



**Cowichan Secondary Watermain
Extension – Canada Avenue to Duncan
Street**

TENDER DOCUMENTS

Invitation to Tenderers

Instructions to Tenderers – Part I

Instructions to Tenderers – Part II (Separate Cover, Refer to MMCD Platinum Edition, Vol. II)

Form of Tender

Appendix 1 – Schedule of Quantities and Prices

Appendix 2 – Construction Schedule

Appendix 3 – Experience of Superintendent

Appendix 4 – Comparable Work Experience

Appendix 5 – Subcontractors

Appendix 6 – Social Procurement

Form of Agreement

Schedule 1 – Schedule of Contract Documents

Schedule 2 – List of Contract Drawings

General Conditions (Separate Cover, Refer to MMCD Platinum Edition Volume II)

Supplementary General Conditions

Specifications (Separate Cover, Refer to MMCD Platinum Edition, Volume II)

Supplementary Specifications

Separate Cover – City of Duncan Works and Services Bylaw No. 3158, 2017

Contract Drawings

Standard Detail Drawings (Separate Cover, Refer to MMCD Platinum Edition, Volume II)

Owner: City of Duncan

(NAME OF OWNER)

Contract: Cowichan Secondary Watermain Extension – Canada Avenue to Duncan Street

(TITLE OF CONTRACT)

Reference No.: 2233-02091-00

(OWNER'S CONTRACT REFERENCE NO.)

The Owner invites tenders for: Watermain construction near University Way between Canada Avenue and Duncan Street. Works generally include removals, waterworks, restoration and landscaping.

(BRIEF DESCRIPTION OF THE WORK)

Digital (PDF) copies of the
Contract Documents are available
for no charge:

Through BC Bid website.

Tenders are scheduled to close: **Tender Closing Time:** 2: 00, P m local time

Tender Closing Date: July 25, 20 23

Address: 200 Craig Street

Duncan, BC V9L 1W3

Documents to be dropped off at front desk

(ADDRESS WHERE TENDERS MUST BE SUBMITTED)

Name of Owner's Representative: Brian Murphy

250-746-6126

(PHONE)

1.0 Introduction.....IT - 1

2.0 Tender DocumentsIT - 1

3.0 Submission of TendersIT - 2

4.0 Supplemental Instructions to Tenderers.....IT - 3

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(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

(TO BE READ WITH “INSTRUCTIONS TO TENDERERS - PART II”
CONTAINED IN THE EDITION OF THE PUBLICATION
“MASTER MUNICIPAL CONSTRUCTION DOCUMENTS” SPECIFIED IN ARTICLE 2.2 BELOW)

Owner: City of Duncan
(NAME OF OWNER)

Contract: Cowichan Secondary Watermain Extension – Canada Avenue to Duncan Street
(TITLE OF CONTRACT)

Reference No.: 2233-02091-00
(OWNER'S CONTRACT REFERENCE NO.)

1.0 Introduction

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

Watermain construction near University Way between Canada Avenue
and Duncan Street. Works generally include removals, waterworks,
restoration and landscaping.

(BRIEF DESCRIPTION OF THE WORK)

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

McElhanney Ltd.

Jon Irving, P.Eng., Engineering Division Manager

(NAME AND POSITION OF INDIVIDUAL WHO WILL ANSWER INQUIRIES)

Address: 107-225 Canada Ave
Duncan, BC
V9L 1T6

Phone: 250 - 748 - 3335

Email: jirving@mcelhanney.com

2.0 Tender Documents

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 *Contract Drawings*”.

2.2 A portion of the *Contract Documents* are 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. They are those contained in the publication entitled "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings". Refer to Schedule 1 to the Agreement or, if not specified in Schedule 1, then the applicable edition shall be the most recent edition as of the date of the *Tender Closing Date*. 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 judgment about its reliability, accuracy, completeness and relevance to the *Contract*, and neither the *Owner* nor any representative of the *Owner* gives any guarantee or representation that the additional information is reliable, accurate, complete or relevant.

3.0 Submission of Tenders

3.1 Tenders must be submitted in a sealed envelope, marked on the outside with the above *Contract* Title and Reference No., and must be received by the office of:

Brian Murphy, Director of Public Works and Engineering

(TITLE OF POSITION)

on or before:

Tender Closing Time: _____ 2: 00 _____, _____ P_m local time
Tender Closing Date: July 25 _____, 20 23

at City of Duncan

Address: 200 Craig Street
Duncan, BC V9L 1W3
Documents to be dropped off at front desk

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

4.0 Supplemental
Instructions to
Tenderers

- 4.1 **Freedom of Information:** The City 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 City cannot guarantee that any information provided to the City can be held in confidence.
- 4.2 **Funding:** Proceeding with an award of this tender may be subject to available funding.
- 4.3 **Award:** The intent is to award the lowest bid price or bid prices but the lowest or any bid price will not necessarily be accepted. If the City elects to reject all bids, the City will not be liable to any bidder for any claims whether for costs incurred by any bidder in preparing the bid, damages, loss of anticipated profit in connection with the work, or any other matter whatsoever.
- 4.4 **Notice of Project:** Submit to WorkSafe BC a completed Notice of Project, providing a copy to the City.
- 4.5 **Construction Traffic Management Plan:** Submit to the Contract Administrator, prior to construction, a construction traffic management plan for review by the Contract Administrator and the Owner.
- 4.6 **Facsimile:** Faxed amendments or revocations will not be accepted.
- 4.7 **Inquiries:** All questions should be received at least 5 business days prior to the closing time and date.
- 4.8 **Working Hours:** The Contractor is required to abide by the following working hours set out in the City of Duncan Good Neighbour Bylaw No. 3156, 2017.
- 4.9 **Important Dates:**
- .1 The Last Addendum will be posted by the end of the day Friday July 21st, 2023
- 4.10 **Superintendent:** The *Owner* reserves the right to object to the *Superintendent* listed in the tender. If the *Owner* objects to the *Superintendent* then the *Owner* will permit a tenderer to, within 5 days, propose a substitute *Superintendent* acceptable to the *Owner* provided that there is no resulting adjustment in the *Tender Price* or the completion date set out in paragraph 2.2 of the Form of Tender. A tenderer will not be required to make such a substitution and, if the *Owner* objects to a listed *Superintendent*, the tenderer may, rather than propose a substitute *Superintendent*, consider its tender rejected by the *Owner* and by written notice withdraw its tender. The *Owner* shall, in that event, return the tenderer's bid security.
- 4.11 **Schedule:** See critical dates in Appendix 2 of the Form of Tender
- 4.12 **Permitting:** The City has applied for permits with Island Health and Island Corridor Foundation. The Island Corridor Foundation approval in principle has been received and it is expected that the Island Health permit will be received prior to the Tender Closing Time and provided to bidders through an addendum.
- 4.13 **Asphalt Paving Coordination:** Asphalt Paving restoration work will be completed by Duncan Paving in direct contract with the Owner. The successful Contractor will be responsible for coordinating and facilitating

- paving work including traffic control.
- 4.14 **Island Corridor Foundation Coordination:** It will be the successful Contractor's responsibility to coordinate rail track removals and necessary inspections with the Island Corridor Foundation as required throughout construction.
- 4.15 **Soil Contamination Testing:** The City is undertaking onsite soil contamination testing and reporting in compliance with Protocol 19 For Contaminated Sites issued by Ministry of Environment and Climate Change during the tender period. Depending on timing of receipt of results, information will either be shared with bidders through an addendum or with the successful contractor following the Tender Closing Date. In the event of the latter and if contaminants are found, additional costs associated with proper disposal (trucking and dump fees) shall be tracked on a Force Account basis and submitted to the Contract Administrator for review and approval.
- 4.16 **Fuel Consumption:** The successful Contractor shall provide a summary of all fuel usage quantities throughout the duration of the Project to Owner upon Project completion.

FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT - TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.

Owner: City of Duncan
(NAME OF OWNER)

Contract: Cowichan Secondary Watermain Extension – Canada Avenue to Duncan Street
(TITLE OF CONTRACT)

Reference No.: 2233-02091-00
(OWNER'S CONTRACT REFERENCE NO.)

To Owner:

WE, THE UNDERSIGNED: 1.1 have received and carefully reviewed all of the *Contract Documents*, including the Instructions to Tenderers, the specified edition of the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings" and the following Addenda:

(ADDENDA, IF ANY)

1.2 have full knowledge of the *Place of the Work*, and the *Work* required; and

1.3 have complied with the Instructions to Tenderers; and

**ACCORDINGLY WE
HEREBY OFFER:**

2.1 to perform and complete all of the *Work* and to provide all the labour, equipment and material all as set out in the *Contract Documents*, in strict compliance with the *Contract Documents*; and

2.2 to achieve Substantial Performance of the *Work* on or before November 1, 2023; and
(WORK DURATION OR DATE)

2.3 to do the *Work* for the price, which is the sum of the products of the actual quantities incorporated into the *Work* and the appropriate unit prices set out in Appendix 1, the "*Schedule of Quantities and Prices*", plus any lump sums or specific prices and adjustment amounts as provided by the *Contract Documents*. For the purposes of tender comparison, our offer is to complete the *Work* for the "*Tender Price*" as set out on 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.

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.

- 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.
- 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 15 *Days* of receipt of the written *Notice of Award* deliver to the *Owner*:
 - .1 a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the Contract Price, covering the performance of the Work including the Contractor’s obligations during the Maintenance Period, 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*;
 - .2 a Baseline Construction Schedule, as provided by GC 4.6.1;
 - .3 a “clearance letter” indicating that the tenderer is in Worksafe BC compliance; and
 - .4 a copy of the insurance policies as specified in GC 24 indicating that all such insurance coverage is in place; and
 - .5 a Construction Traffic Management Plan as detailed in the Supplemental Specifications
 - 5.1.2 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*; and
 - 5.1.3 sign the Contract Documents as required by GC 2.1.2.
- WE AGREE:** 6.1 that, if we receive written *Notice of Award* of this *Contract* and, contrary to paragraph 5 of this Form of Tender, we:
- 6.1.1 fail or refuse to deliver the documents as specified by paragraph 5.1.1 of this Form of Tender; or

- 6.1.2 fail or refuse to commence the *Work* as required by the *Notice to Proceed*,
then such failure or refusal will be deemed to be a refusal by us to enter into the *Contract* and the *Owner* may, on written notice to us, award the *Contract* to another party. 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 our *Tender Price* is less than the amount for which the *Owner* contracts with another party to perform the *Work*.

OUR ADDRESS IS AS
FOLLOWS:

Phone: _____
Fax: _____
Attention: _____
email: _____

This Tender is executed this
_____ day of _____, 20 _____.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

FORM OF TENDER

APPENDIX 1 – SCHEDULE OF QUANTITIES AND PRICES

Form of Tender - Appendix 1

SCHEDULE OF QUANTITIES AND PRICES
(See paragraph 5.3.1 of the Instructions to Tenderers - Part II)

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

Any work called for in these Contract Documents, shown on the plans, or which is necessary for the completion of the Work called for in these Contract Documents and which is not specifically listed as a separate payment item in this Appendix shall be deemed incidental to the performance of the Work and to the general purpose of the Contract; no separate payment will be made on account of any such Work, but the costs of any such incidental Work shall be included in the Unit and Lump Sum Prices.

Summary Sheet

Division 01:	General Requirements	\$ _____
Division 03:	Concrete	\$ _____
Division 32:	Roads and Site Improvements	\$ _____
Division 33:	Utilities	\$ _____

TOTAL TENDER PRICE \$ _____

GST (5%) \$ _____

TENDER PRICE plus GST \$ _____

Tenderer's Initials _____

DIV 01		GENERAL REQUIREMENTS				
Item No.	Section	Specification Title	Unit	Quantity	Unit Price	Amount
	01 10 00SS	Quality Control Testing				
1.01	1.1	Quality Control Testing	Lump Sum	1		
	01 10 00SS	Survey				
1.02	1.2	Layout Survey, Quantity Survey, Volume Calculations, and Record Survey	Lump Sum	1		
	01 33 01	Project Record Documents				
1.03	1.8.1	Project Record Documents	Lump Sum	1		
	01 52 01	Temporary Structures				
1.04	1.6.2ss	Mobilization & Demobilization	Lump Sum	1		
	01 55 00	Traffic Control, Vehicle Access and Parking				
1.05	1.5.1, 1.4.15ss	Traffic Management Plan (TMP), Traffic Control, Vehicle Access and Parking	Lump Sum	1		
	01 57 01	Environmental Protection				
1.06	1.6.1, 1.6.2ss	Environmental Protection Plan	Lump Sum	1		
Sub-Total					\$	

DIV 03		CONCRETE				
Item No.	Section	Specification Title	Unit	Quantity	Unit Price	Amount
	03 30 20	Concrete Walks, Curb And Gutter				
3.01	1.4.3	Curb & Gutter Non-mountable Curb	Lineal Metre	3		
Sub-Total					\$	

DIV 32		ROADS AND SITE IMPROVEMENTS				
Item No.	Section	Specification Title	Unit	Quantity	Unit Price	Amount
	32 12 16	Hot-Mix Asphalt Concrete Paving				
32.01	N/A	Facilitate Asphalt Paving (Duncan Paving Contracted by Owner)	Lump Sum	1		
	32 17 23	Painted Pavement Markings				
32.02	1.5.2	Permanent Painted Pavement Markings	Lump Sum	1		
	32 91 21	Topsoil and Finish Grading				
32.03	1.4.1	Topsoil - 100mm depth	Square Metres	175		

Tenderer's Initials _____

	32 92 19	Hydraulic Seeding				
32.04	1.8.1	Hydraulic Seeding	Square Metres	175		
	32 93 01	Planting of Trees, Shrubs and Ground Covers				
32.05	1.9.1	Restoration and Replanting of shrub beds (Canada Avenue)	Square Metres	6		
Sub-Total					\$	

DIV 33		UTILITIES				
<i>Item No.</i>	<i>Section</i>	<i>Specification Title</i>	<i>Unit</i>	<i>Quantity</i>	<i>Unit Price</i>	<i>Amount</i>
	33 11 01	Waterworks				
33.01	1.8.1, 1.8.2, 1.8.3	Watermain - PVC DR18 200mm diameter, 0-4m depth, imported backfill, including all fittings and appurtenances	Lineal Metres	56		
33.02	1.8.10	Watermain Encasement	Lineal Metres	31		
33.03	1.8.5	Blow-Off Assembly	Each	1		
33.04	1.8.13	Watermain Tie-In	Each	3		
Sub-Total					\$	

Tenderer's Initials _____

Cowichan Secondary Watermain Extension – Canada Avenue to Duncan Street

(TITLE OF CONTRACT)

See paragraph 5.3.3 of the Instructions to Tenderers – Part II.

Name: _____

EXPERIENCE

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Cowichan Secondary Watermain Extension – Canada Avenue to Duncan Street

(TITLE OF CONTRACT)

	Social Procurement Principles or Practices	Yes	No	N/A	Describe where applicable
Diverse Employment Policies and Practices					
1	Does your enterprise work with employment support services within the communities you operate?				<i>Answer prompt: identify the employment support services that you engage with to address workplace needs</i>
Employee Training, Wellness, and Apprenticeship Programs					
2	Does your enterprise provide employee training and development programs?				<i>Answer prompt: describe- what type of training and development do you offer employees?</i>
3	Does your enterprise provide apprenticeships?				<i>Answer prompt: what types of apprenticeships do you host, how many annually, which colleges and institutions do you partner with?</i>

Living Wages				
4	Does your enterprise pay your employees a living wage? The 2022 living wage for Cowichan Valley is \$23.53/hour.			<i>Answer prompt: what percentage of your employees earn above a living wage? What other considerations inform or influence your wages? What other benefits do you offer employees?</i>
Supply Chain Considerations				
5	Do you consider social value in your production process and/or supply chain (e.g. local sourcing for labour and/or materials, social and environmental considerations)			<i>Answer prompt: Describe your process for contracting suppliers- what criteria do you use in selecting and working with your suppliers?</i>
Other Community Benefits				
6	Does your enterprise support community initiatives and/or non-profits in the communities you operate?			<i>Answer prompt: Provide an example of a non-profit partnership, community initiative or other community contributions, outside of your regular course of business, that demonstrates your community engagement</i>

(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

BETWEEN OWNER AND CONTRACTOR

This agreement made in duplicate this

_____ day of _____, 2023.

CONTRACT: Marchmont Road Renewal

REFERENCE No. 02091-00

BETWEEN:

The City of Duncan
(the "Owner")

AND:

(NAME AND OFFICE ADDRESS OF CONTRACTOR)

(the "Contractor")

THE OWNER AND THE CONTRACTOR AGREE AS FOLLOWS:

- | | | |
|--|-----|--|
| Article 1 THE WORK
START /
COMPLETION
DATES | 1.1 | The <i>Contractor</i> will perform all <i>Work</i> and provide all labour, equipment and material and do all things strictly as required by the <i>Contract Documents</i> . |
| | 1.2 | The <i>Contractor</i> will commence the <i>Work</i> in accordance with the <i>Notice to Proceed</i> . The <i>Contractor</i> will proceed with the <i>Work</i> diligently, will perform the <i>Work</i> generally in accordance with the construction schedules as required by the <i>Contract Documents</i> and will achieve <i>Substantial Performance</i> of the <i>Work</i> on or before <u>November 1, 2023</u> subject to the provisions of the <i>Contract Documents</i> for adjustments to the <i>Contract Time</i> . |
| | 1.3 | Time shall be of the essence of the <i>Contract</i> . |

Article 2 **CONTRACT DOCUMENTS**

- 2.1 The “*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 unit prices 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 thereunder 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, or by fax, or by email, or by pre-paid registered mail to the addresses as set out below:

The OWNER:

City of Duncan
200 Craig Street, Duncan, BC, V9L 1W3

Email: bmurphy@duncan.ca
Attention: Brian Murphy, Director of Public Works and Engineering

The CONTRACTOR:

Fax: _____
Email _____
Attention: _____

The CONTRACT ADMINISTRATOR:

McElhanney Ltd.
107-225 Canada Avenue, Duncan, BC, V9L 1T6

Email: jirving@mcelhanney.com
Attention: Jon Irving, P.Eng.

6.2 A communication or notice that is addressed as above shall be considered to have been received

- 3.1.4 immediately upon delivery, if delivered by hand; or
- 3.1.5 after 5 Days from date of posting if sent by registered mail
- 3.1.6 n/a

- 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 assumes all risk that the fax is received in hard copy.

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:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

OWNER:

City of Duncan

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

(INCLUDE IN LIST ALL DOCUMENTS INCLUDING, IF ANY, SUPPLEMENTARY GENERAL CONDITIONS, SUPPLEMENTARY SPECIFICATIONS, SUPPLEMENTARY STANDARD DETAIL DRAWINGS.)

Schedule 1 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”, edition dated 2019. All sections of this publication are included in the *Contract Documents*.

- 8.1 Agreement, including all Schedules;
- 8.2 Supplementary General Conditions;
- 8.3 General Conditions*;
- 8.4 Supplementary Specifications;
- 8.5 City of Duncan Works and Services Bylaw No. 3158, 2017;
- 8.6 Specifications*;
- 8.7 Supplementary Standard Detail Drawings;
- 8.8 Standard Detail Drawings*;
- 8.9 Executed Form of Tender, including all Appendices;
- 8.10 *Contract Drawings* listed in Schedule 2 to the Agreement – “List of *Contract Drawings*”;
- 8.11 Island Health Permit
- 8.12 Island Corridor Foundation Permit
- 8.12 Instructions to Tenderers - Part I;
- 8.13 Instructions to Tenderers - Part II*
- 8.14 The following Addenda:

(ADDENDA, IF ANY)

(COMPLETE LISTING OF ALL DRAWINGS, PLANS AND SKETCHES WHICH ARE TO FORM A PART OF THE CONTRACT,
OTHER THAN STANDARD DETAIL DRAWINGS AND SUPPLEMENTARY STANDARD DETAIL DRAWINGS.)

Schedule 2 LIST OF CONTRACT DRAWINGS

TITLE	DRAWING NO.	DATE	REVISION NO.	REVISION DATE
Cover	000	June 5, 2023	PB	
Notes, Specifications & Legend	C01	June 5, 2023	PB	
Watermain Plan	C02	June 5, 2023	PB	
Profiles, Sections & Details	C03	June 5, 2023	PB	

Modifications and Additions to the Master Municipal Construction Documents

The following conditions form part of the Contract and are supplementary to the MMCD General Conditions and Specifications. In the event of a direct conflict between the MMCD General Conditions and these Supplementary GC's the Supplementary GC's take precedence. Notwithstanding this order of precedence, in the event of a conflict between or within any of the Contract Documents, the more stringent provisions shall apply with the intent that those which produce the highest quality and performance, shall govern.

SECTION	SUB SECTION	SUPPLEMENTARY GENERAL CONDITIONS
GC 1.0 DEFINITIONS	New 1.79 Archaeological Artifacts	"Archaeological Artifacts means any fossils, artifacts, coins, articles of value or antiquity, remains, and other things of geological, archaeological or historical interest or value discovered at the <i>Place of the Work</i> ."
	New 1.80 Engineer	"Engineer means the <i>Contract Administrator</i> ."
	New 1.81 Utilities	"Utilities is used broadly and includes but is not limited to any and all lines, poles, structures, facilities, utilities for power, cable, TV, telephone, telecommunications, all sanitary and storm sewers, and all water, oil, gas and electric services, all steam pipes and services, all survey monuments, all street lights, traffic lights, traffic detector loops embedded in pavement, culverts, rail tracks, whether located above or below ground, whether visible or invisible, whether man-made or natural."
GC 2.0 DOCUMENTS	2.2.4 Document Hierarchy	<p>Replace Section (1) with the following:</p> <p>"The Contract Documents shall govern and take precedence in the following order with the Agreement taking precedence over all other Contract Documents:</p> <ul style="list-style-type: none"> a) Agreement b) Addenda c) Supplementary General Conditions d) General Conditions e) Supplementary Specifications f) City of Duncan Works and Services Bylaw No. 3158, 2017 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."
GC 2.0	New 2.4.3	"The <i>Contract Drawings</i> shall not be used for the

DOCUMENTS	Copies of Contract Documents	construction of the Work unless marked "Issued for Construction" and sealed by a registered professional engineer."
GC 3.0 CONTRACT ADMINISTRATOR	3.3.5 Contract Administration	Amend Clause 3.3.5 by adding: "The <i>Contract Administrator</i> will conduct survey checks of the completed work at his/her discretion. The <i>Contractor</i> will provide a survey assistant, at the <i>Contract Administrator's</i> request, for such checks."
GC 4.0 CONTRACTOR	4.6 Construction Schedule	Amend 4.6.2 by deleting: "monthly" and substituting "monthly or as required by the <i>Contract Administrator</i> ".
GC 18.0 PAYMENT	18.5 Payment	Amend 18.5.1 by replacing: "15th day" to read "30th day".
GC 20.0 LAWS, NOTICES, PERMITS AND FEES	New 20.4.2 Environmental Laws	"The <i>Contractor</i> shall indemnify the <i>Owner</i> , the <i>Contract Administrator</i> , and their respective employees, agents, officers and consultants for any costs, fines, expenses and penalties that the <i>Owner</i> is required to pay on account of the <i>Contractor</i> performing <i>Work</i> in breach of any applicable Federal, or Provincial or municipal laws, regulations, or orders."
SGC 27.0 ARCHAEOLOGICAL ARTIFACTS	New 27.1.1 Archaeological Artifacts	"Any Archaeological Artifacts discovered by the <i>Contractor</i> shall, as between the <i>Owner</i> and the <i>Contractor</i> , be deemed to be the absolute property of the <i>Owner</i> ".
	New 27.1.2 Archaeological Artifacts	"The <i>Contractor</i> shall immediately advise the <i>Contract Administrator</i> of the discovery by the <i>Contractor</i> of any Archaeological Artifacts and take all reasonable precautions to protect and preserve same".
SGC 28.0 APPROVED SUPPLEMENTAL	New 28.1 Approved Supplemental	"All MMCD board approved Supplementary's as listed at www.mmcd.net/ are to be included and in effect for this contract as of tender closing date."

SUPPLEMENTARY SPECIFICATIONS		
Add the following Supplementary Specifications (attached at end):		
SECTION	SUB SECTION	SUPPLEMENTARY SPECIFICATION
01 10 00SS Measurement and Payment	All	
Revise the following Master Municipal Specifications Platinum Edition:		
SECTION	SUB SECTION	SUPPLEMENTARY SPECIFICATION
01 52 01 Temporary Structures	1.6 Payment	<p>Add Clause 1.6.2: "Payment for mobilization and demobilization shall include all the Contractor costs of mobilization at the beginning of the project and the cost of demobilization at the end of the project.</p> <p>.1 Included in the mobilization are such items as bonding, insurance, permits, moving personnel, equipment and materials to the site, setting up temporary facilities and all preparation for performing the <i>Work</i>.</p> <p>.2 Included in demobilization are preparation and submission of record drawings, operation and maintenance manuals, removal of all personnel, equipment and materials and cleanup of the <i>Site</i> and the <i>Work</i>.</p> <p>.3 The lump sum price bid for this work shall be relative to the costs involved but shall not exceed ten percent of the <i>Tender Price</i>.</p> <p>.4 Payment shall be made as follows, as approved by the Contract Administrator:</p> <p>.1 60% of the lump sum bid will be included in the first progress payment certificate</p> <p>.2 40% of the lump sum bid will be included in the final progress payment certificate</p> <p>.5 The Contract Administrator may at his discretion authorize partial payment if mobilization or demobilization is not complete</p> <p>.6 The cost of other items specified under General Requirements shall be considered incidental to the work and separate payment will not be made for any other items in the General Requirements unless specifically noted in the <i>Schedule of Quantities and Prices</i>."</p>
01 55 00 Traffic Control, Vehicle Access and Parking	1.4 Traffic Control	<p>Add Clause 1.4.15:</p> <p>"Provide a detailed Traffic Management Plan (TMP) and drawings with dedicated traffic control and pedestrian delineation for safety of motorists, pedestrians and bicycle traffic for all locations where roadways are affected by construction activities. The TMP shall be sealed by a qualified professional engineer and will be approved by the Contract Administrator in advance of implementation. This plan is to be submitted to the Contract Administrator a minimum of 14 calendar days prior to the contractor's desired date of construction commencement. The plan shall be updated and modified as requested by the Contract</p>

	<p>Administrator, as the construction project proceeds and traffic management needs warrant. The TMP is to contain sufficient details to allow the Contract Administrator and Owner a clear understanding of how the Contractor will ensure the following performance specification will be achieved, at a minimum.</p> <ol style="list-style-type: none">1. TMP shall be prepared in accordance with the BC Ministry of Transportation and Infrastructure guidelines specified in the 2020 Traffic Management Guidelines for Work on Roadways Manual, and the 2016 Standard Specifications for Highway Construction. Table of Contents to include the following:<ol style="list-style-type: none">1.1. General Information1.2. Operations and Signage1.3. Users and Access1.4. Traffic Control Drawings1.5. Public Information Plan1.6. Incident Management Plan1.7. Implementation Plan2. Partial closure of existing travel lanes to a minimum of single lane alternating traffic to facilitate construction of the Works may be requested3. Diverted travel lanes must be on paved or granular base surfaces. Travel surface will allow for vehicles to move through the construction zone at an intended speed of 20 km/h.4. Minimize stopping traffic in the travel lane. No dumping or off loading of materials shall be permitted in the travel lane. Stoppages are permitted for vehicle access to and egress from the construction zone or for construction vehicles crossing the travel lane. No delays for full lane closure of more than 5 minutes.5. Provide a plan of all off site and on site signage and traffic control devices for review and acceptance by the Contract Administrator and the Owner. Update the plan as requested whenever signage or traffic control device locations are changed.6. Provide access for garbage collection and recycling pick-up programs and mail delivery to all residents and businesses. Provide communication to and coordination with all service providers as necessary to ensure access as required.7. Provide for the BC Transit bus routes. Communicate to and coordinate with BC Transit as necessary regarding temporary bus stop locations, transit through the work zone and any other issues that may arise that require discussion and coordination.8. Work shall be in accordance with City of Duncan Noise Bylaws.9. At the discretion of the Contract Administrator, the Contractor may be requested to modify the TMP to accommodate any irregularities or excessive congestion of traffic flow. Maximum total delays of up to 5 minutes are permitted10. Maintain at least one access to all properties, at all times unless otherwise authorized by the Contract Administrator or unless the work is directly in front of a residential driveway. Where closures of residential driveways are required, provide
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		<p>a hand delivered letter a minimum of 72 hours prior to construction to impacted property owner(s). Driveways shall be closed for 72 hours for concrete curing. Daily access shall be provided for trenching where possible using steel plates.</p> <p>11. Facilitate priority access through the work zone for fire trucks and all other emergency vehicles when they are operating with emergency lights and sirens active and where possible otherwise.</p> <p>12. Where sidewalks are closed, provide adequate signage regarding pedestrian detour including signage at closest pedestrian crossing at each side of the closed section. Where work directly impacts sidewalk accessibility, "fixed in place" ramps with a tactile surface are to be provided at either end of the work area allowing pedestrians to safely negotiate the grade change between the roadway surface and drop ramps, curbs, and boulevards. Ramps must be of solid / sound construction, a minimum of 1.5m wide, less than 8% grade, and fixed in place with a traction surface and have a raised barrier edge a minimum of 35mm high.</p> <p>13. Provide plan for on site or off site storage of materials and equipment, location of site trailers and all other storage facilities (e.g. shipping containers). Use of the road right-of way or other public lands will require a Permit to Occupy a Road Allowance.</p>
01 57 01 Environmental Protection	1.1 Section 10 57 01 Includes	Add Clause 1.1.5: "Qualified Environmental Professional"
	1.2 Temporary Erosion and Sediment Controls	Add Clause 1.2.1.4: "All catch basin, silt trap, and lawn basin inlet castings that may receive runoff from the work area to be covered with filter cloth. Ensure no silt or sediment enters the storm drainage system while removing the silt cloth once construction is complete"
	1.4 Environmental Protection	Add Clause 1.4.4: "Disposal of Waste: <ol style="list-style-type: none"> 1. Do not bury rubbish and waste materials on site. 2. Do not dispose of waste or volatile materials such as mineral spirits, oil or point thinner into waterways, storm or sanitary sewers. 3. Dispose of waste materials off property, in accordance with applicable provincial and/or federal regulations. Removal and disposal of Asbestos Cement pipe shall follow current WCB requirements."
		Add Clause 1.4.5: "Concrete and Asphalt Cutting and Placing: <ol style="list-style-type: none"> 1. Control and pick up all wet or dry residue from saw cutting, coring, grinding and milling operations by means of a vacuum device or street sweeper. Under no circumstances is any dust, debris or run-off to migrate into waterways, storm or sanitary sewers. 2. Minimize the volume of wastewater produced by cutting tools by recycling and reusing wastewater whenever possible. 3. Do not allow cement washout into the streets, driveways, gutters, storm drains, ditches or water courses.

		<ol style="list-style-type: none">4. Set up and operate portable mixers on tarps or heavy drop cloths to contain spillage.5. When breaking up and milling pavement, remove broken pavement and sweep area clean.”
	1.6 Measurement and Payment	Add Clause 1.6.2: “Environmental Protection Plan shall be lump sum and includes all work to prepare, deliver and enact an Environmental Management Plan prepared by a registered qualified environmental professional (QEP) that contains the following components as applicable: tree protection plan; sensitive ecosystem management plan; sediment and erosion control plan; invasive species management plan; waste disposal; storage areas and laydown area management plan; equipment idling control plan; hazardous material control and spill response plan.”

- 1.0 GENERAL**
- .1 Section 01 10 00SS addresses additional measurement and payment clauses which do not apply to other specification sections
- 1.1 Quality Control Testing**
- .1 Perform all necessary Quality Management testing as indicated on the Drawings and/or within the Contract Documents. Payment shall be based on the Lump Sum bid the Schedule of Quantities and Unit Prices as measured and accepted by the Contract Administrator. Payment shall be accepted as full compensation for everything furnished and done. Payment of the Lump Sum bid will be paid in equal amounts each month.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or review by the Contract Administrator's instructions.
- .3 All submissions shall be prompt to ensure that all necessary retesting and replacement of construction can proceed without delay.
- .4 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.
- .5 Provide the Owner with copies of all test results.
- .6 Submit samples and/or materials required for testing, as specifically requested in specifications or by the Owner.
- .7 Submit test results specifying that material requirements are being met.
- .8 Provide labour and facilities to obtain and handle samples and materials on-site. Provide sufficient space to store and cure test samples.
- 1.2 Layout survey, quantity survey, volume calculations and record survey**
- .1 Payment shall be based on the Lump Sum bid in the Schedule of Quantities and Unit Prices as measured and accepted by the Contract Administrator. Payment shall be accepted as full compensation for everything furnished and done.
- .2 Payment of the lump sum bid will be paid in equal amounts each month.
- .3 The Contractor is responsible for all staking and survey layout and quantity calculations required for the completion of all Work, as shown on the Contract Drawings, and to affect incidental field adjustments.
- .4 The unit price bid shall include, but not be limited to; all survey layout, staking, cross sections, calculations of volumes required for tender items, coordination required for the completion of the work, record survey, and all other work and materials incidental and necessary to complete the Work to provide a functional system.
- .5 Any calculations necessary shall be performed by the Contractor and shall be provided to the Contract Administrator at any time upon request. Information shall include both text files and any CAD drawings.



**Cowichan Secondary Watermain
Extension – Canada Avenue to Duncan
Street**

CONTRACT DRAWINGS

DATE: 2023-05-05 11:58 FILE: P:\Projects\22302091-00_City of Duncan - Third Street Renewal\100_Drawing\1 - Ack\1011_Sheets\02091-00-UNIVERSITY WAY WATERMAIN.dwg McElhanney Corp. D - 2023-12-08

CLIENT

CITY OF DUNCAN

ADDRESS / CONTACT INFO.

200 CRAIG STREET, DUNCAN BC V9L 3Y2

PROJECT NAME

COWICHAN SECONDARY WATER MAIN EXTENSION CANADA AVE TO DUNCAN STREET

DESCRIPTION

CIVIL ENGINEERING DESIGN

McELHANNEY PROJECT

2233-02091-00

STATUS

ISSUED FOR TENDER

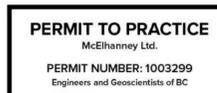


PROJECT LOCATION

SCALE: 1:2000



Suite 107
225 Canada Avenue
Duncan BC
Canada V9L 1T6
T 250 748 3335



05-Jun-2023

DRAWING LIST								
SHEET #	SHEET TITLE	REVISIONS						
		PA	PB	PC	0	1	2	3
C00	COVER	X	X					
C01	NOTES, SPECIFICATIONS & LEGEND	X	X					
C02	SITE PLAN	X	X					
C03	PROFILES, SECTIONS & DETAILS	X	X					

GENERAL NOTES

- 1. ALL WATER SYSTEM CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH THE CITY OF DUNCAN (CoD) STANDARDS UNLESS OTHERWISE NOTED.
2. ALL CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND DRAWINGS INCLUDED IN THE LATEST REVISION OF THE CITY OF DUNCAN - WORKS AND SERVICES BYLAW No. 3158, ENGINEERING SPECIFICATIONS AND STANDARD DRAWINGS, AND THE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS (MMCD PLATINUM EDITION) AND AMENDMENTS TO THE MMCD FOR WORK ON MUNICIPAL ROW OR SROW.
3. IF A CONFLICT BETWEEN THE SPECIFICATIONS ARISES, THE MOST STRINGENT SPECIFICATION SHALL APPLY.
4. CONTRACTOR TO ENSURE MINIMAL DISRUPTION TO LOCAL TRAFFIC IN ACCORDANCE WITH CITY OF DUNCAN (CoD) REQUIREMENTS. CONTRACTOR TO PROVIDE TRAFFIC MANAGEMENT PLAN (TMP), TMP REQUIRED TO BE SUBMITTED AND APPROVED BY CoD PRIOR TO WORKS.
5. CONTRACTOR TO OBTAIN AND PAY FOR A PERMIT TO CONSTRUCT WORKS ON A MUNICIPAL RIGHT OF WAY FROM THE CITY OF CoD 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.
6. CONTRACTOR TO MAINTAIN AN UP-TO-DATE SET OF REDLINE DRAWINGS FOR THE PREPARATION OF AS-CONSTRUCTED DRAWINGS. THE REDLINES ARE TO BE DELIVERED TO THE ENGINEER PRIOR TO SUBSTANTIAL PERFORMANCE. ALL DATA REQUIRED MUST BE ACCEPTABLE TO THE ENGINEER TO PREPARE THE AS-CONSTRUCTED DRAWINGS. MISSING OR INADEQUATE DATA TO BE PROVIDED BY THE CONTRACTOR OR BY AN INDEPENDENT SURVEYOR AT THE CONTRACTOR'S EXPENSE.
7. CONTRACTOR TO ENSURE EXISTING MONUMENTS AND IRON PINS ARE NOT DISTURBED DURING CONSTRUCTION. ANY MONUMENTS OR IRON PINS IN DANGER OF DISTURBANCE ARE TO BE REFERENCED AND, IF DISTURBED, BE REPLACED BY A BCLS AT THE CONTRACTORS EXPENSE.
8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION LAYOUT, MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES FOR CO-ORDINATING THE VARIOUS PARTS OF THE WORK IN THESE DRAWINGS. McELHANNEY LTD. WILL PROVIDE DIGITAL FILES FOR LAYOUT PURPOSES UPON REQUEST.
9. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE WRITTEN CONFIRMATION TO THE OWNER AND McELHANNEY LTD. THAT THEY WILL ASSUME THE RESPONSIBILITIES OF THE PRIME CONTRACTOR AS OUTLINED IN THE WORKERS COMPENSATION ACT FOR THE DURATION OF THE PROJECT.
10. NO CONSTRUCTION TO TAKE PLACE UNLESS DRAWINGS ARE ISSUED FOR CONSTRUCTION AND ALL APPROVALS ARE IN PLACE. CONTRACTOR TO CONFIRM WITH ENGINEER.

TRENCHING, EXCAVATING AND BACKFILLING

- 1. CONTRACTOR TO SUBMIT A DEWATERING PLAN & PROCEDURE FOR APPROVAL BY THE AUTHORITY HAVING JURISDICTION PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO EXCAVATE TO CONFIRM LOCATION AND ELEVATION OF EXISTING UTILITIES AT ALL CROSSINGS AND CONNECTION POINTS AND CONFIRM ELEVATIONS WITH THE ENGINEER PRIOR TO CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND ARE REQUIRED TO BE CONFIRMED IN THE FIELD. ANY DAMAGE OR REPAIR TO EXISTING UTILITIES SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR.
3. DO NOT START ANY BACKFILL OPERATION DURING CONSTRUCTION PRIOR TO THE ENGINEER'S INSPECTION.
4. WHERE EXISTING ABANDONED WATERMAIN IS ENCOUNTERED DURING EXCAVATION, CONTRACTOR TO REMOVE AND DISPOSE OF EXISTING ABANDONED WATERMAIN INCLUDING ASBESTOS CEMENT AS NECESSARY IN ACCORDANCE WITH THE REGULATORY AGENCIES.
5. AFTER CONSTRUCTION, RESTORE WORK AREAS AND ALL EXISTING FEATURES TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE CITY OF DUNCAN AND/OR PRIVATE PROPERTY OWNER.
6. ADJUST ALL PROPOSED AND EXISTING APPURTENANCES TO MEET THE FINAL GRADES.
7. ALL UTILITY TRENCHING TO BE IN ACCORDANCE WITH CoD STD. T1 AND MMCD SECTION 31 23 01 - EXCAVATING, TRENCHING & BACKFILLING.
8. WHERE A TRENCH IS UNDER OR WITHIN 1.0m FROM THE EDGE OF A ROAD OR DRIVEWAY, USE PIT RUN GRAVEL BACKFILL FROM THE TOP OF THE PIPE BEDDING TO THE TOP OF THE ROAD, PARKING OR DRIVEWAY SUBGRADE AS PER CoD STD. DWG. T1
9. ALL EXCAVATION TO BE AS PER WCB REQUIREMENTS UNLESS OTHERWISE APPROVED IN WRITING BY A GEOTECHNICAL ENGINEER.
10. CONTRACTOR SHALL RETAIN AND PAY FOR THE SERVICES OF A QUALIFIED INDEPENDENT GEOTECHNICAL TESTING ENGINEER TO PROVIDE QUALITY CONTROL SERVICES DURING CONSTRUCTION AND SHALL PROVIDE THE FOLLOWING AT A MINIMUM UNLESS APPROVED IN WRITING BY A GEOTECHNICAL ENGINEER:
10.1. SIEVE ANALYSIS OF SANDS AND AGGREGATES SUPPLIED TO THE WORK.
10.2. STANDARD PROCTOR DENSITY CURVES FOR BACKFILL MATERIALS.
10.3. STANDARD PROCTOR DENSITY CURVES FOR APPROVED BORROW MATERIALS.
10.4. TRENCH BEDDING DENSITY TEST (MAINLINE) - ONE FOR EVERY 75m OF TRENCH. MINIMUM ONE BETWEEN ANY TWO MANHOLES.
10.5. TRENCH BACKFILL DENSITY TEST (MAINLINE) - ONE FOR EVERY 75m OF TRENCH AT EACH 1.0m FILL DEPTH. MINIMUM ONE BETWEEN ANY TWO MANHOLES (INCLUDING ONE AT SURFACE LEVEL).
10.6. TRENCH BACKFILL DENSITY TEST (SERVICE) - ONLY SURFACE LEVEL DENSITY TEST
11. THE CITY OF DUNCAN RESERVES THE RIGHT TO MODIFY/ALTER ANY MMCD SPECIFICATION TO SUIT THE CITY OF DUNCAN.
12. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REINSTATE ANY SURFACE WORKS OR UNDERGROUND UTILITIES INCLUDING IRRIGATION LINES AND TRAFFIC CONTROL LOOPS TO EXISTING OR BETTER CONDITION IF DAMAGED BY THE CONTRACTOR OR SUBCONTRACTOR DUE TO CONSTRUCTION.
13. THE LOCATION OF EXISTING UNDERGROUND UTILITIES HAVE BEEN COMPILED FROM DIFFERENT SOURCES AND ARE APPROXIMATE ONLY. EXACT LOCATION IS UNKNOWN AND MUST BE CONFIRMED PRIOR TO CONSTRUCTION. THE CITY ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF THE INFORMATION SHOWN.
14. CONTRACTOR TO COMPLY WITH ALL ENVIRONMENTAL, FISHERIES, LEGISLATION, REGULATIONS AND CITY OF DUNCAN BY-LAWS DURING CONSTRUCTION.
15. NOT ALL, IF ANY, EXISTING STRUCTURES OR LANDSCAPING ARE SHOWN. CONTRACTOR TO IDENTIFY ANY DESIGN CONFLICTS WITH STRUCTURES AND/OR LANDSCAPING PRIOR TO INSTALLATION. IF ANY DESIGN CONFLICTS ARE FOUND THE CONTRACTOR IS TO CONTACT THE CITY OF DUNCAN PROJECT MANAGER IMMEDIATELY.
16. ANY MATERIALS, INCLUDING BUT NOT LIMITED TO SOIL, ORGANIC WASTE, PARTS, CONCRETE, ETC. TO BE REMOVED AS A PART OF CONSTRUCTION IS TO BE DISPOSED OF OFF SITE AT THE CONTRACTOR'S EXPENSE.
17. CONTRACTOR IS RESPONSIBLE FOR RECORDING ALL ACTUAL SITE CONDITIONS.
18. ANY NON-EMERGENCY ASSISTANCE FROM THE CITY OF DUNCAN'S PUBLIC WORKS CREW REQUIRES 2 WEEKS NOTICE.
12. PROOF ROLL TRENCH MATERIAL AS PER MMCD SPECIFICATIONS, HOWEVER A SINGLE AXLE DUMP TRUCK IS TO BE USED. THE DUMP TRUCK IS TO HAVE A REAR AXLE LOAD OF 8000kg AND A TIRE PRESSURE OF 550 kpa.

ROADWORKS

- 1. CONSTRUCT ALL ROADWAYS AS SHOWN ON THE TYPICAL SECTIONS AND DETAIL DRAWINGS.
2. ALL PAVING TO BE IN ACCORDANCE WITH MMCD SECTION 32 12 16 - HOT-MIX ASPHALT CONCRETE PAVING. MIX DESIGN TO BE APPROVED BY GEOTECHNICAL ENGINEER.
3. ALL GRANULAR BASE AND GRANULAR SUB-BASE TO BE IN ACCORDANCE WITH MMCD SECTION 31 05 17 - AGGREGATES & GRANULAR MATERIALS.
4. CONTRACTOR SHALL RETAIN AND PAY FOR THE SERVICES OF A QUALIFIED INDEPENDENT GEOTECHNICAL TESTING ENGINEER TO PROVIDE QUALITY CONTROL SERVICES DURING CONSTRUCTION AND SHALL PROVIDE THE FOLLOWING AT A MINIMUM UNLESS APPROVED IN WRITING BY A GEOTECHNICAL ENGINEER:
4.1. SIEVE ANALYSIS OF SANDS AND AGGREGATES SUPPLIED TO THE WORK.
4.2. STANDARD PROCTOR DENSITY CURVES FOR BACKFILL MATERIALS.
4.3. STANDARD PROCTOR DENSITY CURVES FOR APPROVED BORROW MATERIALS.
4.4. COMPACTION CONTROL TESTS FOR BACKFILL AND EMBANKMENT MATERIAL INCLUDING:
4.4.1. GRANULAR BASE (CURBS) - ONCE PER 50 LINEAL METRES PLUS PROOF ROLL TEST, FULL LENGTH.
4.4.2. GRANULAR BASE (ROADS) - ONCE PER 50 LINEAL METRES PLUS PROOF ROLL TEST, FULL LENGTH.
4.4.3. GRANULAR BASE (WALKWAYS) - ONCE PER 50 LINEAL METRES PLUS PROOF ROLL TEST, FULL LENGTH.
4.5. CONCRETE MIX DESIGN AND TESTING
4.6. CONCRETE STRENGTH TESTS (MINIMUM THREE SPECIMEN CYLINDERS IN ACCORDANCE WITH CSA A23.1) FOR THE FOLLOWING:
4.6.1. CURB AND GUTTER - ONCE PER 150 LINEAL METRES (MINIMUM ONE PER DAY DURING CONCRETE PLACING)
4.6.2. CONCRETE SIDEWALKS AND DRIVEWAYS - ONCE PER 50 SQUARE METRES MINIMUM ONCE PER DAY DURING CONCRETE PLACING
4.7. ASPHALT MIX DESIGN AND TESTING
4.8. ASPHALT TESTS FOR THE FOLLOWING:
4.8.1. AGGREGATE GRADATION TESTS - ONE PER 300 TONNES OF PRODUCTION (MINIMUM ONE PER DAY DURING ASPHALT PLACEMENT).
4.8.2. MARSHALL TEST - THREE BRIQUETTES FOR EVERY 300 TONNES OF PRODUCTION (MINIMUM ONE PER DAY DURING ASPHALT PLACEMENT).
4.8.3. COMPACTION - ONE CORE FOR EVERY 500sq.m PLACED.
5. RESTORE ALL LANDSCAPED AREAS WITH TOPSOIL AND SOD. NEW LANDSCAPED AREAS TO BE COMPLETE WITH MINIMUM 200mm TOPSOIL AND SOD AS PER MMCD.
6. SUBGRADE TO BE APPROVED BY GEOTECHNICAL ENGINEER. ANY FAILURE OF THE SUBGRADE AFTER APPROVAL IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY MITIGATION PROCEDURES REQUIRED TO PROTECT THE SUBGRADE IS THE RESPONSIBILITY OF AND AT THE EXPENSE OF THE CONTRACTOR.

HYDRO, TELEPHONE, STREETLIGHTING, CABLE & GAS

- 1. CONTACT "BC ONE CALL" AT 1-800-474-6886 A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION. CONTRACTOR TO REVIEW INFORMATION PRIOR TO START OF ANY EXCAVATION.
2. CONTACT "DIGSHAW" AT 1-866-DIGSHAW (344-7429) A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION. CONTRACTOR TO REVIEW INFORMATION PRIOR TO START OF ANY EXCAVATION.
3. CONTACT BC HYDRO, TELUS, SHAW CABLE AND FORTIS BC 48 HOURS PRIOR TO THE START OF ANY EXCAVATION.
4. CONNECTION TO, OR ALTERATION OF, EXISTING BC HYDRO, TELUS, SHAW CABLE, FORTISBC, CoD OR OTHER UTILITIES WILL BE UNDERTAKEN BY THE APPROPRIATE UTILITY ONLY. CONTRACTOR TO PROVIDE SITE ACCESS TO ALL UTILITIES AS REQUIRED.
5. ANY BC HYDRO, TELUS, SHAW CABLE OR FORTIS BC FACILITIES SHOWN ON THE ENGINEERING DRAWINGS ARE SCHEMATIC ONLY. CONSTRUCT UNDERGROUND HYDRO, TELEPHONE AND CABLE AS SPECIFIED AND IN ACCORDANCE WITH BC HYDRO, TELUS AND SHAW CABLE STANDARD SPECIFICATIONS AND DRAWINGS.

WATER

- 1. VANCOUVER ISLAND HEALTH AUTHORITY WATER SUPPLY CONSTRUCTION PERMIT NO. "W-S-XXXX". THE CONTRACTOR SHALL MEET THE CONDITIONS EXPRESSED IN THE WATER SUPPLY CONSTRUCTION PERMIT ISSUED BY THE VANCOUVER ISLAND HEALTH AUTHORITY AND SHALL NOT COMMENCE CONSTRUCTION WITHOUT A COPY OF THE PERMIT. ANY CHANGES OR ALTERATIONS ARE TO BE PRE-APPROVED BY THE VIHA PUBLIC HEALTH ENGINEERS VIA THE PROJECT ENGINEER.
2. ALL WATERWORKS CONSTRUCTION SHALL BE IN ACCORDANCE WITH MMCD SPECIFICATIONS AND STANDARD DRAWINGS. ONLY CoD STAFF CAN OPERATE VALVES OR INTERRUPT SERVICE TO RESIDENTS
3. WATER MAINS SHALL BE PVC DR18 TO AWWA C900 c/w THRUST BLOCKS & JOINT RESTRAINTS, UNLESS OTHERWISE NOTED.
4. PROVIDE MINIMUM 1.2m COVER FOR WATER MAINS, UNLESS OTHERWISE NOTED.
5. MARK WATER MAINS BELOW GRADE USING TRACER WIRE SET ABOVE THE PIPE.
6. MAINTAIN A MINIMUM OF 3m HORIZONTAL AND 450mm CLEAR VERTICAL SEPARATION BETWEEN WATER SERVICES AND SEWER SERVICES, SANITARY OR STORM/DRAIN. IN SPECIAL CIRCUMSTANCES, WHERE A SANITARY OR STORM DRAIN SERVICE IS LOWER THAN A WATER SERVICE BY MORE THAN 450 mm IN ELEVATION THE HORIZONTAL OFFSET MAY BE REDUCED TO NO LESS THAN 1.0 METRES EXCEPT WHERE NOTED AND APPROVED BY CoD. VIHA APPROVAL IS REQUIRED FOR ANY REDUCTION IN THE SEPARATION.
7. FOR CROSSING OF EXISTING SEWERS, WHERE THE WATER MAIN DOES NOT HAVE THE REQUIRED 450mm VERTICAL SEPARATION, WRAP WATER MAIN JOINTS WITH PETROLATUM TAPE 3m EITHER SIDE OF THE SEWER, WHERE A VERTICAL SEPARATION OF 150mm CANNOT BE ACHIEVED, SPECIAL MITIGATIVE MEASURES SHALL BE APPROVED BY THE ENGINEER.
8. WHERE NEW CATCHBASIN (CB) LEADS DO NOT HAVE A 450mm VERTICAL SEPARATION, WRAP CB LEAD JOINTS WITH DENSO TAPE.
9. MAINTAIN A MINIMUM OF 1.5m HORIZONTAL CENTER TO CENTER AND 150mm CLEAR VERTICAL SEPARATION BETWEEN WATERMANS AND ELECTRICAL CONDUITS, GAS MAINS AND TELEPHONE CONDUITS EXCEPT WHERE NOTED IN ENGINEERING DRAWINGS.
10. MAINTAIN A MINIMUM OF 1.0m HORIZONTAL CENTER TO CENTER AND 300mm CLEAR VERTICAL SEPARATION BETWEEN WATER SERVICES AND ELECTRICAL CONDUITS, GAS MAINS AND TELEPHONE CONDUITS EXCEPT WHERE NOTED BY MMCD.
11. CONTRACTOR SHALL FLUSH AND DISINFECT WATER MAINS IN ACCORDANCE WITH AWWA STANDARDS, MMCD AND AS APPROVED BY McELHANNEY LTD AND CoD, AND IN THE PRESENCE OF CoD AND McELHANNEY LTD. WATER SAMPLES FOR HEALTH TESTS TO BE COLLECTED AND PROCESSED BY McELHANNEY LTD. PROVIDE 24 HOURS NOTICE TO McELHANNEY LTD.
12. NEUTRALIZE CHLORINE SOLUTIONS IN ACCORDANCE WITH MINISTRY OF ENVIRONMENT AND FISHERIES AND OCEANS CANADA REGULATIONS PRIOR TO DISCHARGE TO ANY DRAINAGE COURSE.
13. CONTRACTOR SHALL PROVIDE 24 HOUR NOTICE TO CoD PRIOR TO PROCEEDING WITH ANY WATERWORKS.
14. CONTRACTOR SHALL CONDUCT PRESSURE TESTING IN ACCORDANCE WITH MMCD SECTION 33 11 01 (WATERWORKS) AND IN THE PRESENCE OF THE CIVIL ENGINEER AND CoD. TEST PRESSURE TO BE 200psi. CONTRACTOR TO PROVIDE A PRESSURE TESTING AND FLUSHING PLAN PRIOR TO ANY PRESSURE TESTING.

STORM SEWER

- 1. STORM MANHOLE TO BE 1800w UNLESS OTHERWISE NOTED AND TO BE AS PER MMCD STD. DWG S1. MANHOLE LID TO BE SET SLIGHTLY BELOW FINISHED GRADE TO AVOID OBSTRUCTION.
2. CONTRACTOR TO PROVIDE ENGINEER WITH CCTV VIDEO OF STORM SEWER SYSTEM AS PER CoD SPECIFICATIONS INCLUDING FLUSH & CCTV VIDEO AND ANY DEFICIENCIES REPAIRED PRIOR TO PAVING CONSTRUCTION.
3. ALL ABANDONED STORM MANHOLES TO BE REMOVED & ABANDONED MAINS PLUGGED FOLLOWING TIE IN AND ACTIVATION OF NEW STORM MAINS

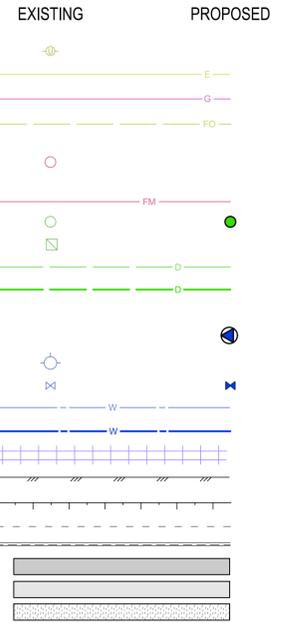
ENVIRONMENTAL AND TREE PROTECTION

- 1. CONTRACTOR TO PROVIDE AN ENVIRONMENTAL PROTECTION & MANAGEMENT PLAN (TO BE APPROVED BY CoD) PREPARED BY A QUALIFIED ENVIRONMENTAL CONSULTANT A MINIMUM OF 48 HOURS BEFORE COMMENCING CONSTRUCTION, WHICH WILL PROVIDE DETAILS AND PROCEDURES, AT A MINIMUM, OF THE FOLLOWING:
1.1. DISPOSAL OF WASTES.
1.2. DISCHARGING OF TRENCH WATER.
1.3. EROSION AND SEDIMENT CONTROL.
1.4. FUEL SPILL CONTROL, INCLUDING SIZE AND TYPE OF SPILL KITS.
1.5. DRAINAGE, TREATMENT AND DISPOSAL OF DEWATERING, IN ACCORDANCE WITH REGULATORY AGENCY REQUIREMENTS.
2. CONTRACTOR TO OBTAIN PERMISSION FROM CoD PRIOR TO REMOVAL OF ANY TREES ON PRIVATE OR PUBLIC PROPERTY. TREES AND TREE ROOTS ARE TO BE PROTECTED DURING CONSTRUCTION. HAND DIG WHERE ROOTS OVER 50mm ARE ENCOUNTERED. CERTIFIED ARBORIST TO BE ENGAGED BY THE CONTRACTOR.

SOUTHERN VANCOUVER ISLAND RAILWAY NOTES

- 1. RAILWAY FLAG PROTECTION MUST BE PROVIDED FOR ALL WORK INVOLVING MATERIALS, EQUIPMENT, AND/OR PERSONNEL AT ALL TIMES WHEN LOCATED WITHIN 9.1m OF ANY TRACK CENTERLINE. RAILWAY FLAG PROTECTION MUST BE PROVIDED BY A QUALIFIED RAILWAY FLAG PERSON AND TRACK INSPECTOR. THE RAILWAY FLAG PERSON MUST BE AN EMPLOYEE OF THE OPERATING RAILWAY OR A QUALIFIED PERSON APPROVED BY THE RAILWAY. THE RAILWAY FLAG PERSON IS REQUIRED TO PROVIDE FOR THE SAFETY OF THE RAILWAY, PUBLIC, AND PERSONS PERFORMING WORK ON, UNDER, AND/OR AROUND THE RAILWAY. TRACK PROTECTION INCLUDES OBTAINING THE CREWS, COORDINATING THE WORK WITH RAIL TRAFFIC ON THE LINE, AND LOOKING OUT FOR THE GENERAL INTEREST OF THE RAILWAY RELATING TO SAFETY. THE SAFETY PROCEDURE IS A REGULATORY REQUIREMENT OF THE PROVINCIAL GOVERNMENT, REPRESENTED BY THE C.V. SAFETY AUTHORITY.
2. DEPENDING ON THE EXTENT OF THE WORK, ADDITIONAL PERSONNEL COULD BE REQUIRED, AS A GENERAL RULE ONE FLAG PERSON CAN FULFILL THESE REQUIREMENTS FOR WORK ACTIVITY THAT DOES NOT EXTEND BEYOND A SPECIFIC GEOGRAPHIC AREA (EG. 1-2 MILES).
3. NOTIFICATION OF THE WORK TO BE PERFORMED WITHIN 30 FEET OF ANY TRACK CENTERLINE MUST BE MADE TO THE RAILWAY 48 HOURS IN ADVANCE OF THE WORK OR BY MEANS OF COMMUNICATION ON SITE FOR WORK THAT IS ONGOING IN PROGRESS. NOTIFICATION CAN BE MADE BY CONTACTING SVI ROADMASTER, AL KUTAJ AT 250-755-5604, OR BYRON REED AT 250-755-6459. THE SVI GENERAL OFFICE PHONE NUMBER IS 250-754-9222.
4. FOR WORK REQUIRED ON THE RAIL RIGHT-OF-WAY WHERE ALL MATERIALS, EQUIPMENT, AND PERSONNEL ARE AT NO TIME LOCATED WITHIN A DISTANCE OF 30 FEET OF ANY TRACK CENTERLINE, FLAG PROTECTION MAY NOT BE REQUIRED HOWEVER THE RAILWAY MUST BE NOTIFIED OF THE DETAILS OF THE WORK AND THE SCHEDULE USING THE NOTIFICATION PROCEDURE AND CONTACT NUMBERS ABOVE.
5. NO CONSTRUCTION WORK TO OCCUR WITHIN 9.1m OF RAILWAY TRACKS WITHOUT NOTIFICATION AND PERMISSION BY SVI.
6. CONTRACTOR TO PROVIDE A TWO WEEK NOTICE OF WORK PRIOR TO CONSTRUCTION TO PROVIDE SVI ADEQUATE TIME TO COORDINATE MATERIALS AND FOR SCHEDULING OF RESOURCES.
7. CONTRACTOR TO CONTACT AL KUTAJ AT (250) 755-5604 EVERY MORNING PRIOR TO CONSTRUCTION.
8. CONTRACTOR TO PROVIDE PROOF OF INSURANCE WITH A 2 MILLION DOLLAR LIABILITY AND TO HAVE SVI AND ICF NAMED ON THE CERTIFICATE.
9. SVI CAN REMOVE A SET OF RAILS IF REQUIRED WITH TWO WEEKS NOTICE
10. THE NAMED CONTRACTOR WILL BE THE PRIME CONTRACTOR ON SITE. ALL SAFETY AND RELATED PPE AS PER THE CONTRACTORS SAFETY PLAN AND WORK SAFE BC REGULATIONS DURING CONSTRUCTION.
11. ALL OPEN TRENCHES OVER NIGHT TO BE THE RESPONSIBILITY OF THE CONTRACTOR AND TO BE FENCED OFF FOR THE SAFETY OF THE PUBLIC.
12. CONTRACTOR TO ENSURE THE TRENCH BACKFILL IS TO 75mm BELOW THE BOTTOM OF THE RAIL TIES AND NOTIFY SVI OF THIS COMPLETION. THE LENGTH OF THE TRENCH IS TO BE COMPLETED TO AT LEAST 5.0m FROM THE NEAREST RAIL. SVI TO COMPLETE THE RESTORATION OF THE RAILWAY FROM THIS POINT UPON INSPECTION.
13. SVI TO SUPPLY AND INSTALL TOP BASE BALLAST GRAVELS AND REPLACE AND INSTALL NEW RAIL TIES AS REQUIRED.
14. THE CITY OF DUNCAN TO BE RESPONSIBLE FOR ALL SVI COSTS INVOLVED IN ASSISTING ON THIS PROJECT.
15. NO SUB-SURFACE INVESTIGATION OR GEOTECHNICAL ASSESSMENT HAS BEEN UNDERTAKEN.

LEGEND



Revision table with columns: Rev, Date, Description, Drawn, Design, App'd. Includes entries for ISSUED FOR TENDER, ISSUED FOR PERMITTING, and ISSUED FOR PERMITTING.

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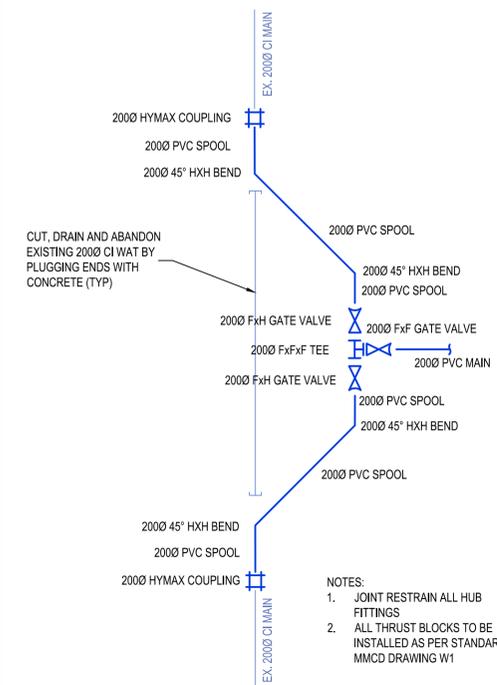
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McElhanney logo and contact information (Suite 107, 225 Canada Avenue, Duncan BC, Canada V9L 1T6, T 250 748 3335). Includes 'PERMIT TO PRACTICE' stamp for J. R. IRVING, Professional Engineer, No. 49122.

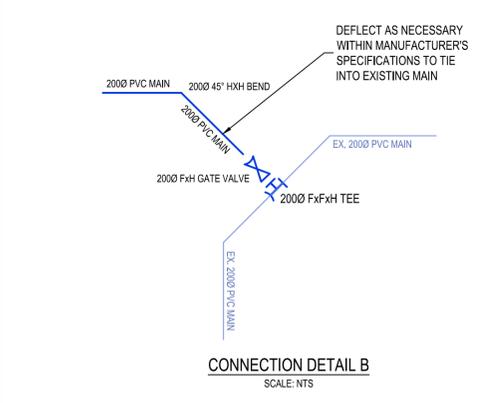
PRELIMINARY NOT FOR CONSTRUCTION stamp.

CITY OF DUNCAN logo and project title: COWICHAN SECONDARY WATER MAIN EXTENSION CANADA AVE TO DUNCAN STREET. Includes 'NOTES, SPECIFICATIONS & LEGEND'.

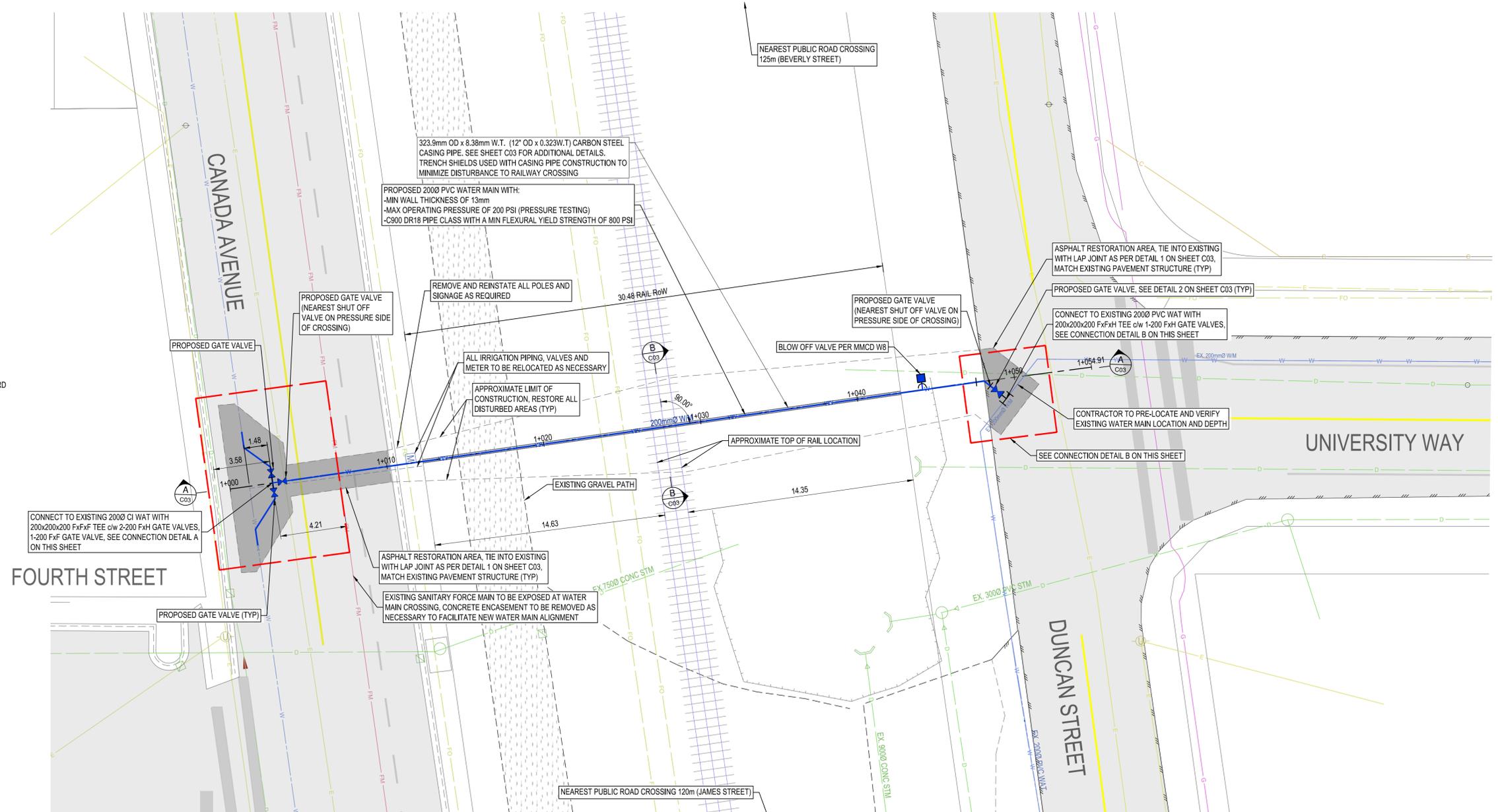
Project information table with columns: Drawing No., Project Number, Rev. Includes values: C01, 2233-02091-00, PB.



CONNECTION DETAIL A
SCALE: NTS



CONNECTION DETAIL B
SCALE: NTS



- NOTES:
1. JOINT RESTRAIN ALL HUB FITTINGS
 2. ALL THRUST BLOCKS TO BE INSTALLED AS PER STANDARD MMCD DRAWING W1

- NOTES:
- THE WATER MAIN CROSSING WILL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE BRITISH COLUMBIA RAILWAY SAFETY CODE PART 3 CONSTRUCTION AND MAINTENANCE.
 - THE WATER MAIN CROSSING IS DESIGNED FOR COOPER'S E-80 TRAIN LOADING WITH IMPACT FOR LOCAL CONDITIONS.
 - THE PROPOSED METHOD OF INSTALLATION IS VIA AN OPEN TRENCH.
 - ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
 - ALL INFRASTRUCTURE DEPTHS AND GRADES COMPILED FROM GIS AND OTHER SOURCES. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.



05-Jun-2023



Rev	Date	Description	Drawn	Design	App'd
PB	2023-06-05	ISSUED FOR TENDER	MR	MR	JJ
PB	2023-06-05	ISSUED FOR PERMITTING	MR	MR	JJ
PA	2023-02-06	ISSUED FOR PERMITTING	MR	MR	JJ

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ORIGINAL DWG SIZE: ANSI D (22" x 34")

McElhanney

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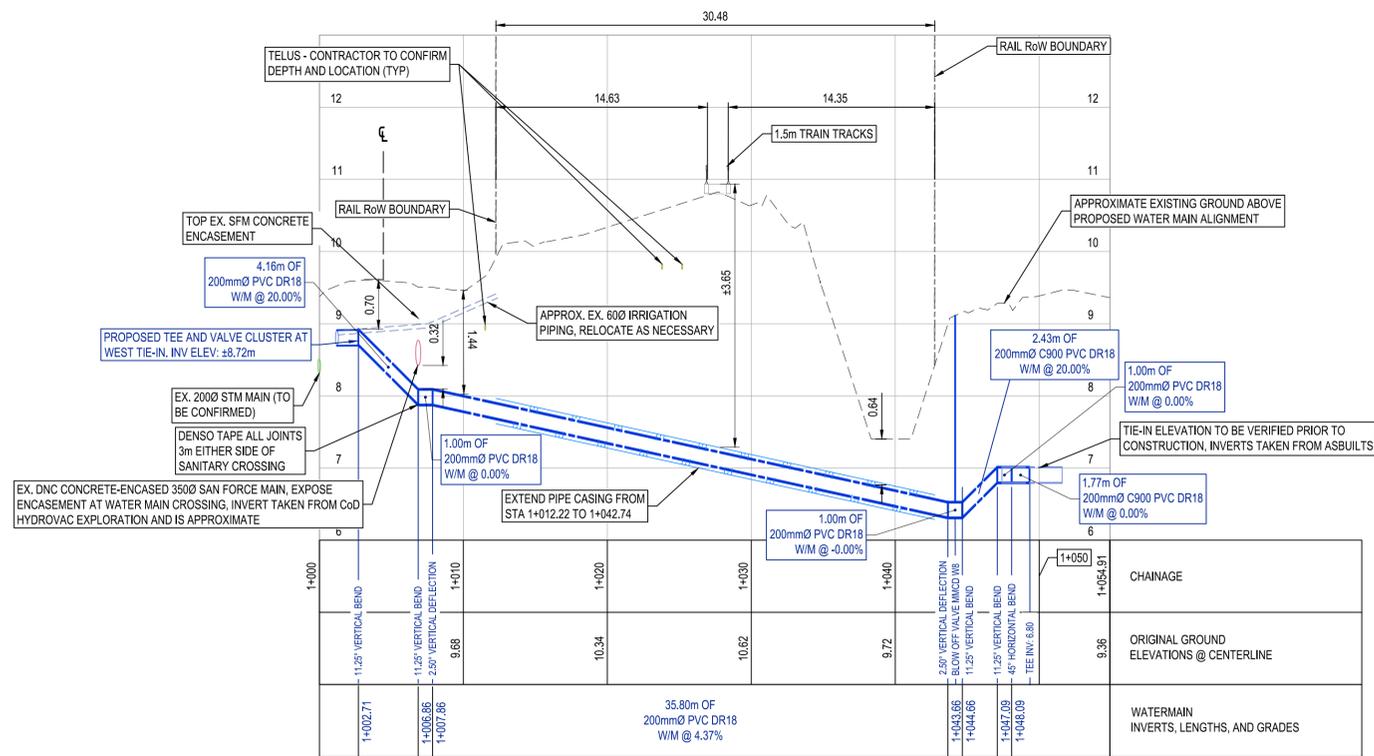
CITY OF DUNCAN
200 CRAIG STREET, DUNCAN BC V9L 3Y2

**COWICHAN SECONDARY WATER MAIN EXTENSION
CANADA AVE TO DUNCAN STREET
WATER MAIN PLAN**

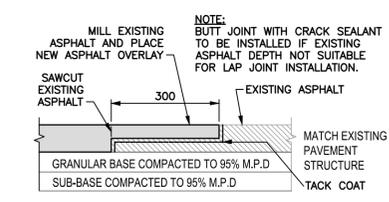
Drawing No.
C02

Project Number
2233-02091-00

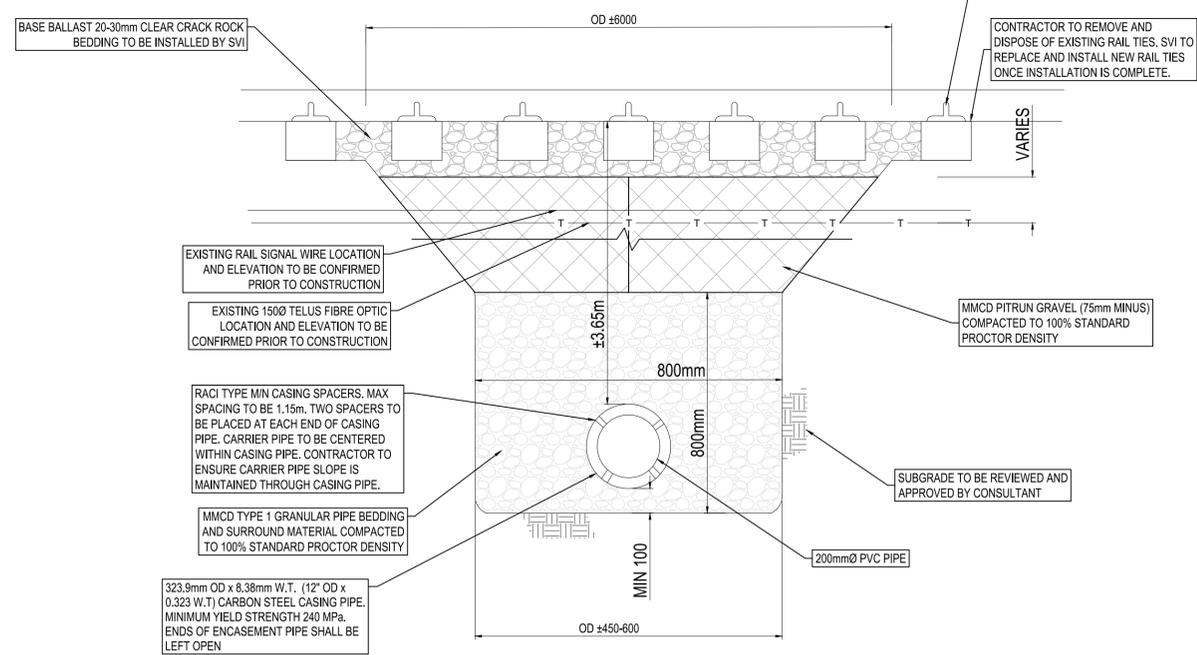
Rev.
PB



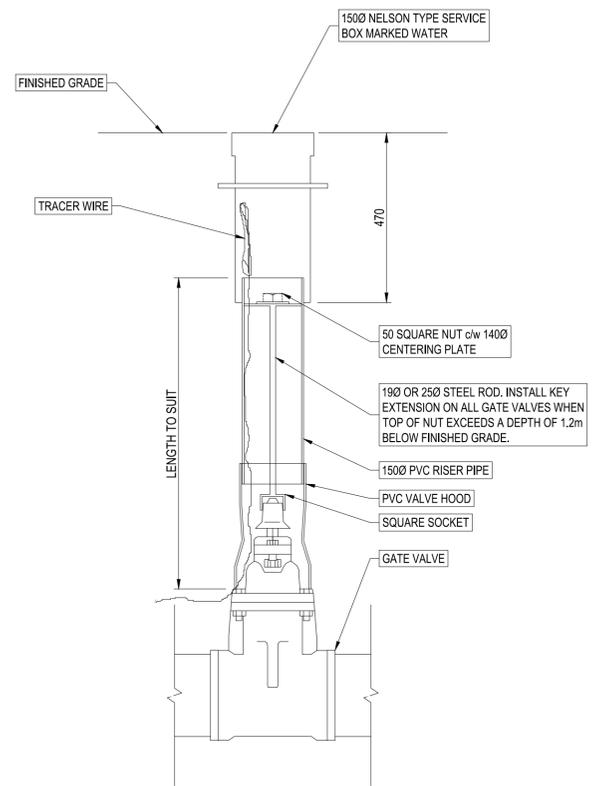
A SITE SECTION
SCALE: H 1:250
V 1:50



1 LAP JOINT DETAIL
SCALE: H NTS



B TYPICAL RAIL CROSSING
SCALE: H NTS
V NTS



2 GATE VALVE INSTALLATION
SCALE: H NTS

- NOTES:**
- THE WATER MAIN CROSSING WILL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE BRITISH COLUMBIA RAILWAY SAFETY CODE PART 3 CONSTRUCTION AND MAINTENANCE.
 - THE WATER MAIN CROSSING IS DESIGNED FOR COOPER'S E-80 TRAIN LOADING WITH IMPACT FOR LOCAL CONDITIONS.
 - THE PROPOSED METHOD OF INSTALLATION IS VIA AN OPEN TRENCH.
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- NOTES:**
- ONLY PRODUCTS APPROVED BY THE CITY ENGINEER WILL BE ACCEPTED FOR INSTALLATION.
 - VALVES LOCATED ON GRAVEL ROADS OR ROAD SHOULDERS REQUIRE A 1.5m X 1.5m ASPHALT APRON.
 - VALVES LOCATED IN UNTRAVELED AREAS REQUIRE A 1.2m X 1.2m CONCRETE APRON.
 - 1500 RISER PIPE SHALL BE DR-18 PVC IN TRAVELED AND UNTRAVELED AREAS.
 - TRACER WIRE TO ENTER RISER AT VALVE BODY AND EXCESS TO BE BUNDLED NEATLY AT WITHIN VALVE BOX IN SUCH A MANNER AS TO NOT INTERFERE WITH VALVE OPERATION OR PROPER LID CLOSURE.
 - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.



Rev	Date	Description	Drawn	Design	App'd
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ORIGINAL DWG SIZE: ANSI D (22" x 34")

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200 CRAIG STREET, DUNCAN BC V9L 3Y2

**COWICHAN SECONDARY WATER MAIN EXTENSION
CANADA AVE TO DUNCAN STREET
PROFILES, SECTIONS & DETAILS**

Drawing No. **C03**

Project Number 2233-02091-00

Rev. **PB**