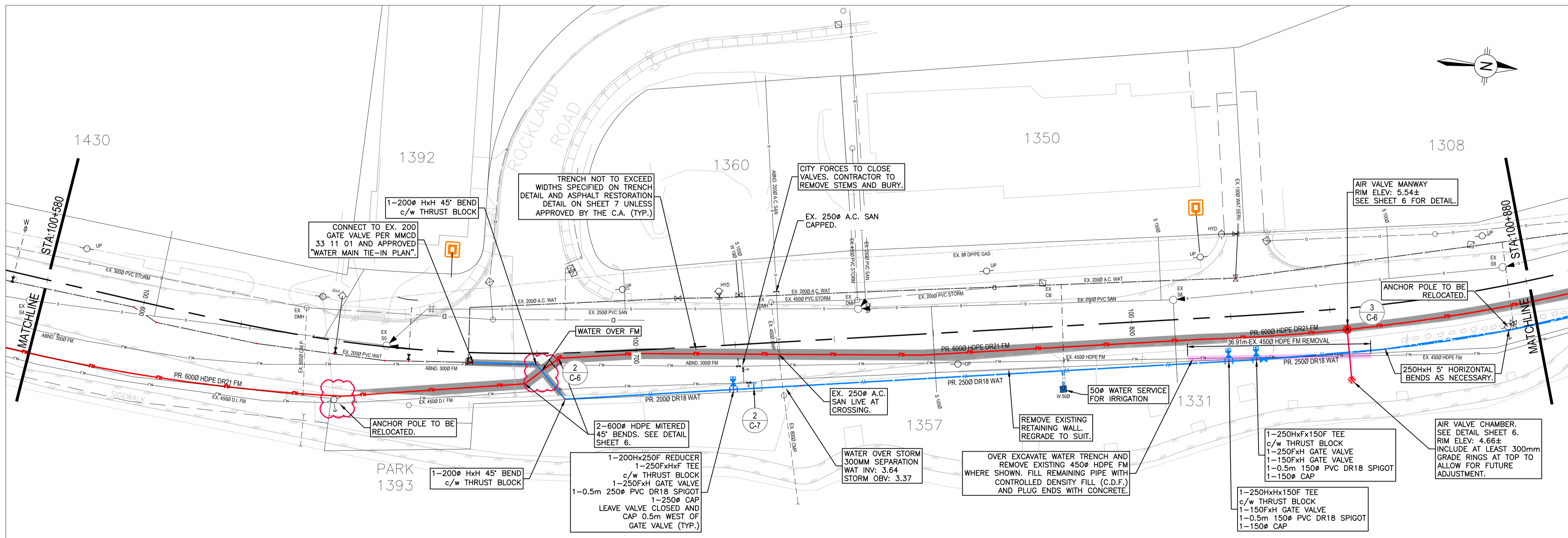
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3	ISSUED FOR TENDER	EGM	19/03/04	MD	19/03/04	TEL U/G TELEPHONE	S SANITARY SEWER	--- S ---	--- S ---	--- S ---	--- S ---	--- S ---	--- S ---	--- S ---	--- S ---	19/03/04	19/03/04	CCR19-501-C-1
2	ISSUED FOR FINAL REVIEW	EGM	19/02/01	MD	19/02/01	BCH U/G HYDRO	FM SANITARY FORCEMAIN	--- FM ---	--- FM ---	--- FM ---	--- FM ---	--- FM ---	--- FM ---	--- FM ---	--- FM ---			2221-49145
1	ISSUED FOR REVIEW - 80% DESIGN	EGM	19/11/30	MD	19/11/30	GAS NATURAL GAS	D STORM DRAIN	--- D ---	--- D ---	--- D ---	--- D ---	--- D ---	--- D ---	--- D ---	--- D ---			SHEET 1 OF 7
0	ISSUED FOR REVIEW	EGM	18/08/22	MD	18/08/22	PL WATER MAIN	W WATER MAIN	--- W ---	--- W ---	--- W ---	--- W ---	--- W ---	--- W ---	--- W ---	--- W ---			REV. 3



DRAWING PATH: C:\Users\Melhaney\Documents\Projects\Campbell River\2019\19-03-04\Campbell River\19-03-04\Civil\19-501-C-1.dwg 19/03/04 11:39:09am



PROFILE
SCALE 1:500H;1:50V



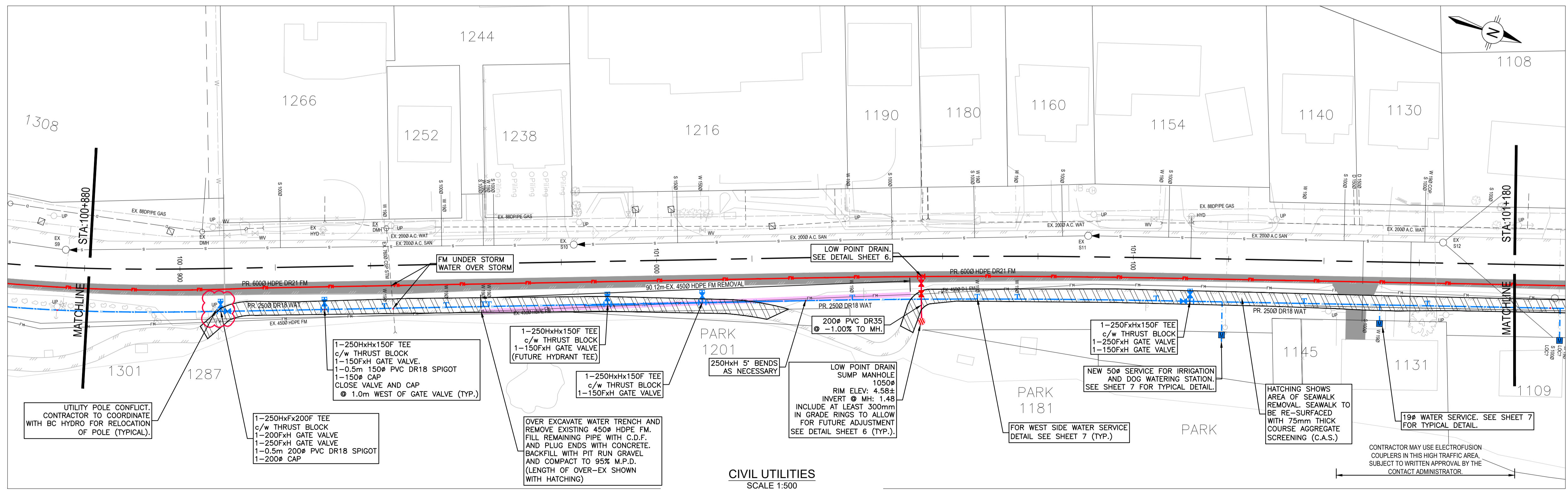
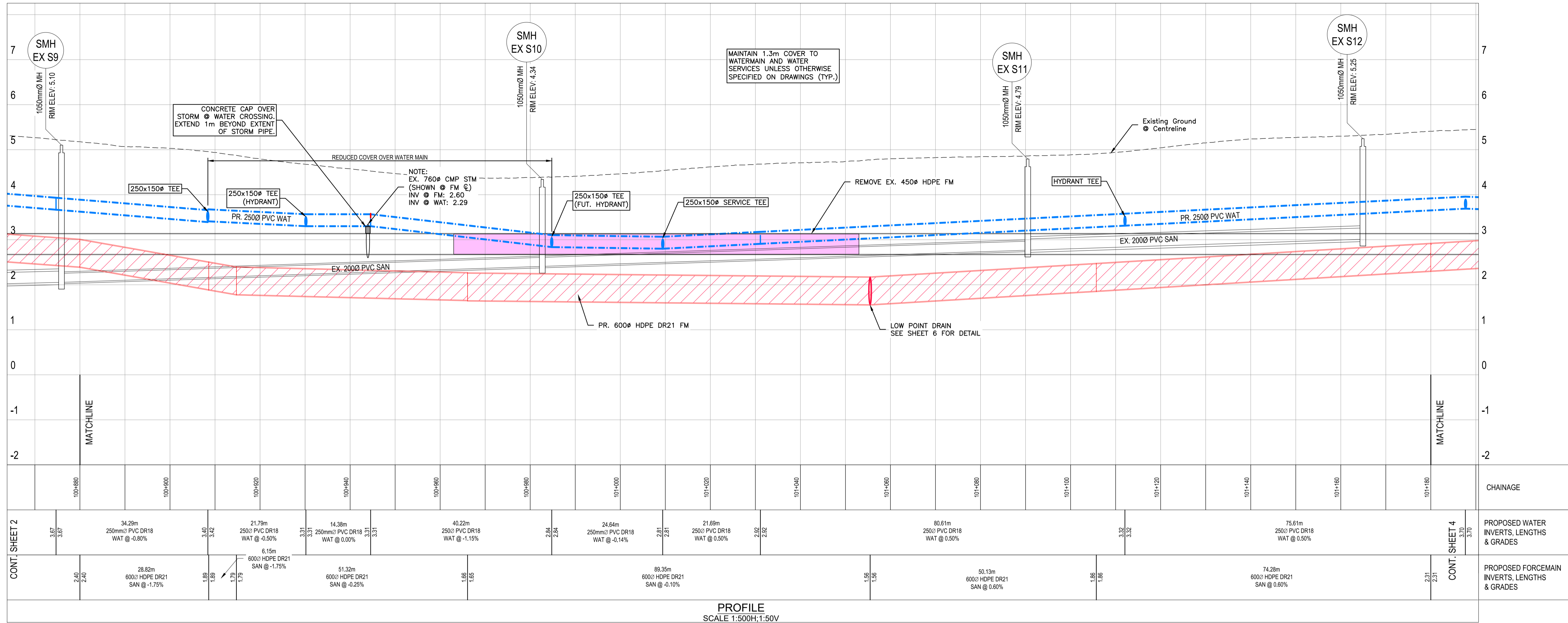
CIVIL UTILITIES
SCALE 1:500

ISSUED FOR TENDER

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NO.	REVISION	DRAWN	DATE	CHECKED	DATE	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	DESIGNED:	A1 SCALE:	DRAWN:	DATE:	CHECKED:	DATE:	APPROVED:	DATE:	CITY OF CAMPBELL RIVER	PROJECT:	SHEET	REV.
3	ISSUED FOR TENDER	EGM	19/03/04	MD	19/03/04	TEL	U/G TELEPHONE	TEL	S	SANITARY SEWER	S	O.D.	OPEN DITCH	O.D.	SMH	MANHOLE	SMH	MANHOLE	DESIGNED:	MD	1:500	EGM	19/03/04	MD	19/03/04	MD	19/03/04	CITY OF CAMPBELL RIVER	CIVIL UTILITIES - PLAN AND PROFILE	2	OF 7	
2	ISSUED FOR FINAL REVIEW	EGM	19/02/01	MD	19/02/01	BCH	U/G HYDRO	BCH	FM	SANITARY FORCEMAIN	FM	SMH	MANHOLE	SMH	MANHOLE	D	STORM DRAIN	D	DRAWN:	EGM	1:500	EGM	19/03/04	MD	19/03/04	MD	19/03/04	CITY OF CAMPBELL RIVER	CIVIL UTILITIES - PLAN AND PROFILE	2	OF 7	
1	ISSUED FOR REVIEW - 80% DESIGN	EGM	18/11/20	MD	18/11/20	D	NATURAL GAS	D	W	WATER MAIN	W	HYD	FIRE HYDRANT	HYD	WV	WATER VALVE	WV	CHECKED:	JS	1:500	EGM	19/03/04	MD	19/03/04	MD	19/03/04	CITY OF CAMPBELL RIVER	CIVIL UTILITIES - PLAN AND PROFILE	2	OF 7		
0	ISSUED FOR REVIEW	EGM	18/08/22	MD	18/08/22	PL	PROPERTY LINE	PL	P	PAVEMENT	P	UP	UTILITY POLE	UP	C	CURB & GUTTER	C	APPROVED:	MD	1:500	EGM	19/03/04	MD	19/03/04	MD	19/03/04	CITY OF CAMPBELL RIVER	CIVIL UTILITIES - PLAN AND PROFILE	2	OF 7		



ISSUED FOR TENDER

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NO.	REVISION	DRAWN	DATE	CHECKED	DATE
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2	ISSUED FOR FINAL REVIEW	EGM	19/02/01	MD	19/02/01
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0	ISSUED FOR REVIEW	EGM	18/08/22	MD	18/08/22

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			P	PAVEMENT	P
			C	CURB & GUTTER	C
			S	SIDEWALK	S

EXISTING	LEGEND	DESIGN	EXISTING	LEGEND	DESIGN
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S.I.	SAN SEWER INLET	S.I.	S.M.H.	MANHOLE	S.M.H.
S.I.	SAN SEWER INLET	S.I.	S.M.H.	MANHOLE	S.M.H.
S.I.	SAN SEWER INLET	S.I.	S.M.H.	MANHOLE	S.M.H.
S.I.	SAN SEWER INLET	S.I.	S.M.H.	MANHOLE	S.M.H.

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McElhannay
McElhannay Consulting Services Ltd.
1160 COWDRIE STREET
CAMPBELL RIVER B.C.
V9W 4P2

City of Campbell River

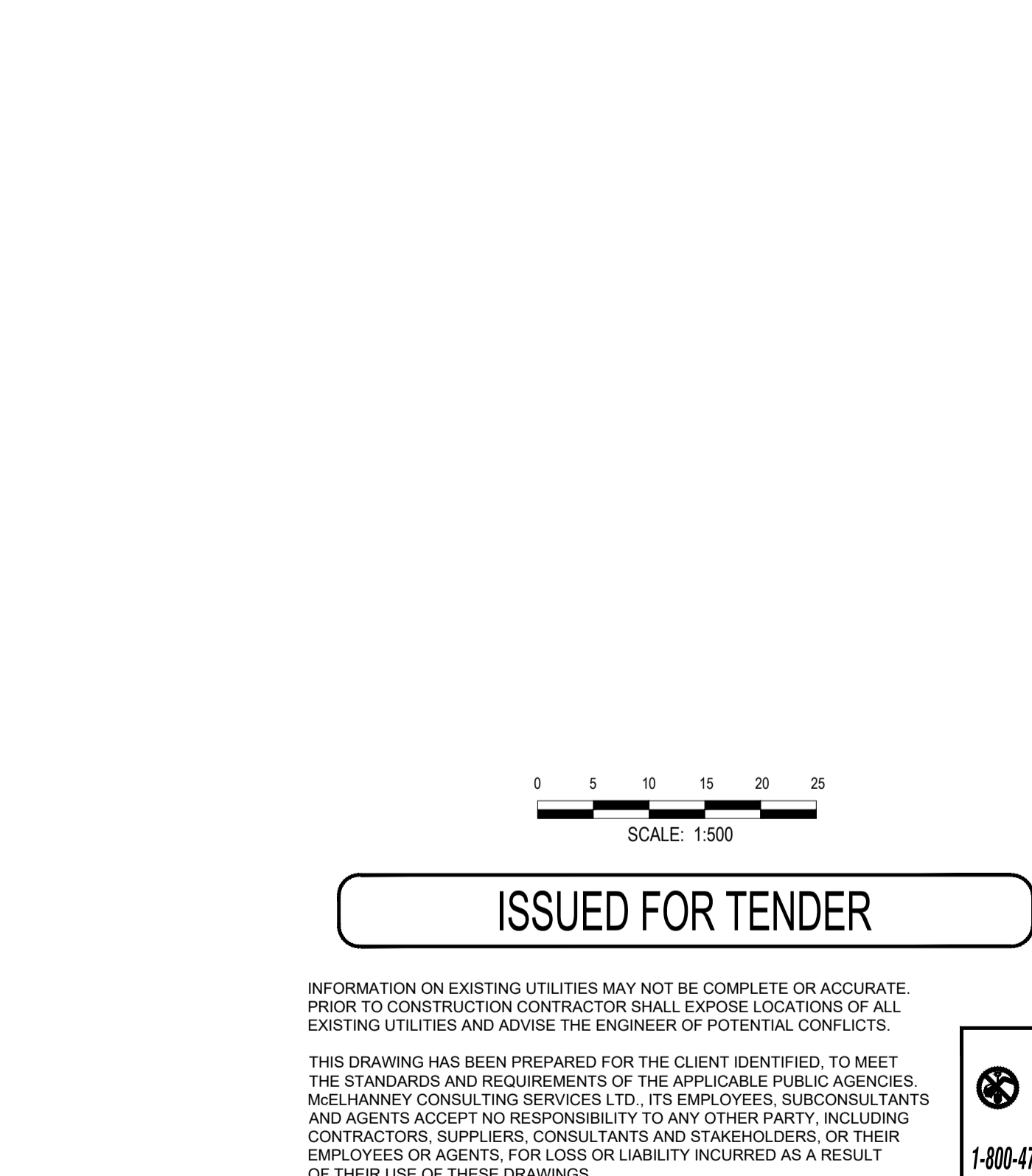
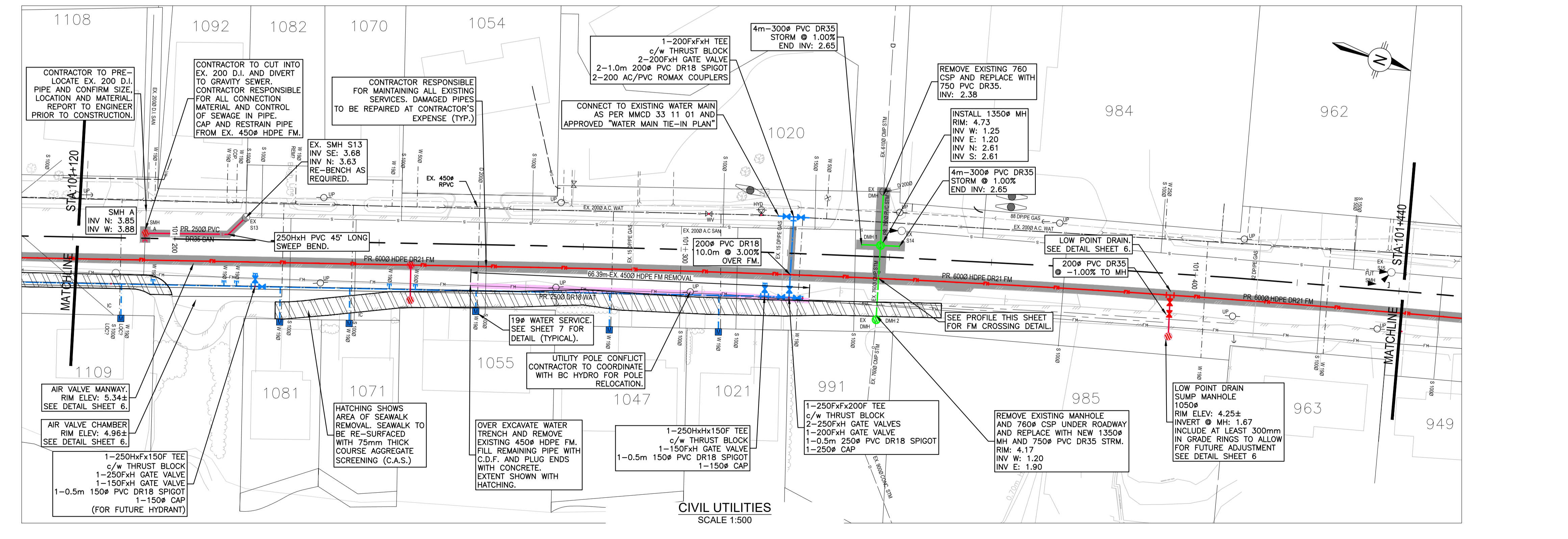
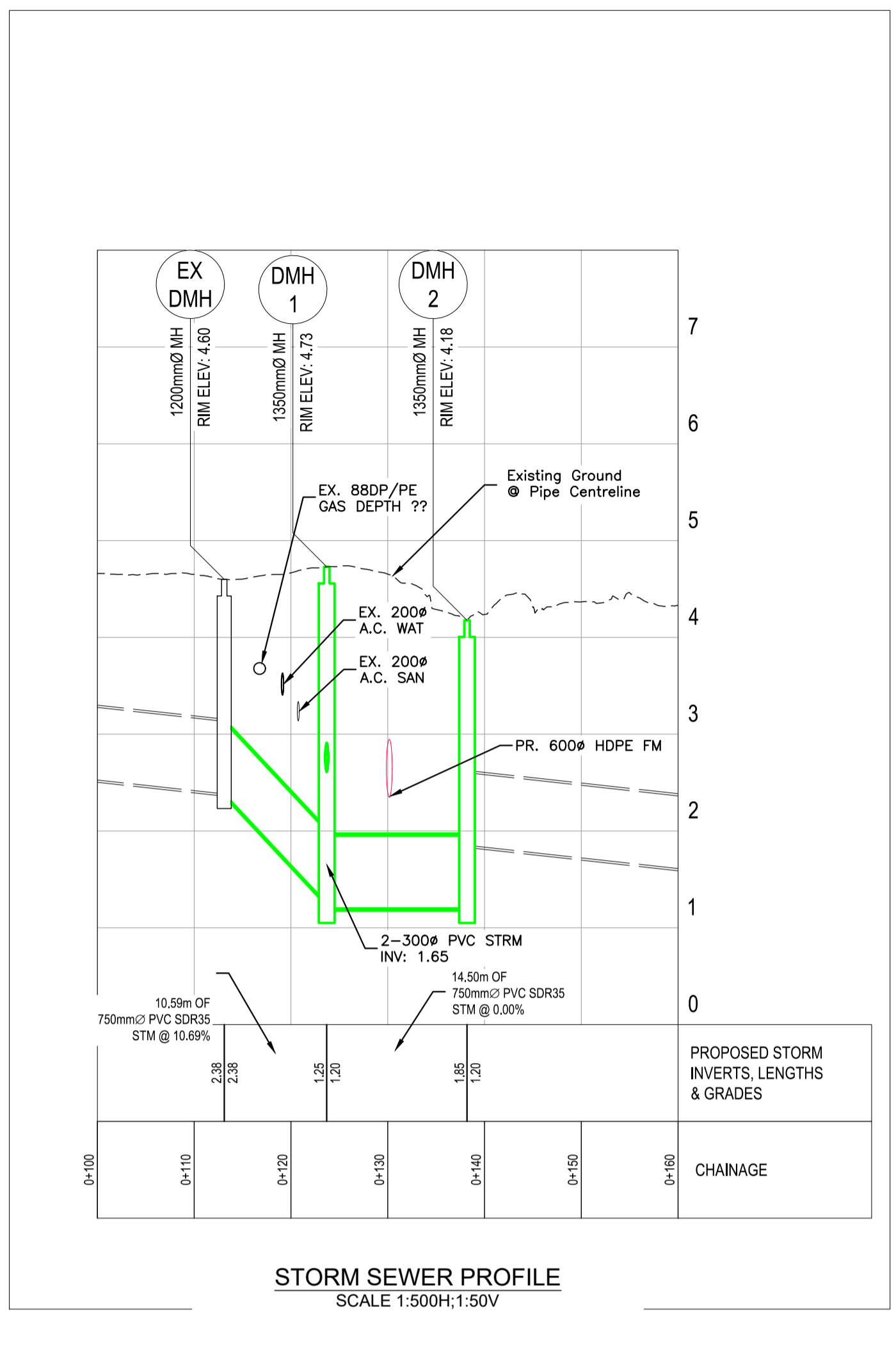
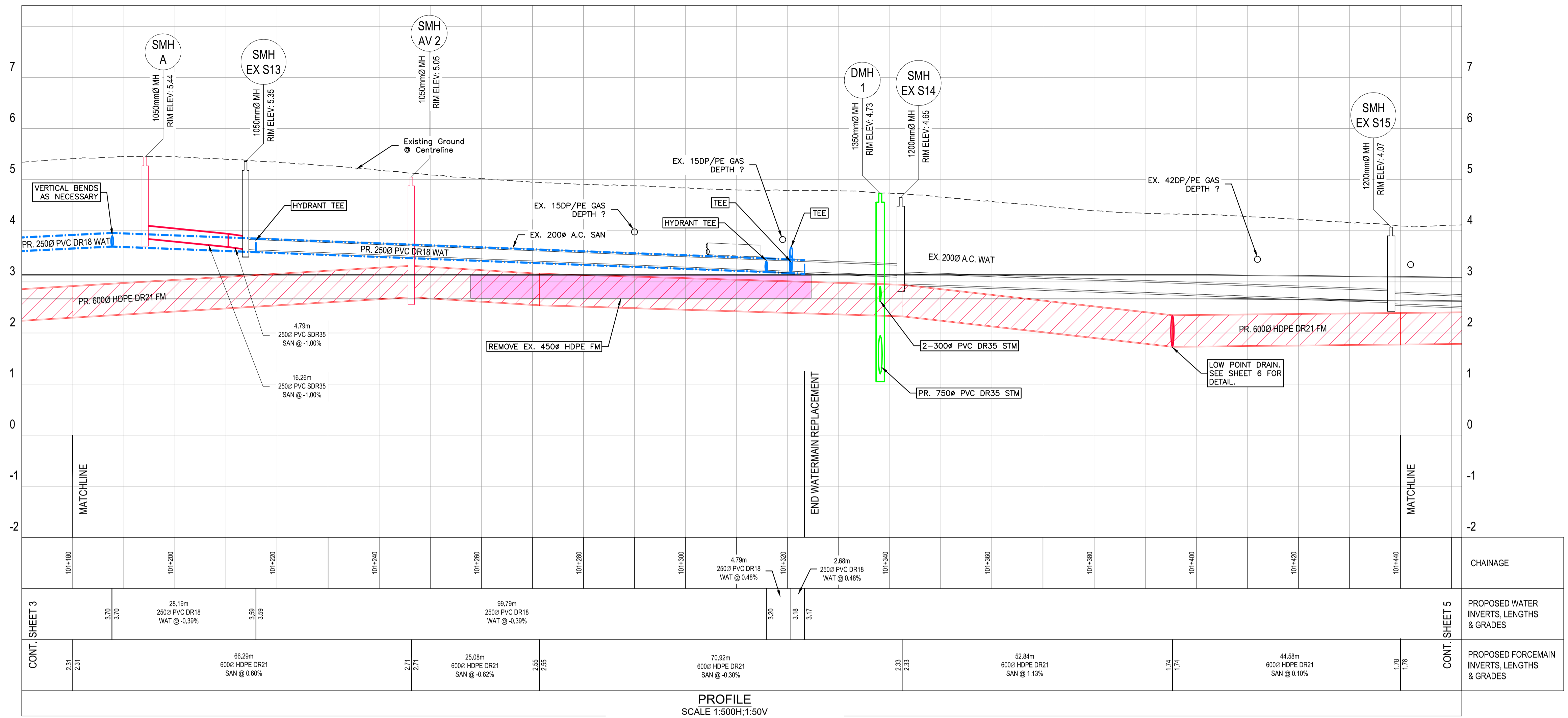
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HIGHWAY 19A - ROCKLAND ROAD TO L.S.#6
WATERMAIN AND SANITARY FORCEMAIN UPGRADE
CAMPBELL RIVER, BC

CCR DWG #
CCR19-501-C-3

PROJECT:
2221-49145

SHEET 3 OF 7

REV. 3

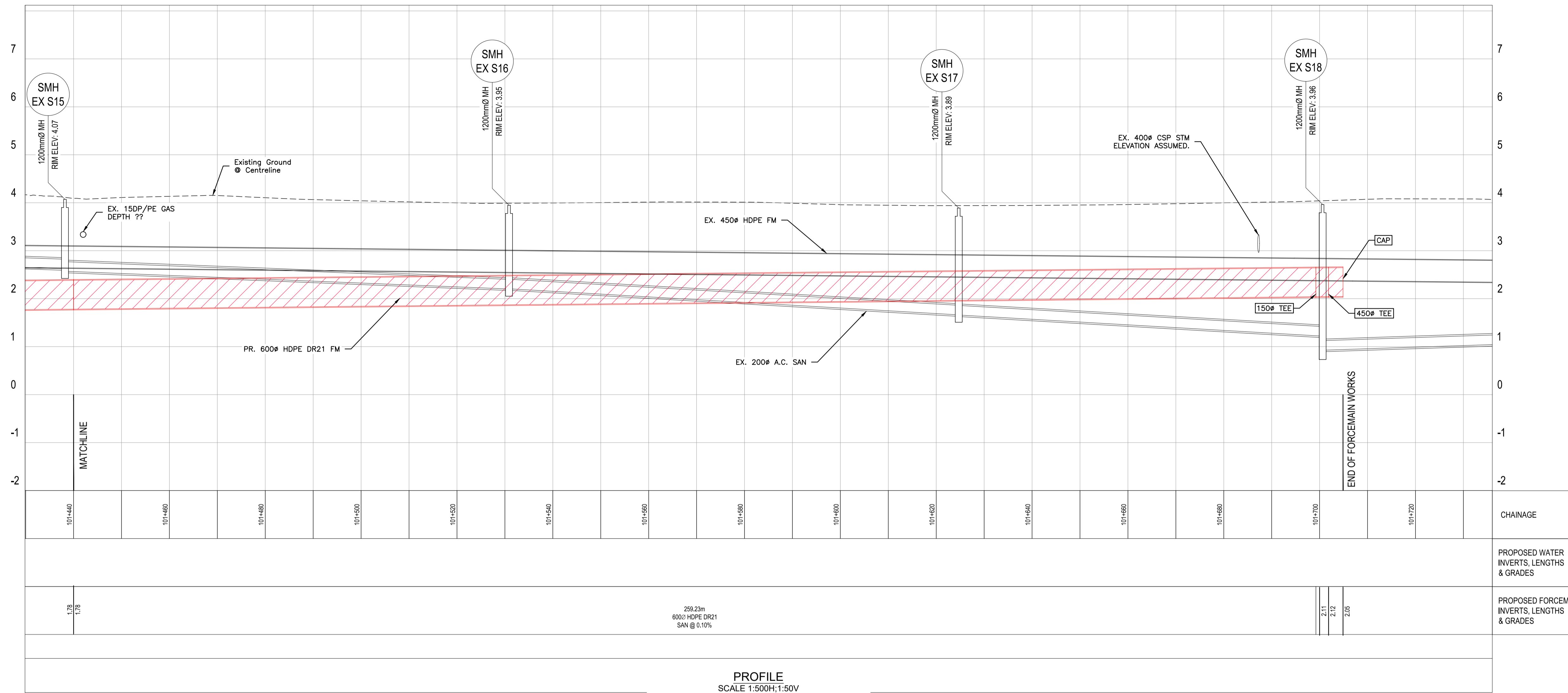


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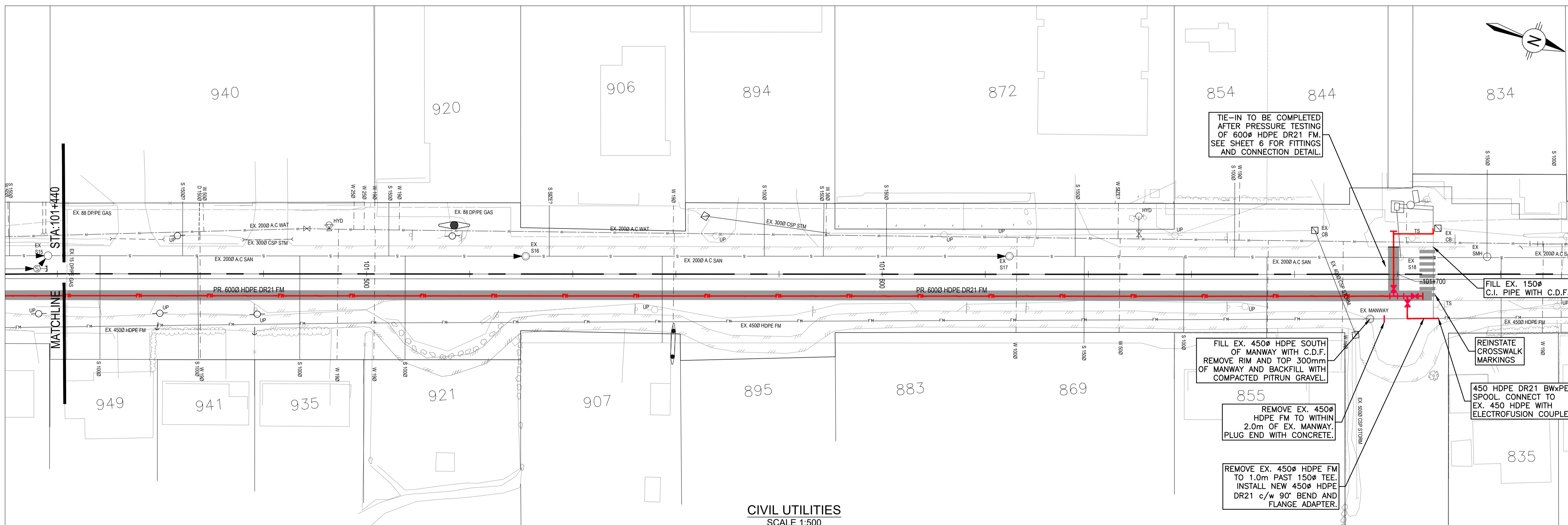
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			P	PAVEMENT	P	W.V.	WATER VALVE	W.V.
			C	CURB & GUTTER	C	U.P.	UTILITY POLE	U.P.
				SIDEWALK				

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CITY OF CAMPBELL RIVER	CCR DWG #
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HIGHWAY 19A - ROCKLAND ROAD TO L.S.#6	SHEET 4 OF 7
WATERMAIN AND SANITARY FORCEMAIN UPGRADE	REV. 3
CAMPBELL RIVER, BC	



PROFILE
SCALE 1:500H, 1:50V



CIVIL UTILITIES
SCALE 1:500

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EXISTING	LEGEND	DESIGN
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W	WATER MAIN	W
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C	CURB & GUTTER	C
	SIDEWALK	

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W.V.	WATER VALVE	W.V.
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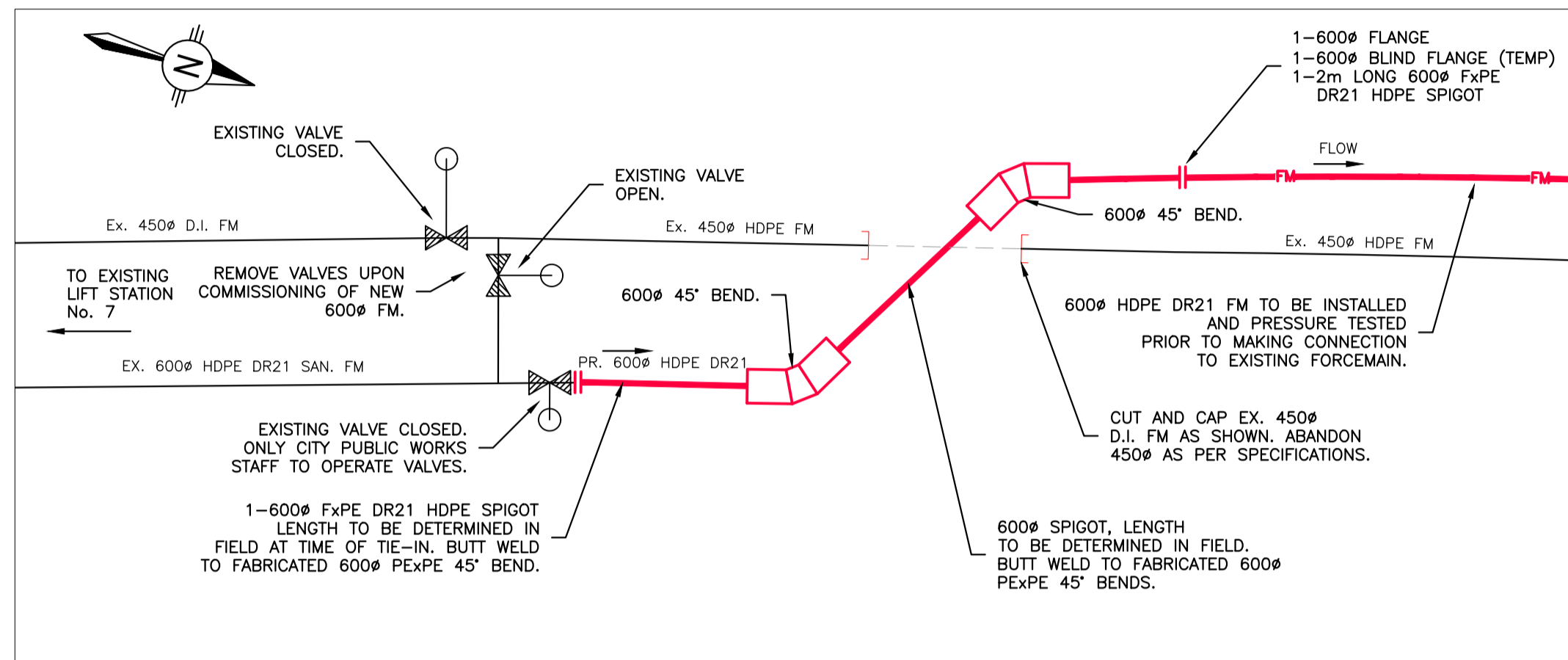


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SHEET	5 OF 7
REV.	3

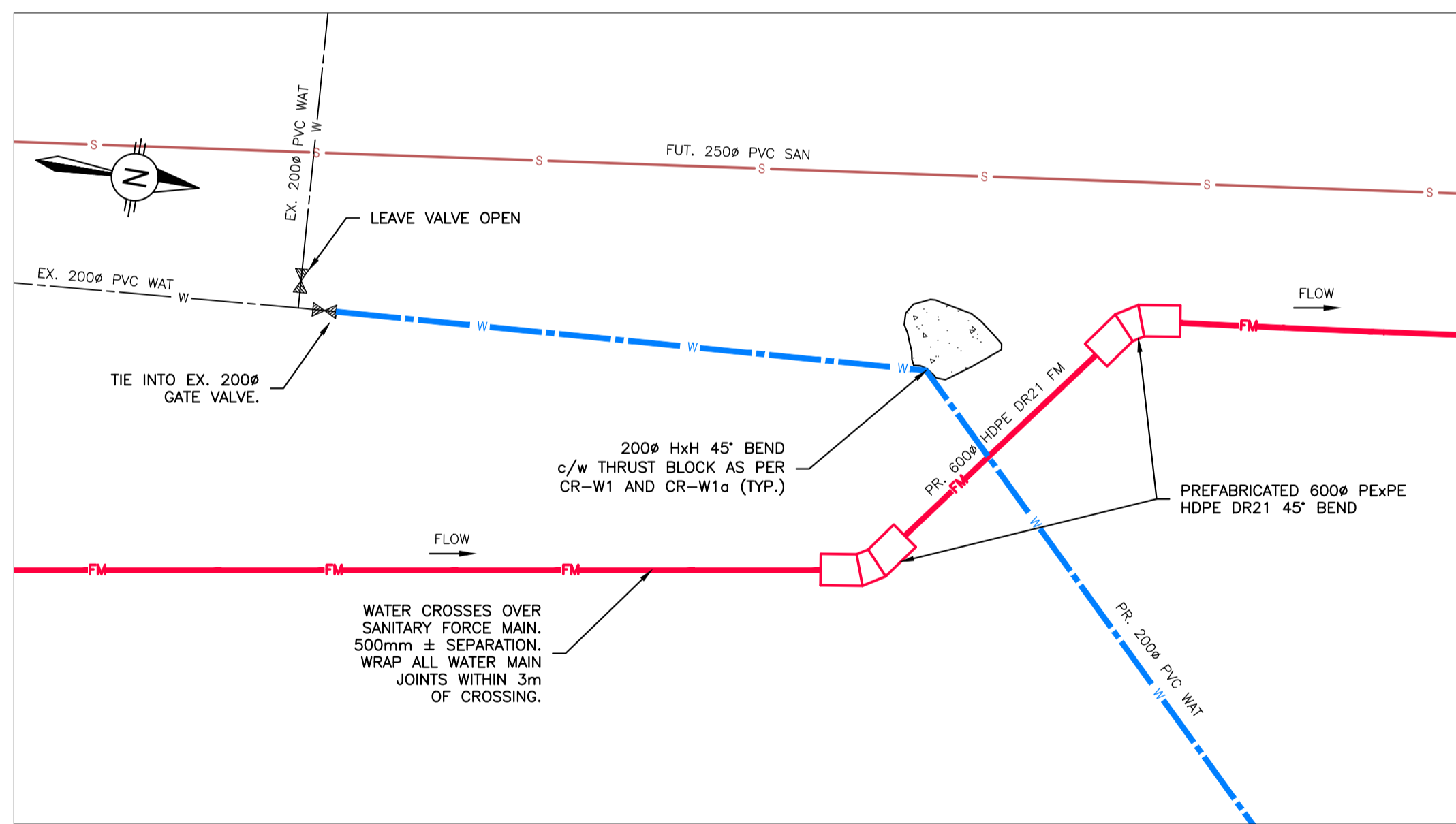
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STATIONS 101+440-101+705
HIGHWAY 19A - ROCKLAND ROAD TO L.S.#6
WATERMAIN AND SANITARY FORCEMAIN UPGRADE
CAMPBELL RIVER, BC

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PROJECT:	2221-49145
SHEET	5 OF 7
REV.	3

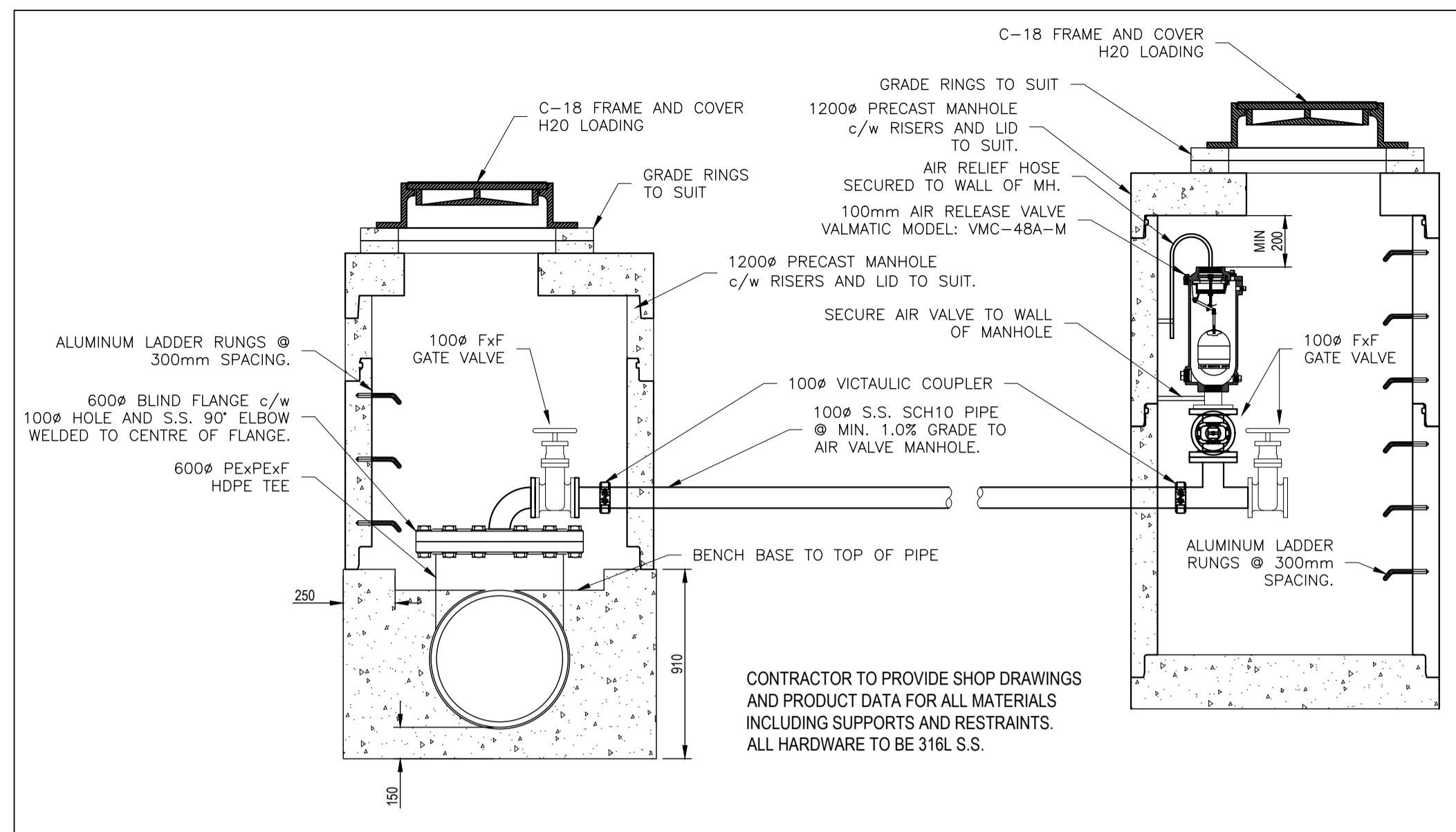
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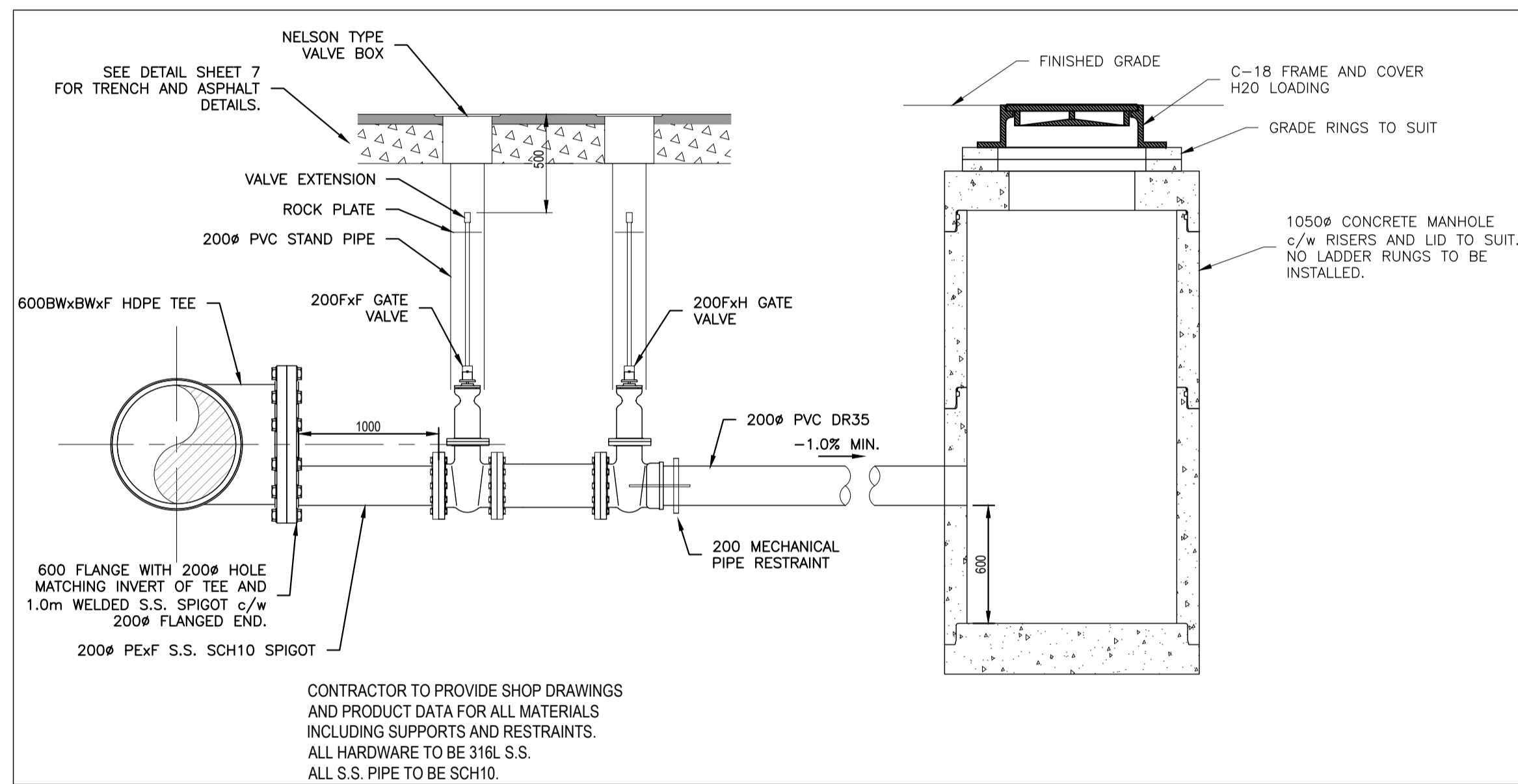
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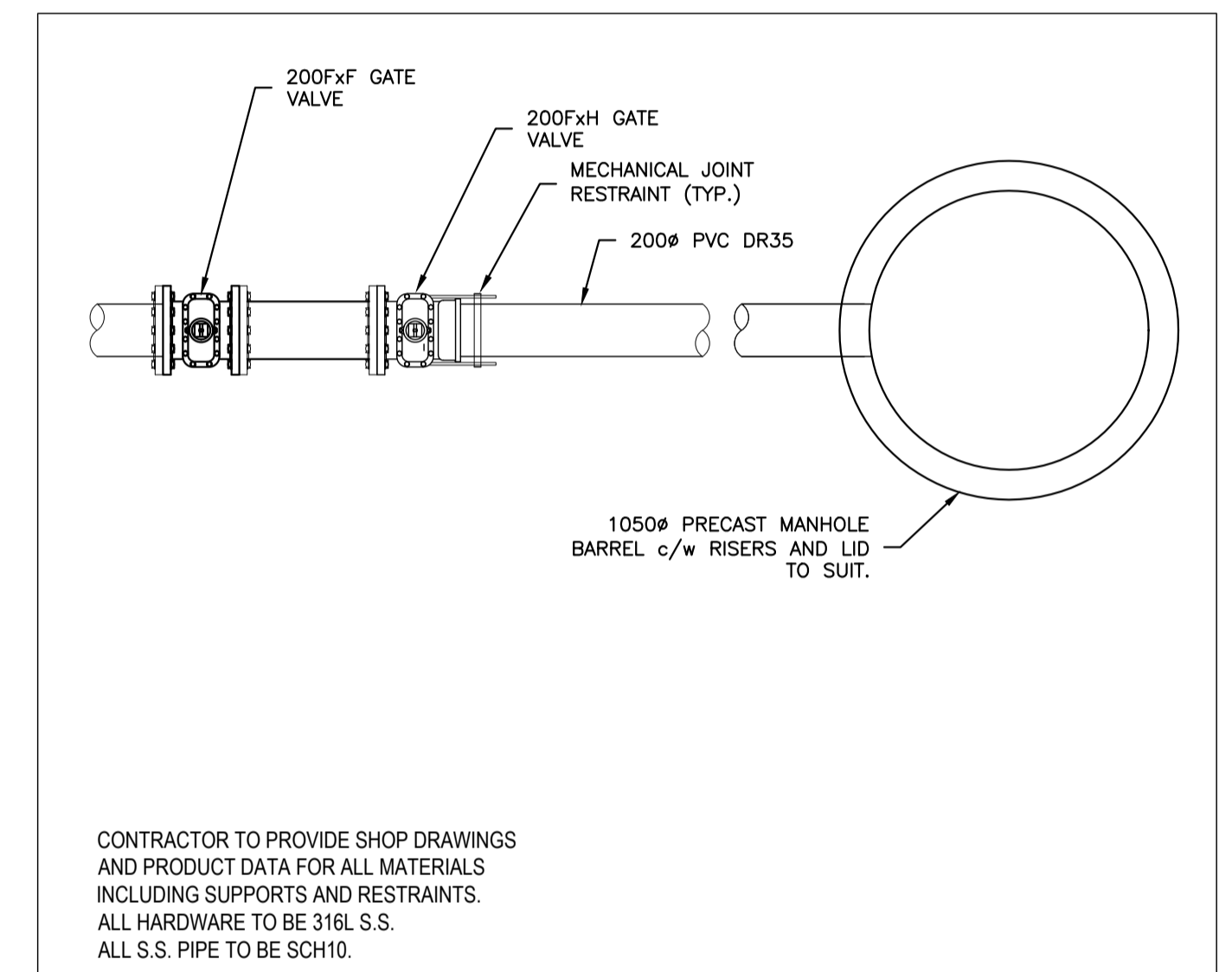
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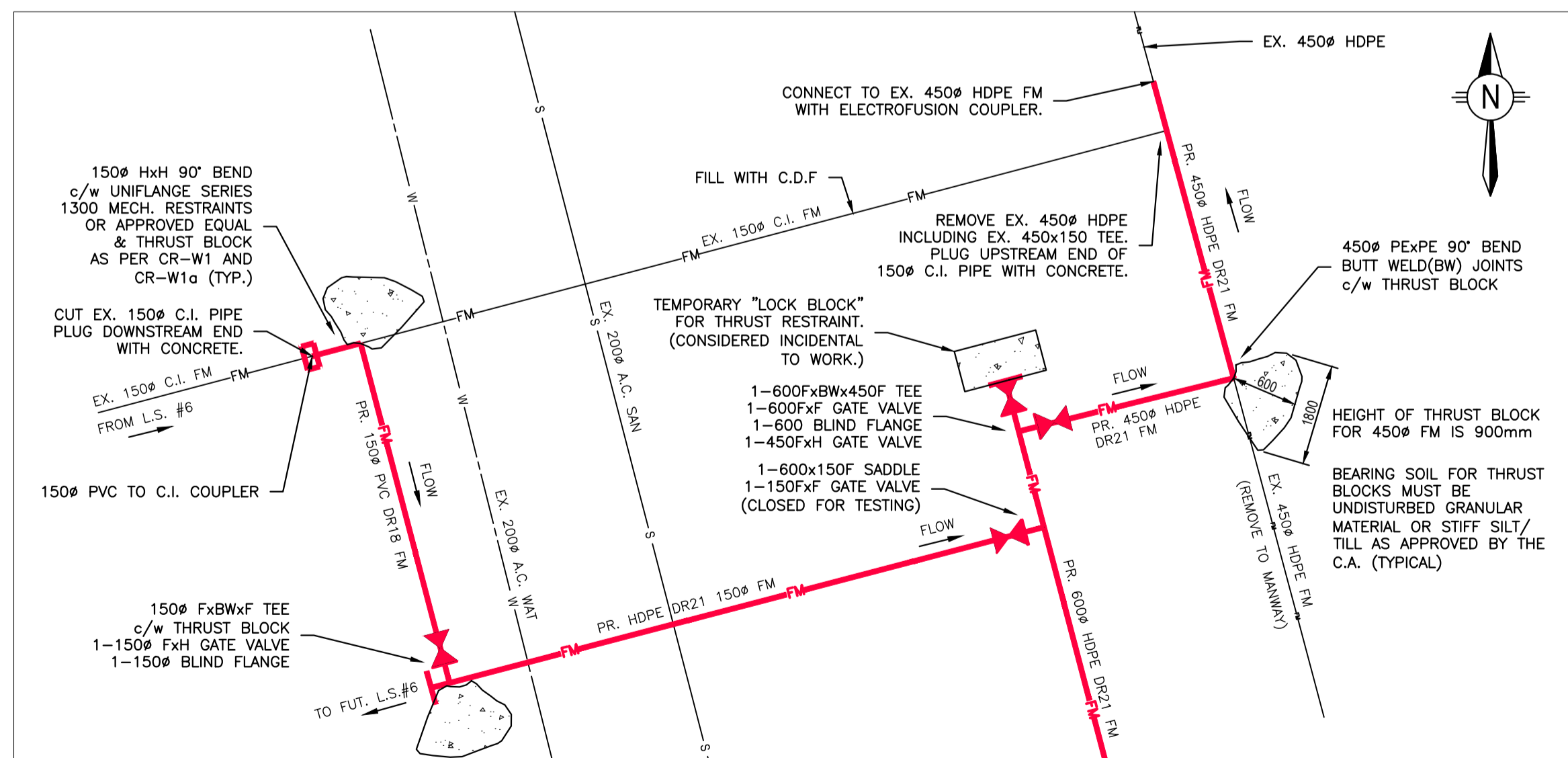
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SCALE: HNTS
VNTS



5 FORCEMAIN NORTH TIE-IN DETAIL
SCALE: HNTS
VNTS

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GAS	NATURAL GAS	GAS	D	STORM DRAIN	D
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				SIDEWALK	

LEGEND	DESIGN	EXISTING	LEGEND	DESIGN	EXISTING
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				WATER VALVE	
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APPROVED: MD
DATE: 19/03/04

McElhannay
McElhannay Consulting Services Ltd.
1180 GARDNER STREET
CAMPBELL RIVER BC
V9B 5W6

City of
Campbell
River

CITY OF CAMPBELL RIVER

FORCEMAIN DETAILS

HIGHWAY 19A - ROCKLAND ROAD TO L.S.#6
WATERMAIN AND SANITARY FORCEMAIN UPGRADE
CAMPBELL RIVER, BC

CCR DWG #
CCR19-501-C-6

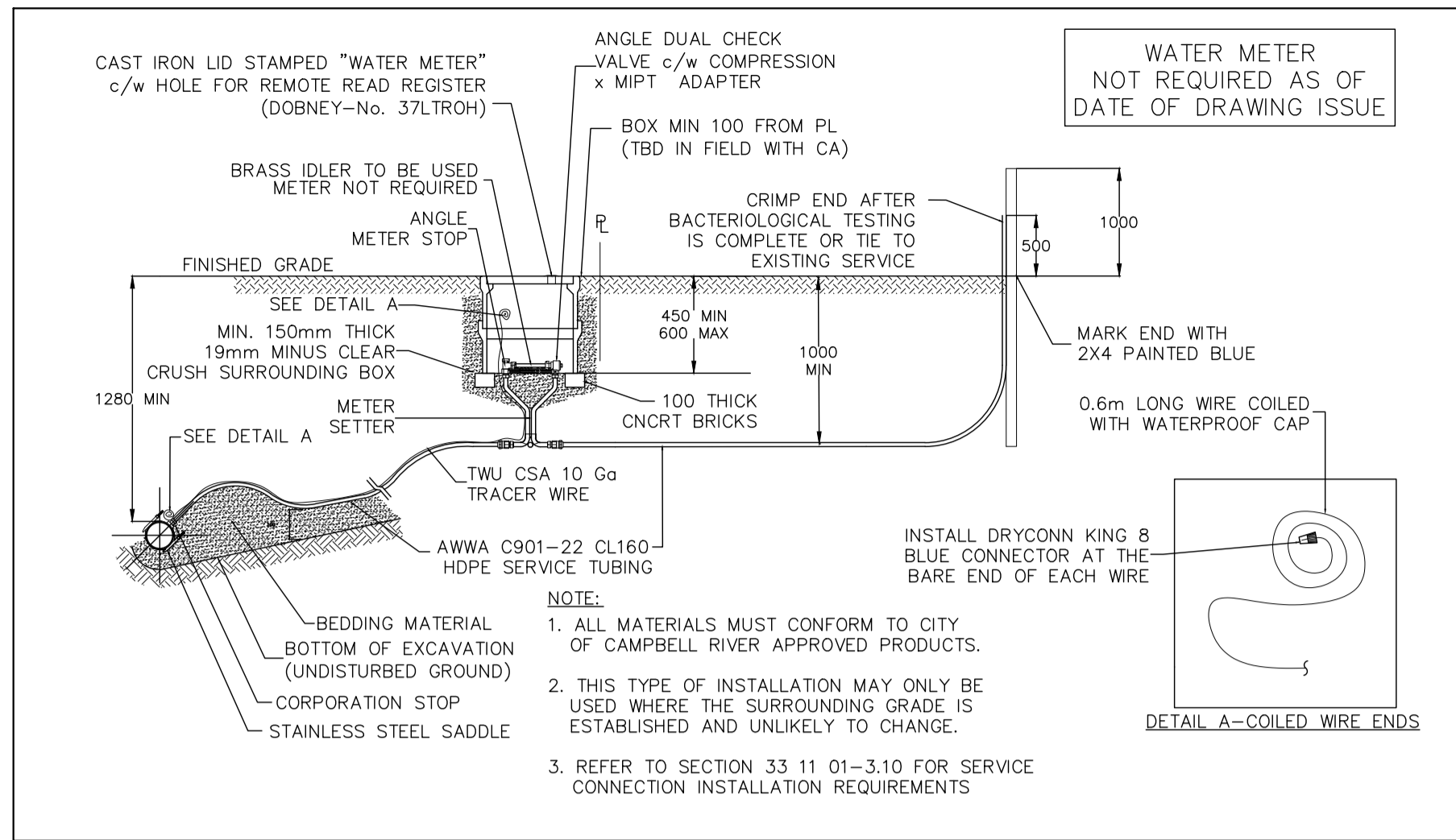
PROJECT:
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SHEET 6 OF 7

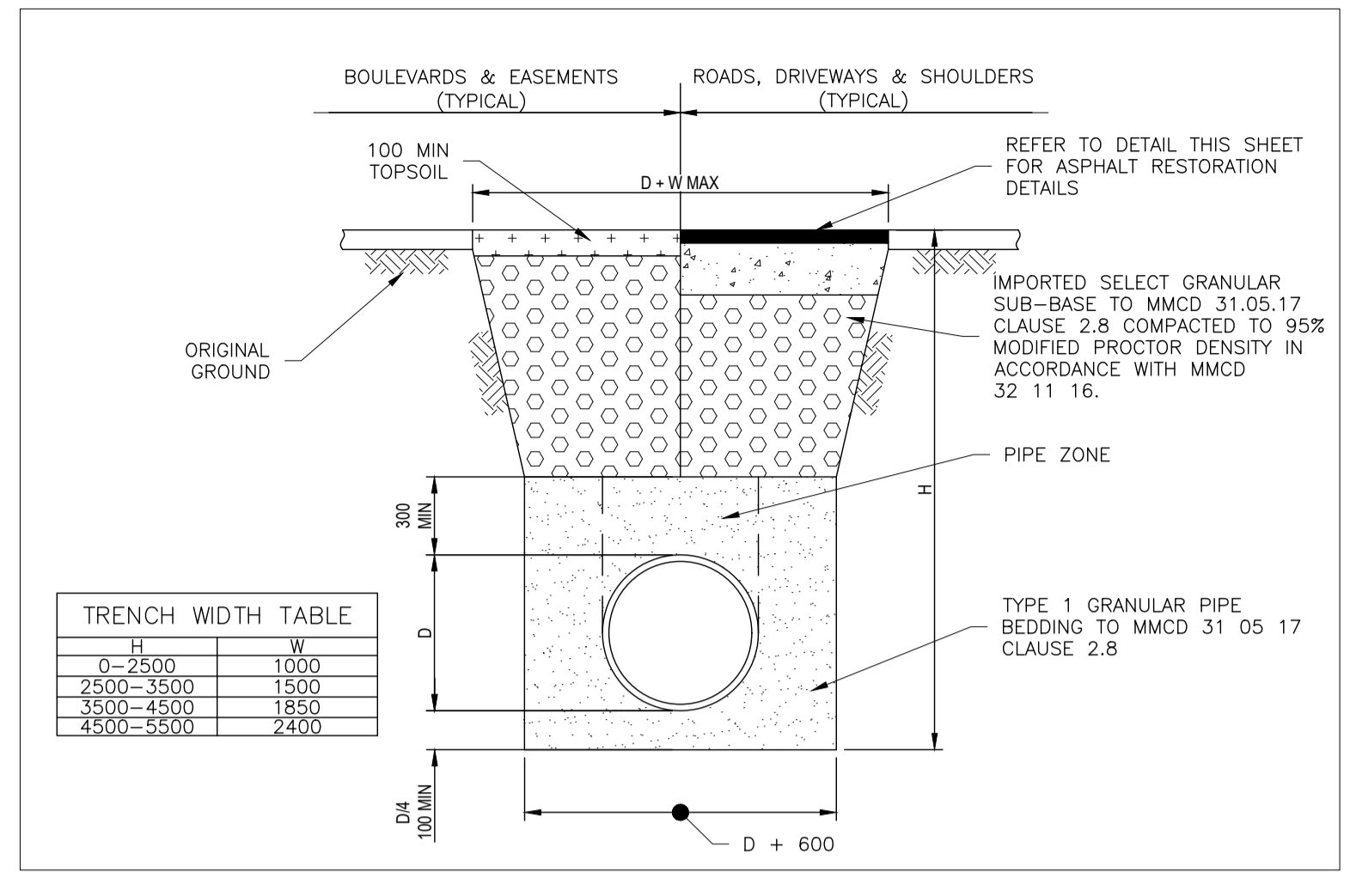
REV. 3

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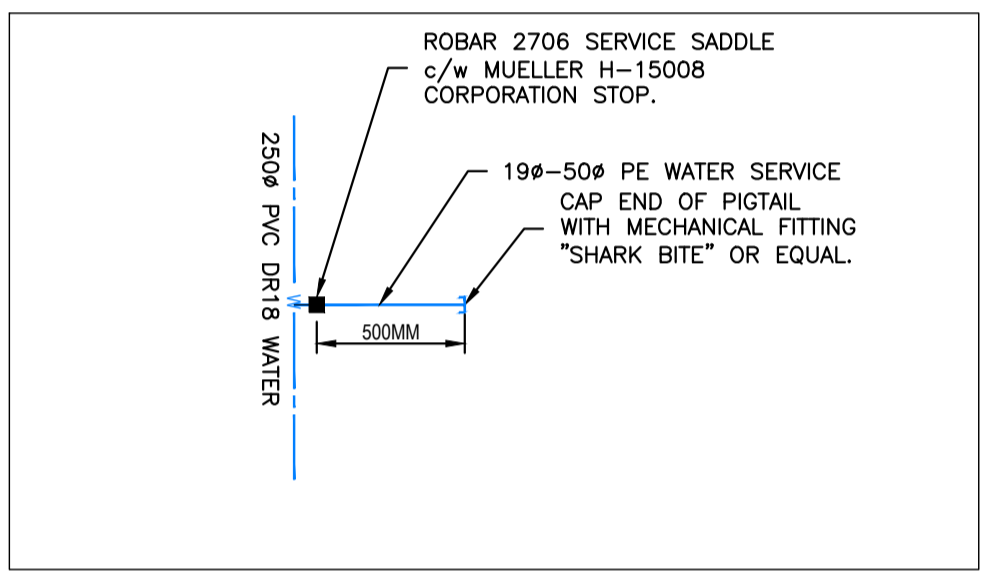
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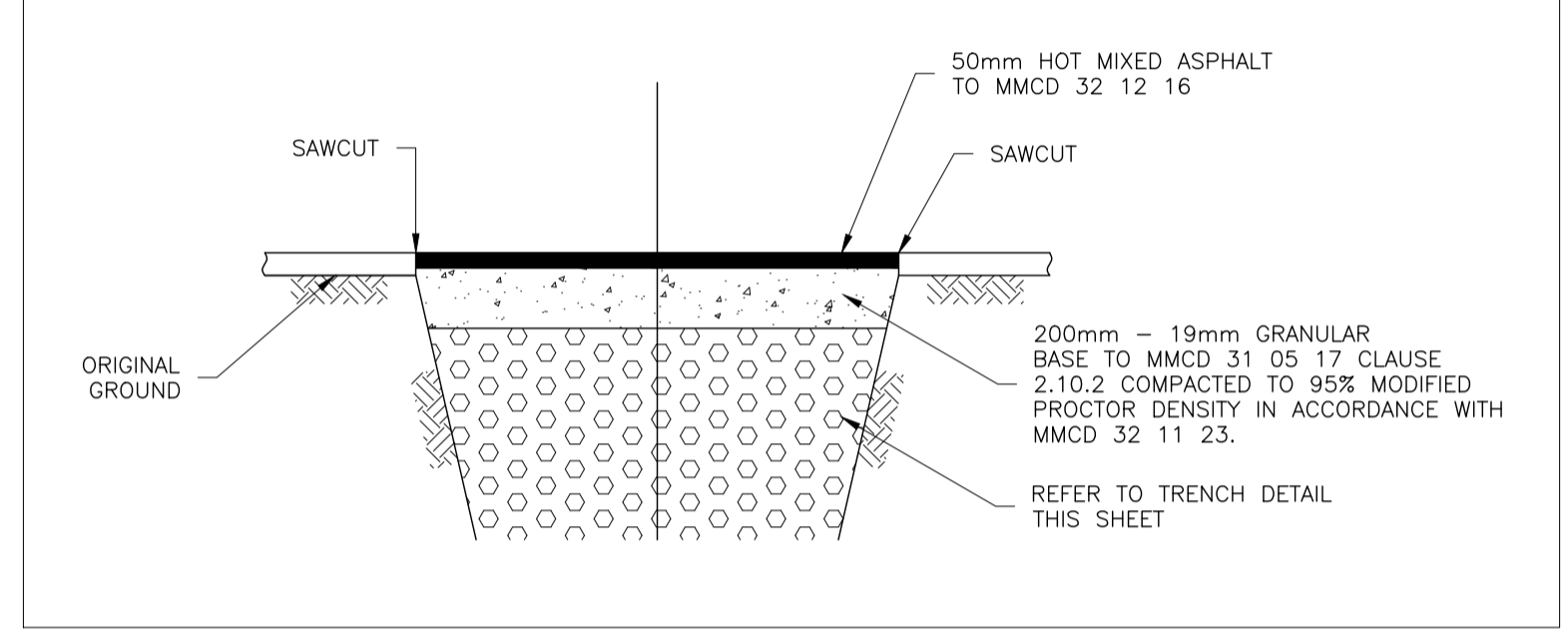
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August 30, 2018

Our File: 2221-49145-00

Mr. Clinton Crook
Senior Buyer
City of Campbell River City Hall
301 St. Ann's Road
Campbell River, BC V9W 4C7

Dear Mr. Crook,

**RE: GEOTECHNICAL ASSESSMENT - HIGHWAY 19A PHASE 3
SIMMS CREEK PUMPING STATION TO THE BIG ROCK BOAT RAMP, CAMPBELL RIVER, BC**

1.0 INTRODUCTION

As requested, McElhanney Consulting Services Ltd. (McElhanney) has prepared this geotechnical report which summarizes our geotechnical findings for the Highway 19A Phase 3 renewal development.

We understand that Phase 3 is the middle section of the 4.5km Highway19A waterfront corridor renewal project. This corridor is the scenic gateway from the south island into the City of Campbell River. The location of the site is shown on the attached Geotechnical Site Plan.

The proposed Highway 19A Phase 3 includes approximately 1km of Highway 19A, including the complete replacement of the existing underground infrastructure, as well as a full upgrade to the present roadway which will feature medians, turning lanes, a roundabout, sidewalks / a multi-use pathway (Seawalk), parking areas, and the conversion of overhead utilities to underground.

The portion of the highway south of Rockland Road was not investigated, as this section of the highway was rehabilitated in 2011 as an extension to the Phase 2 work. Sewer and water mains were replaced, as was any encountered unsuitable road foundation materials. The design contemplates an asphalt overlay with the intention of not disturbing the existing foundation materials as much as possible.

No biological, archaeological or environmental reviews were completed as part of this assessment. Archaeological and environmental reviews have been completed by others and submitted under separate cover.

Assessment of any required retaining walls or structures is beyond the scope of this report.



2.0 BACKGROUND

The following documents were reviewed in preparation of this report:

- i. **Highway 19A Sewer – Hilchey Road to Simms Creek, Campbell River, BC; Report of Geotechnical Assessment;** (file: SGL09-028), October 20, 2009, Simpson Geotechnical Ltd.
- ii. **Geotechnical Assessment, Sanitary Sewer Study, Forcemain Replacement, Campbell River – South** (file:1401-0119), February 2003, Levelton Engineering Ltd.

3.0 ASSESSMENT METHODOLOGY

A subsurface drilling investigation was completed on April 23, 2018. Seven (7) boreholes, designated as BH18-01 to BH18-07, were augured to a maximum depth of 6.1m. The approximate borehole locations are shown on the attached Geotechnical Site Plan. McElhanney also reviewed additional boreholes (BH1 to BH7) within the Phase 3 highway alignment from the Levelton (2003) report (attached to this report).

Note that Levelton's BH7 is located about 30m north of Phase 3 and therefore is not shown on the Geotechnical Site Plan.

Soil and groundwater conditions were logged and select soil samples were taken for further evaluation. Upon completion of the excavation activities, the boreholes were backfilled to ground surface with cuttings, and asphalt patch was applied to the roadway. The borehole locations were recorded using a handheld GPS.

4.0 SOIL AND GROUNDWATER CONDITIONS

4.1 Surficial Geology

Surficial geology mapping (Geological Survey of Canada, Map 49-1959) indicates that the surficial geology covering the study area generally consists of Salish sediments over Ground Moraine deposits/bedrock.

The site is situated in **Soil Units 8 and 3** which are defined as follows:

- 8: Salish sediments - Shore, Deltaic, and fluvial deposits: gravel, sand, silt, clay, peat.
- 3: Ground moraine deposits: till, lenses of gravel, sand, and silt.

The soils encountered during the drilling investigations are generally consistent with the soil descriptions as defined on the surficial geology map. No bedrock outcrops were observed at the site. Large boulders (including Big Rock) were observed on the beach. Sandstone bedrock was encountered at a depth of 2.6m depth on the south side of Phase 3, based on a previous geotechnical report.



Figure 1. Portion of “Surficial Geology Campbell River” showing study area. (Map 49-1959. Geological Survey of Canada.)

4.2 Soil Stratigraphy

In general, the soils encountered at the borehole locations consist of the following materials:

- Asphaltic concrete;
- Road base and subbase; over
- Imported subgrade fill: pit-run sand and gravel; over
- Salish Sediments, including the following:
 - Organic soil, peat;
 - Gravel;
 - Silty sand, sand and silt, sandy silt;
 - Sand or sand and gravel;
 - Silt; and
 - Clay
- Till-like materials: Silty Sand with some gravel and occasional cobbles.

Subsurface soil and groundwater conditions encountered at the subject site are summarized in **Table 1**. Detailed soil descriptions are provided in the attached **Borehole Logs**. The soils observed in the field were classified in accordance with the Modified Unified Classification System for Soils, which is also attached.



Table 1. Soil Stratigraphy and Groundwater Seepage Summary

Test Hole ID	Asphalt (mm)	Road base and Subbase (m)	Pit-run Sand and Gravel (m)	Salish Sediments (m)	Till-Like Materials (m)	Ground water (m)	Maximum Borehole Depth (m)
BH18-1	200	0.20 - 0.60	0.60 - 1.10	1.1-6.1	-	1.5	6.1
BH18-2	100	0.10 - 0.30	0.30 - 1.20	1.2- 4.6	4.6 - 6.1	1.5	6.1
BH18-3	200	0.20 - 0.60	0.60 - 0.90	0.90 - 6.1	-	1.5	6.1
BH18-4	200	0.20-0.60	0.60 - 1.80	n/a	-	n/a	1.8
BH18-5	200	0.20 - 0.60	-	0.60 - 2.70	-	1.5	2.7
BH18-6	300	0.30 - 0.60	-	0.60 - 1.80	-	1.5	1.8
BH18-7	250	0.25 - 0.45	0.45 - 0.75	0.75 - 6.10	-	1.5	6.1
BH1 (2002)	130	0.13 - 0.40	-	0.4 - 3.05	-	1.0	3.03
BH2 (2002)	75	0.075 - 0.20	-	0.20 - 3.0	-	1.5	3.05
BH3 (2002)	150	0.15 - 0.30	-	0.30 - 6.10	-	1.45	6.15
BH4 (2002)	170	0.17 - 0.30	0.30 - 0.60	0.60 - 3.1	-	1.5	3.05
BH5 (2002)	235	0.235 - 0.45	-	0.45 - 3.10	-	1.5	3.05
BH6 (2002)	240	0.24 - 0.60	-	0.60 - 2.10	2.1 - 3.1	1.2	3.05
BH7 (2002)	240	0.24 - 0.30	0.3 - 2.1	2.1 - 6.1	-	2.65	6.1

Table 2. Salish Deposits Stratigraphy and Summary

Test Hole ID	Organic Soil (m)	Gravel (m)	Silty Sand, Sand and Silt, Sandy Silt (m)	Sand to Sand & Gravel (m)	Silt (m)	Clay (m)	Groundwater (m)	Maximum borehole depth (m)
BH18-1	-	1.1 - 3.7	-	-	3.7 - 6.1	-	1.5	6.1
BH18-2	1.2 - 1.4	1.4 - 3.1	3.1 - 4.6	-	-	-	1.5	6.1
BH18-3	-	-	0.9 - 6.1	-	-	-	1.5	6.1
BH18-4	-	1.2 - 1.8	-	0.6 - 1.2	-	-	-	1.8
BH18-5	-	-	-	0.6 - 2.7	-	-	1.5	2.7
BH18-6	-	0.6 - 1.8	-	-	-	-	1.5	1.8
BH18-7	-	0.75 - 3.7	-	-	-	3.7 - 6.1	1.5	6.1
BH1 (2002)	-	-	-	0.4 - 3.05	-	-	1.0	3.03
BH2 (2002)	-	-	-	0.2 - 3.05	-	-	1.5	3.05
BH3 (2002)	-	-	-	0.3 - 6.1	-	-	1.45	6.15
BH4 (2002)	0.6 - 1.7	-	-	1.7 - 3.05	-	-	1.5	3.05
BH5 (2002)	-	-	-	0.6 - 3.05	0.45 - 0.6	-	1.5	3.05
BH6 (2002)	-	-	-	0.6 - 2.1	-	-	1.2	3.05
BH7 (2002)	-	-	-	0.3 - 2.1	-	2.1 - 6.1	2.65	6.1



The encountered road structures and soil strata are further described below. It should be noted that in boreholes BH18-4, BH18-5, and BH18-6, drilling refusal was encountered at depths of 1.8 to 2.7m below existing grade. The cause of the drilling refusal could not be determined at the time of drilling. Levelton's BH5 was located in between BH18-04 and BH18-05 and no drilling refusal nor large cobbles/boulders were noted. Levelton's BH6 was approximately 12m north of BH18-06 and encountered sandy till-like materials at a depth of 2.1m.

Asphalt:

Asphalt pavement thickness varied from 75 to 300mm.

Road Base and Subbase materials:

19mm minus crushed sand and gravel were observed below the asphalt during the 2018 drilling investigation. Well graded sand and gravel were observed below the road base materials. The total thickness of road base and subbase materials were in the range of 0.12 to 0.4m. The above materials were in a compact condition.

Pit-Run Sand and Gravel:

Imported pit-run sand and gravel were observed below road structures as subgrade fills as shown in **Table 1**. The pit-run was in a compact condition with a thickness of 0.3m to 1.8m. The import sand and gravel is considered a suitable subgrade material for road and utility line support. However, when below groundwater, pit-run sand and gravel in a compact condition could have a moderate potential of seismic liquefaction under a severe seismic event.

Organic Soil:

Organic soil was encountered in two boreholes with a thickness of 0.15m to 1.1m as shown in **Table 2**. Organic soil is not considered a suitable bearing for road and utility support. Excessive settlement could be expected. This material appears to be concentrated at the north end of Ellis Park in front of 1308 Island Highway.

Gravel:

This material ranged from trace fines and trace sand to sandy and silty. It was mainly in a compact condition. This soil is considered a suitable bearing soil for both roadway and utility structure and has a low potential of seismic liquefaction due to its high permeability; unless it is underlain by a low-permeability soil layer.

Silty Sand, Sand and Silt, Sandy Silt:

These materials were mainly fine grained and ranged from compact to dense condition. These soils are considered suitable bearing soil for both road structure and utility lines under static condition. When in a less than dense condition, this soil has a moderate potential of liquefaction under a severe seismic event.

Sand to Sand and Gravel:

These materials ranged from fine to coarse grained and were mainly in a compact condition, with local zones in a loose to compact condition. These soils are considered suitable bearing soil



when in a compact or better condition. Fine to medium sand in a loose to compact condition may have a high potential of seismic liquefaction under a moderate seismic event.

Silt:

Silt was encountered in BH18-01 in a compact condition, non-plastic and sensitive. It is considered as a suitable bearing soil for utility lines under static conditions. However, silt encountered in Levelton's BH29 (90m south of the project) was in a loose condition and non-plastic. It is not considered a suitable bearing soil for either utility lines or road structure. Excessive settlement could be expected under static conditions. Non-plastic silt has a high potential of seismic liquefaction under a moderate seismic event.

Clay:

Clay was encountered in three boreholes. The material ranged from firm to hard, medium plasticity, and grey in colour. Considering its depth is below 2m, the clay is considered a suitable bearing soil for utility lines. This soil is not considered a seismic liquefiable soil.

Till-Like Materials:

Till-like materials consisted of sand, silt/clay and some gravel, occasional to frequent cobbles, in a dense/hard to very dense/hard condition. This material is considered a suitable bearing soil for structures.

4.3 Groundwater Conditions

Groundwater seepage was observed during drilling in most boreholes. Groundwater levels in the standpipes at some borehole locations were recorded in the borehole logs. As shown in **Table 1**, the groundwater ranged from 1.0 to 2.65m and averaged around 1.5m below ground surface. Groundwater conditions at other times and locations can differ from those observed within the test hole at the time of the investigation. Groundwater levels should be expected to fluctuate seasonally with cycles of precipitation, and daily with tidal levels. Sea level rise could also affect the groundwater levels in the future.

5.0 DISCUSSION AND RECOMMENDATIONS

5.1 General

Based on the encountered soil conditions, the site is considered geotechnically suitable for the proposed Phase 3 Highway Improvement Project, provided that the following recommendations are implemented.

The recommendations presented in this report are based on site observations, field and laboratory testing results, previous geotechnical reports, information available regarding the proposed development, and experience with similar projects. Considering the inherent nature of soil variations, soil conditions between and beyond boreholes can differ from those



encountered in the boreholes during the investigation. In such instances, adjustments to design and construction may be necessary.

The provided recommendations are based on the assumption that all work will be carried out in accordance with City of Campbell River standards and specifications.

5.2 Bearing Support for Utilities and Related Structures

Soils along the project alignment vary significantly. The utility subgrade materials may range from isolated pockets of organic soil to glacial till. Even though bedrock was not confirmed to be encountered at the borehole locations, large boulders or local bedrock are likely possible.

All utilities and related structures, such as manholes and culverts, should be supported by either competent native bearing soil or structural fill. All unsuitable materials should be removed to expose suitable bearing subgrade. Unsuitable materials include any non-mineral material such as organic soil, granular soil in a less than compact condition, cohesive soil in a less than firm condition; or soils disturbed by construction activity, water or weather actions.

5.3 Excavation

Most of the site materials are expected to be practically excavatable with conventional excavation equipment. However, it is likely that in the northern half of the project large boulders may be present below surface, as two newer boreholes encountered refusal conditions at 1.8m. These were adjacent to two older (2002) boreholes, which were able to be conveyed below 3.0m. Contractors should be given the available data and plan accordingly for the installation of underground utilities.

All excavations must be supported or sloped in accordance with the conventions outlined in the Worksafe BC Occupational Health and Safety Regulations. Where excavation scenarios are not clearly defined under this regulation, the geotechnical engineer should be consulted to assess potential hazards and provide recommendations.

Due to the high groundwater tables and potential tidal influences, dewatering and supported excavations are expected to be required. The geotechnical engineer should be consulted immediately for any temporary slope stability concerns during construction.

5.4 Dewatering

The groundwater table is expected to change seasonally and may also be influenced by tides for deep excavations. Given the shallow nature of observed groundwater seepage (about 1.5m depth), it is likely that trench dewatering will be necessary. Suitable de-silting methods will be required to protect receiving water's habitats.

It is expected that conventional sump and pump techniques could manage excavation water in relatively high permeability soils for short periods of time. However, in areas where uniformly



graded fine to medium sand or silt/clay soil, piping and heaving could occur if high hydraulic gradients exist below. Heaving or piping will disturb subgrade soil. Geotechnical advice should be pursued in advance at such locations.

5.5 Trench Backfill

Consolidation of new trench backfill will cause differential settlement compared to adjacent existing soils. The total settlement depends on the fines content of the backfill, the moisture content of the backfill during compaction, the depth of the trench, and the compaction density achieved. Free-draining granular materials are recommended for use as backfill.

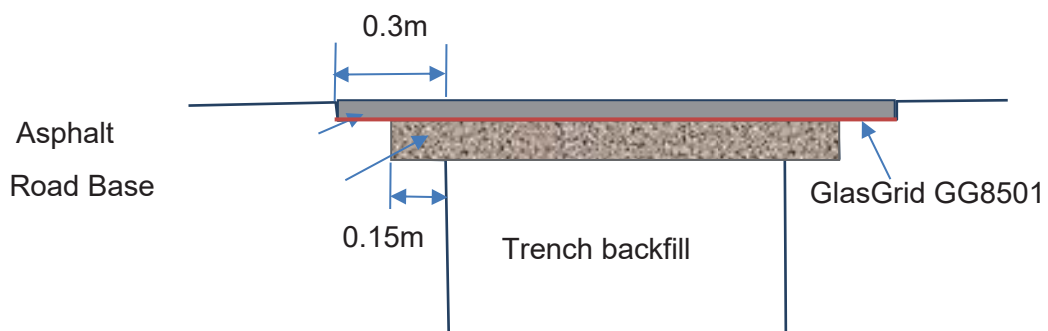
To mitigate trench settlement in critical settlement areas, such as under pavement, backfill materials should be uniformly compacted to a minimum of 95% of the materials Modified Proctor Maximum Dry Density (MPMDD, ASTM D1557) on the wet side of the optimum moisture content (1% or wetter than optimum moisture content). In summer seasons, wetting of backfilled trench areas will help accelerate water-induced consolidation before placing road structures. It is suggested that the surface of trench backfills be slightly mounded to allow for the anticipated minor settlement.

Trenches should be backfilled with suitable structural fills. Import materials are expected to be required for trench backfill. Where proposed utility excavations are below the groundwater table, clear crushed rock could be considered as subgrade fill and pipe bedding material for trenches in a wet condition.

5.6 Pavement Restoration

Pavement structures should be restored in accordance with City of Campbell River specifications. South of Rockland Road the asphalt is in relatively good condition, having been constructed in 2011, and it is anticipated that this asphalt could be used as a suitable base layer for a new 38mm overlay.

To mitigate pavement cracks along trenches, it is suggested to extend the base course 150mm laterally wider than the trench excavation and extend the pavement 300mm laterally wider than the trench excavation, to provide a transition between the existing and new road structure, as shown in the sketch below.





Installing new pavement slightly higher (2 to 3mm) than the adjacent existing pavement over trenches will provide better asphalt compaction and joint sealing.

5.7 Pavement Structures

5.7.1 Subgrade Preparation

The road subgrade should consist of undisturbed native soil that is free of organics and in a stiff/compact or better condition.

If materials in less than a stiff/compact condition are encountered, they should be over-excavated as follows:

- 0.6m for parking, sidewalk and Seawalk areas
- 1.0m for roadway areas

The bottom of the excavation should then be compacted by a minimum of 6 passes of a vibratory compactor before placing subgrade fill.

Where desired density can not be achieved by compaction, such as silt or clay in a less than firm condition, it may be possible to stabilize the base of the excavation using geotextile reinforcement. The geotechnical engineer should be consulted in these circumstances.

5.7.2 Roadway Pavement

Highway 19A Phase 3 will be classified as an Arterial Road. The pavement structure should comply with City of Campbell River's minimum Roadway Design Standards below:

100 mm	Asphaltic Concrete Pavement
130 mm	20mm minus Granular Base
300 mm (min.)	75mm minus Subbase (SGSB)

All import aggregates and asphalt should comply with MMCD specifications. As described above, it is recommended that a layer of asphalt reinforcement, such as GlasGrid GG8501 or equivalent be used above all new utility trench areas.

5.7.3 Parking Lots

We recommend that the pavement structure for the parking lot at Rockland Road near the new roundabout complies with the City of Campbell River's minimum Roadway Design Standards for "Local Roads":

50 mm	Asphaltic Concrete Pavement
75 mm	20mm minus Granular Base
230 mm (min.)	75mm minus Subbase (SGSB)



Where frequent RV, trailers and/or bus parking are expected, such as parking areas along the water side of the highway, we recommend that the pavement structure complies with “Collector Road” standards:

75 mm	Asphaltic Concrete Pavement
130 mm	20mm minus Granular Base
230 mm (min.)	75mm minus Subbase (SGSB)

5.7.4 Sidewalk and Seawalk

Sidewalk and Seawalk pavement structures should conform to the current specifications of the City of Campbell River. A minimum thickness of crushed gravel base of 100mm is recommended.

It is understood that fills will be required to achieve the design grade of the Seawalk. Fills should comply with the City of Campbell River’s Specifications. Granular materials free of organics should be used. Well-graded gravel or coarse sand and gravel should be considered under the outer portion of the seawalk adjacent to riprap. Re-use of site materials for embankment fill for this area and for other uses is discussed below.

5.8 Reuse of Site Materials

The inorganic, well-graded sand or sand and gravel encountered in the boreholes may be suitable for trench backfill below pavement subgrade elevation with additional classification or laboratory testing. Materials excavated from below the groundwater level may require drying before re-use.

The encountered gravels are likely to be suitable as embankment fill for the Seawalk.

The encountered silt, clay and sandy silt, silt and sand can be used as landscaping materials.

Excavated glacial till generally is not considered a suitable material or cost-effective for structural fill or trench backfill below pavement, due to its extreme high sensitivity to moisture content and high requirement for compaction effort.

5.9 Construction Review

The long-term performance of the asphalt pavement will be significantly affected by the quality of construction, especially above extensive utility trenches. The specifications for construction will include Quality Control, which will be the responsibility of the Contractor, and include as a minimum:

- Excavation and subgrade reviews
- Drainage condition observations
- Review and approval of proposed fill materials



- In-place density testing of subgrade fill, trench backfill, subbase and base materials
- Proof roll testing of paved areas
- Asphalt testing, and
- Concrete testing.

6.0 CLOSURE

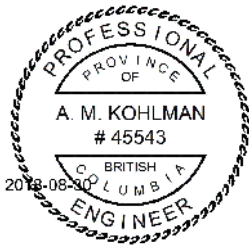
The attached **Limitations** apply to this report and are hereby incorporated herein.

We trust that the information contained in this report is suitable for your current needs. If you have any questions or require additional information, please do not hesitate to contact us.

Yours truly,

McElhanney Consulting Services Ltd.

Reviewed by:



Alyssa Kohlman, P.Eng.
Geotechnical Engineer

Mark DeGagné, P.Eng.
Senior Municipal Engineer

Attachments:

1. Limitations
2. Geotechnical Site Plan
3. Modified Unified Classification System for Soils and Borehole Logs
4. Laboratory Testing Results
5. Levelton Report (2003) Report



ATTACHMENT 1

LIMITATIONS

Statement of Limitations – Geotechnical Services

Use of this Report. This report was prepared by McElhanney Consulting Services Ltd. ("**McElhanney**") for the particular site, design objective, development and purpose (the "**Project**") described in this report and for the exclusive use of the client identified in this report (the "**Client**"). The data, interpretations and recommendations pertain to the Project and are not applicable to any other project or site location and this report may not be reproduced, used or relied upon, in whole or in part, by a party other than the Client, without the prior written consent of McElhanney. The Client may provide copies of this report to its affiliates, contractors, subcontractors and regulatory authorities for use in relation to and in connection with the Project provided that any reliance, unauthorized use, and/or decisions made based on the information contained within this report are at the sole risk of such parties. McElhanney will not be responsible for the use of this report on projects other than the Project, where this report or the contents hereof have been modified without McElhanney's consent, to the extent that the content is in the nature of an opinion, and if the report is preliminary or draft. This is a technical report and is not a legal representation or interpretation of laws, rules, regulations, or policies of governmental agencies. The professional services retained for this Project include only the geotechnical aspects of the subsurface conditions at the site, unless otherwise specifically stated and identified in this report. In particular, environmental conditions such as surface and subsurface contamination are outside the scope of this report.

Standard of Care and Disclaimer of Warranties. This study and report have been prepared in accordance with generally accepted engineering and scientific judgments, principles and practices. McElhanney expressly disclaims any and all warranties in connection with this report including, without limitation, any warranty that this report and the associated site review work has uncovered all potential geotechnical liabilities associated with the subject property.

Effect of Changes. All evaluations and conclusions stated in this report are based on facts, observations, site-specific details, legislation and regulations as they existed at the time of the site assessment. Some conditions are subject to change over time and the Client recognizes that the passage of time, natural occurrences, and direct or indirect human intervention at or near the site may substantially alter such evaluations and conclusions. Construction activities can significantly alter soil, rock and other geologic conditions on the site. McElhanney should be requested to re-evaluate the conclusions of this report and to provide amendments as required prior to any reliance upon the information presented herein upon any of the following events: a) any changes (or possible changes) as to the site, purpose, or development plans upon which this report was based, b) any changes to applicable laws subsequent to the issuance of the report, c) new information is discovered in the future during site excavations, construction, building demolition or other activities, or d) additional subsurface assessments or testing conducted by others.

Subsurface Risks. Soil, rock and groundwater data were collected in general accordance with the standards and methods described in the document. The classification and identification of soils, rocks and geologic formations was based on commonly accepted methods employed in the practice of geotechnical engineering and related disciplines. Interpretations of groundwater levels and flow direction are based on water level observations at selected test hole locations and are expected to fluctuate. Observations at test holes indicate the approximate subsurface conditions at those locations only. Subsurface conditions between test holes were based, by necessity, on judgement and assumptions of what exists between the actual locations sampled, and may vary significantly from actual site conditions and all persons making use of this report should be aware of, and accept, this risk. Even a comprehensive sampling and testing program, implemented in accordance with appropriate equipment by experienced personnel, may fail to detect all or certain conditions.

Information from Client and Third Parties. McElhanney has relied in good faith on information provided by the Client and third parties noted in this report and has assumed such information to be accurate, complete, reliable, non-fringing, and fit for the intended purpose without independent verification. McElhanney accepts no responsibility for any deficiency, misstatements or inaccuracy contained in this report as a result of omissions or errors in information provided by third parties or for omissions, misstatements or fraudulent acts of persons interviewed.

Underground Utilities and Damages. In the performance of the services, McElhanney has taken reasonable precautions to avoid damage or injury to subterranean structures or utilities. Subsurface sampling may result in

unavoidable contamination of certain subsurface areas not known to be previously contaminated such as, but not limited to, a geologic formation, the groundwater or other hydrous body. McElhanney will adhere to an appropriate standard of care during the conduct of any subsurface sampling.

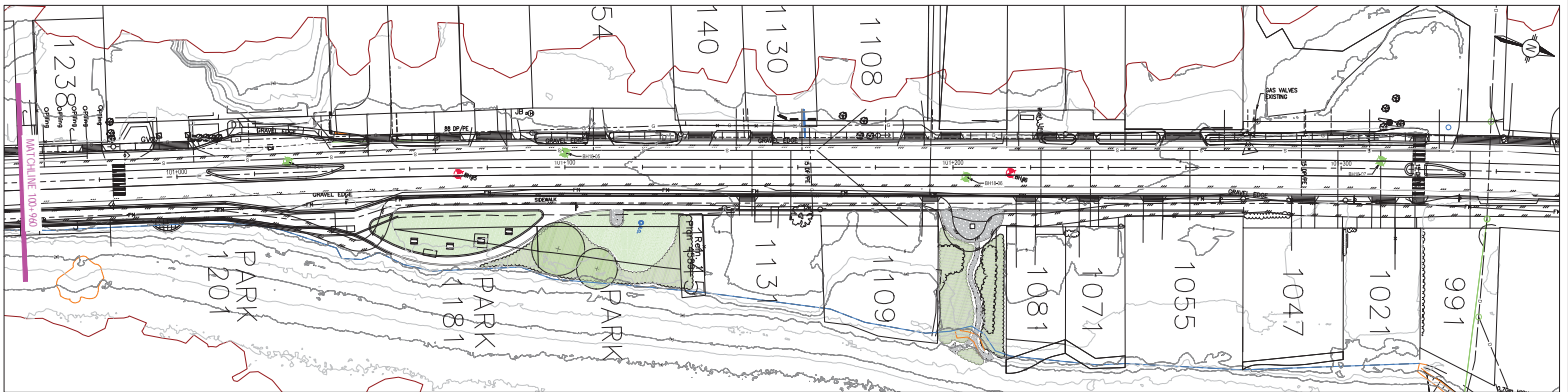
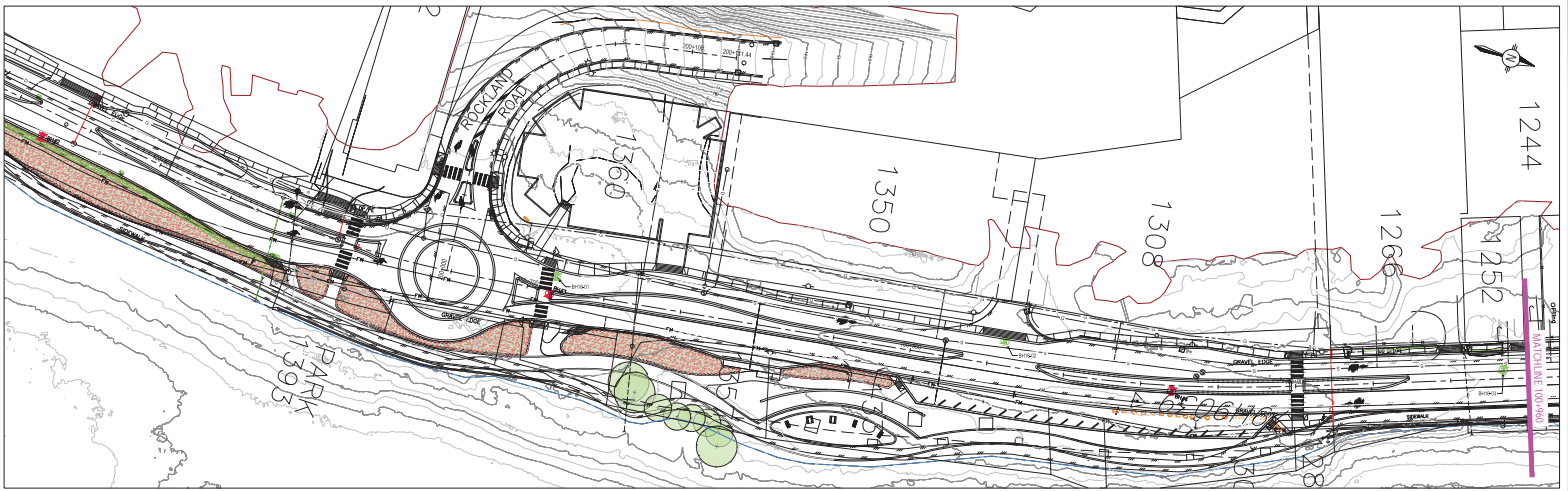
Independent Judgments. McElhanney will not be responsible for the independent conclusions, interpretations, interpolations and/or decisions of the Client, or others, who may come into possession of this report, or any part thereof. This restriction of liability includes decisions made to purchase, finance or sell land or with respect to public offerings for the sale of securities.

Construction. The subsurface information contained in this report were obtained for the owner's information and design. The extent and detail of assessments necessary to determine all relevant conditions that may affect construction costs would normally be greater than the assessments carried out for this report. Accordingly, a contingency fund to allow for the possibility of variations of subsurface conditions should be included in the construction budget to cover costs associated with modifications of the design and construction procedures resulting from conditions that vary from the assumptions in this report. If during construction, subsurface conditions are found to be other than those described in this report, McElhanney is to be notified and may alter or modify the geotechnical report recommendations. If McElhanney is not retained to provide services during construction, then McElhanney is not responsible for confirming or recording that subsurface conditions do not materially differ from those interpreted conditions contained in this report or for confirming or recording that construction activities have not adversely affected subsurface conditions or the recommendations contained in this report.



ATTACHMENT 2

GEO TECHNICAL SITE PLAN



NOT FOR CONSTRUCTION

McElhanney
 McElhanney Consulting Services Ltd.
 1188 DOGWOOD ST
 CAMPBELL RIVER, B.C. V9W 3A4
 PH (250) 287-7799

CITY OF CAMPBELL RIVER
 GEOTECHNICAL SITE PLAN
 FIGURE-B01
 HIGHWAY 19A UPGRADE-PHASE 3
 CAMPBELL RIVER, BC

Drawing No.
FIGURE-B01
 DATE: 2018/08/30
 Sheet 1 of 1 Revision PA

LEGEND
 LEVELTON BOREHOLE LOCATIONS - DRILLED 2003
 MCELHANNY BOREHOLE LOCATIONS - DRILLED 2018

REGISTRATION ON EXISTING UTILITIES MAY NOT BE COMPLETE OR ACCURATE. PRIOR TO CONSTRUCTION CONTRACTOR SHALL EXPOSE LOCATIONS OF ALL EXISTING UTILITIES AND ADVISE THE ENGINEER OF POTENTIAL CONFLICTS.
 THIS DRAWING HAS BEEN PREPARED FOR THE CLIENT IDENTIFIED, TO MEET THE STANDARDS AND REQUIREMENTS OF THE BRITISH COLUMBIA PROFESSIONAL ENGINEERING REGULATORY BOARD. MCELHANNY CONSULTING SERVICES LTD., ITS EMPLOYEES, SUBCONTRACTORS AND AGENTS ACCEPT NO RESPONSIBILITY TO ANY OTHER PARTY, INCLUDING CONTRACTORS, SUPPLIERS, CONSULTANTS AND STAKEHOLDERS OR THEIR EMPLOYEES OR AGENTS, FOR LOSS OR LIABILITY INCURRED AS A RESULT OF THEIR USE OF THESE DRAWINGS.



ATTACHMENT 3

***MODIFIED UNIFIED CLASSIFICATION
SYSTEM FOR SOILS
AND
BOREHOLE LOGS***

MODIFIED UNIFIED CLASSIFICATION SYSTEMS FOR SOILS

MAJOR DIVISION		GROUP SYMBOL	TYPICAL SOIL DESCRIPTION	LABORATORY CLASSIFICATION CRITERIA				
COARSE GRAINED SOILS (more than 50% larger than 75 µm)	GRAVELS	Clean Gravels (< 5% Fines)	GW	Well graded gravels, sandy gravels, trace or no fines	$C_u = D_{60}/D_{10} > 4$, $C_c = (D_{30})^2 / D_{10} D_{60} = 1$ to 3			
			GP	Poorly graded gravels, sandy gravels, trace or no fines	Not meeting the GW requirements.			
		Dirty Gravels (> 12% Fines)	GM	Silty gravels, silty sandy gravels	Plasticity below A-Line or $I_p < 4$			
			GC	Clayey gravels, clayey sandy gravels	Plasticity above A-Line or $I_p > 7$			
	SANDS	Clean Sands (< 5% Fines)	SW	Well graded sands, gravelly sand, trace or no fines	$C_u = D_{60}/D_{10} > 4$, $C_c = (D_{30})^2 / D_{10} D_{60} = 1$ to 3			
			SP	Poorly graded sands, gravelly sand, trace or no fines	Not meeting the SW requirements.			
		Dirty Sands (> 12% Fines)	SM	Silty sands, sand and silt mixtures	Plasticity below A-Line or $I_p < 4$			
			SC	Clayey sands, sand and clay mixtures	Plasticity above A-Line or $I_p > 7$			
			FINE GRAINED SOILS (more than 50% smaller than 75 µm)	SILTS	$W_L < 50\%$	ML	Inorganic silts, sandy silts with slight plasticity	Classifications are based upon Plasticity Chart.
					$W_L > 50\%$	MH	Inorganic silts of high plasticity	
CLAYS	$W_L < 30\%$	CL	Inorganic clay, silty clays of low plasticity					
	$30\% < W_L < 50\%$	CI	Inorganic clay, silty clays of intermediate plasticity					
	$W_L > 50\%$	CH	Inorganic clay, silty clays of high plasticity					
ORGANIC SILTS AND CLAYS	$W_L < 50\%$	OL	Organic silts and silty clays of low plasticity					
	$W_L > 50\%$	OH	Organic silts and silty clays of high plasticity					
HIGHLY ORGANIC		PT	Peat and other highly organic soils					

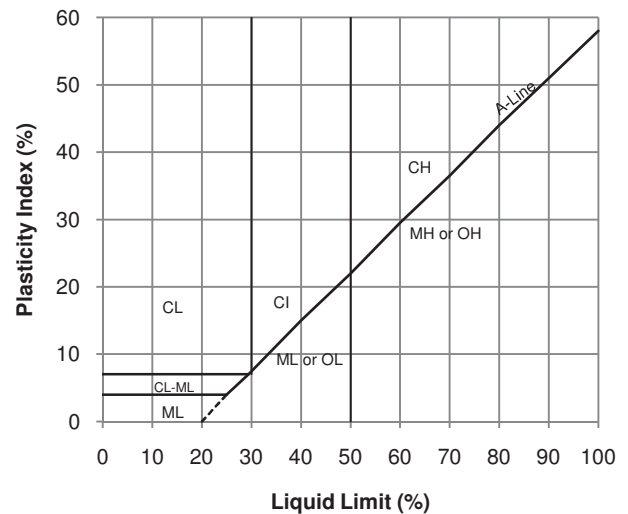
SOIL COMPONENTS

Fraction	U.S. Standard Sieve Size		Percentage (by weight)	Description
	Passing	Retained		
Gravel			35-50	AND
Coarse	76 mm	19 mm		
Fine	19 mm	4.75 mm		
Sand			20-35	Y/EY
Coarse	4.75 mm	2.00 mm		
Medium	2.00 mm	425 µm	10-20	SOME
Fine	425 µm	75 µm		
Fines (Silt or Clay)	75 µm		1-10	TRACE
Oversize Material	Cobbles	76 mm to 200 mm		
	Boulders	> 200 mm		

RELATIVE DENSITY AND CONSISTENCY

Cohesionless Soils		Cohesive Soils	
Relative Density	SPT (N) Value	Consistency	Undrained Shear Strength (kPa)
Very Loose	0-4	Very Soft	0-10
Loose	4-10	Soft	10-25
Compact	10-30	Firm	24-50
Dense	30-50	Stiff	50-100
Very Dense	>50	Very Stiff	100-200
		Hard	>200

Plasticity Chart



Notes:

- Use dual symbols for coarse grained soils with 5 to 12% fines (i.e. GP-GM)
- All sieves are U.S. Standard ASTM E11



McElhanney

McElhanney Consulting Services Limited



CLIENT City of Campbell River
 PROJECT NUMBER 2221-49145-00
 DATE STARTED 4/23/18 COMPLETED 4/23/18
 DRILLING CONTRACTOR DRILLWELL
 DRILLING METHOD Solid Stem Auger
 LOGGED BY B. Hannah CHECKED BY _____
 NOTES _____

PROJECT NAME Hwy 19A Ph 3
 PROJECT LOCATION _____
 GROUND ELEVATION _____ HOLE SIZE _____
 GROUND WATER LEVELS:
 ∇ AT TIME OF DRILLING 1.50 m
 AT END OF DRILLING ---
 AFTER DRILLING ---

GEOTECH BH COLUMNS 2221-49145-00.HWY19APH3.DRILLLOGS.GPJ GINT STD CANADA LAB.GDT 5/18/18

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (Su) (kPa)	Dry Density (kg/m ³)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0.0 - 0.5	ASPHALT											
0.5 - 1.0	FILL (3/4" CRUSH); sandy, silty, compact, brown, moist to dry		AU S-1		21			5				
1.0 - 1.5	FILL (PITRUN); gravel, sandy, silty, compact, brown, moist-wet - Maximum grain sizes to 75 mm				13							
1.5 - 2.0	SAND and GRAVEL; trace silt, subrounded-rounded, loose to compact, grey, saturated ∇ - Maximum grain sizes to 50-70 mm - Heavy groundwater seepage @ 1.5 m				12							
2.0 - 2.5					16							
2.5 - 3.0			AU S-2		30			7				
3.0 - 3.5					30							
3.5 - 4.0					39							
4.0 - 4.5	SILT; some gravel, trace fine sand, compact, light grey, very moist to wet, slow-moderate dilatancy, sensitive - Maximum gravel sizes to 10-20 mm		AU S-3		20							
4.5 - 5.0					39			19				
5.0 - 5.5			AU S-4		59							
5.5 - 6.0					68							
6.0 - 6.5					61			19				
6.5 - 7.0					64							
7.0 - 7.5					64							
7.5 - 8.0					64							
8.0 - 8.5					66							

Hole sloughed to 1.4m after auger removed.
 DCPT conducted.
 Backfilled with drill cuttings.
 Bottom of borehole at 6.10 meters.



CLIENT City of Campbell River

PROJECT NAME Hwy 19A Ph 3

PROJECT NUMBER 2221-49145-00

PROJECT LOCATION _____

DATE STARTED 4/23/18 COMPLETED 4/23/18

GROUND ELEVATION _____ HOLE SIZE _____

DRILLING CONTRACTOR DRILLWELL

GROUND WATER LEVELS:

DRILLING METHOD Solid Stem Auger

∇ AT TIME OF DRILLING 1.50 m

LOGGED BY B. Hannah CHECKED BY _____

AT END OF DRILLING ---

NOTES _____

AFTER DRILLING ---

GEOTECH BH COLUMNS 2221-49145-00 HWY19APH3.DRILLLOGS.GPJ GINT STD CANADA LAB.GDT 5/18/18

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (Su) (kPa)	Dry Density (kg/m ³)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
1		ASPHALT FILL (3/4" CRUSH); sandy, silty, compact, brown, moist FILL (PITRUN); gravel, sandy, silty, loose to compact, brown, moist - Maximum grain sizes to 50-75 mm	AU S-5					10				
2		PEAT / ORGANICS; black, moist										
3		GRAVEL; trace silt, loose to compact, poorly graded, light grey, wet - Maximum grain sizes to 50-70 mm - Heavy groundwater seepage @ 1.5 m	AU S-6					22				
4		SILTY SAND; fine-grained, trace pebble, compact to dense, non-low plasticity, light grey - Gravel sizes to 20-40 mm - More dense @ 3.1 m - Dense / hard @ 4.0 m	AU S-7					13				
5		SILTY SAND and GRAVEL (TILL-LIKE); dense, medium cemented, light grey, moist - Maximum grain sizes to 40-50 mm	AU S-8					10				
6												

Hole sloughed to 1.5 m after auger removed.
Backfilled with drill cuttings.
Bottom of borehole at 6.10 meters.



CLIENT City of Campbell River

PROJECT NAME Hwy 19A Ph 3

PROJECT NUMBER 2221-49145-00

PROJECT LOCATION _____

DATE STARTED 4/23/18 COMPLETED 4/23/18

GROUND ELEVATION _____ HOLE SIZE _____

DRILLING CONTRACTOR DRILLWELL

GROUND WATER LEVELS:

DRILLING METHOD Solid Stem Auger

∇ AT TIME OF DRILLING 1.50 m

LOGGED BY B. Hannah CHECKED BY _____

AT END OF DRILLING ---

NOTES _____

AFTER DRILLING ---

GEOTECH BH COLUMNS 2221-49145-00.HWY19APH3.DRILLLOGS.GPJ GINT STD CANADA LAB.GDT 5/18/18

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (Su) (kPa)	Dry Density (kg/m ³)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
		ASPHALT										
		FILL (3/4" CRUSH); sandy, silty, compact, brown, moist			11							
		FILL (PITRUN); gravel, sandy, silty, loose to compact, brown, moist	AU S-9		15			6				
1		Sandy GRAVEL; trace silt, fine-grained, dense, light grey, moist			21							
		- Maximum gravel sizes to 30 mm			28							
		∇ - Heavy groundwater seepage @ 1.5 m			25							
2					42							
		- Sieve Analysis: Gravel=64.2%, Sand=33.8%, Fines=2.0%	AU S-10		74			8				
3		SILTY SAND; fine-grained, dense, light grey, wet, sensitive										
		- Maximum gravel sizes to 40-70 mm										
4												
			AU S-11					11				
5												
		- Difficult drilling @ 5.2 m										
		- Bigger gravel sizes, possible cobbles, sandy, light grey, damp	AU S-12					9				
6												

Hole sloughed to 1.5 m after auger removed.
 DCPT conducted.
 Backfilled with drill cuttings.
 Bottom of borehole at 6.10 meters.



CLIENT City of Campbell River

PROJECT NAME Hwy 19A Ph 3

PROJECT NUMBER 2221-49145-00

PROJECT LOCATION _____

DATE STARTED 4/23/18 COMPLETED 4/23/18

GROUND ELEVATION _____ HOLE SIZE _____

DRILLING CONTRACTOR DRILLWELL

GROUND WATER LEVELS:

DRILLING METHOD Solid Stem Auger

AT TIME OF DRILLING ---

LOGGED BY B. Hannah CHECKED BY _____

AT END OF DRILLING ---

NOTES _____

AFTER DRILLING ---

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (Su) (kPa)	Dry Density (kg/m ³)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
		ASPHALT										
		FILL (3/4" CRUSH); sandy, silty, compact, brown, moist										
1		SAND; some gravel, trace silt, loose to compact, poorly graded, light brown, moist	AU S-13					3				
		GRAVEL; sandy, trace silt, grey, moist	AU S-14					2				

Hole sloughed to 0.4 m after auger removed.
 No groundwater or seepage encountered.
 Backfilled with drill cuttings.
 Refusal at 1.80 meters.
 Bottom of borehole at 1.80 meters.



CLIENT City of Campbell River

PROJECT NAME Hwy 19A Ph 3

PROJECT NUMBER 2221-49145-00

PROJECT LOCATION _____

DATE STARTED 4/23/18 COMPLETED 4/23/18

GROUND ELEVATION _____ HOLE SIZE _____

DRILLING CONTRACTOR DRILLWELL

GROUND WATER LEVELS:

DRILLING METHOD Solid Stem Auger

∇ AT TIME OF DRILLING 1.50 m

LOGGED BY B. Hannah CHECKED BY _____

AT END OF DRILLING ---

NOTES _____

AFTER DRILLING ---

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (Su) (kPa)	Dry Density (kg/m ³)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
		ASPHALT										
		FILL (3/4" CRUSH); sandy, silty, compact, brown, moist			32							
		SAND and GRAVEL; trace silt, compact			18							
1		- Sieve Analysis: Gravel=45.9%, Sand=49.2%, Fines=4.9%	AU S-15		22			3				
		∇ - Heavy groundwater seepage @ 1.5 m			42							
					52							
2			AU S-16		80			7				
			AU S-17					5				

Hole sloughed at 1.5 m after auger removed.
 Backfilled with drill cuttings.
 Refusal at 2.70 meters.
 Bottom of borehole at 2.70 meters.



CLIENT City of Campbell River

PROJECT NAME Hwy 19A Ph 3

PROJECT NUMBER 2221-49145-00

PROJECT LOCATION _____

DATE STARTED 4/23/18 COMPLETED 4/23/18

GROUND ELEVATION _____ HOLE SIZE _____

DRILLING CONTRACTOR DRILLWELL

GROUND WATER LEVELS:

DRILLING METHOD Solid Stem Auger

∇ AT TIME OF DRILLING 1.50 m

LOGGED BY B. Hannah CHECKED BY _____

AT END OF DRILLING ---

NOTES _____

AFTER DRILLING ---

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (Su) (kPa)	Dry Density (kg/m ³)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
		ASPHALT										
		FILL (3/4" CRUSH); sandy, silty, compact, brown, moist										
		GRAVEL and COBBLE; sandy, compact, grey, moist - Maximum grain sizes to 75-150 mm										
1		- Heavy groundwater seepage @ 1.5-1.7 m	AU S-18					4				

Hole sloughed to 0.6 m after auger removed.
 Backfilled with drill cuttings.
 Refusal at 1.80 meters.
 Bottom of borehole at 1.80 meters.



CLIENT City of Campbell River
PROJECT NUMBER 2221-49145-00
DATE STARTED 4/23/18 **COMPLETED** 4/23/18
DRILLING CONTRACTOR DRILLWELL
DRILLING METHOD Solid Stem Auger
LOGGED BY B. Hannah **CHECKED BY** _____
NOTES _____

PROJECT NAME Hwy 19A Ph 3
PROJECT LOCATION _____
GROUND ELEVATION _____ **HOLE SIZE** _____
GROUND WATER LEVELS:
 ∇ **AT TIME OF DRILLING** 1.50 m
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (Su) (kPa)	Dry Density (kg/m ³)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
		ASPHALT										
		FILL (3/4" CRUSH); sandy, silty, compact, brown, moist										
		FILL (PITRUN); gravel, sandy, silty, compact, brown, moist			25							
1		GRAVEL; sandy, silty, compact, brown, moist - Maximum grain size to 50-75 mm	AU S-19		22							
		∇ - Heavy groundwater seepage @ 1.5 m										
2		- More coarse gravel, silty, sandy, brown	AU S-20		32							
					33							
					37							
3					23							
					16							
					23							
					13							
					46							
4		CLAY; silty, firm, medium plasticity, massive, grey, moist - Firm (PP = 100 kPa)	AU S-21		15							
					17							
					18							
5		- Firm (PP = 50 kPa)	AU S-22		29							
					37							
					37							
					42	100						
6					56	50						

Hole sloughed to 1.7 m after auger removed.
 Backfilled with drill cuttings.
 Bottom of borehole at 6.10 meters.

GEOTECH BH COLUMNS 2221-49145-00 HWY19APH3.DRILLLOGS.GPJ GINT STD CANADA LAB.GDT 5/18/18



ATTACHMENT 4

LABORATORY TESTING RESULTS

PROJECT NO. 2221-49145

CLIENT City of Campbell River
C.C.

TO
City of Campbell River
301 St. Ann's Road
Campbell River, BC
V9W 4C7

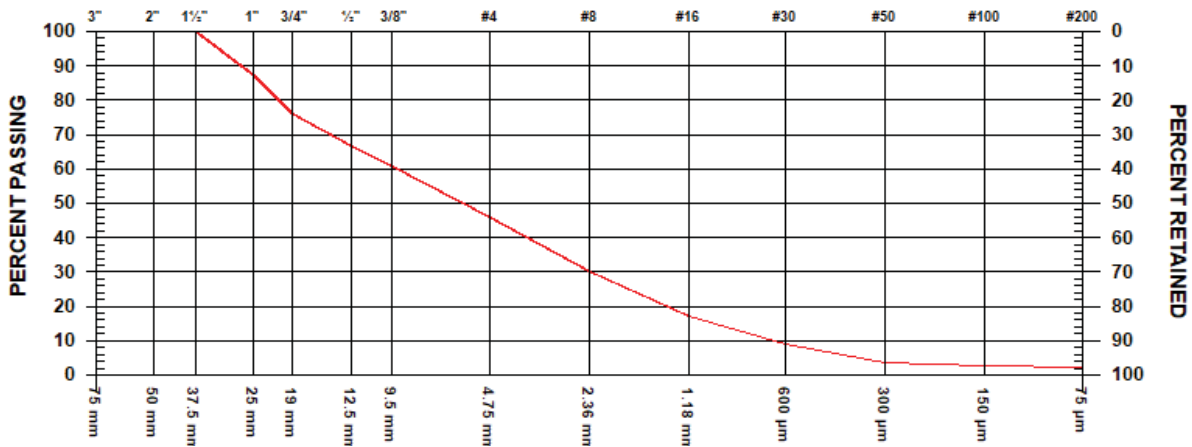
ATTN: Clinton Crook

PROJECT Highway 19A Phase 3
Geotechnical and Materials Testing Campbell River
CONTRACTOR

SIEVE TEST NO. 1 DATE RECEIVED 24-Apr-2018 DATE TESTED 16-May-2018 DATE SAMPLED 23-Apr-2018

SUPPLIER
SOURCE BH 18-01 (S-2)
SPECIFICATION
MATERIAL TYPE

SAMPLED BY BH/MG
TESTED BY MG
TEST METHOD WASHED



GRAVEL SIZES	PERCENT PASSING	GRADATION LIMITS
3" 75 mm		
2" 50 mm		
1 1/2" 37.5 mm	100.0	
1" 25 mm	87.4	
3/4" 19 mm	76.1	
1/2" 12.5 mm	66.8	
3/8" 9.5 mm	60.8	

SAND SIZES AND FINES	PERCENT PASSING	GRADATION LIMITS
No. 4 4.75 mm	46.0	
No. 8 2.36 mm	30.1	
No. 16 1.18 mm	17.2	
No. 30 600 µm	8.8	
No. 50 300 µm	3.4	
No. 100 150 µm	2.8	
No. 200 75 µm	2.2	

MOISTURE CONTENT 7.4%

COMMENTS
Lab ID: 106

Reporting of these test results constitutes a testing service only. Engineering interpretation or evaluation of test results is provided only on written request.

TO
City of Campbell River
301 St. Ann's Road
Campbell River, BC
V9W 4C7

PROJECT NO. 2221-49145
CLIENT City of Campbell River
C.C.

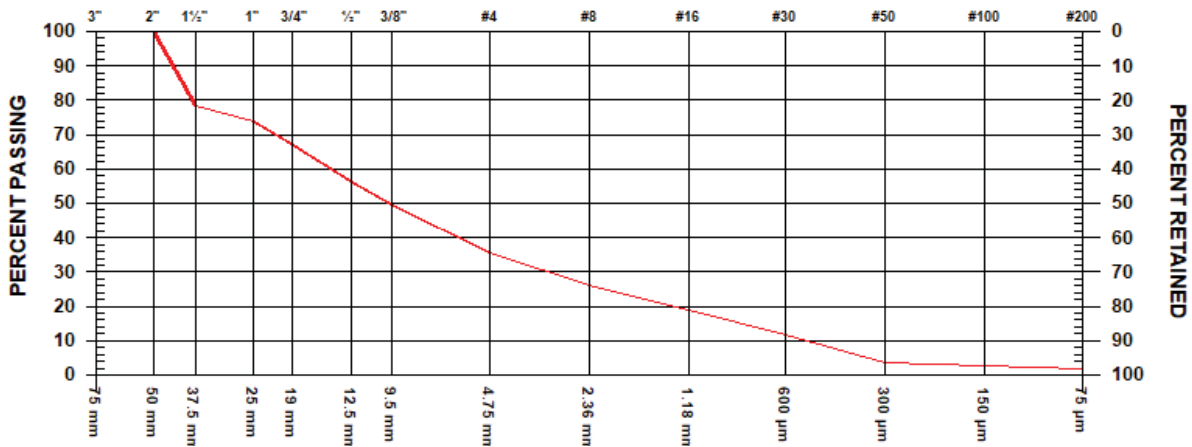
ATTN: Clinton Crook

PROJECT Highway 19A Phase 3
Geotechnical and Materials Testing Campbell River
CONTRACTOR

SIEVE TEST NO. 2 DATE RECEIVED 04-May-2018 DATE TESTED 16-May-2018 DATE SAMPLED 04-May-2018

SUPPLIER
SOURCE BH 18-03 (S-10)
SPECIFICATION
MATERIAL TYPE

SAMPLED BY BH/MG
TESTED BY MG
TEST METHOD WASHED



GRAVEL SIZES	PERCENT PASSING	GRADATION LIMITS
3"	75 mm	
2"	50 mm	100.0
1 1/2"	37.5 mm	78.3
1"	25 mm	74.0
3/4"	19 mm	67.1
1/2"	12.5 mm	56.4
3/8"	9.5 mm	49.5

SAND SIZES AND FINES	PERCENT PASSING	GRADATION LIMITS
No. 4	4.75 mm	35.8
No. 8	2.36 mm	26.0
No. 16	1.18 mm	19.0
No. 30	600 µm	11.8
No. 50	300 µm	3.8
No. 100	150 µm	2.7
No. 200	75 µm	2.0

MOISTURE CONTENT 7.6%

COMMENTS
Lab ID: 106

PROJECT NO. 2221-49145

CLIENT City of Campbell River
C.C.

TO
City of Campbell River
301 St. Ann's Road
Campbell River, BC
V9W 4C7

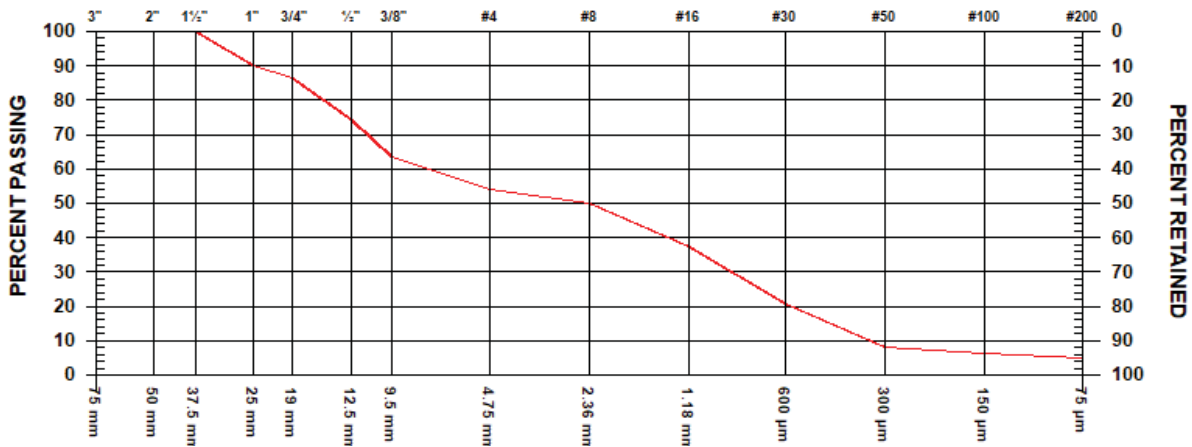
ATTN: Clinton Crook

PROJECT Highway 19A Phase 3
Geotechnical and Materials Testing Campbell River
CONTRACTOR

SIEVE TEST NO. 3 DATE RECEIVED 04-May-2018 DATE TESTED 16-May-2018 DATE SAMPLED 04-May-2018

SUPPLIER
SOURCE BH 18-05 (S-15)
SPECIFICATION
MATERIAL TYPE

SAMPLED BY BH/MG
TESTED BY MG
TEST METHOD WASHED



GRAVEL SIZES	PERCENT PASSING	GRADATION LIMITS
3" 75 mm		
2" 50 mm		
1 1/2" 37.5 mm	100.0	
1" 25 mm	90.2	
3/4" 19 mm	86.7	
1/2" 12.5 mm	74.5	
3/8" 9.5 mm	63.7	

SAND SIZES AND FINES	PERCENT PASSING	GRADATION LIMITS
No. 4 4.75 mm	54.1	
No. 8 2.36 mm	50.0	
No. 16 1.18 mm	37.3	
No. 30 600 µm	20.6	
No. 50 300 µm	8.0	
No. 100 150 µm	6.2	
No. 200 75 µm	4.9	

MOISTURE CONTENT 3.1%

COMMENTS
Lab ID: 106



ATTACHMENT 5

LEVELTON (2003) REPORT



556 Harmston Avenue Courtenay B.C. V9N 2X5 Phone: (250) 897-3853

May 16, 2018

McElhanney Consulting Services Ltd.
1307 Shoppers Row
Campbell River, BC
V9W 2C9

Attn: Mark DeGagne, P.Eng.

Re: Archaeological Overview Assessment of Proposed Hwy 19A Phase 3 Engineering Project (RFP 18-01)

Mark DeGange, representing McElhanney Consulting Services Ltd. (McElhanney) requested that Baseline Archaeological Services Ltd. (Baseline) undertake an archaeological overview assessment (AOA) for proposed work along Highway (Hwy) 19A, in order to determine if further archaeological work is required. This letter presents the results and recommendations of an AOA conducted by Baseline for the replacement of the road surface and subsurface utilities along a portion of Hwy 19A in Campbell River, BC as well as the construction of a roundabout and parking lot at the intersection of Rockland Road. Other improvements noted in this assessment include the renewal of structures associated with the Big Rock Boat Ramp (*Figure 1*). The proposed developments are located between 1st Avenue and Forberg Road along Hwy 19A. The proposed project involves mechanical excavations to facilitate the removal and replacement of existing unsuitable road materials and services. All materials excavated during this project are expected to have been previously disturbed during the construction and installation of historic and existing infrastructure in the area.

The work reported herein consists of an AOA as defined in the *British Columbia Archaeological Impact Assessment Guidelines* (1998). This letter is concerned with identifying known archaeological sites in conflict with the development area and making management recommendations on how to proceed in the event that archaeological materials are encountered during proposed ground disturbing activities. It is also concerned with determining the potential for any unrecorded archaeological sites. This report does not address any First Nations traditional use activities. As such, this report does not comprehensively document all First Nations interest in the land. The study was conducted without prejudice to First Nations treaty negotiations, aboriginal rights, or aboriginal title.

Archaeological sites are defined as locations which contain physical evidence of past human activity, such as artifacts or features. Archaeological remains which predate, or are likely to predate 1846 are automatically protected from any form of alteration, excavation, damage or desecration in British Columbia under the *Heritage Conservation Act (HCA)*. Other sites protected under the *HCA* include aboriginal rock art sites with historical or archaeological value, burial places and heritage shipwrecks.

The proposed development is located within an area covered by the GIS-based archaeological site potential model for the Campbell River Forest District developed by Millennia Research Ltd. (Millennia) under Heritage Inspection Permit (HIP) 2007-0048. This model indicates that the development area has moderate archaeological potential (*Figure 2*). Site specific AOAs, however, tend to be more accurate than large scale AOAs because archaeological site potential can be determined based on the specific topographic and environmental features of the particular development as well as the results of previous studies in the vicinity.

A background file search of the Remote Access to Archaeological Data (RAAD) website revealed that previously recorded archaeological site **DISH-14** is adjacent to Pump Station #7, located at the southern extent of the development. Archaeological site **EaSh-19** is also located approximately 350 m north of the northern extent of the development (*Figure 3*).

Archaeological site **DISH-14** was recorded by Baseline in 2009 during the archaeological impact assessment (AIA) of pump station #7 (HIP 2009-0392) and the subsequent archaeological monitoring of the construction of the pump station in 2010 under site alteration permit (SAP) 2010-0029. The site consist of a small disturbed deposit of shell midden, previously impacted by historic developments. Numerous artifacts and a diverse range of faunal remains were recovered from **DISH-14** during these two studies. **EaSh-19** was originally recorded in 1966 as a burial cave in a high bank above the beach.

Additional studies conducted by Baseline in the development area include the AIA of the Big Rock Boat Ramp during proposed upgrades in 2013 (HIP 2013-0028). Work under that permit yielded culturally sterile materials throughout the property (Lots 921, 985 and 991).

Despite the negative results under HIP 2013-0028 and the highly disturbed nature of archaeological site **DISH-14**, the potential for unrecorded archaeological remains within the development footprint is considered to be high. It is suggested that the proponent contract a qualified archaeologist to obtain a HIP based on the high potential for yet undiscovered archaeological remains. This will allow for ground altering activities to occur under the supervision of a qualified archaeologist in the event the previously unknown archaeological materials are encountered. As a condition of the permit, all ground altering activities will be initially monitored by a qualified archaeologist to determine the extent of archaeological work required for any given section of the development.

Developers and operators should be made aware of the potential of undiscovered archaeological remains in any surveyed or unsurveyed areas. If archaeological remains are encountered, all development activities in the vicinity of the archaeological remains must be halted so as not to threaten these remains, and the immediate notification of BC Archaeology Branch, Ministry of Forests, Lands, Natural Resource Operations and Rural Development must occur.

Please feel free to contact me if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read 'Phil Whalen', written in a cursive style.

Phil Whalen, B.A.
Archaeologist

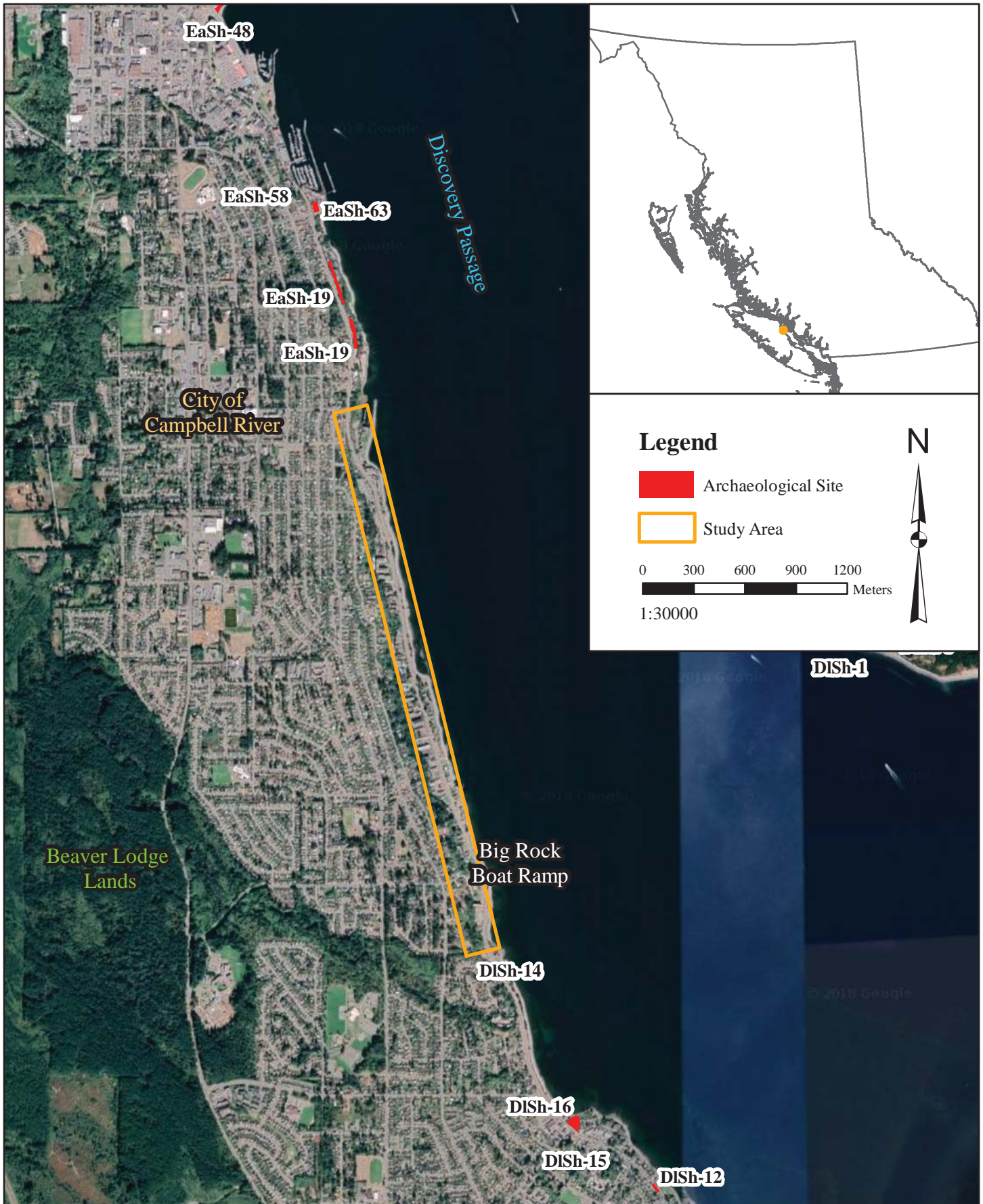


Figure 1. Location of Study Area

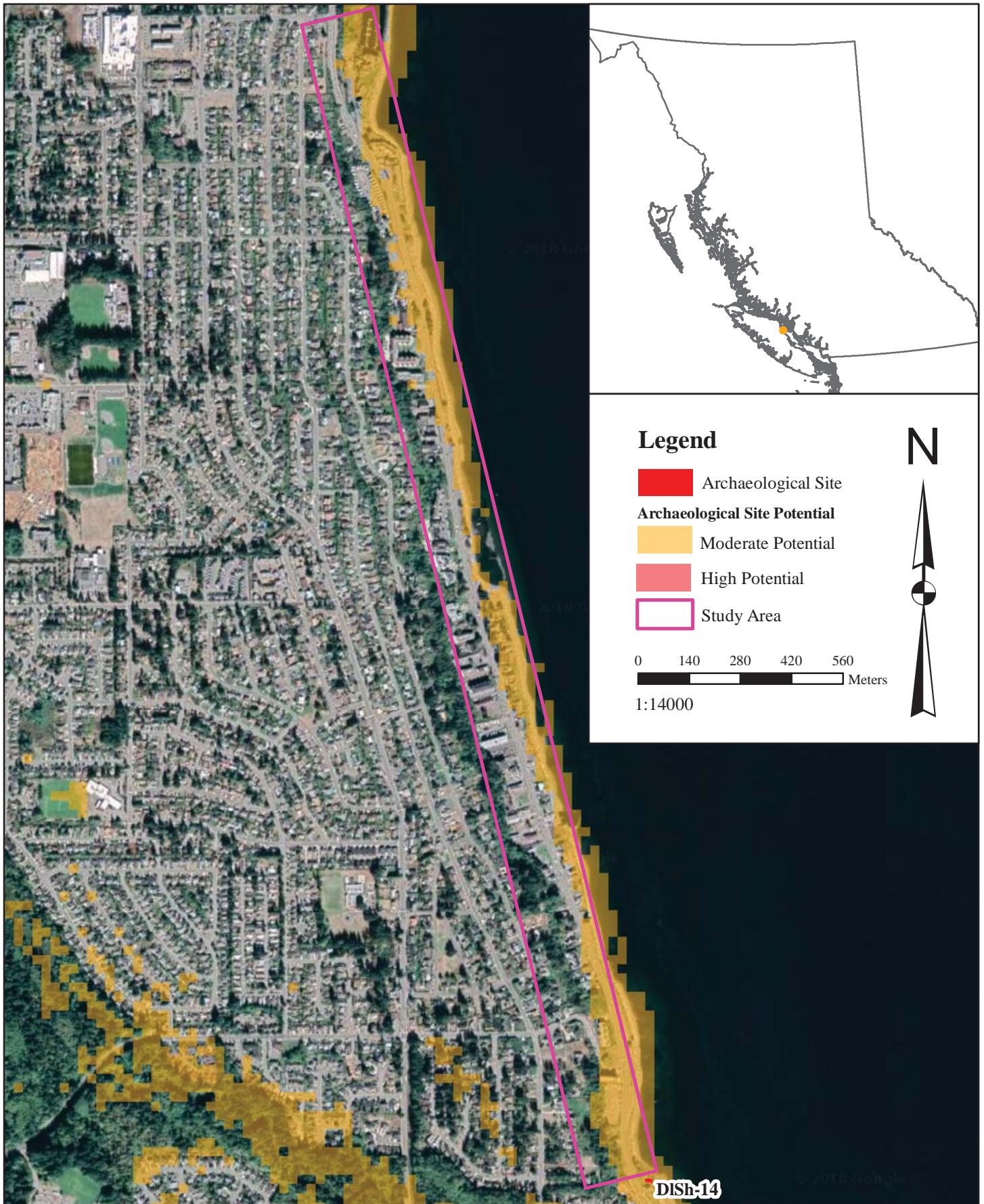


Figure 2. Archaeological Potential Model