

## Tender Documents

Resort Municipality of Whistler

January 2024

**2024 Water Main Upgrades  
Contract No. E20502**

**ISL**

*Owner:* Resort Municipality of Whistler  
(NAME OF OWNER)

*Contract:* 2024 Water Main Upgrades  
(TITLE OF CONTRACT)

Reference No. E20502  
(OWNER'S CONTRACT REFERENCE NO.)

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*Owner:* Resort Municipality of Whistler  
(NAME OF OWNER)

*Contract:* 2024 Water Main Upgrades  
(TITLE OF CONTRACT)

Reference No. E20502  
(OWNER'S CONTRACT REFERENCE NO.)

**The Owner invites tenders for:** Project works described below:

*Water:*

- Replacement of approximately 400m of PVC DR18 C900 pipe ranging from 150mmØ to 200mmØ
- 19mm service connection including shut-off
- Tie-in to existing water mains
- Replacement/relocation of 4 - hydrant assemblies
- Replacement of various valves, tees, crosses, bends and reducers

(BRIEF DESCRIPTION OF THE WORK)

**Contract Documents are available during normal business hours at:**

This Tender is being issued electronically through the RMOW website ([www.bcbid.gov.bc.ca](http://www.bcbid.gov.bc.ca)) where any interested party may download the Tender documents directly from the aforementioned website. No registration, tracking or other recording of Tender document holders will be performed by the Resort Municipality of Whistler. All addenda, amendments or further information will be published on the BC Bid website. It is the sole responsibility of the Tenderer to monitor the website regularly to check for updates.

(LIST ADDRESSES FOR DOCUMENT PICKUP)

**The Contract Documents are available for viewing at:**

Resort Municipality of Whistler  
Municipal Hall  
4325 Blackcomb Way  
Whistler, BC V0N 1B4  
(ADDRESS WHERE CONTRACT DOCUMENTS CAN BE VIEWED)

**Tenders are scheduled to close:**

**Tender Closing Time:** 2:00pm local time

**Tender Closing Date:** January 30<sup>th</sup>, 2024

**Address:** Resort Municipality of Whistler  
[engineerbids@whistler.ca](mailto:engineerbids@whistler.ca)  
(E-MAIL WHERE TENDERS MUST BE SUBMITTED ELECTRONICALLY)

**Name of Owner's representative:**

Graham Schulz, P.Eng.  
Contract Administrator  
[gschulz@islengineering.com](mailto:gschulz@islengineering.com)  
604-815-4646  
(PHONE)

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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:* Resort Municipality of Whistler  
(NAME OF OWNER)

*Contract:* 2024 Water Main Upgrades  
(TITLE OF CONTRACT)

Reference No. E20502  
(OWNER'S CONTRACT REFERENCE NO.)

**1.0 Introduction**      1.1 Project works described below:

*Water:*

- Replacement of approximately 400m of PVC DR18 C900 pipe ranging from 150mmØ to 200mmØ
- 19mm service connection including shut-off
- Tie-in to existing water mains
- Replacement/relocation of 4 - hydrant assemblies
- Replacement of various valves, tees, crosses, bends and reducers

(BRIEF DESCRIPTION OF THE WORK)

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

Graham Schulz, P.Eng.

Contract Administrator

(NAME AND POSITION OF INDIVIDUAL WHO WILL ANSWER INQUIRIES)

**Address:** ISL Engineering and Land Services Ltd.

101 – 38026 Second Avenue

Squamish, BC V8B 0C3

**Phone:** 604-815-4646

**Fax:** 604-815-4647

**Email:** [gschulz@islengineering.com](mailto:gschulz@islengineering.com)

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

Chelsey Roberts, AScT

Capital Projects Manager, Infrastructure Services

(NAME AND POSITION OF INDIVIDUAL WHO WILL ANSWER INQUIRIES)

**Address:** Resort Municipality of Whistler

4325 Blackcomb Way

Whistler, BC V0N 1B4

[engineerbids@whistler.ca](mailto:engineerbids@whistler.ca)

(E-MAIL WHERE INQUIRIES MUST BE SUBMITTED ELECTRONICALLY)

**Phone:** 604-905-9462

**Email:** [croberts@whistler.ca](mailto:croberts@whistler.ca)

**2.0 Tender**      2.1 The tender documents which a tenderer should review to prepare a tender

**Documents**

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 electronically to the email address noted below. The email should indicate the Contract Title and Contract No. (See Tender Documents cover page) in the subject line and the proponents full legal name in the body of the email.  
Tenderers should note that the maximum acceptable email size is 8MB. If greater than 8GB the Tenderer should email response in multiple emails with each email indicating the total number of emails being sent. All emails must be received prior to the Submission Deadline.

on or before

**Tender Closing Time:** 2:00pm local time

**Tender Closing Date:** January 30<sup>th</sup>, 2024

at

**Address:** Resort Municipality of Whistler  
[engineerbids@whistler.ca](mailto:engineerbids@whistler.ca)

(ADDRESS WHERE TENDERS MUST BE SUBMITTED)

**Fax:** n/a

3.2 Late tenders will not be accepted or considered.

3.3 Depending on the available funds to complete the work program, the scope of

the work may be decreased due to budget constraints. The *Owner* reserves the right to reduce or remove projects based on available funds.

**4.0 Supplemental Instructions to Tenderers**

**4.1 Completing the Form of Tender**

The submitted Form of Tender must be legible, written in ink, or by typewriter and ALL ITEMS MUST BE BID, unless the Form of Tender specifically permits otherwise, with the price for every item and other extras clearly shown. Each page must be initialed by the Tenderer.

The Tenderer shall be deemed to have satisfied himself as to the sufficiency of his tender for the work and of the unit and lump sum prices stated in the Form of Tender. These unit prices shall cover all his costs including overhead, profit and tax, except for the Goods and Services Tax as explained in the following paragraphs of this section, for carrying out the works and his obligations under this Contract.

This document contains one extra separate set of the Form of Tender. The Contractor shall complete and submit the separate set of the Form of Tender, in accordance with the Instructions to Tenderers and keep the remaining documents for record purposes.

The "Amount" column shall be totaled in groups of items as shown and each total for a group of items shall be carried to the Summary Sheet for insertion in the appropriate place. The totals for all groups of items shall be added to give the Total Tender Price, Goods and Services Tax of 5% shall be calculated separately then added to arrive at the Total Tender Price including GST.

**4.2 Right to Accept or Reject Tenders**

The Owner reserves the right to reject any or all tenders or to accept any tender should it be deemed in the interest of Owner to do so. The lowest tender will not necessarily be accepted.

For each item listed in the Form of Tender, there shall be a reasonable unit price. Under no conditions will an unbalanced tender be considered. The Contract Administrator will be the sole judge of such matters. Any tender considered to be unbalanced shall be rejected by the Owner.

Without limiting the generality of the foregoing, any tender may be disqualified or rejected which is incomplete, obscure or irregular, which had erasures or corrections in the Form of Tender, in which prices are omitted or which has an insufficient or irregular Surety.

**4.3 Award**

The Owner will, following receipt of an acceptable tender, issue in writing a Notice of Award to the successful Tenderer. This notice will be given as soon as possible following the closing of tenders and, unless otherwise agreed to by the Tender, not later than sixty (60) days following the closing of tenders. The following amendments reference Instructions to Tenderers - Part II:



12.1S	Amendment of Tenders	Change “hand, mail or fax” to “hand” and add “An amendment by email or fax will not be accepted.”
15.4S	Award	<p>Insert the following clause:</p> <p>“The lowest or any tender will not necessarily be accepted. Without limiting the generality of the foregoing, any tender which is incomplete, obscure or irregular may be rejected, any tender having erasures or corrections in the Form of Tender: Appendix 1, Schedule of Quantities &amp; Prices may be rejected, any tender in which unit prices are omitted or in which unit prices are obviously unbalanced may be rejected, any tender accompanied by an insufficient bond may be rejected, any tender that has any deletions, alterations, or changes in the <i>Contract Documents</i> as listed in Schedule 1 and 2 of the Agreement may be rejected.”</p>
15.5S		<p>Insert the following clause:</p> <p>In exercising its discretion, the <i>Owner</i> will have regard to the information provided by the tenderer in the Appendices to the Form of Tender as described under IT 5.3, and may also have regard to any information obtained by the <i>Owner</i> in evaluation of such tender information, any information obtained by the <i>Owner</i> from any other person, firm or corporation relating to their previous experience with the tenderer, as well as the <i>Owner’s</i> previous relevant experience, if any, with the tenderer. In exercising this discretion the <i>Owner</i> may consider, but is not limited to, the following criteria in addition to the <i>Tender Price</i>.</p> <p>a) the proven experience of the tenderer, and any listed</p>

- subcontractors to do the *Work*;
- b) the tenderer's ability to complete the *Work* within the *Preliminary Construction Schedule* including timeliness in completing deficiency works;
  - c) the tenderer's ability to work effectively with the *Owner*, its consultants and representatives, and the public;
  - d) the tenderer's ability to manage and do the work effectively using the named superintendent and submitted contractors and subcontractors;
  - e) the tenderer's history on other projects including with respect to quality of work, changes in the work, force account work, cooperation with the *Owner*, and the contract administration costs of the *Owner*;
  - f) the nature of any legal proceedings undertaken by the tenderer, or any officer or director of the tenderer directly (or indirectly through another corporation) against the *Owner* within the last five years of the Invitation to Tender.

In no event shall the *Owner* be liable for the tenderer's costs of preparing a tender.

The award of this Contract is subject to the availability of sufficient funds to complete the work.

Basis of Contract Award & Acceptance

In reviewing tenders and awarding the *Contract* for this project the *Owner* may consider not only the tendered prices but the overall value that the tender represents to the *Owner* based on quality, service and price, and the tenderer's experience and qualifications considered essential by the *Owner* for the satisfactory completion of this type and size of project, including:

- a) Bonding capability.
- b) Financial capability.
- c) Previous completed projects of this type and/or size.
- d) Major projects now being undertaken by the tenderer.
- e) Key office and site personnel to be assigned by the tenderer to this project.
- f) Time for completion of the *Work*.
- g) The past experience of the *Owner* and/or other project owners with respect to the tenderer's performance in completing projects in a timely, efficient and satisfactory manner, the tenderer's methods of doing business and the tenderer's ability to establish and maintain a good working relationship with a project owner.

The *Owner* reserves the right to award the *Contract* based on the above pre-requisites and to reject without further consideration, any tender which in its opinion, does not meet the criteria it considers essential for this project.

The tenderer, by submitting a tender, agrees that it will not make a claim against the *Owner*, for whatever reason, relating to the tender, the tender documents, or the competitive tender process. The tenderer, by submitting a tender, waives any claim or recovery for loss of profits or any prospective damages whatsoever if no *Contract* is entered into with the tenderer.

4.4 Contract Time

The Tenderer may alter the contract time noted in the Form of Tender; however, he shall be responsible for inspection costs incurred for each working day beyond the noted time subject to the Provisions of the General Conditions. The applicable cost will be \$1,500.00 per working day.

4.5 Hours of Work

The hours of work for all project sections must not extend beyond 0700h and 2000h, inclusive, daily. The Contractor shall schedule his work within these hours and will not be permitted to commence work earlier than 0700h and/or work later than 2000h, except as authorized by the Contract Administrator.

No work on Saturdays, Sundays, or Statutory Holidays will be permitted except in case of emergency and then only with written permission of the Contract Administrator and to such extent as he deems necessary.

The Owner reserves the right not to allow any work to be undertaken on Weekends or Statutory Holidays.

4.6 Budget Constraints

Depending on the available funds to complete the capital works program, the scope of work may be decreased due to budget constraints. The Owner reserves the right to reduce or remove projects based on available funds.

4.7 Note that the MMCD (this Contract is based on the **2009 Platinum Edition**) must be purchased separately from:

MMCD  
102, 211 Columbia Street  
Vancouver, BC V6A 2R5

Phone: 604-681-0295  
Fax: 604-681-4545  
Email: [admin@mmcd.net](mailto:admin@mmcd.net)

**4.8 Contractor is to familiarize himself/herself with IT Part II – Section 10.0**

**Add IT Part II – Section 10.3**

**“It shall be the responsibility of the Tenderer to include in his tender sufficient amounts to cover the cost of the work and materials not listed in the Schedule of Quantities and Unit Prices and specifications by either direct mention or implication. All such amounts shall be included in the items to which they pertain most closely in the Schedule of Quantities and Unit Prices.**

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: Resort Municipality of Whistler  
(NAME OF OWNER)

Contract: 2024 Water Main Upgrades  
(TITLE OF CONTRACT)

Reference No. E20502  
(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 July 31, 2024; 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.

3.2 that we understand and agree that the *Owner* is in no way obligated to accept this Tender.

**WE CONFIRM:**

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

Tenderer's Initials \_\_\_\_\_

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.

4.1.3 the *Consent of Security* - Performance, Labour and Materials Payment filled and signed.

**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*:

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;

5.1.2 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:

Tenderer's Initials \_\_\_\_\_

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: \_\_\_\_\_  
Email: \_\_\_\_\_  
Attention: \_\_\_\_\_

This Tender is executed this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

*Contractor:*

\_\_\_\_\_  
(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

\_\_\_\_\_  
(AUTHORIZED SIGNATORY)

\_\_\_\_\_  
(AUTHORIZED SIGNATORY)

Tenderer's Initials \_\_\_\_\_



RMOW 2024 Water Main Upgrades

(CONTRACT#E20502)

**SCHEDULE OF QUANTITIES AND PRICES**

(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.) \*Payment item in Supplementary Specifications.

ITEM NO.	DESCRIPTION	
1.0	TAYLOR WAY	
2.0	LAKE PLACID ROAD	
3.0	SUMMER LANE	
<b>TENDER PRICE</b>		
<b>GST (5%)</b>		
<b>TENDER PRICE INCL GST</b>		

Tenderer's Initials \_\_\_\_\_

ITEM NO.	MMCD REF.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1.0		<b>TAYLOR WAY</b>				
		<b>MMCD 01 55 00 - TRAFFIC CONTROL, VEHICLE ACCESS AND PARKING</b>				
1.01	1.5.2*	Traffic Control	L.S.	1		
		<b>MMCD 31 23 01 - EXCAVATING, TRENCHING, AND BACKFILLING</b>				
1.02	1.10.10*	Overexcavation with offsite disposal - includes backfilling (Optional)	Cu.M.	10		
		<b>MMCD 33 11 01 - WATERWORKS</b>				
1.03	1.8.2*	Pipe - 150mmØ PVC DR18 C900	Lin.M.	20		
1.04	1.8.2*	Pipe - 200mmØ PVC DR18 C900	Lin.M.	80		
1.05	1.8.3*	Tee - 200mmØ x 200mmØ x 150mmØ	Each	1		
1.06	1.8.3*	Gate Valve - 200mmØ	Each	3		
1.07	1.8.3*	Gate Valve - 150mmØ	Each	1		
1.08	1.8.3*	Bends - Horizontal - 150mmØ - 45°	Each	2		
1.09	1.8.3*	Bends - Horizontal - 200mmØ - 90°	Each	1		
1.10	1.8.3*	Cap - 200mmØ	Each	1		
1.11	1.8.14*	Fire hydrant assembly - Including tee, hydrant, 150mmØ lead and 150mmØ gate valve	Each	2		
1.12	1.8.4*	19mmØ service connection to Pump Station	Each	1		
1.13	1.8.4*	19mmØ service connection to Boulevard Irrigation	Each	2		
1.13	1.8.16*	Unknown Utility Crossing (Optional)	Each	1		
		<b>Highway 99 Tie In</b>				
1.14	1.8.13*	Tie-in to existing 200mmØ DI watermain	L.S.	1		
		<b>Residential Tie In</b>				
1.15	1.8.13*	Tie-in to existing 150mmØ DI watermain	L.S.	1		
					<b>Subtotal 1.0</b>	

Tenderer's Initials \_\_\_\_\_

ITEM NO.	MMCD REF.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
<b>2.0</b>	<b>LAKE PLACID ROAD</b>					
		<b>MMCD 01 55 00 - TRAFFIC CONTROL, VEHICLE ACCESS AND PARKING</b>				
<b>2.01</b>	1.5.2*	Traffic Control	L.S.	1		
		<b>MMCD 31 23 01 - EXCAVATING, TRENCHING, AND BACKFILLING</b>				
<b>2.02</b>	1.10.10*	Overexcavation with offsite disposal - includes backfilling <b>(Optional)</b>	Cu.M.	20		
		<b>MMCD 33 11 01 - WATERWORKS</b>				
<b>2.03</b>	1.8.2*	Pipe - 150mmØ PVC DR18 C900	Lin.M.	160		
<b>2.04</b>	1.8.2*	Pipe - 200mmØ PVC DR18 C900	Lin.M.	55		
<b>2.05</b>	1.8.3*	Tee - 200mmØ x 200mmØ x 200mmØ	Each	1		
<b>2.06</b>	1.8.3*	Gate Valve - 200mmØ	Each	3		
<b>2.07</b>	1.8.3*	Gate Valve - 150mmØ	Each	1		
<b>2.08</b>	1.8.3*	Bends - Horizontal - 150mmØ - 5° <b>(Optional)</b>	Each	2		
<b>2.09</b>		Bends - Horizontal - 200mmØ - 5° <b>(Optional)</b>	Each	1		
<b>2.10</b>	1.8.3*	Bends - Horizontal - 200mmØ - 22°	Each	1		
<b>2.11</b>	1.8.3*	Bends - Vertical - 150mmØ - 22°	Each	4		
<b>2.12</b>	1.8.3*	Reducer - 200mmØ x 150mmØ	Each	1		
<b>2.13</b>	1.8.5	Blow-off assembly per RMOW W8	Each	1		
<b>2.14</b>	1.8.14*	Fire hydrant assembly - Including tee, hydrant, 150mmØ lead and 150mmØ gate valve	Each	2		
<b>2.15</b>	1.8.4*	19mm service connection including shut-off	Each	10		
<b>2.16</b>	1.8.16*	Unknown Utility Crossing <b>(Optional)</b>	Each	1		
<b>2.17</b>	1.8.17*	Overland servicing connections from fire hydrant	L.S.	1		
		<b>Northern Tie In</b>				
<b>2.18</b>	1.8.13*	Tie-in to existing 200mmØ DI watermain	L.S.	1		
					<b>Subtotal 2.0</b>	

Tenderer's Initials\_\_\_\_\_

ITEM NO.	MMCD REF.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
3.0		<b>SUMMER LANE</b>				
		<b>MMCD 01 55 00 - TRAFFIC CONTROL, VEHICLE ACCESS AND PARKING</b>				
3.01	1.5.2*	Traffic Control	L.S.	1		
		<b>MMCD 31 23 01 - EXCAVATING, TRENCHING, AND BACKFILLING</b>				
3.02	1.10.10*	Overexcavation with offsite disposal - includes backfilling <b>(Optional)</b>	Cu.M.	8		
		<b>MMCD 33 11 01 - WATERWORKS</b>				
3.03	1.8.2*	Pipe - 150mmØ PVC DR18 C900	Lin.M.	80		
3.04	1.8.3*	Bends - Horizontal - 150mmØ - 22°	Each	2		
3.05	1.8.3*	Reducer - 250mmØ x 150mmØ	Each	1		
3.06	1.8.5	Blow-off assembly per RMOW W8	Each	1		
3.07	1.8.3*	Cap - 150mmØ	Each	1		
3.08	1.8.4*	19mm service connection including shut-off	Each	6		
3.09	1.8.16*	Unknown Utility Crossing <b>(Optional)</b>	Each	1		
3.10	1.8.17*	Overland servicing connections from fire hydrant	Each	1		
		<b>North Tie In</b>				
3.11	1.8.13*	Tie-in to existing 250Ø gate valve	L.S.	1		
					<b>Subtotal 3.0</b>	

Tenderer's Initials \_\_\_\_\_



**APPENDIX 3  
EXPERIENCE OF SUPERINTENDENT**

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

*Owner:* Resort Municipality of Whistler  
(NAME OF OWNER)

*Contract:* 2024 Water Main Upgrades  
(TITLE OF CONTRACT)

Reference No. E20502  
(OWNER'S CONTRACT REFERENCE NO.)

**Name:** \_\_\_\_\_  
**Experience:** \_\_\_\_\_

**Dates:** \_\_\_\_\_  
Project Name: \_\_\_\_\_  
Responsibility: \_\_\_\_\_  
\_\_\_\_\_

References: \_\_\_\_\_  
\_\_\_\_\_

**Dates:** \_\_\_\_\_  
Project Name: \_\_\_\_\_  
Responsibility: \_\_\_\_\_  
\_\_\_\_\_

References: \_\_\_\_\_  
\_\_\_\_\_

**Dates:** \_\_\_\_\_  
Project Name: \_\_\_\_\_  
Responsibility: \_\_\_\_\_  
\_\_\_\_\_

References: \_\_\_\_\_  
\_\_\_\_\_

**Dates:** \_\_\_\_\_  
Project Name: \_\_\_\_\_  
Responsibility: \_\_\_\_\_  
\_\_\_\_\_

References: \_\_\_\_\_  
\_\_\_\_\_

Tenderer's Initials \_\_\_\_\_

**APPENDIX 4  
COMPARABLE WORK EXPERIENCE**

See paragraph 5.3.4 of the Instructions to Tenderers – Part II.

*Owner:* Resort Municipality of Whistler  
(NAME OF OWNER)

*Contract:* 2024 Water Main Upgrades  
(TITLE OF CONTRACT)

Reference No. E20502  
(OWNER'S CONTRACT REFERENCE NO.)

PROJECT	OWNER / CONTACT NAME PHONE and FAX	WORK DESCRIPTION	VALUE (\$)
	Owner / Contract _____ Email _____ Phone ( ) Fax ( )		
	Owner / Contract _____ Email _____ Phone ( ) Fax ( )		
	Owner / Contract _____ Email _____ Phone ( ) Fax ( )		
	Owner / Contract _____ Email _____ Phone ( ) Fax ( )		
	Owner / Contract _____ Email _____ Phone ( ) Fax ( )		
	Owner / Contract _____ Email _____ Phone ( ) Fax ( )		
	Owner / Contract _____ Email _____ Phone ( ) Fax ( )		
	Owner / Contract _____ Email _____ Phone ( ) Fax ( )		
	Owner / Contract _____ Email _____ Phone ( ) Fax ( )		
	Owner / Contract _____ Email _____ Phone ( ) Fax ( )		

Tenderer's Initials \_\_\_\_\_





(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 \_\_\_\_\_, 20\_\_

Owner: Resort Municipality of Whistler  
(NAME OF OWNER)

Contract: 2024 Water Main Upgrades  
(TITLE OF CONTRACT)

Reference No. E20502  
(OWNER'S CONTRACT REFERENCE NO.)

BETWEEN:

The Resort Municipality of Whistler  
(NAME OF OWNER)  
(the "Owner")

AND: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(NAME AND OFFICE ADDRESS OF CONTRACTOR)

(the "Contractor")

The Owner and the Contractor agree as follows:

<b>Article 1</b>	<b>The Work Start / Completion Dates</b>	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>July 31, 2024</u> subject to (INSERT DATE OF SUBSTANTIAL PERFORMANCE ) 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> .

<b>Article 2</b>	<b>Contract Documents</b>	2.1	The " <i>Contract Documents</i> " 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 <i>Contract Documents</i> . All of the <i>Contract Documents</i> shall constitute the entire <i>Contract</i> between the <i>Owner</i> and the <i>Contractor</i> .
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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:

1.1.1 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

1.1.2 all lump sums, if any, as listed in the *Schedule of Quantities and Prices*, for items relating to or incorporated into the *Work*; plus

1.1.3 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 email, or by fax, or by pre-paid registered mail to the addresses as set out below:

The *Owner*:

Resort Municipality of Whistler

Municipal Hall

4325 Blackcomb Way

Whistler BC, V0N 1B4

Fax: n/a

Email: [croberts@whistler.ca](mailto:croberts@whistler.ca)

Attention: Chelsey Roberts

The *Contractor*:

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Attention: \_\_\_\_\_

The *Contract Administrator*:

ISL Engineering and Land Services Ltd.

101, 38026 Second Avenue

Squamish BC, V8B 0C3

Fax: 604-815-4647

Email: [gschulz@islengineering.com](mailto:gschulz@islengineering.com)

Attention: Graham Schulz, P.Eng., Contract Administrator

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

1.1.4 immediately upon delivery, if delivered by hand; or

1.1.5 at the date and time as shown in the recipients inbox, if sent by email; or

1.1.6 immediately upon transmission if sent by fax and received in hard copy; or

1.1.7 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*.

**Article 7    General**

- 6.4     The sender of a notice by fax or email assumes all risk that the fax or email is received.
  
- 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:*

**Resort Municipality of Whistler**

\_\_\_\_\_  
(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 Platinum Edition, 2009. All sections of this publication are included in the *Contract Documents*.

- 8.1 Agreement, including all Schedules;
- 8.2 Supplementary General Conditions (for MMCD Volume II, Platinum Edition, 2009);
- 8.3 General Conditions\*;
- 8.4 Supplementary Specifications (for MMCD Volume II, Platinum Edition, 2009);
- 8.5 Specifications\*;
- 8.6 Supplementary Standard Detail Drawings (if any, insert title and edition date);
- 8.7 Standard Detail Drawings\*;
- 8.8 Executed Form of Tender, including all Appendices;
- 8.9 *Contract Drawings* listed in Schedule 2 to the Agreement, –“List of *Contract Drawings*”;
- 8.10 Instructions to Tenderers - Part I;
- 8.11 Instructions to Tenderers - Part II\*;
- 8.12 The following Addenda:

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(ADDENDA, IF ANY)

- 8.13 MMCD Supplementary Updates:
    - 2022-04-07      2012-08-07
    - 2021-04-23      2012-06-08
    - 2020-08-04      2012-05-30
    - 2016-11-18      2011-08-08
    - 2015-11-02      2011-08-04
    - 2014-09-19      PVC C900 Pipe Specification Clarification
    - 2014-07-15      2010-05-18
    - 2014-02-28      2010-03-25
    - 2013-06-13      2009-11-19
- As provided on website of tender closing date:www.mmcd.net

(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
2024 WATERMAIN UPGRADES - COVER	33516	Dec 19, 2023	2	Dec 19, 2023
2024 WATERMAIN UPGRADES - NOTES	33516-01	Dec 19, 2023	2	Dec 19, 2023
2024 WATERMAIN UPGRADES - DETAILS	33516-02	Dec 19, 2023	2	Dec 19, 2023
2024 WATERMAIN UPGRADES – TAYLOR WAY PHASING PLAN	33516-03	Dec 19, 2023	2	Dec 19, 2023
2024 WATERMAIN UPGRADES – LAKE PLACID ROAD PHASING PLAN	33516-04	Dec 19, 2023	2	Dec 19, 2023
2024 WATERMAIN UPGRADES – WATERMAIN PLAN / PROFILE 0+000 – 0+076	33516-05	Dec 19, 2023	2	Dec 19, 2023
2024 WATERMAIN UPGRADES – WATERMAIN PLAN / PROFILE 1+000 – 1+120	33516-06	Dec 19, 2023	2	Dec 19, 2023
2024 WATERMAIN UPGRADES – WATERMAIN PLAN / PROFILE 1+120 – 1+220	33516-07	Dec 19, 2023	2	Dec 19, 2023
2024 WATERMAIN UPGRADES – WATERMAIN PLAN / PROFILE 2+000 – 2+080	33516-08	Dec 19, 2023	2	Dec 19, 2023

# *Supplementary Specifications*

**SUPPLEMENTARY SPECIFICATIONS INDEX**

**DIVISION 01 – GENERAL REQUIREMENT**

- 01 33 01S Project Record Documents
- 01 54 00S General Requirements
- 01 55 00S Traffic Control, Vehicle Access and Parking
- 01 57 01S Environmental Protection

**DIVISION 31 – EARTHWORKS**

- 31 05 17S Aggregate and Granular Materials
- 31 15 60S Dust Control
- 31 23 01S Excavating, Trenching, and Backfilling

**DIVISION 33 – UTILITIES**

- 33 11 01S Waterworks



1.7            **Recording Actual  
Site Conditions**

.2S

.1     After “appurtenances” insert:

“including exact location of wyes along sanitary sewers and elevations of service connections at property lines”

.5S

***(add clause 1.7.5 as follows)***

The Contractor will keep one set of drawings on-site that will be marked up in red ink identifying all work completed and any changes made during the construction. This copy will be turned over to the Contract Administrator within 5 days of completion of all works.

The Contractor shall be responsible for the detailed setting out of the work and recording all data required to compile record drawings.

Payment for recording data for record drawings shall be considered incidental to the work performed and no additional payment will be made to the Contractor.

**END OF SECTION**

1.0	<b>Master Municipal Construction Documents</b>	.1S	The Supplementary Specifications contained herein must be read in conjunction with the Master Municipal Specifications contained in the Master Municipal Construction Documents, Volume II ( <b>Platinum Edition 2009</b> ) as identified in the Instructions to Tender article 2.2.
2.0	<b>Format and Numbering System</b>	.1S	The Supplementary Contract Specifications follow the same format and numbering system as the Master Municipal Specifications, but is differentiated from it by having the letter "S" or a "*" placed after the section number.
3.0	<b>Construction Survey Layout</b>	.1S	The Contractor shall be responsible for the detailed setting out of the work.
		.2S	Payment for survey layout shall be considered incidental to the work performed and no additional payment will be made to the contractor.
		.3S	All monuments, including but not limited to brass caps, iron pins, lead plugs, rock posts and wooden witness posts, disturbed by the Contractor shall be re-established by Registered British Columbia Land Surveyors, at the Contractor's cost, and the appropriate authorities advised of the revised elevation and coordinates. Contractors are advised that the Contract Administrator will monitor construction to ensure that disturbed monuments are replaced at the Contractor's expense prior to completion of the Contract.
4.0	<b>Description of Work</b>	.1S	<p>Project works described below:</p> <p><i>Water:</i></p> <ul style="list-style-type: none"> <li>• Replacement of approximately 400m of PVC DR18 C900 pipe ranging from 150mmØ to 200mmØ</li> <li>• 19mm service connection including shut-off</li> <li>• Tie-in to existing water mains</li> <li>• Replacement/relocation of 4 - hydrant assemblies</li> <li>• Replacement of various valves, tees, crosses, bends and reducers</li> </ul>
5.0	<b>Safety Procedures</b>	.1S	<p>Entry Procedure for Confined Space: This procedure shall be used as a guideline only. The Contractor shall be responsible for familiarization with this and all WCB requirements.</p> <p>There must a minimum of two men: - One man always on the surface, and - One man in well. Man lift/retrieval devices must be used.</p>

1. Open manhole lids, turn on blower/fan to ventilate wet well for approximately two to three minutes.
  - a) Leave fan running until job is completed.
  - b) Manhole must be circulated by a blower fan to allow fresh air into the confined space. Check levels on gas detector by lowering into well. If levels are not safe, portable fans must be used.

2. Turn gas detector "ON":
  - Oxygen levels should read between 20.0 and 21.0
  - H2S level should read 000
  - LEL levels should read 000

Note: - readings shall be taken before entering well  
- record gas levels on "Confined Entry Space" forms and hand in daily.

3.
  - a) lower gas detector by rope/cord into lower portion of wet well where work shall be performed.
  - b) pull detector to surface and check gas levels. If levels are safe, entry into well is permitted.

4. Gas detector MUST be left "ON" and brought down into well with person(s) entering.

5. Check levels on gas detector when in well. Proceed with watching/repairing of station.

6. If at any time the gas detector goes "OFF" (ringing). EXIT WET WELL IMMEDIATELY and check levels.

<b>6.0</b>	<b>Safety - Work Near Overhead and Underground Power Lines or Other Utilities</b>	.1S	<p>All works shall be in strict compliance with WorkSafe BC Industrial and Safety Regulations Section 24 when working near or under any overhead power lines.</p> <p>The Contractor must be fully aware of the danger to workers and shall take all necessary safety precautions when working near to existing utilities, such as high pressure gas, water line and BC Hydro lines.</p>
<b>7.0</b>	<b>Dust and Mud Control</b>	.1S	<p>The Contractor shall make every reasonable effort to minimize the creation of dust or mud by his operations. Special measures may include, but shall not be limited to, frequent sweeping of existing roads used as haul routes; control of traffic speeds; frequent watering of dirt access and egress routes; watering of the construction areas; re-routing of traffic; and modification of construction procedures; and cleaning of off-site haul routes on a regular basis as required by the Municipality. Refer to MMCD Section 31 15 60, Dust Control, for</p>

General, Products and Execution.

Payment for the above items will be considered to be incidental to the work performed and no additional payment will be made to the Contractor.

- |             |   |     |  |
|-------------|---|-----|--|
| <b>8.0</b>  | <b>Materials Testing</b>                          | .1S | <p>Materials and density Quality Assurance (QA) testing will be carried out as directed by the Contract Administrator. Initial QA testing carried out at the Contract Administrator's direction will be paid for by the Municipality. Where initial tests fail and subsequent QA testing is deemed necessary by the Contract Administrator, the cost of the subsequent testing shall be the responsibility of the Contractor.</p> <p>If the Contractor requests QA testing and upon arrival of the Municipality appointed testing agency, the contractor is not ready to conduct testing, any cost associated with the delay of testing i.e. standby or return trips will revert back to the contractor.</p> <p>The Contractor will perform Quality Control inspections at the Contractors discretion to ensure that the requirements of the Contract are being met.</p> |
| <b>9.0</b>  | <b>Grassed Areas Disturbed to be Hydro-seeded</b> | .1S | <p>All areas disturbed by the construction shall be reinstated with 150mm compacted depth topsoil and hydro-seeded.</p> <p>No additional payment will be made to the Contractor for this work.</p>   |
| <b>10.0</b> | <b>Curb, Sidewalk and Driveway Restoration</b>    | .1S | <p>Existing curbs, sidewalks and driveways shall be reconstructed and reinstated to ensure proper drainage and appearance, to match existing finish, and in accordance with the Standard Drawings. All concrete curbs, pavers, sidewalks and driveways shall be 32 MPa strength concrete. Concrete curb and gutter to be reinstated between control joints. Concrete sidewalk and driveways to be reinstated to nearest panel joint for one complete panel.</p> <p>No additional payment will be made to the Contractor for this work.</p>   |

- 11.0 Interfering Services** .1
- .1S 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.
- .2S When other utility structures are encountered, the Contractor shall support them to the satisfaction of the Contract Administrator so as to protect them from damage. The Contractor shall, at his own expense, at once repair and make good any damage which may occur to any watermains, service or utility pipes, or facilities, or to any electrical conductor or telephone facility or to any sidewalk, crosswalk as a result of this operation. The Contractor is also wholly responsible for all existing above ground structures (including any supporting sub-grade structures such as concrete bases or pads) within the area of construction including supporting those structures as necessary to permit the completion of the Works.
- .3S It is the Contractor's responsibility wherever necessary to determine location of existing pipes, valves, 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.
- .4S Where gas mains and/or service lines exist in the vicinity of the proposed work, the Contractor shall consult the officers of the gas company prior to commencing operations and arrange for a mutually agreeable procedure for their protection.
- .5S When existing poles conflict with the proposed works, the Contractor shall consult MOTI, B.C. Hydro and Telus prior to commencing operations and advise the Contract Administrator with the works to be undertaken.
- Costs associated with pole holding / support are incidental to the work.**
- .6S The Contractor shall respond and determine the cause of all service interruption and/or quality issues within the area of work. No additional payment will be made to the Contractor for this work.
- 12.0 Coordination with Other Contractors** .1S
- The Contractor will be responsible for all coordination with all utility providers including but not limited to MOTI, BC Hydro, TELUS, Fortis, and BC Transit. The Contractor shall inform any utility/service provider of any

planned disruption/adjustment to usual service in writing and receive written agreement of such disruption or adjustment prior to these disruptions or adjustments.

The Contractor is to coordinate with any other ongoing construction activities that may be proceeding at the same time and in the same general vicinity of this project. No additional payment will be made for any expenses or delays incurred as a result of these concurrent construction activities.

**13.0 Environmental Protection**

- .1S The Contractor is advised that he is responsible for all necessary measures required to prevent the transportation of any silt or other deleterious material from the site into any fish bearing watercourses or their tributaries. All requirements of the Ministry of Environment, Lands and Parks, Fish and Wildlife Branch and Fisheries & Oceans Canada, with respect to air, earth and water pollution, must be strictly adhered to.

**Refer to Section 01 57 01S Environmental Protection for further information. If there are any discrepancies between this section and Section 01 57 01S, then the following governing hierarchy will be used:**

- (1) Section 01 57 01S;**
- (2) Section 01 54 00S Item 13.0.**

**14.0 Metric Units of Measurement**

- .1S All the units of measurement for payment in this Contract are metric units as modified by the internationally agreed S.I. Units (System International).

However, as the construction industry is not entirely converted to S.I. Units, some conversions will need to be made for purpose of month end and Final Progress Estimates.

The following conversion factors will be used in this Contract:

1 ton	=	0.907 tonnes
1 cubic yard	=	0.765 cubic metres
1 foot	=	0.3048 metres

15.0	<b>Disposal Site</b>	.1S	<p>The Contractor is responsible for the provision of all off-site disposal sites for materials that are to be removed from the construction sites in this Contract. The Contractor is responsible for all fees, permits and costs associated with the off-site disposal of materials.</p> <p>The Resort Municipality of Whistler will not accept any material at municipal lands or facilities for this project.</p>
16.0	<b>Permits from Outside Agencies</b>	.1S	<p>The Contractor is responsible to obtain and pay for <u>all permits</u> required from outside agencies including but not limited to MOTI, BC Hydro, and DFO.</p>
17.0	<b>Temporary Drainage Facilities</b>	.1S	<p>All required temporary drainage facilities, measures for control of ground water during construction and restoration of temporary drainage ditches after construction shall be considered as incidental to work being performed under this Contract and no separate payment will be made for this work.</p>
18.0	<b>Notice to Residents</b>	.1S	<p>Deliver a letter written by the Resort Municipality of Whistler to all properties which may be affected by construction not less than one week (5 days) and not more than two weeks (10 days) prior to construction.</p> <p>Notify residents directly affected by the work 72 hours in advance of commencement of construction.</p> <p>Cost of notifying residents of ensuing construction and delivery of letters is incidental to the Contract.</p>
19.0	<b>Weight Restriction</b>	.1S	<p>None unless otherwise required by agency permits.</p>
20.0	<b>Foreign Utility Adjustments</b>	.1S	<p>The Contractor will be responsible for adjusting all foreign utilities, unless noted otherwise on the drawings. All adjustments to foreign utilities must be completed to the satisfaction of the Utility Owner. The Contractor should note that certain Utility Owners may decide, after tender closing, to complete their own adjustments if personnel are available. If the Utility Owner decides to complete their own adjustments, the Contractor will not be compensated for these utility adjustments.</p>
21.0	<b>Material Supply</b>	.1S	<p>The Municipality will not supply materials.</p>
22.0	<b>Site offices</b>	.1S	<p><b><i>(amend clause 1.12.1 as follows)</i></b></p> <p>A Contract Administrator's temporary office will not be required for this project.</p>

<b>23.0</b>	<b>Construction Signage</b>	.1S	<b><i>(amend clause 1.13.1 as follows)</i></b>  Construction project signs will be required for this project at a minimum at either end of each site.  No additional payment will be made to the contractor to supply, erect and remove these signs.
<b>24.0</b>	<b>Optional Work</b>	.1S	All items included in the Schedule of Quantities and Prices which shall be stated to be Optional Work shall be used only as directed and at the sole discretion of the Contract Administrator. All or any unused portion of these sums shall revert to the Municipality and shall be deducted from the Contract Price before final payment is made.
<b>25.0</b>	<b>Construction Sequencing</b>	.1S	The Contractor is required to submit a written detailed construction sequencing and tie-in plan and submit it to the Contract Administrator for review a minimum of two weeks prior to any anticipated construction works affecting stakeholders for approval. At a minimum the construction sequencing and tie-in procedure plan is to include the following:  <i>Overall Construction Sequencing</i> <ul style="list-style-type: none"><li>• Diagram of overall construction sequencing to the match the detailed Construction Schedule</li><li>• Expected dates of each portion of the works</li><li>• Expected dates and areas of impact for significant construction tasks such as hot taps and line stop installation, bypass construction and implementation, removal and reinstatement of manhole and piping etc.</li><li>• Breakdown of all tasks in order to perform the work</li><li>• List of materials to perform the installation</li><li>• Timeline showing each task and expected start/completion time</li><li>• Number of crew and equipment working on the tie in and which crew member and piece of equipment is assigned to each task.</li><li>• “point of no return” tie-in abandonment time at which point the tie-in works will be abandoned and the contingency plan will begin</li><li>• Sketch including staging areas and traffic management through the various phases of the Works including pedestrian/cyclist routing.</li></ul>



No tie-in is to take place until the Contract Administrator and Resort Municipality of Whistler representative approve the tie in plans. Hand sketches may only be accepted if they are clearly legible, to scale and reproducible.

**26.0 Hours of Work**

.1S The hours of work for all project sections must not extend beyond 0700h and 2000h, inclusive, daily. The Contractor shall schedule his work within these hours and will not be permitted to commence work earlier than 0700h and/or work later than 2000h, except as authorized by the Contract Administrator.

No work on Saturdays, Sundays, or Statutory Holidays will be permitted except in case of emergency and then only with written permission of the Contract Administrator and to such extent as he deems necessary.

The Owner reserves the right not to allow any work to be undertaken on Weekends or Statutory Holidays.

**27.0 Business License**

.1S The Contractor shall have or otherwise obtain a current business license in the Resort Municipality of Whistler prior to commencement of the Works.

**END OF SECTION**

1.0	General	.3S	<p><b><i>(delete 1.0.3 and replace with)</i></b></p> <p>“Unless alternative arrangements satisfactory to those adversely affected have been made by the Contractor, pedestrian and vehicular access to affected properties shall be maintained at all times.</p>
1.2	Temporary Access Roads	.1S	<p><b><i>(delete 1.2.1 and replace with)</i></b></p> <p>"Do not close any lanes of road or highway without approval of the Owner. Before re-routing traffic erect suitable signs and devices as approved by the Contract Administrator. Provide sufficient cold mix to ensure a smooth riding surface during work."</p>
1.5	Payment	.2S	<p><b><i>(add new clause 1.5.2)</i></b></p> <p>The Contractor is responsible for all temporary traffic control on the streets within this contract. The Contractor will meet all the standards and conditions of the Resort Municipality of Whistler, and the Ministry of Transportation and Highways Traffic Control Manual for Work on Roadways.</p> <p>At a minimum for all roadways single lane alternating traffic shall be maintained at all times unless otherwise directed by the Contract Administrator.</p> <p>The Municipality will not control or direct the traffic control or direct the traffic control activities of the Contractor, but may require an immediate stop to any work where, in the Contract Administrator’s opinion, the provided traffic control does not meet the requirements of the Agreement.</p> <p>The Contractor will prepare and submit a written Traffic Management Plan to the Resort Municipality of Whistler a minimum of ten (10) working days prior to commencement of any work affecting traffic. The Contractor will update and resubmit that plan for review as necessary for acceptance by the Municipality.</p> <p>Measurement of payment will be on a lump sum basis as shown in the schedule of quantities and prices.</p>

**END OF SECTION**

- 1.2 Temporary Erosion and Sediment Controls .1S ***(delete 1.2.1.1 and replace with)***
- Drainage, Erosion and Sediment Control*
- “Properly drain all portions of the site. Protect the site and the watercourses to which it drains, directly or indirectly, against erosion and siltation in accordance with the Sediment Control Plan approved by the Owner during construction and until the maintenance period is completed. Ensure no silt, gravel, debris or other deleterious substance resulting from construction activity discharges into existing drainage systems or watercourses or onto highways or adjacent property. The Contractor is responsible for all damage that may be caused by water backing up or flowing over, through, from or along any part of the work or otherwise resulting from his operations.
- “Keep existing culverts, drains, ditches and watercourses affected by the work clear of excavated material at all times. When it is necessary to remove or alter an existing drainage structure, provide suitable alternative measures for handling the drainage. Adequately support culverts and drainpipes across trenches to prevent displacement and interference with the proper flow of water due to trench settlement.
- “Sweep streets, and clean catch basins, manhole sumps, detention tanks, and maintain siltation controls as often as the Contract Administrator deems necessary.
- “Follow all Federal and Provincial regulations and guidelines respecting protection of fish, fish habitat, and watercourses.
- “The Contract Administrator is responsible for monitoring ongoing compliance with this section.”
- 1.4 Environmental Protection .3 ***(add clause 1.4.3.5S as follows)***
- Immediately contain and clean up any leaks and spills of prohibited materials on the job site.
- (add clause 1.4.3.6S as follows)***
- Ensure that a well-stocked spill kit is on-site at all times and that the Contractor’s employees are familiar with appropriate spill response techniques.

***(add clause 1.4.3.7S as follows)***

Immediately notify the Contract Administrator and the Director of any leaks or spills of prohibited materials that occur on the job site.

***(add clause 1.4.3.8S as follows)***

Ensure that any fuel stored on-site is located at least 15 metres from the nearest stream, and is placed within a bermed and lined area, in order to prevent leaks or spills into the environment

***(add clause 1.4.3.9S as follows)***

Ensure that no equipment fueling or servicing is conducted within 15 metres of a stream.”

1.9S

**Archaeological /  
Historical Resources**

***(add)***

Immediately cease work and inform the Contract Administrator and the Director, if any archaeological or historical resources are encountered during construction. Leave these resources in-place and do not disturb them in any way.”

**END OF SECTION**

2.7 Granular Pipe Bedding  
and Surround Material

.1S *(delete 2.7.1 and replace with)*

"Crushed or graded gravels to conform to the following gradations"

and replace with:

"Crushed or graded gravel to conform to Type 1 gradation as specified on chart in clause 2.7.1."

**END OF SECTION**

2.1            **Materials**

.7S    *(add)*

"Resin and Water: to Contract Administrator's approval."

.8S    *(add)*

"All Dust Control materials to be environmentally friendly."

**END OF SECTION**

1.10	<b>Measurement of Payment</b>	.9S	<p><b>(add new clause 1.10.9)</b></p> <p>Payment for over-excavation including backfilling with 19mm base gravel and compaction to 95% modified proctor density will only be made for over excavation authorized by the Contract Administrator. Payment will be based on volume (Lx D x Max Width)</p>
3.6	<b>Surface Restoration</b>	.6	<p><b>(replace clause 3.6.6.2)</b></p> <p>.2S At a minimum, patch all other roads on the Friday of each week to provide asphalt surface for weekend traffic. At all other times, the Contractor is to maintain a smooth granular running surface free of rutting, potholes or other irregularities. All asphalt patches shall be to finished surface.</p>
		.11S	<p><b>(add new clause 3.6.11)</b></p> <p><i>Grassed Areas Disturbed to be Hydro-Seeded</i> All areas disturbed by the construction shall be reinstated with 150mm compacted depth topsoil and hydro-seeded. No additional payment will be made to the Contractor for this work.</p>
		.12S	<p><b>(add new clause 3.6.12)</b></p> <p>Existing curbs, sidewalks and driveways including pavers shall be reconstructed and reinstated to ensure proper drainage and appearance, to match existing finish, and in accordance with the Standard drawings. All concrete curbs, sidewalks and driveways shall be 32 MPa strength concrete. Concrete sidewalk to be reinstated to nearest panel joint for one complete panel. No additional payment will be made to the Contractor for this work.</p>

**END OF SECTION**

1.8 Measurement and  
Payment

.2S *(replace clause 1.8.2 with the following)*

Payment for watermain and service connection to include saw cutting pavement, concrete, trench excavation, disposal of surplus excavated material, bedding, supply and installation of all pipe, bolts, gaskets and tie rods, restraints, all wire and fittings relating to the tracing system, rigid insulation if specified, wrapping with Denso product, imported or native backfill as shown on the Drawings, cleaning, pressure and leakage testing, flushing, disinfection, all surface restoration as specified under Section 31 23 01 – Excavating Trenching and Backfilling – 3.6, including permanent asphalt and concrete restoration, and all other work and materials necessary to complete the installation as shown on the Contract Drawings and specified under this section.

Measurement for watermain will be made along centerline of main through valves and fittings, with no deduction for length of valves or fittings, over the surface after work has been completed.

.3S *(replace clause 1.8.3 with the following)*

Payment for inline gate valves or butterfly valves including valve boxes; and for fittings (crosses, tees, bends, reducers, Robar couplers, blind flanges, caps etc.) will be made for items identified on Contract Drawings and installed as part of watermain as described under section 1.8.2S of this section. All valves to include 1.0m asphalt or concrete (50mm) surround. Thrust restraints and thrust blocks required for valves and fittings are included in the price of the valve or fitting. No separate payment will be made for reverse acting thrust blocks and tie-rods, the cost of which is included in the valve and fitting items.

All buried fittings and bolted connections or other iron works forming part of the water distribution system shall be protected from corrosion by wrapping the components with Denso (paste, mastic and tape) in accordance with manufacturer's specifications.

Measurement will be for each respective item installed without deduction for length of pipe measured for payment under 1.8.1 & 1.8.2 of this section. Payment for lockblock thrustblocks, thrustblocks and reverse thrustblocks if required are considered incidental to the fittings installed under this section.

.4S *(replace clause 1.8.4 with the following)*

Payment for service connections includes mainline saddles



where specified, corporation stops, curb stops, service pipes and all related fittings and appurtenances specified and/or shown on RMOW Standard Detail Drawings W2a and water service and meter details shown on sheet 02 of contract drawings as applicable. Payment includes all applicable work described in 1.8.2 of this section.

Payment includes all efforts to locate, expose and tie-in to existing service where specified in the contract drawings and all related fittings and appurtenances. Payment includes locating existing services & meter boxes (if applicable) where required.

**.5S (change clause 1.8.5 with the following)**

All references to MMCD Standard Drawings shall be replaced with the equivalent RMOW Standard Drawings where equivalent standard drawings exist.

**.13S (add to 33 11 01-1.8.13)**

Tie in to include, but not limited to supply and installation of all, couplers, thrust blocks, rods and any other fittings as shown on the contract drawings and all work associated with installing the tie in.

Tie also to include all other works associated with completing and commissioning a connection to the existing Municipal water system

Payment for abandoning existing watermains including valves, and caps as shown on the contract drawings along with permanent asphalt restoration is to be considered incidental to the contract price. No additional payment will be made to the Contractor for this work.

Payment will be made on a lump sum basis as specified in the Schedule of Quantities.

**.14S (replace clause 33 11 01-1.5.14S with the following)**

Payment for hydrant assembly includes hydrant body, risers, mainline tee, lateral connections from mainline tee off watermain to hydrant, integral isolation gate valve with adjustable valve box, precast barrel, snow marker and all other incidental work as shown on RMOW Standard Detail Drawing W4. (Mainline valve payment under different section).

Where the Works include removal of an existing fire hydrant, the old hydrant is to be delivered to the Owner's Public Works Yard.

.16S **(add clause 33 11 01-1.8.16)**

Utilities that are encountered that are not shown on the contract drawings and are deemed by the Contract Administrator to be preventing the watermain from continuing along the proposed alignment are to be crossed as per the Utility Crossing Detail shown on sheet 02 of the Contract Drawings. Payment will be made per utility crossed and include all that is described in the utility crossing detail regardless of depth, width and type of utility encountered.

.17S **(add clause 33 11 01-1.8.17)**

Payment for maintaining temporary services shall include the supply, necessary testing (such as pre-chlorinating)/certification/permitting prior to installation, installation and maintenance such that no existing users of the Municipal water system shall have disruption of their service with the exception of a four (4) hour maximum disruption period during the initial set up and decommission Works associated with service transfers.

Contractor shall supply temporary services of sufficient size and arrangement to provide adequate pressures to existing users. Should connection points to residents require adjustment or modification in order to achieve a workable temporary supply, the Contractor shall do so and shall return the connection point back to its original arrangement. These efforts are considered incidental to this pay item.

Works under this pay item include any required ramping, trenching, supply and installation of carrier pipes (if required) and all removals and restoration efforts required during the decommissioning and removal of the temporary system.

**2.5 Service Connections,  
Pipe, Joints and  
Fittings**

.1S **(replace clause 2.5.1 with the following)**

Pipe diameter of 19 mm to 50 mm to be Gold Stripe Polyethylene service tubing Series 160, CSA 137.3.

**3.6 Pipe Installation**

.15S **(add new clause 3.6.15)**

Where watermain is shown for installation shallower than 1.8m, the Contractor shall supply and install insulation as per Resort Municipality of Whistler specifications.

Minimum Insulation thickness to be 100mm.

Measurement and payment for this item will be incidental to payment for work described in in other sections.

3.17      **General Procedure  
Flushing, Testing and  
Disinfection**

.2S      *(replace clause 3.17.2 with the following)*

Perform all tests in the presence of Contract Administrator and Municipal representative. Notify Contract Administrator 48 h in advance of proposed test.

.7S      *(add new clause 3.17.7)*

The Contractor is required to submit a written testing and flushing procedure for approval from the Municipal and Contract Administrator. The procedure must be submitted a minimum of two weeks prior to performing pressure and chlorination testing. At a minimum the testing procedure is to include the following.

- Water source locations
- Water discharge points
- Expected testing dates for pressure testing, initial chlorination, chlorine residual testing, flushing and collection of water samples for laboratory testing.
- Segments of watermain to be tested
- Chlorination method
- Brand and model of chlorine analyzer unit (**test strips are not considered and acceptable method of determining chlorine concentration**)
- Bacterial testing laboratory used

The preparation and submission of this procedure is to be incidental to testing performed and no additional payment will be made for this work.

The RMOW will not assist with any tests related to the watermain including pressure, chlorination (injection & residual) and bacteriological.

.8S      *(add new clause 3.17.8)*

Prior to the initial use of the temporary system it must undergo disinfection and bacteriological testing per AWWA C651. Subsequent uses of the temporary system require only disinfection and flushing per AWWA C651.

The Contractor shall show diligence in the protection of the temporary system while relocating it to different sections of the site. Additional Bacteriological testing may be required at the discretion of the Contract Administrator or RMOW.

The testing of the temporary system shall be incidental to the contract and no additional payment will be made to the Contractor for this work.

3.23 Connections to Existing Mains

.1S *(replace clause 3.23.1 with the following)*

Watermain tie-ins will only be completed after hydrostatic testing, disinfecting per AWWA C651, flushing, sampled **(C651-14, Option A with the initial sample to be taken no sooner than 24hrs after initial filling)** and passed. All materials except those identified in the schedule of quantities are to be included in the lump sum pay item. Tie-ins are to be witnessed by the Resort Municipality of Whistler approved representative.

.2S *(add new clause 3.23.2)*

Provide temporary service while existing service is interrupted.

The Contractor is required to submit a written detailed construction sequencing and tie in plan, and submit it to the Contract Administrator for review **a minimum of two weeks prior to any anticipated construction works** affecting any users of the municipal water system for approval. At a minimum the construction sequencing and tie in procedure plan is to include the following for each roadway and/or segment of pipe that will affect existing users of the municipal water system. It is expected that the plan will provide details of each stage of construction. For each stage of construction, the plan shall address each of the following items:

*Overall Construction Sequencing*

- Diagram of overall construction sequencing to the match the detailed Construction Schedule

*Tie In Procedure*

- Expected tie in dates
- Explanation **and** diagrammatic illustration of specific watermains to be shut down and specifically identify valves to be exercised.
- Expected duration of shut down
- Breakdown of all tasks in order to perform the work
- List of materials to perform the installation
- Timeline showing each task and expected start/completion time
- Number of crew and equipment working on the tie in and which crew member and piece of equipment is assigned to each task.
- “point of no return” tie-in abandonment time at which point the tie in works will be abandoned and the contingency plan will begin
- Specific contingency plan to provide water to shut down areas should the initial tie in not be completed by the point of no return time.

- Sketch including staging areas and traffic management through the various phases of the tie in.

No tie in is to take place until the Contract Administrator and Resort Municipality of Whistler representative approve the tie in plans. Hand sketches may only be accepted if they are clearly legible, to scale and reproducible.

**For clarity, the above description applies to the entirety of the 2024 Water Main Upgrades.**

.3S *(add new clause 3.23.3)*

Contractor shall be responsible for the costs for the Owner to flush and purge all air from the existing mains and service in the area affected by the service interruption.

**END OF SECTION**

Owner: Resort Municipality of Whistler  
(NAME OF OWNER)

Contract: 2024 Water Main Upgrades  
(TITLE OF CONTRACT)

Reference No. E20502  
(OWNER'S CONTRACT REFERENCE NO.)

General Conditions #	Paragraph #	Title	Action
3	.2	Authority	Delete GC3.2.2 and replace with:  "Nothing contained in the <i>Contract Documents</i> shall create any contractual relationship or other relationship recognized by law between the <i>Contract Administrator</i> and the <i>Contractor</i> , subcontractors, suppliers, or their agents, employees or other persons performing any of the <i>Work</i> ."
3	3	Contract Administration	Delete GC3.3.5 and replace with:  "The Owner shall provide the Contractor with three survey control points at the Place of the Work, and relative coordinates of the major portions of the Work. The Contract Administrator may conduct survey checks of the Work at his discretion. The Contractor shall provide a survey assistant, at the Contract Administrators request, for such survey checks. The Contractor shall protect and preserve such survey control points for so long as they are required for the Work and if any of them must be replaced because they are disturbed or destroyed by the Contractor, then the Contractor shall pay the costs of such replacement."
4.3	.1	Protection of Work, Property and the Public	Add:  Within the terms of this clause, the <i>Contractor</i> is responsible for the protection of existing power and telephone poles during the term of the <i>Contract</i> .
	.4		Delete GC 4.3.4 and replace with the following:  Before commencing any <i>Work</i> at the <i>Place of the Work</i> , the <i>Contractor</i> shall be responsible to locate in three dimensions all underground utilities and structures indicated on the <i>Contract Documents</i> as being at the <i>Place of the Work</i> . The <i>Contractor</i> shall also be responsible to consult with all utility corporations that provide electricity, communication, gas or other utility services in the area of the <i>Place of the Work</i> , to locate in three dimensions all underground utilities for which they have records. The <i>Contractor</i> shall also locate in three dimensions any other utilities or underground structures that are reasonably apparent in an inspection of the <i>Place of the Work</i> .

			The <i>Contractor</i> shall contact BC One Call at least 48 hours prior to excavating to advise of the Work.
4.5	.1	Errors, Inconsistencies or Omissions in the <i>Contract Documents</i>	GC4.5.1 are amended:  (i) by deleting “or omission” wherever it appears and substituting “omission or any incorrect, inaccurate or misrepresented fact”, and  (ii) by deleting “or omissions” wherever it appears and substituting “omissions or incorrect, inaccurate or misrepresented facts”.
	.4		Add GC4.5.4:  “If Additional Instructions are required to address any error, inconsistency, omission or incorrect, inaccurate or misrepresented facts, the Contractor’s inefficiencies or mismanagement, if any, shall not be taken into account when determining any impact of those Additional Instructions on the Contract Price or the Contract Time.”
4.6	.2	Construction Schedule	GC4.6.2 is amended by deleting “monthly” and substituting “monthly or within a shorter time period specified in the <i>Contract Documents</i> ”.
4.12	.5	Tests and Inspections	GC4.12.2.5 (1) and (2) are amended by deleting “timely notice” and substituting “not less than two days”.
6.2	.1	Coordination and Connection	Add:  The <i>Owner</i> or <i>Contract Administrator</i> will not be liable for claims for delay caused by applicable third parties, including, but not limited to BC Hydro, TELUS, Fortis BC, Shaw Cable, BC Transit, or Municipal Forces for work required to be undertaken on this <i>Contract</i> .
7.4	.2	Optional Work	Add GC 7.4.2:  All items included in the <i>Schedule of Quantities and Prices</i> which stated to be Optional Work shall be used only as directed and at the sole discretion of the <i>Contract Administrator</i> .
	.3		Add GC 7.4.3  All or any unused portion of these sums shall revert to the RMOW and shall be deducted from the Contract Price before final payment is made. No claim for lost profit shall be made by the <i>Contractor</i> for the deletion of any or all of these optional items.
9.2	.4	Valuation Method	GC9.2.4 is amended by deleting “unless at the time of the agreement the <i>Contractor</i> expressly reserved in writing the right to claim for additional payment or Contract Time adjustments.”
11.1	.1	Concealed or Unknown Conditions Definition	GC 11.1.1(3) is deleted and the following substituted: “(3) differs materially and substantially from: i. the conditions of the Place of the Work that would have been evident to or reasonably foreseeable by a

			Contractor who was qualified to undertake the Work, and ii. any information in the Tender Documents or otherwise made available by the Owner with respect to any conditions of the Place of the Work that would not have been evident to or reasonably foreseeable by a contractor who was qualified to undertake the Work”.
13.1	.1	Delay by Owner or Contract Administrator	Add:  The Owner or Contract Administrator will not be liable for claims for delay caused by applicable third parties, including, but not limited to BC Hydro, TELUS, Fortis BC, Shaw Cable, BC Transit, or Municipal forces for work required to be undertaken on this Contract.
13.9	.1	Liquidated Damages for Late Completion	GC 13.9.1.1 is amended by deleting “\$1000 per day” and substituting “\$1,500 per day”.
15.3	.1	Termination	GC 15.3.1 (1) is deleted and the following substituted: “(1) be entitled to: (i) take possession of the <i>Place of the Work</i> and the materials to be incorporated into the <i>Work</i> wherever they are located including materials ordered for the <i>Work</i> but not yet delivered, (ii) utilize the construction machinery and equipment, subject to the right of third parties, and (iii) complete the <i>Work</i> by whatever method the <i>Owner</i> may consider expedient, and
17	5	Referee	GC17.5.2(2) is deleted and the following substituted: 2) “if the parties have not agreed upon a Referee within 15 Days after the delivery of the Dispute Notice, then either party may make a written request to the Master Municipal Document Association to appoint the Referee within 10 Days of the written request. If after consultation with the parties, the Association is unable to appoint a Referee who is acceptable to both parties, the Association shall appoint as the Referee an individual who is qualified to act in that capacity under the Contract and who is independent and impartial.” GC17.5.3 is deleted and the following substituted: “If a Referee is selected for appointment as provided by this GC then the parties shall enter into an agreement with the Referee by signing a letter in the form as set out in Schedule 17.5.3 to these GC’s. If one party and the Referee sign the agreement and, after presentation, the other party fails or refuses to sign the agreement, the defaulting party shall be deemed to be a party to that agreement.” GC 17.5.8 is amended by adding after “The Referee” the following: “shall make decisions in a fair and impartial manner and”. GC17.5.II is amended



			<p>a) by renumbering it GC 17.5. 11.1 and by adding the following at the end “unless the parties agree otherwise.” and</p> <p>b) by adding the following: 17.5.11.2 Despite 17.5.1 1.1, on written application of a party, the Master Municipal Documents Association may revoke the appointment of the Referee if the Association is satisfied that the Referee is biased, unqualified to discharge the Referee’s duties, or has failed to diligently and conscientiously perform the Referee’s duties. A replacement Referee shall be selected for appointment as provided by this GC. GC17.5.13 is amended by deleting “by either party, or both parties,” and substituting the following: “by both parties but not by one party.”</p>
18.2	.1	Supporting Documentation	<p>Add:</p> <p>The <i>Contractor</i> shall not work on the <i>Site</i> or deliver materials for which delivery slips submitted to the <i>Owner</i> are the basis of payment unless the <i>Site Inspector</i> is present. However, if the <i>Contract Administrator</i> deems these requirements inappropriate then this requirement may be waived.</p>
18.9	.1	Waiver of Claims	<p>GC18.9.1 is amended by deleting the last sentence and substituting the following: This waiver of claims shall include without limitation those claims that might arise from: 1) the negligence or breach of contract by the <i>Owner</i>, its employees, agents or officials, or 2) the negligence or wrongful acts of the <i>Owner’s</i> consultants or the <i>Contract Administrator</i>, but does not include claims made by <i>the Contractor</i> in writing prior to such application in accordance with the provisions of the <i>Contract Documents</i> and delivered to the <i>Contract Administrator</i> prior to date of Substantial Performance and still unsettled.</p>
	.2		<p>GC 18.9.2 is amended by deleting the last sentence and substituting the following: This waiver of claims shall include without limitation those claims that might arise from: 1) the negligence or breach of <i>Contract</i> by the <i>Owner</i>, its employees, agents’, or officials, or 2) the negligence or wrongful acts of the <i>Owner’s</i> consultants or <i>Contract Administrator</i>, but does not include claims made by the <i>Contractor</i> in writing prior to such application in accordance with the provisions of the <i>Contract Documents</i> and delivered to the <i>Contract Administrator</i> and still unsettled.</p>
20.4	.2	Environmental Laws	<p>GC20.4 is amended by adding the following: 20.4.2 The <i>Contractor</i> shall indemnify the <i>Owner</i> for any costs, fines, expenses and penalties that the <i>Owner</i> is required to pay on account of the <i>Contractor</i> performing</p>

			the <i>Work</i> in breach of any applicable Federal or Provincial or municipal environmental laws, regulations, or orders.
21	.2		<p>Delete GC 2 1.2.1 and replace with the following As part of the <i>Work</i> the Contractor shall, to the extent reasonably possible, perform on behalf of the Owner the obligations which the Owner must undertake as “Prime Contractor” by virtue of the Workers’ Compensation Act and Regulations, or other statutes. The Contractor shall have a safety program acceptable to the Workers’ Compensation Board and shall ensure that all Workers’ Compensation Board safety rules and regulations are observed during performance of this contract, not only by the Contractor but by all sub-contractors, workers, material personnel and others engaged in the performance of this contract. The Contractor shall indemnify the RMOW and hold harmless the RMOW from all manner of claims, demand, costs, losses, penalties and proceedings arising out of or in any way related to unpaid Workers’ Compensation Board assessments owing from any person or corporation engaged in the performance of this contract, or arising out of or in any way related to the failure to observe safety rules, regulations and practices of the Workers’ Compensation Board, including penalties levied by the Workers’ Compensation Board.”</p>
24	.1	Required Insurance	<p>In addition to the MMCD insurance requirements, the <i>Contractor</i> shall also comply with the following requirements of the RMOW, which will take precedence: “The <i>Contractor</i> shall insure and keep insured while this contract is in force, with such companies and on such forms as are acceptable to the RMOW, at the <i>Contractor’s</i> expense, Comprehensive General Liability Insurance covering premises and operations liability; <i>Contractor’s</i> Contingency Liability with respect to the operations of Subcontractor’s Completed Operations Liability, Contractual Liability and Non-Owned Automobile Liability Insurance. The limits of liability for Personal Injury and Property Damage combined shall be for not less than \$5,000,000 each occurrence. The RMOW and ISL Engineering and Land Services shall be added as additional named insured under the Comprehensive General Liability. A Cross Liability Clause shall be made part of the Comprehensive General Liability Insurance. All policies shall provide that they cannot be cancelled, lapsed, or materially changed without at least thirty (30) days notice to the RMOW by Registered Mail. Prior to the commencement of any work hereunder, the <i>Contractor</i> shall file with the RMOW a certificate of insurance for each policy required.</p>

			<p>All such insurance shall be maintained until final completion of the work, including the making good of faulty work or materials, except that coverage for completed operations liability shall in any event be maintained for twelve (12) months from date of final acceptance.</p> <p>Should the <i>Contractor</i> neglect to obtain and/or maintain insurance as aforesaid, or deliver such policy or policies to the RMOW, then it shall be lawful for the RMOW to obtain and/or maintain such insurance and the <i>Contractor</i> hereby appoints the RMOW his true and lawful attorney to do all things necessary for this purpose. All monies expended by the RMOW for insurance premiums under the provisions of this clause shall be charged to the <i>Contractor</i>.”</p>
25.1	.2	Correction of Defects	<p>Add to Clause:</p> <p>“Where in the opinion of the <i>Owner</i>, delay would cause serious loss or damage, repairs may be made without notice being sent to the <i>Contractor</i> and all expenses incurred will be charged to the <i>Contractor</i>.”</p>
	.3		<p>GC25. 1.3 is deleted and the following substituted: 25.1.3 The <i>Owner</i> shall provide the <i>Contractor</i> with access, at all reasonable times, to the location of any defect or deficiency described in this GC to enable the <i>Contractor</i> to correct the defect or deficiency but the <i>Contractor</i> shall be responsible for</p> <ol style="list-style-type: none"> <li>1) exposure of the defect or deficiency in order to correct or repair the defect, deficiency,</li> <li>2) the restoration of the <i>Work</i> or other property that is disturbed or damaged in the course of <ol style="list-style-type: none"> <li>(i) exposing the defect or deficiency, or</li> <li>(ii) correcting or repairing the defect or deficiency, and</li> </ol> </li> <li>3) all risks associated with any activity described in paragraphs (1) and (2).</li> </ol>
26.1	.1	Partial Use	<p>GC26. 1. 1 is amended by deleting “on written approval of the <i>Contract Administrator</i>” and substituting “with prior written notice to the <i>Contract Administrator</i>”.</p>

*Appendix A*  
*Contract Drawings*

# RESORT MUNICIPALITY OF WHISTLER

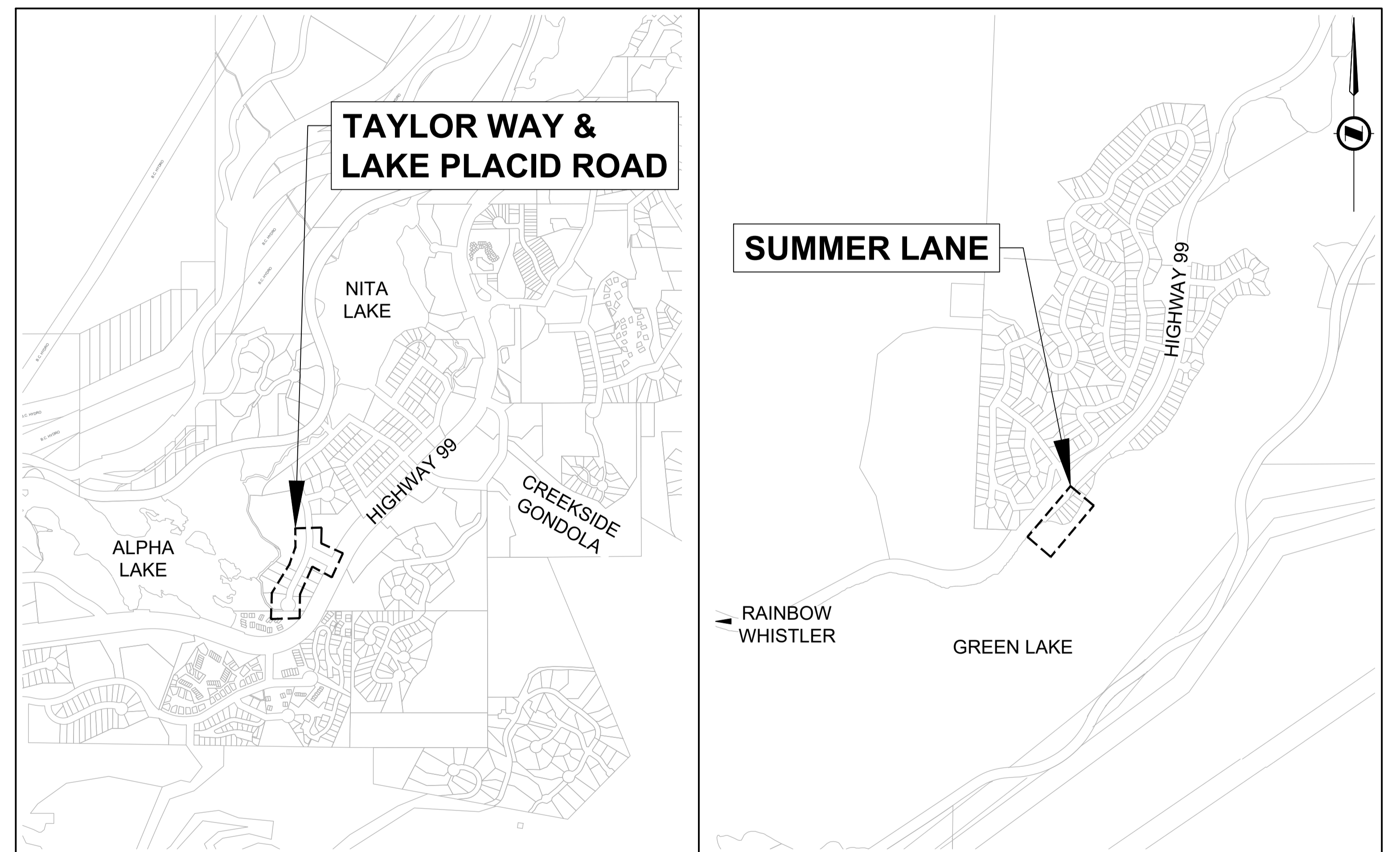
## 2024 WATERMAIN UPGRADES

ISSUED FOR TENDER

January 2024

WHISTLER, BRITISH COLUMBIA

DRAWING LIST	
SHEET NUMBER	SHEET TITLE
00	COVER
01	NOTES
02	DETAILS
TAYLOR WAY & LAKE PLACID ROAD	
03	TAYLOR WAY PHASING PLAN
04	LAKE PLACID ROAD PHASING PLAN
05	WATERMAIN PLAN / PROFILE 0+000 - 0+076
06	WATERMAIN PLAN / PROFILE 1+000 - 1+120
07	WATERMAIN PLAN / PROFILE 1+120 - 1+220
SUMMER LANE	
08	WATERMAIN PLAN / PROFILE 2+000 - 2+080



LOCATION PLAN



#101 - 38026 Second Avenue Squamish, BC V8B 0C3  
T: (604)815-4646 F: (604)815-4647



33516

REV. 2

**GENERAL NOTES:**

- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH:
  - THE MASTER MUNICIPAL CONSTRUCTION DOCUMENT AND STANDARD DETAIL DRAWINGS (MMCD 2009), (PLATINUM EDITION) AND RESORT MUNICIPALITY OF WHISTLER DETAILED DRAWINGS UNLESS OTHERWISE NOTED;
  - CONSTRUCTION PLANS, ACCEPTED AND SIGNED BY THE RESORT MUNICIPALITY OF WHISTLER;
  - APPLICABLE CONTRACT DOCUMENTS AND ALL SPECIFICATIONS REFERENCED THEREIN;
  - WORKSAFE BC, LATEST EDITION.

THE CONTRACTOR SHALL MAINTAIN ON SITE COPIES OF THE ABOVE DOCUMENTS AND SHALL ENSURE THAT ALL SUB CONTRACTORS ARE THOROUGHLY FAMILIAR WITH THE APPLICABLE SECTIONS OF THE DOCUMENTS.
- THE CONTRACTOR SHALL REPAIR OR REPLACE ANY EXISTING STREETS, SERVICES, SIGNS, FENCES, LANDSCAPING, BOULEVARDS, CURBS, GUTTERS, SIDEWALKS, DRIVEWAY LETDOWNS, PRIVATE LANDSCAPING, OR PRIVATE IMPROVEMENTS THAT MAY BE DAMAGED AS A RESULT OF CONSTRUCTION. REPAIRS TO EXISTING RMOW SERVICES SUCH AS WATER, SANITARY SEWER, STORM SEWER, AND STREET OR TRAFFIC LIGHTING SHALL BE MADE AT COST TO THE CONTRACTOR. REPAIRS TO EXISTING SURFACE WORKS TO BE DONE BY THE CONTRACTOR AT THE DISCRETION OF THE CONTRACT ADMINISTRATOR.
- THE LOCATION OF EXISTING UTILITIES IS COMPILED FROM OWNER AND UTILITY SUPPLIED RECORD DRAWINGS AND ARE CONSIDERED APPROXIMATE ONLY. THE EXACT LOCATION AND EXTENT OF UTILITIES SHOULD BE DETERMINED BY CONSULTING THE LOCAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND INVERT ELEVATION BY HAND EXCAVATION BEFORE CONSTRUCTION OF UTILITY CROSSINGS AND SHALL BE RESPONSIBLE FOR RESTORATION OF ANY DAMAGE TO EXISTING UTILITIES. ANY COSTS ASSOCIATED WITH UTILITY CONFLICTS THAT WERE NOT PRELOCATED WILL BE THE CONTRACTORS RESPONSIBILITY.
- REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION TO ENSURE THAT THE LINE AND GRADE OF THE PROPOSED WATERMAIN CAN BE ADJUSTED TO SUIT FIELD CONDITIONS AS REQUIRED.
- RESTORATION OF EXISTING DRIVEWAYS, CURBS AND WALKWAYS TO CONFORM TO THE RMOW SPECIFICATIONS AND TO BE INCIDENTAL TO THE UNIT PRICES IN THE CONTRACT FOR MAINLINE AND SERVICE CONNECTIONS.
- EVERY EFFORT IS TO BE MADE TO SAVE EXISTING LANDSCAPING WITHIN THE ROAD R.O.W. LANDSCAPING IS TO BE RESTORED TO ITS ORIGINAL OR BETTER CONDITION. IN THE EVENT OF LANDSCAPING REMOVAL THE PROPERTY OWNER SHALL BE ADVISED OF THE REMOVAL AND THE LANDSCAPING PLACED IN OWNERS PROPERTY UPON THEIR REQUEST.
- ALL SURVEY MONUMENTS WITHIN THE PROJECT BOUNDARIES SHALL BE PROTECTED DURING THE COURSE OF THE WORK. SHOULD ANY SURVEY MONUMENT REQUIRE RAISING OR RELOCATION, THE CONTRACTOR SHALL NOTIFY THE RMOW AT LEAST 72 HOURS IN ADVANCE OF SCHEDULING WORK.
- SURVEY PINS DISTURBED DURING THE COURSE OF CONSTRUCTION SHALL BE REPLACED BY A B.C. LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.
- ALL ELEVATIONS ARE GEODETIC AND REFERENCED TO INTEGRATED SURVEY MONUMENT ELEVATIONS LOCATED ON ROAD RIGHT-OF-WAYS.
- ALL PUBLIC ROADWAYS AFFECTED BY THE WORKS SHALL BE KEPT IN A CLEAN STATE AT ALL TIMES AND FREE OF EQUIPMENT AND MATERIALS AT ALL TIMES WHEN CONSTRUCTION ACTIVITY IS NOT UNDERWAY. DUST CONTROL MEASURES SHALL ALSO BE EMPLOYED.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES, AND FOR COORDINATING THE VARIOUS PARTS OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THERE IS NO DISRUPTION TO SERVICE, AND IF DISRUPTION IS ANTICIPATED, TO NOTIFY THE ENGINEER A MINIMUM OF 72 HOURS PRIOR, AND OBTAIN APPROVAL FOR THE DISRUPTION.
- ALL DISTURBED AND GRASS AREAS TO BE REINSTATED WITH 150mm TOPSOIL AND HYDROSEEDDED TO EXISTING OR BETTER CONDITION. THE CONTRACTOR IS RESPONSIBLE FOR A 1 YEAR MAINTENANCE PERIOD INCLUDING MOWING AND IRRIGATION.
- THE CONTRACTOR SHALL FIELD LAYOUT THE NEW SERVICES FOR CONFIRMATION BY ENGINEER PRIOR TO INSTALLATION.
- CONTRACTOR NOT TO OPEN OR CLOSE ANY VALVES ON RMOW WATER SYSTEM. ALL VALVE OPERATIONS BY RMOW.
- CONTRACTOR IS REQUIRED TO OBTAIN HYDRANT USE PERMIT FROM RMOW FOR ALL HYDRANT USE.
- CALL RMOW IMMEDIATELY IN CASE OF EMERGENCY OR BROKEN SERVICES ON WATERMAIN, CONTACT ENVIRONMENTAL OPERATIONS 604-935-8300
- THE CONTRACTOR IS TO CARRY OUT THE BEST MANAGEMENT PRACTICES FOR SEDIMENT CONTROL DURING THE CONSTRUCTION OF THE WORK. AT NO TIME MAY CONSTRUCTION DEBRIS BE ALLOWED TO ENTER THE DITCHES ALONG THE CONSTRUCTION ZONE AS THESE ARE FISH BEARING DITCHES. CONTRACTOR IS TO INSTALL SILT FENCING AS REQUIRED OR AS DIRECTED BY ENGINEER WHEN TRENCH LINE IS WITHIN 1M OF TOP OF DITCH.

**WATERMAIN NOTES:**

- ALL NEW WATERMAINS SHALL BE PVC C900 DR18 AND INSTALLED WITH 1.8m MINIMUM COVER UNLESS OTHERWISE NOTED. ALL WATERMAINS NOT MEETING THE REQUIRED 1.8m MINIMUM COVER SHALL BE INSTALLED WITH 100mm STYROFOAM SM.
- ALL FITTINGS ARE TO BE STANDARD DUCTILE IRON FITTINGS TO AWWA C153 CEMENT MORTOR LINED AS PER MMCD SPECIFICATIONS AND FULLY PROTECTED WITH DENSO PRIMER, MASTIC AND TAPE PER MANUFACTURER'S SPECIFICATIONS.
- MECHANICALLY RESTRAIN FULL LENGTH UNIFLANGE 1300/1390 SERIES c/w PIPE ANCHOR BLOCKS PER RMOW STD DWG G8 WHERE PIPE GRADE IS 10% OR MORE. ALL RESTRAINERS, TIE-RODS, BOLTS AND NUTS ARE TO BE FULLY PROTECTED WITH DENSO PRIMER, MASTIC AND TAPE PER MANUFACTURER'S SPECIFICATIONS.
- NO CHANGES TO BE MADE TO PIPE FITTINGS OR ALIGNMENTS WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE CONTRACT ADMINISTRATOR.
- THE CONTRACTOR IS TO EXPOSE EXISTING WATERMAINS AND WATER SERVICES AT TIE-IN LOCATION AND ALL EXISTING UTILITIES IN BETWEEN. UTILITY DEPTHS ARE TO BE RECORDED AND FORWARDED TO THE CONTRACT ADMINISTRATOR FOR REVIEW PRIOR TO CONSTRUCTION.
- ASSURANCE OF PROTECTION OF THE WATERMAIN AS PER VANCOUVER COASTAL HEALTH
 

PARALLEL LINES: WATERMAINS SHOULD BE LAID AT LEAST 3m HORIZONTALLY FROM ANY SANITARY OR STORM SEWER. WHERE THIS HORIZONTAL SEPARATION IS NOT POSSIBLE, THE BOTTOM OF THE WATERMAIN SHOULD BE AT LEAST 450mm ABOVE THE TOP OF THE SEWER AND SUFFICIENTLY TO ONE SIDE OF THE SEWER TO ALLOW FOR SEWER REPAIRS WITHOUT DISTURBING THE WATERMAIN. IF THIS VERTICAL SEPARATION IS NOT POSSIBLE, THE SEWER SHOULD BE OF THE SAME SERVICE CAPABILITY AS THE WATERMAIN, WITH PRESSURE CLASS JOINTS DESIGNED TO REMAIN WATERTIGHT IF THE GROUNDWATER TABLE PERIODICALLY RISES ABOVE THE SEWER, AND ARE TO BE PRESSURE TESTED BEFORE BACKFILLING. OTHER PRECAUTIONS, SUCH AS A WATERMAIN WITH IMPROVED JOINTS AND HIGHER STRENGTH MAY BE NEEDED. WHERE A WATERMAIN IS LAID WITHIN 3m OF EXISTING SANITARY OR STORM SEWER, A NILEX LLDPE 30 mil GEOMEMBRANE OR SIMILAR APPROVED MUST BE PLACED CONTINUOUSLY ALONG TRENCH TO PROVIDE A HYDRAULIC BARRIER.

CROSSINGS: WHERE A WATERMAIN CROSSES A SANITARY OR STORM SEWER, THE LINES SHOULD BE LAID WITH THE WATERMAIN CROSSING OVER THE SEWER AND WITH THE MIDDLE OF PIPE LENGTHS LOCATED AT THE CROSSING POINT, TO MAXIMIZE THE SEPARATION BETWEEN JOINTS. WHERE A MINIMUM 3m JOINT SEPARATION AND/OR 450mm CLEAR VERTICAL SEPARATION IS NOT POSSIBLE AT THE CROSSING, PRECAUTIONS TO IMPROVE WATER TIGHTNESS OF THE SEWER JOINTS AND STRUCTURAL IMPROVEMENTS SUCH AS HIGHER STRENGTH WATERMAIN AND/OR SEWER AT THE CROSSING AREA MAY BE NEEDED. SLEEVING, PIPE BRIDGING OR OTHER SUITABLE MEASURES MAY BE CONSIDERED. ALL JOINTS WITHIN 3m OF THE CROSSING SHOULD BE WRAPPED WITH T.C. ENVIROTAPE (50mm), MANUFACTURED BY TAPECOAT CANADA INC. TRENTON TEC-TAPE OR APPROVED EQUIVALENT, OR WATERMAIN SHOULD BE CONSTRUCTED USING A JOINLESS PIPE TO REMOVE ANY JOINTS WITHIN 3m OF THE CROSSING. BOTTOM OF THE WATERMAIN MUST HAVE MINIMUM 150MM CLEARANCE FROM TOP OF THE SANITARY OR STORM SEWER BEING CROSSED. WHERE A WATERMAIN IS LAID BELOW A SANITARY OR STORM SEWER, PIPEWORK WITHIN 3m OF THE CROSSING POINT MUST BE PROVIDED WITH A NILEX LLDPE 30 mil GEOMEMBRANE OR SIMILAR APPROVED FOR FULL WIDTH OF THE TRENCH AS A HYDRAULIC BARRIER IN ADDITION TO WRAPPING JOINTS OR USING A JOINLESS PIPE FOR BOTH WATERMAIN AND SEWER. TOP OF THE WATERMAIN MUST HAVE MINIMUM 150MM CLEARANCE FROM BOTTOM OF THE SANITARY OR STORM SEWER BEING CROSSED.

ALL JOINTS WITHIN 3M OF THE CROSSING OR WITHIN 3M OF A SANITARY SEWER, STORM SEWER OR DRAINAGE DITCH SHOULD BE WRAPPED WITH HEAT SHRINK PLASTIC OR PACKED WITH INERT PETROLATUM COMPOUND AND WRAPPED WITH TAPE BASED ON THE FOLLOWING STANDARDS: ANSIIAWWA C214 (FACTORY APPLIED), ANSIIAWWA C209 (FIELD APPLIED), ANSIIAWWA C217-90 (PETROLATUM TAPE). ALL MATERIALS USED ARE TO HAVE ZERO HEALTH HAZARD RATING.
- FOR SERVICE CONNECTIONS, WHEREVER POSSIBLE, THE ABOVE CONSTRUCTION PRACTICES SHOULD ALSO BE APPLIED.
- THE CONTRACTOR SHALL TRANSFER ALL WATER SERVICES AT PROPERTY LINE AFTER TESTING AND ACCEPTANCES OF THE NEW MAIN UNLESS OTHERWISE NOTED.
- ALL NEW WATER SERVICE CONNECTIONS SHALL BE 19mm DIAMETER GOLD STRIPE PE SERIES 160 MUNICIPAL SERVICE TUBING UNLESS OTHERWISE NOTED OR LOCATED IN FIELD. CONTRACTOR TO CONFIRM SIZE AND LOCATION OF EXISTING SERVICE PRIOR TO INSTALLATION OF NEW SERVICE.
- ALL SERVICE CURB STOPS ARE TO BE INSTALLED AS PER SUPPLEMENTAL STANDARD DETAIL DRAWING W2-BS & SHALL BE AT A DEPTH OF 1.8m WITH THE TRANSITION TO THE EXISTING SERVICE ELEVATION AFTERWARDS.
- FOR ALL WATER SERVICES TO BE TRANSFERRED AT THE PROPOSED WATERMAIN, THE CONTRACTOR IS TO INSTALL THE APPROPRIATE SIZED CORPORATION STOP AT THE SAME OFFSET AS THE EXISTING WATER SERVICE.
- THRUST BLOCKS AND JOINT RESTRAINTS ARE TO BE PROVIDED AT ALL FITTINGS AND CHANGES IN DIRECTION.
- MAXIMUM JOINT DEFLECTION SHOULD NOT EXCEED ONE-HALF OF THE MANUFACTURER'S RECOMMENDED SPECIFICATION.
- NEW SERVICE CONNECTIONS RANGING IN SIZED FROM 19mm TO 50mm SHALL BE AS PER RMOW STANDARD DETAIL DRAWINGS W2-A AND W2-B AND CONNECTED TO EXISTING BY THE CONTRACTOR AT THE EXISTING PROPERTY SHUT-OFF LOCATION.
- ALL PROPOSED HYDRANTS SHALL BE TERMINAL CITY UNLESS OTHERWISE PREVIOUSLY APPROVED IN WRITING AND INSTALLED PER RMOW STANDARD DETAIL W4. FIRE HYDRANT GATE VALVES TO BE OUTSIDE OF ROAD LANE AND WITHIN ROAD SHOULDER AND PLACED AS REQUIRED. ISOLATION VALVES TO BE FLANGED TO THE TEE ON MAIN. TRACER WIRE TO EXTEND TO THE HYDRANT ASSEMBLY C/W COBRA ACCESS POINT AND GROUNDING ROD AS NOTED ON THE DRAWINGS.
- ALL VALVES TO BE WITHIN A MINIMUM 1.0m ASPHALT OR CONCRETE (50mm) SURROUND UNLESS OTHERWISE SPECIFIED.
- TRACER WIRE TO BE INSTALLED OVER ALL WATERMAINS & SERVICES PER MANUFACTURER SPECIFICATIONS AND TO BE #12 AWG AS PER MANUFACTURERS SPECIFICATIONS c/w TRACER BOXES AS NOTED ON SHEET DRAWINGS.

**LEGEND**

**LINETYPES**

PROPOSED	EXISTING	DESCRIPTION
		RIGHT OF WAY
		CENTER LINE
		WATER MAIN
		WATER SERVICE
		STORM MAIN
		STORM SERVICE
		CB / DRAINAGE LEAD
		STREAM / CREEK / DITCH
		SANITARY SEWER MAIN
		SANITARY SERVICE
		ELECTRICAL
		CABLE
		NATURAL GAS
		CHAINLINK FENCE
		RETAINING WALL
		EDGE OF GRAVEL ROAD
		BOTTOM OF BANK
		TOP OF BANK
		EDGE OF PAVEMENT

**SYMBOLS**

PROPOSED	EXISTING	DESCRIPTION	PROPOSED	EXISTING	DESCRIPTION
		WATER VALVE AIR			STORM CATCHBASIN DOUBLE
		WATER VALVE			STORM CATCHBASIN
		WATER BEND			STORM CULVERT / HEADWALL
		WATER TEE			STORM LAWN DRAIN
		WATER CROSS			STORM MANHOLE
		WATER HYDRANT			SANITARY MANHOLE
		WATER REDUCER			GUY WIRE
		WATER ROBAR			TELUS MANHOLE
		WATER THRUST BLOCK			POLE
		WATER SERVICE			SIGN
		WATER BLOWOFF			STREETLIGHT
		WATER CAP			TREE
		WATER METER			JUNCTION BOX
		WATER HUB FLANGE			ELECTRICAL BOX

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PLOT DATE: December 20, 2023				
REV NO.	REVISION DESCRIPTION	DATE	DRAWN	APPRD
1	75% DESIGN	2023/06/14	JT	GS
2	ISSUED FOR TENDER	2023/12/19	JT	GS



**WATER WORKS**

**2024 WATERMAIN UPGRADES**  
NOTES

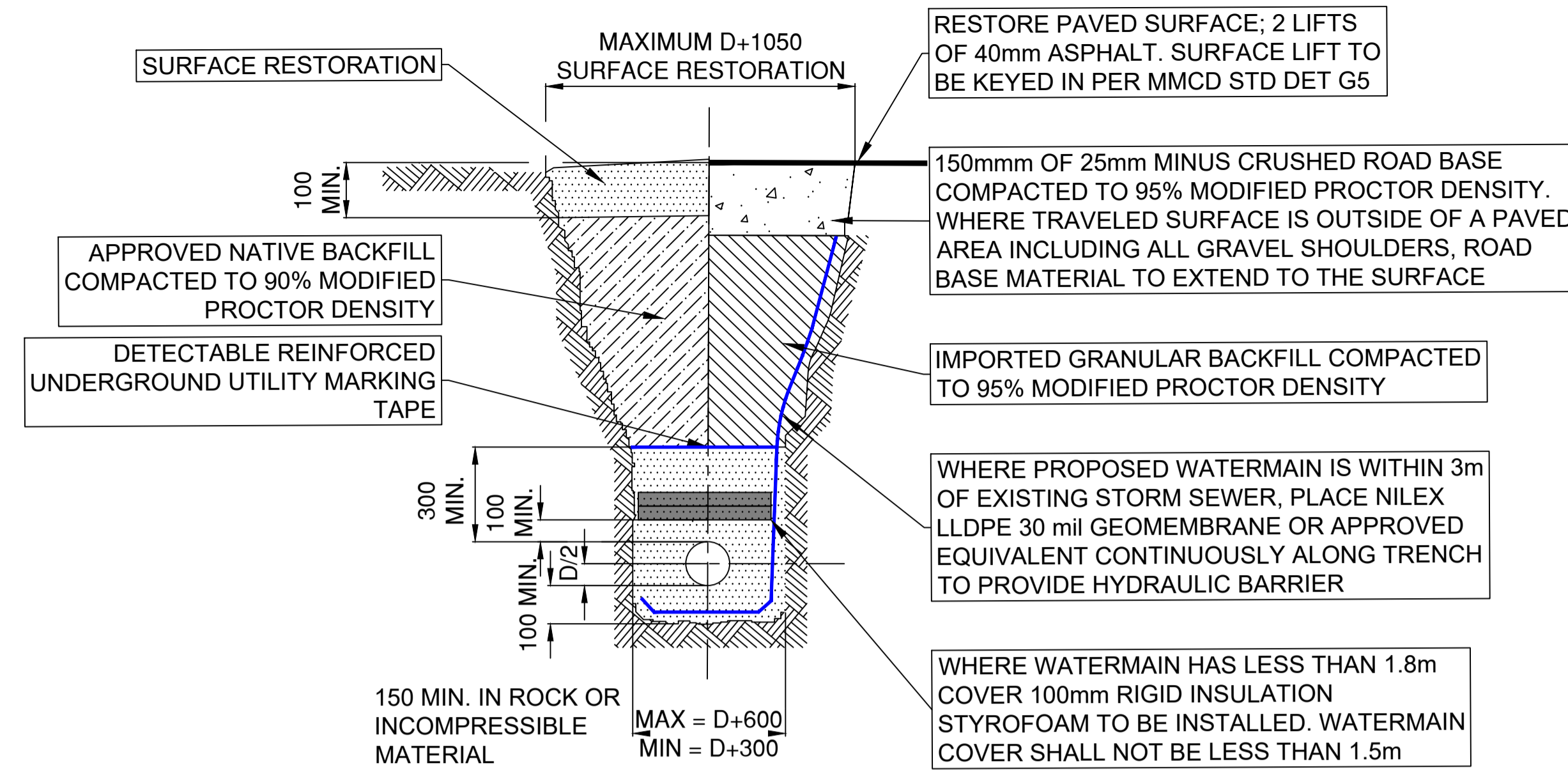


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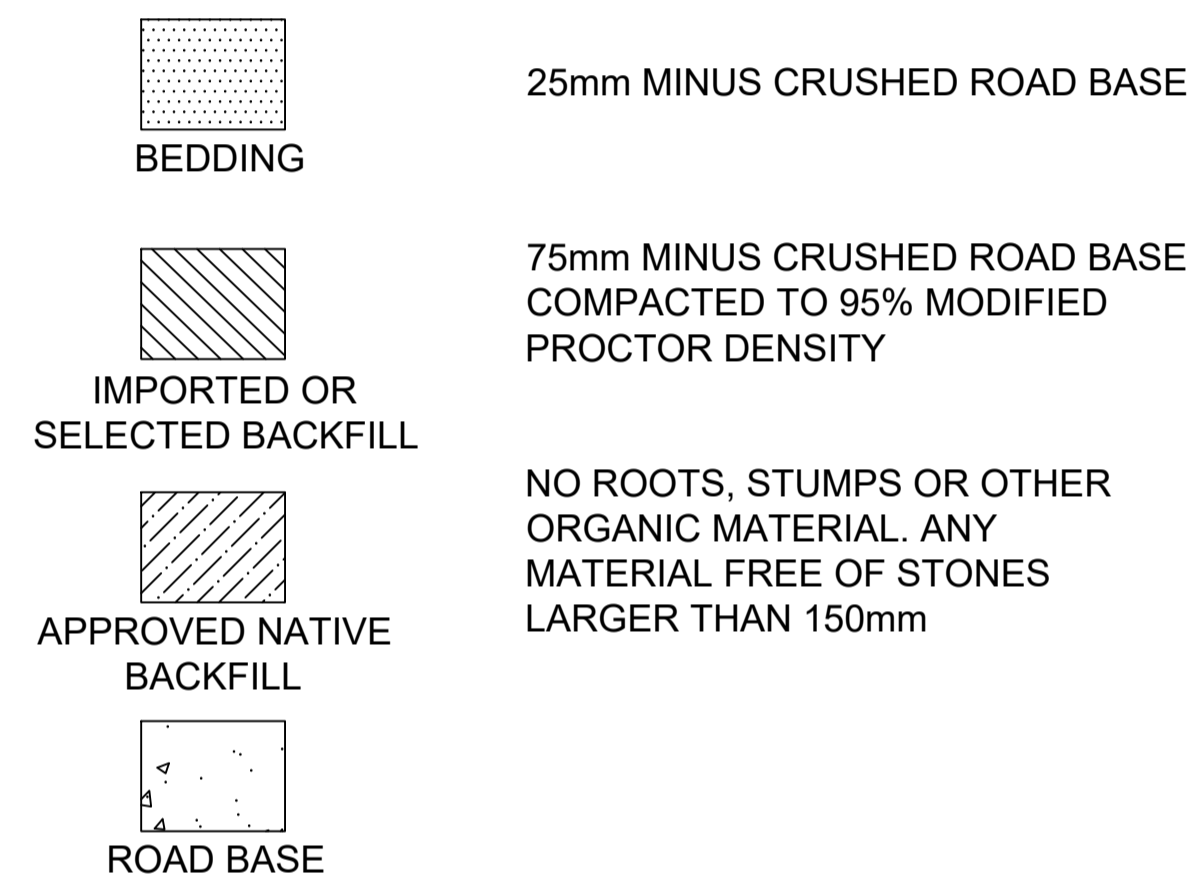
**33516**

SCALE	-	CREATION DATE	2023/12/19	DWG. NO.	01 OF 08
DRAWN BY	JT	DESIGN BY	GS		
CHECKED BY	GS	APPROVED BY	GS		
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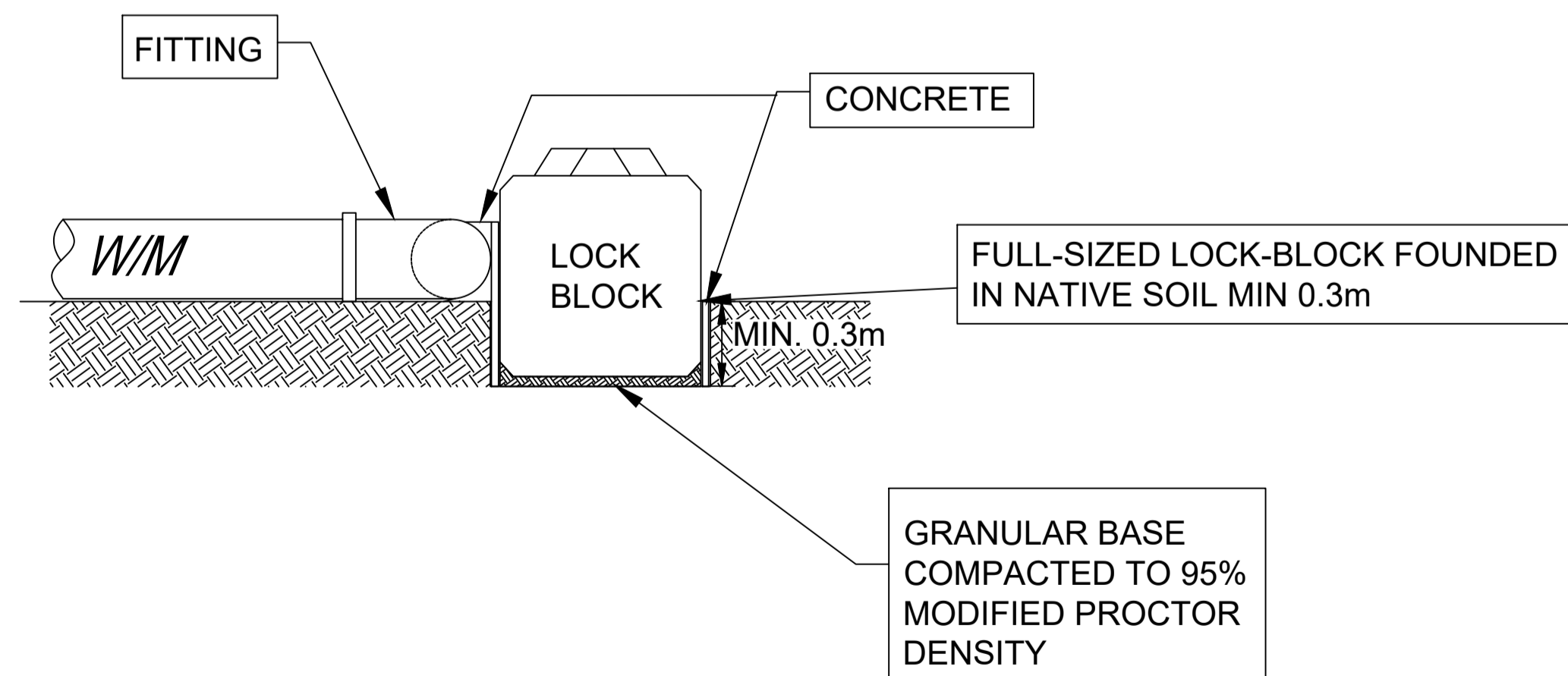
**NOTES:**

1. UNDER THE TRAVELED PORTION OF ROADS AND DRIVEWAYS OR WITHIN 1.5M FROM THE EDGE OF TRAVELED ROADWAY. THE TRENCH SHALL BE BACKFILLED WITH COMPACTED. IMPORTED BACKFILL UP TO 30mm BELOW ROAD SURFACE. THE REMAINING TRENCH TO BE BACKFILLED WITH 25mm MINUS CRUSHED ROAD GRAVEL.
2. CONTROLLED DENSITY BACKFILL MAY BE USED IN LIEU OF IMPORTED OR SELECT BACKFILL AND GRANULAR BASE.
3. D = OUTSIDE PIPE DIAMETER.



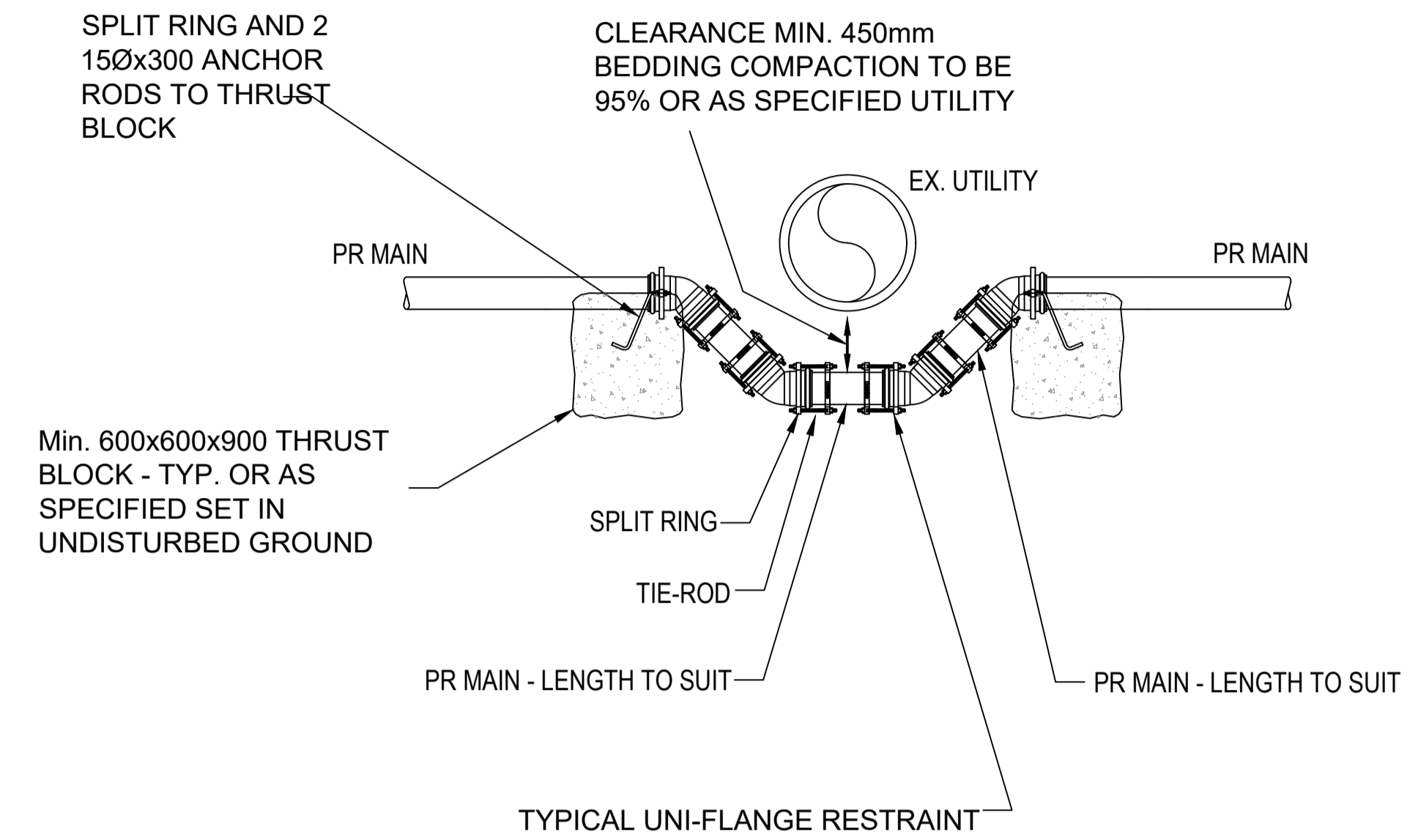
**UTILITIES TRENCH WITH HYDRAULIC BARRIER**

NTS



**LOCK-BLOCK THRUST BLOCK DETAIL**

NTS

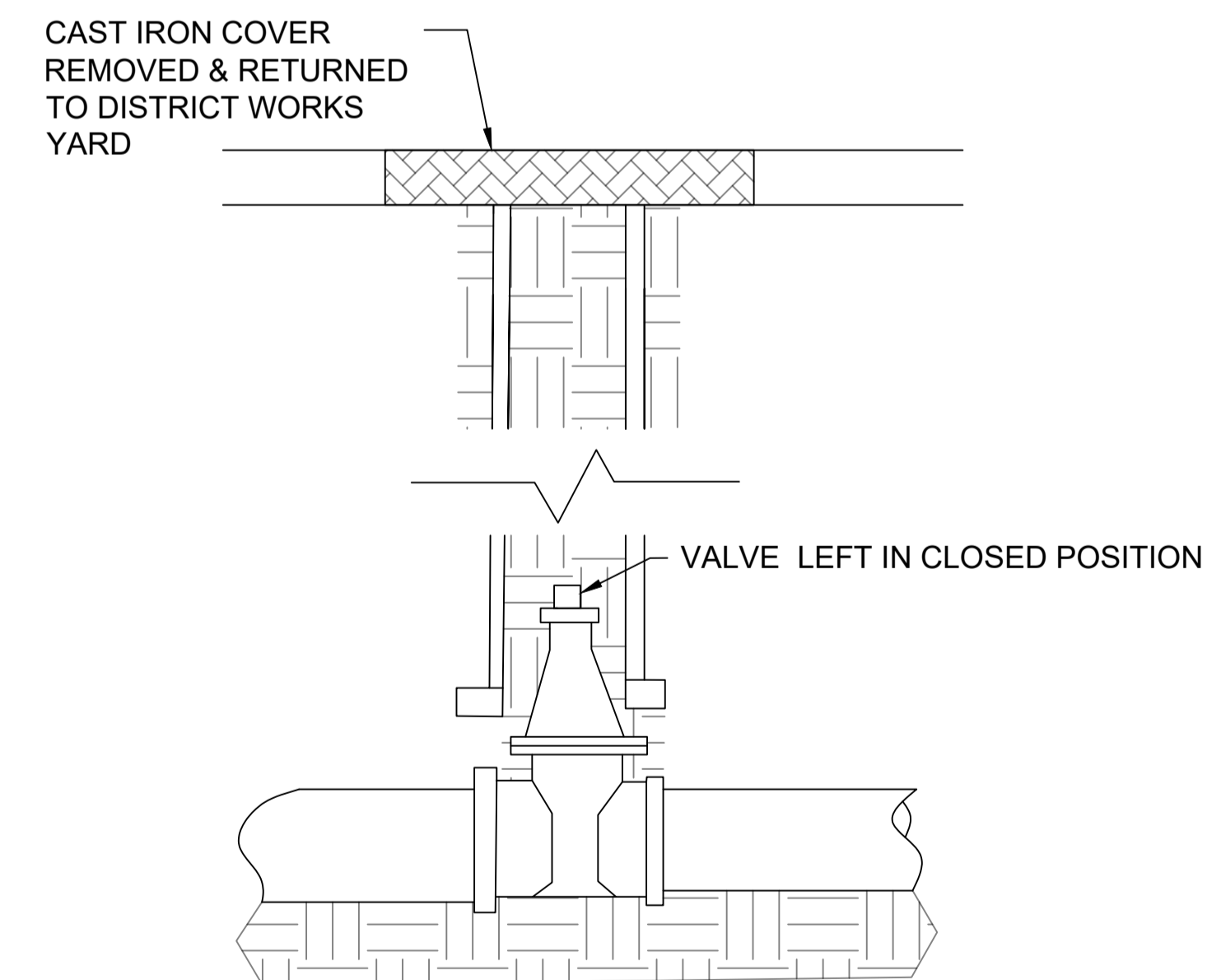


**NOTES:**

1. ALL PIPE TO BE SAME MATERIAL AND MEET OR EXCEED EXISTING MAIN CLASS OF MAINLINE.
2. ALL FITTINGS TO BE D.I. AWWA C153.
3. ALL RESTRAINERS TO BE UNI-FLANGE SERIES OF SAME MODEL AS REST OF MAIN OR APPROVED EQUAL.
4. THRUST BLOCKS MAY BE ELIMINATED, BY RESTRAINING EXISTING PIPE JOINTS, AS DIRECTED AND APPROVED BY CONTRACT ADMINISTRATOR.
5. WHEN TYING TO EXIST A.C. MAINS THRUST BLOCKS MUST BE USED.
6. TIE ROD BOLTS TO BE POSITIONED ON THE PIPE VERTICAL AXIS
7. FULL LENGTH OF PIPE TO BE CENTERED AT CROSSING POINT

**UTILITY CROSSING DETAIL**

NTS



**ABANDONED VALVE DETAIL**

NTS

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1	75% DESIGN	2023/06/14	JT	GS
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**WATER WORKS**

**2024 WATERMAIN UPGRADES  
DETAILS**

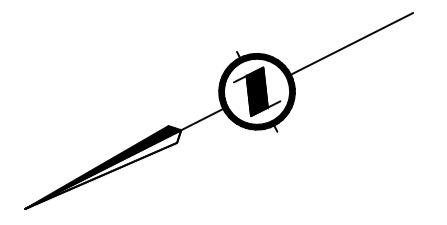


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SCALE	-	CREATION DATE	2023/12/19	DWG. NO.	02
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**33516**



**CONSTRUCTION SEQUENCING**  
 PHASE 1 WORKS  
 PHASE 2 WORKS  
 PHASE 3 WORKS  
 PHASE 4 WORKS

CONCRETE ENCASED WATERMAIN  
 6.0m AT SANITARY CROSSING

PHASE 2 - TEST AND COMMISSION NEW LINE  
 WITH GATE VALVE CLOSEST TO LAKE PLACID  
 ROAD SHUT OFF. TIE-IN TO EXISTING  
 WATERMAIN WITH 90° BEND, COUPLER AND  
 RESTRAIN BACK TO CONCRETE ENCASEMENT

PHASE 1 - INSTALL 200mmØ PVC C900 DR18  
 WATERMAIN WITH 1.5m OFFSET FROM EXISTING LINE

PHASE 1 - INSTALL HYDRANT, LEAD, TEE  
 AND GATE VALVE CLUSTER

PHASE 1 - INSTALL TEE AND GATE VALVE

PHASE 2 - TEST AND COMMISSION NEW LINE WITH  
 GATE VALVE CLOSEST TO LAKE PLACID ROAD  
 SHUT OFF. TIE-IN TO EXISTING WATERMAIN WITH 2  
 x 45° BENDS, COUPLER AND RESTRAIN

PHASE 1 - INSTALL HYDRANT, LEAD, TEE  
 AND GATE VALVE CLUSTER  
 PHASE 3 - COMMISSION TEMPORARY  
 OVERLAND SERVICING TO RESIDENTS  
 FROM INSTALLED HYDRANT. UTILIZE EX  
 CULVERT TO ELIMINATE ROAD CROSSINGS

PHASE 1 - INSTALL TEMPORARY  
 CAP TO WATERMAIN

CONCRETE ENCASED WATERMAIN  
 6.0m AT SANITARY CROSSING

PHASE 3 - INSTALL HYDRANT, LEAD, TEE, GATE  
 VALVE AND TIE-IN TO EXISTING WITH COUPLER

PHASE 3 - SHUT OFF GATE VALVE AT  
 KATHLEEN PLACE TO ISOLATE LAKE PLACID  
 ROAD WATERMAIN. RUN OVERGROUND PIPE  
 TO AFFECTED RESIDENTS

PHASE 3 - EXISTING WATERMAIN TO BE  
 REMOVED/LAID OVER DEPENDING ON DEPTH.  
 INSTALL 150mmØ PVC C900 DR18 WATERMAIN  
 ALONG EXISTING LINE

PHASE 3 - EXISTING WATERMAIN TO BE  
 REMOVED/LAID OVER DEPENDING ON DEPTH.  
 INSTALL 200mmØ PVC C900 DR18 WATERMAIN  
 ALONG EXISTING LINE

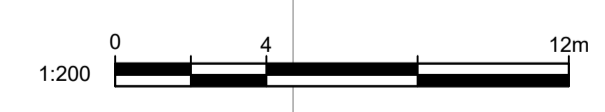
PHASE 3 - DECOMMISSION EX TEE AND VALVES  
 AND INSTALL NEW TEE, VALVE CLUSTER,  
 REDUCER AND HORIZONTAL BEND  
 PHASE 4 - TIE-IN TO PHASE 1 WATERMAIN  
 FOLLOWING TESTING AND COMMISSIONING

LAKE PLACID ROAD

TAYLOR WAY

2208

PLAN  
 SCALE: 1:200



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1	75% DESIGN	2023/06/14	JT	GS
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**WATER  
 WORKS**

**2024 WATERMAIN UPGRADES  
 TAYLOR WAY PHASING PLAN**



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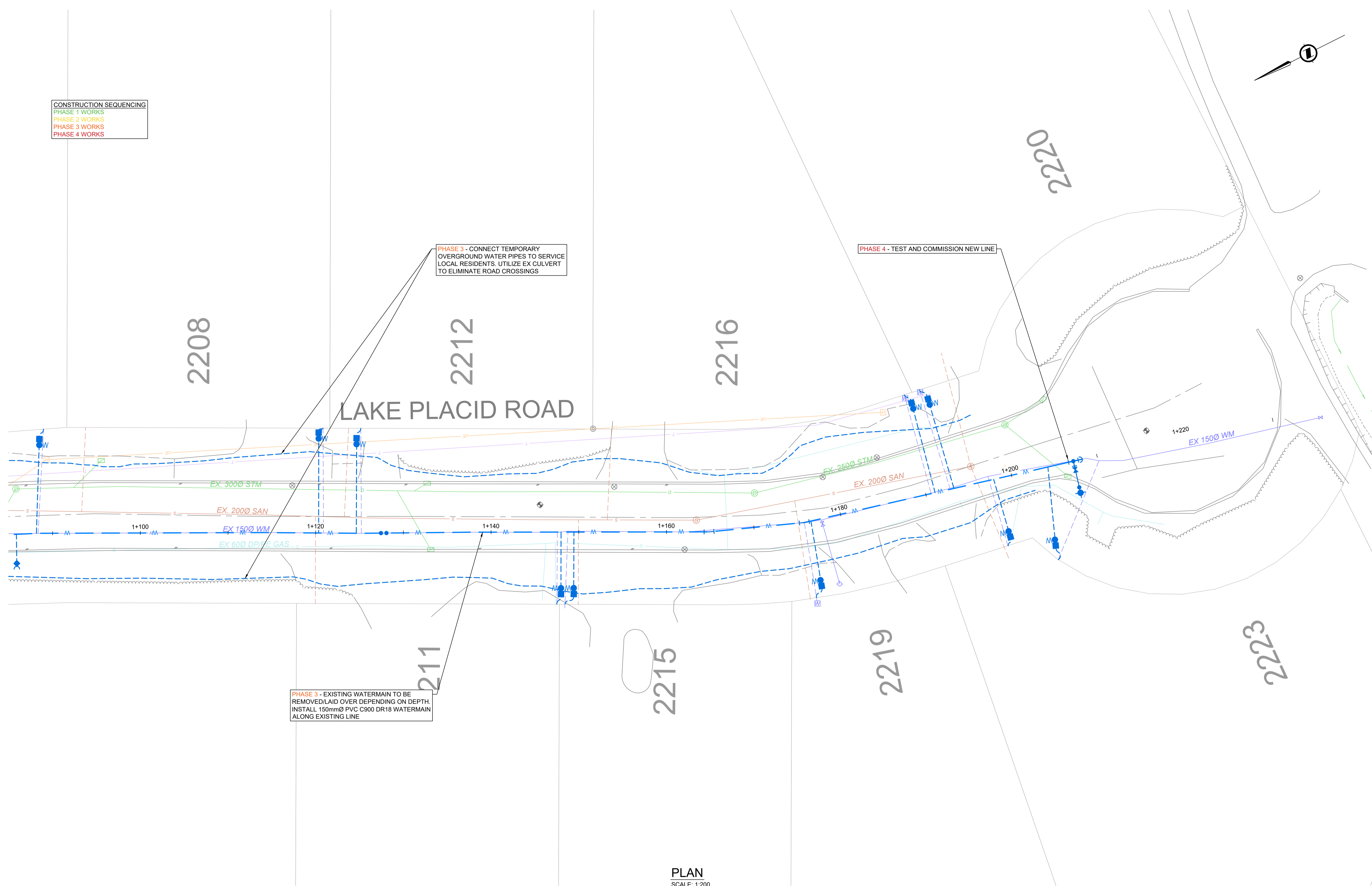
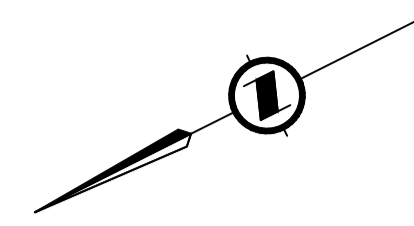
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SCALE	1:200	CREATION DATE	2023/12/19	DWG. NO.
DRAWN BY	JT	DESIGN BY	GS	03
CHECKED BY	GS	APPROVED BY	GS	08
				REV. 2

**33516**



CONSTRUCTION SEQUENCING	
PHASE 1 WORKS	Green
PHASE 2 WORKS	Orange
PHASE 3 WORKS	Blue
PHASE 4 WORKS	Purple



PLAN  
SCALE: 1:200



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PLOT DATE: December 20, 2023				
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**WATER  
WORKS**

**2024 WATERMAIN UPGRADES  
LAKE PLACID ROAD PHASING PLAN**



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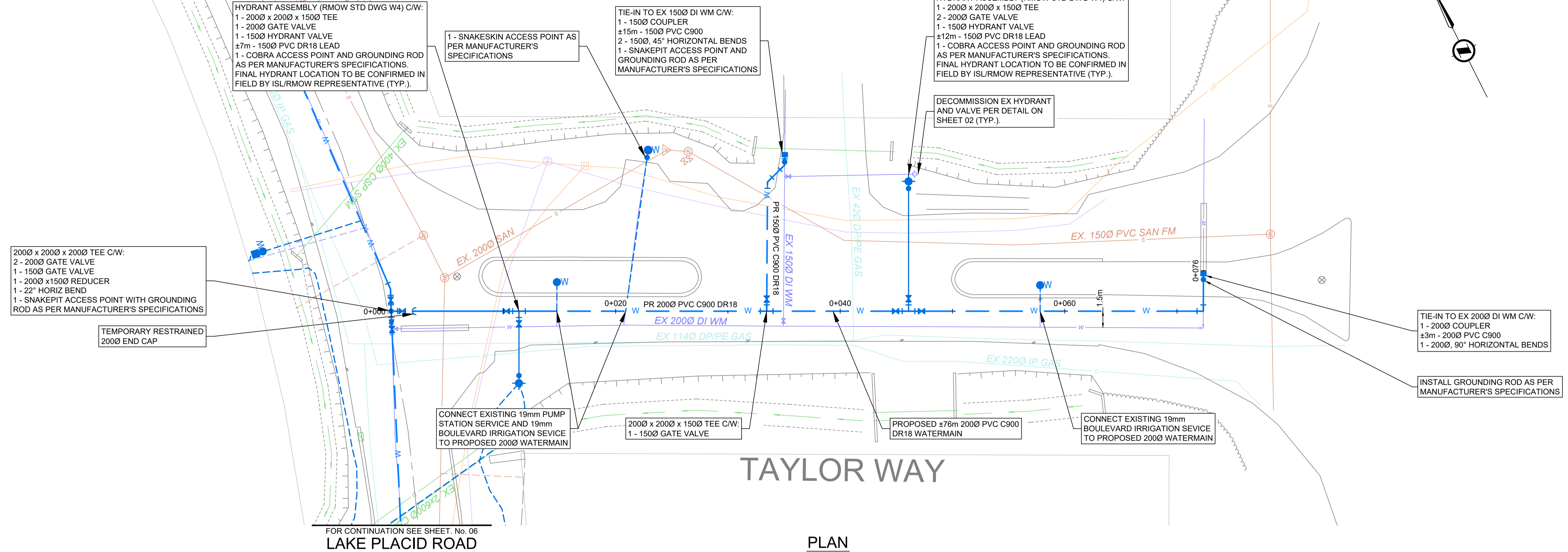
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EXISTING UTILITIES SHOWN ARE BASED UPON AVAILABLE RECORD DRAWINGS AND MAY NOT BE COMPLETE OR ACCURATE. THE CONTRACTOR REMAINS RESPONSIBLE FOR THE FIELD LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND FOR THEIR PROTECTION DURING CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE FOR FIELD LOCATES OF EXISTING UTILITY CROSSINGS, TIE-INS & SERVICES, CONFIRMING LOCATION AND ELEVATION PRIOR TO CONSTRUCTION AND COORDINATE WITH THE CONTRACT ADMINISTRATOR AS REQUIRED TO ACCOMMODATE THE WATERMAIN INSTALLATION

ALL FITTINGS RESTRAINED w/ SERIES 1300/1350/1390 UNFLANGED RESTRAINERS c/w POURED THRUST BLOCK (RMOV STD DWG W12-A AND W12-B) OR LOCK BLOCK AS PER DETAIL ON SHEET 2

ALL COUPLERS TO BE ROMAC HP/ALPHA OR XR 501. CONSIDERED INCIDENTAL. ANY WORKS DESCRIBED OR SHOWN ON DRAWINGS, BUT NOT SPECIFIED IN SCHEDULE OF QUANTITIES TO BE CONSIDERED INCIDENTAL.

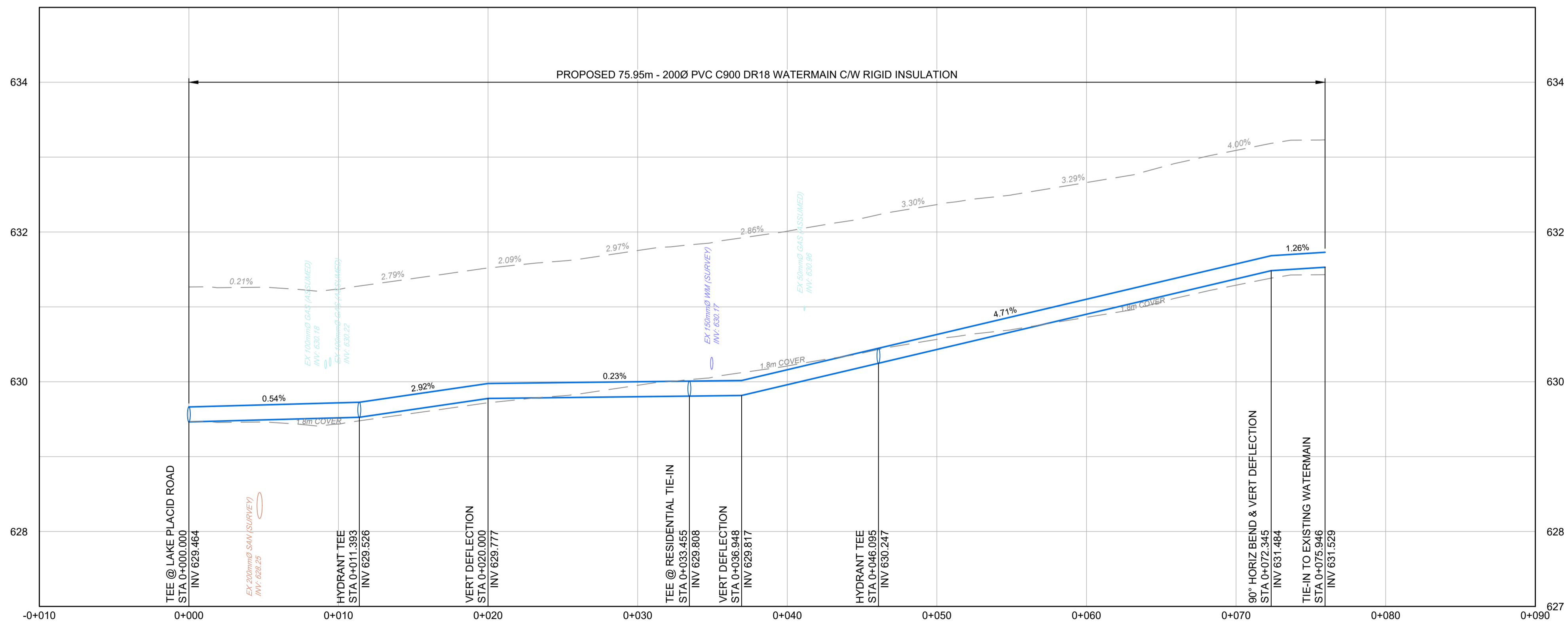
ALL RESTORATION INCLUDING BUT NOT LIMITED TO ASPHALT, CONCRETE, GRAVEL, GRASS, TOPSOIL/SEED TO BE RESTORED BACK TO EXISTING CONDITION OR BETTER & IS CONSIDERED INCIDENTAL.



TAYLOR WAY

PLAN  
SCALE: 1:200

FOR CONTINUATION SEE SHEET No. 06  
LAKE PLACID ROAD



PROFILE  
SCALE: 1:200H / 1:40V



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WATER WORKS

2024 WATERMAIN UPGRADES  
WATERMAIN PLAN / PROFILE 0+000 - 0+076



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CHECKED BY	GS	APPROVED BY	GS	REV. 2

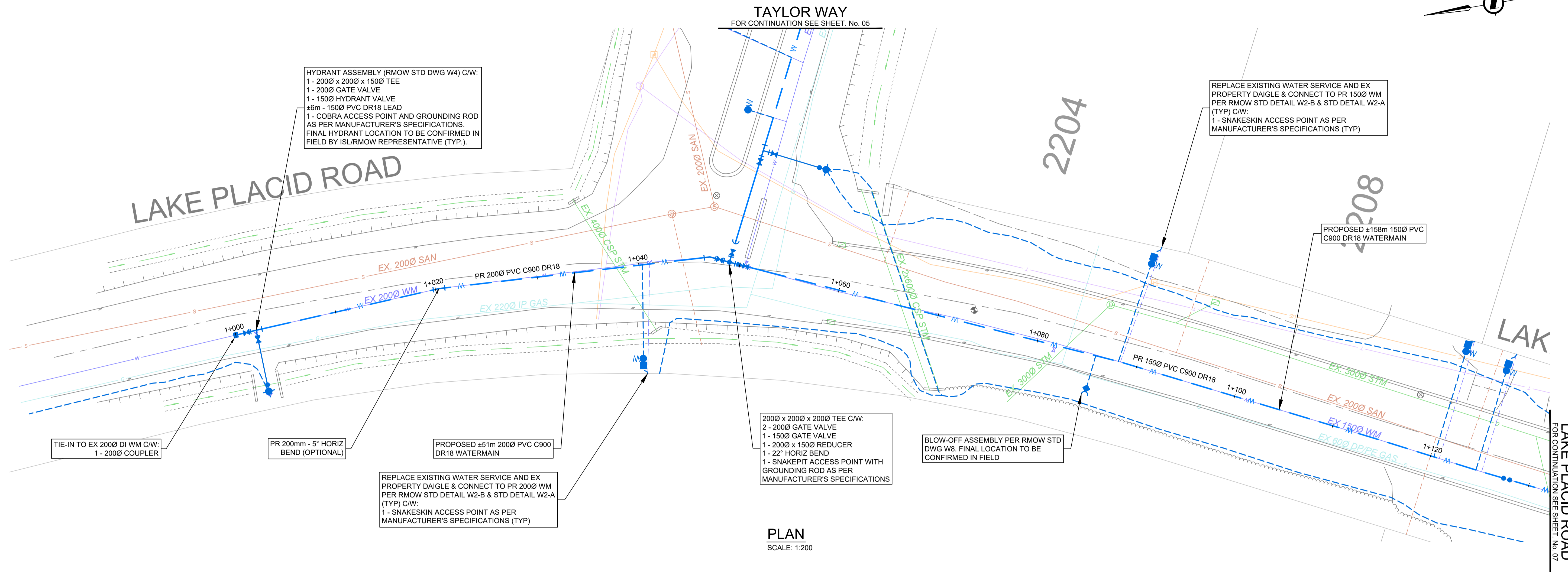
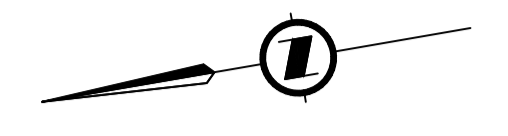
33516

EXISTING UTILITIES SHOWN ARE BASED UPON AVAILABLE RECORD DRAWINGS AND MAY NOT BE COMPLETE OR ACCURATE. THE CONTRACTOR REMAINS RESPONSIBLE FOR THE FIELD LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND FOR THEIR PROTECTION DURING CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE FOR FIELD LOCATES OF EXISTING UTILITY CROSSINGS, TIE-INS & SERVICES, CONFIRMING LOCATION AND ELEVATION PRIOR TO CONSTRUCTION AND COORDINATE WITH THE CONTRACT ADMINISTRATOR AS REQUIRED TO ACCOMMODATE THE WATERMAIN INSTALLATION

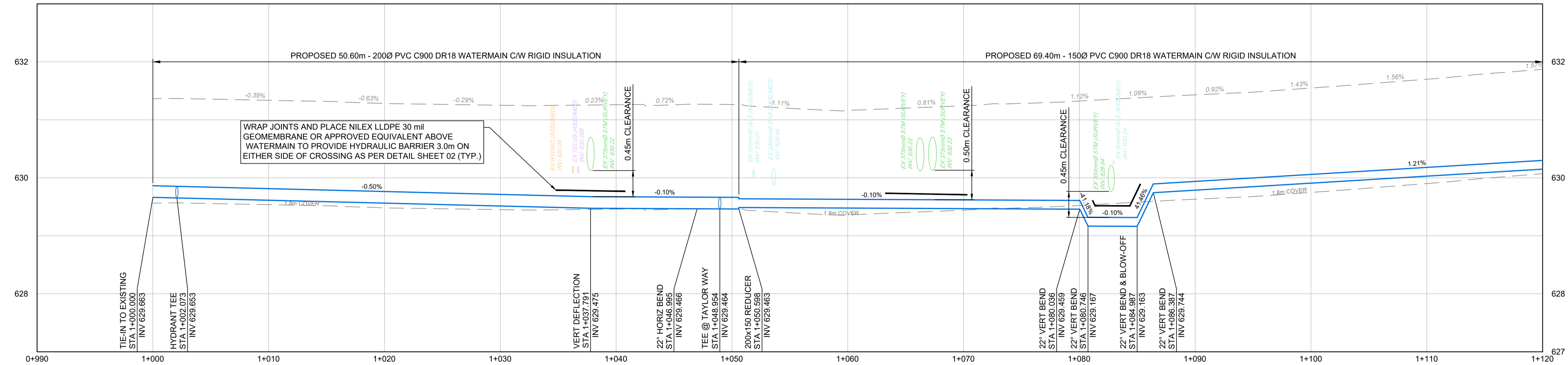
ALL FITTINGS RESTRAINED w/ SERIES 1300/1350/1390 UNFLANGED RESTRAINERS c/w POURED THRUST BLOCK (RMOW STD DWG W12-A AND W12-B) OR LOCK BLOCK AS PER DETAIL ON SHEET 2

ALL COUPLERS TO BE ROMAC HP/ALPHA OR XR 501. CONSIDERED INCIDENTAL. ANY WORKS DESCRIBED OR SHOWN ON DRAWINGS, BUT NOT SPECIFIED IN SCHEDULE OF QUANTITIES TO BE CONSIDERED INCIDENTAL.

ALL RESTORATION INCLUDING BUT NOT LIMITED TO ASPHALT, CONCRETE, GRAVEL, GRASS, TOPSOIL/SEED TO BE RESTORED BACK TO EXISTING CONDITION OR BETTER & IS CONSIDERED INCIDENTAL.



PLAN  
SCALE: 1:200



PROFILE  
SCALE: 1:200H / 1:40V



File: G:\Projects\33000\33000\33516\_RMOW\_Creekside\_Water\_Main\_Upgrade\02\_Drafting\02\_Production\ProductionSheets\_33516.dwg

REV NO.	REVISION DESCRIPTION	DATE	DRAWN	APPRD
1	75% DESIGN	2023/06/14	JT	GS
2	ISSUED FOR TENDER	2023/12/19	JT	GS



**WATER WORKS**

**2024 WATERMAIN UPGRADES**  
WATERMAIN PLAN / PROFILE 1+000 - 1+120



#101 - 38026 Second Avenue Squamish, BC V8B 0C3  
T: (604) 815-4646 F: (604) 815-4647

ISSUED FOR TENDER DESIGN NO.

SCALE	1:200	CREATION DATE	2023/12/19	DWG. NO.
DRAWN BY	JT	DESIGN BY	GS	06
CHECKED BY	GS	APPROVED BY	GS	08
				REV. 2

**33516**

EXISTING UTILITIES SHOWN ARE BASED UPON AVAILABLE RECORD DRAWINGS AND MAY NOT BE COMPLETE OR ACCURATE. THE CONTRACTOR REMAINS RESPONSIBLE FOR THE FIELD LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND FOR THEIR PROTECTION DURING CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE FOR FIELD LOCATES OF EXISTING UTILITY CROSSINGS, TIE-INS & SERVICES, CONFIRMING LOCATION AND ELEVATION PRIOR TO CONSTRUCTION AND COORDINATE WITH THE CONTRACT ADMINISTRATOR AS REQUIRED TO ACCOMMODATE THE WATERMAIN INSTALLATION

ALL FITTINGS RESTRAINED w/ SERIES 1300/1350/1390 UNFLANGED RESTRAINERS c/w POURED THRUST BLOCK (RMOW STD DWG W12-A AND W12-B) OR LOCK BLOCK AS PER DETAIL ON SHEET 2

ALL COUPLERS TO BE ROMAC HP/ALPHA OR XR 501. CONSIDERED INCIDENTAL. ANY WORKS DESCRIBED OR SHOWN ON DRAWINGS, BUT NOT SPECIFIED IN SCHEDULE OF QUANTITIES TO BE CONSIDERED INCIDENTAL.

ALL RESTORATION INCLUDING BUT NOT LIMITED TO ASPHALT, CONCRETE, GRAVEL, GRASS, TOPSOIL/SEED TO BE RESTORED BACK TO EXISTING CONDITION OR BETTER & IS CONSIDERED INCIDENTAL.

HYDRANT ASSEMBLY (MMCD W4) C/W:  
 1 - 150Ø x 150Ø x 150Ø TEE  
 1 - 150Ø HYDRANT VALVE  
 ±4m - 150Ø PVC DR18 LEAD  
 1 - 150Ø END CAP FOR POTENTIAL FUTURE WORKS AGREED WITH CLIENT.  
 1 - SNAKEKIT ACCESS POINT WITH GROUNDING ROD AND COBRA ACCESS POINT WITH GROUNDING ROD AS PER MANUFACTURER'S SPECIFICATIONS. FINAL HYDRANT LOCATION TO BE CONFIRMED IN FIELD BY ISL/RMOW REPRESENTATIVE (TYP.).

DECOMMISSION EX VALVE PER DETAIL ON SHEET 02 (TYP.).

REPLACE EXISTING WATER SERVICE AND EX PROPERTY DAIGLE & CONNECT TO PR 150Ø WM PER RMOW STD DETAIL W2-B & STD DETAIL W2-A (TYP) C/W:  
 1 - SNAKESKIN ACCESS POINT AS PER MANUFACTURER'S SPECIFICATIONS (TYP)

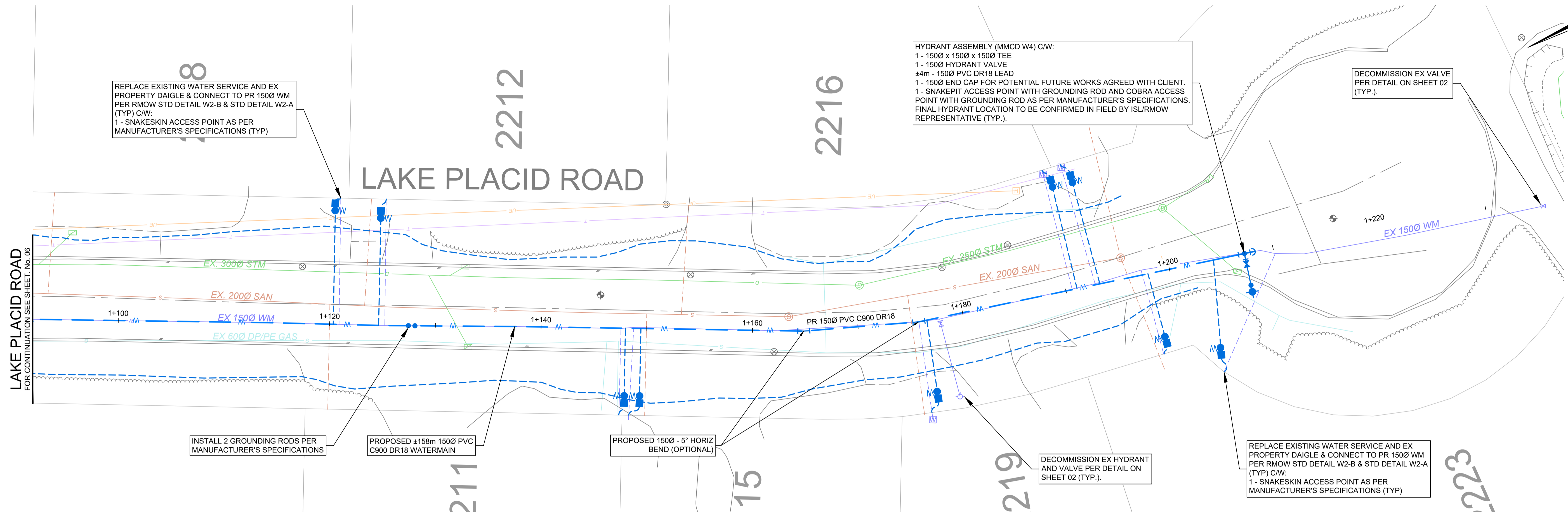
INSTALL 2 GROUNDING RODS PER MANUFACTURER'S SPECIFICATIONS

PROPOSED ±158m 150Ø PVC C900 DR18 WATERMAIN

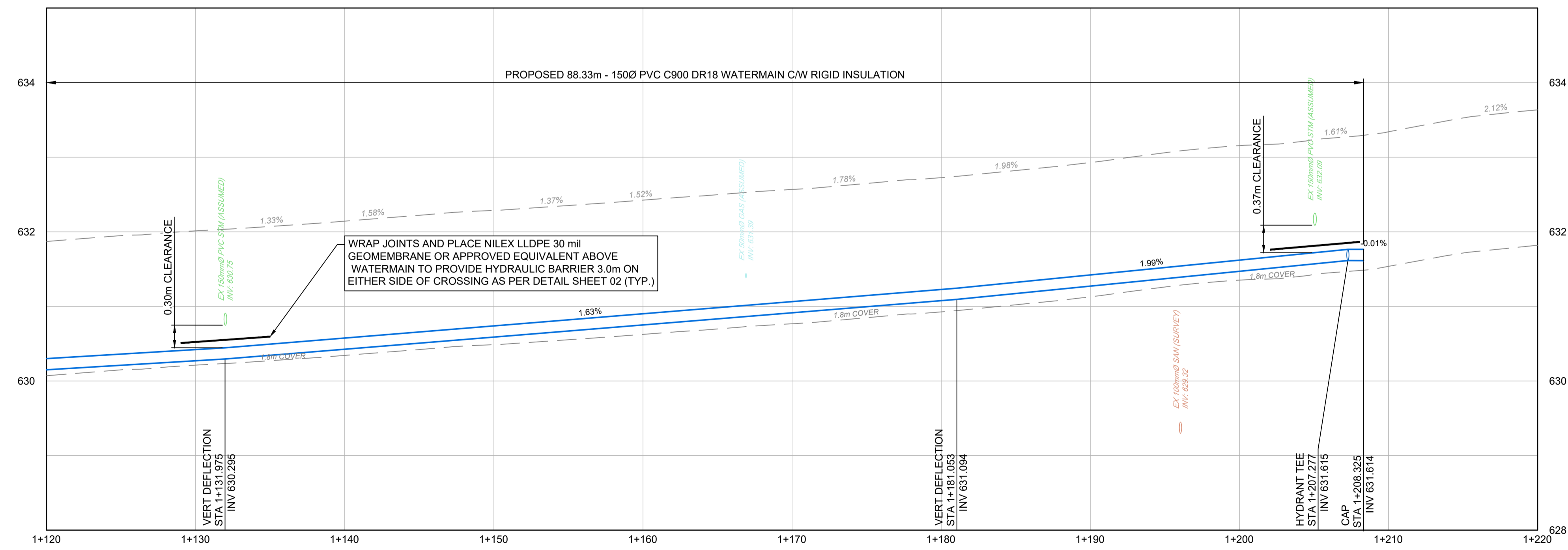
PROPOSED 150Ø - 5° HORIZ BEND (OPTIONAL)

DECOMMISSION EX HYDRANT AND VALVE PER DETAIL ON SHEET 02 (TYP.).

REPLACE EXISTING WATER SERVICE AND EX PROPERTY DAIGLE & CONNECT TO PR 150Ø WM PER RMOW STD DETAIL W2-B & STD DETAIL W2-A (TYP) C/W:  
 1 - SNAKESKIN ACCESS POINT AS PER MANUFACTURER'S SPECIFICATIONS (TYP)



PLAN  
SCALE: 1:200



PROFILE  
SCALE: 1:200H / 1:40V



File: G:\Projects\33000\33516\_RMOW\_Upgrade\Water\_Main\_Upgrade\02\_CADD\02\_Drafting\02\_Production\ProductionSheets\_33516.dwg

REV NO.	REVISION DESCRIPTION	DATE	DRAWN	APPRD
1	75% DESIGN	2023/06/14	JT	GS
2	ISSUED FOR TENDER	2023/12/19	JT	GS



**WATER WORKS**

**2024 WATERMAIN UPGRADES**  
WATERMAIN PLAN / PROFILE 1+120 - 1+220



#101 - 38026 Second Avenue Squamish, BC V8B 0C3  
T: (604) 815-4646 F: (604) 815-4647

ISSUED FOR TENDER DESIGN NO.

SCALE	1:200	CREATION DATE	2023/12/19	DWG. NO.
DRAWN BY	JT	DESIGN BY	GS	07 OF 08
CHECKED BY	GS	APPROVED BY	GS	REV. 2

**33516**

EXISTING UTILITIES SHOWN ARE BASED UPON AVAILABLE RECORD DRAWINGS AND MAY NOT BE COMPLETE OR ACCURATE. THE CONTRACTOR REMAINS RESPONSIBLE FOR THE FIELD LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND FOR THEIR PROTECTION DURING CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE FOR FIELD LOCATES OF EXISTING UTILITY CROSSINGS, TIE-INS & SERVICES, CONFIRMING LOCATION AND ELEVATION PRIOR TO CONSTRUCTION AND COORDINATE WITH THE CONTRACT ADMINISTRATOR AS REQUIRED TO ACCOMMODATE THE WATERMAIN INSTALLATION

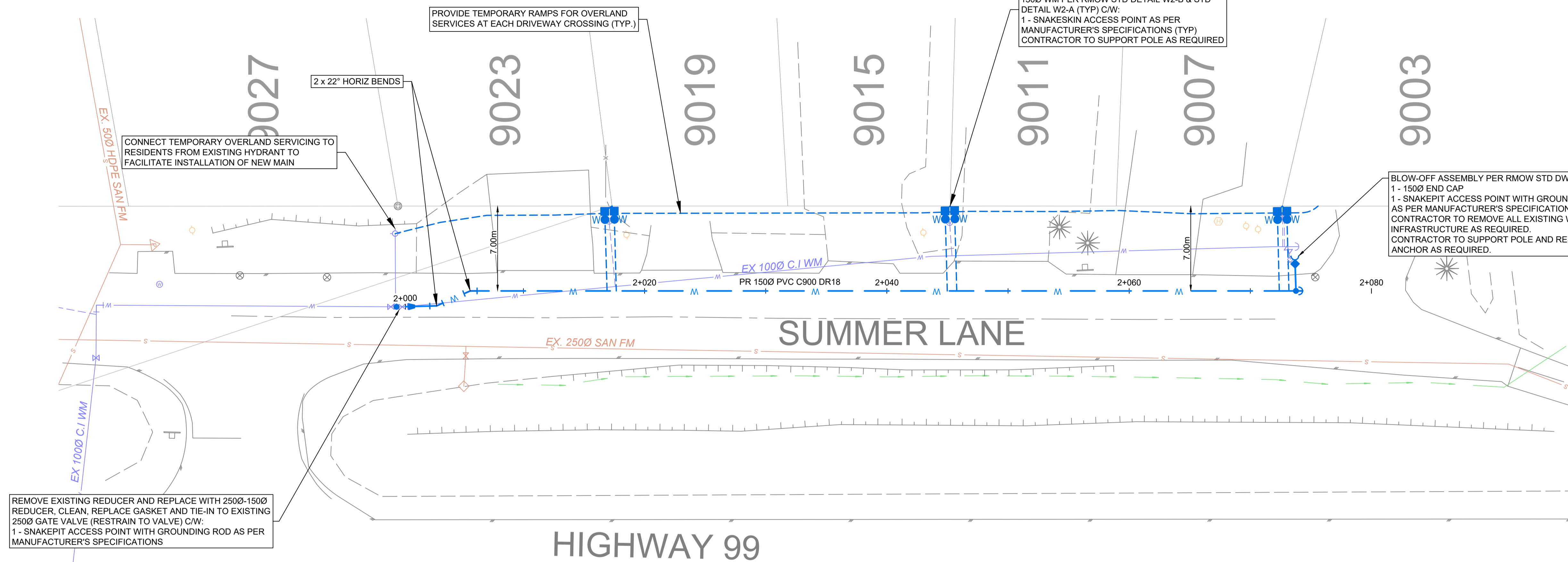
ALL FITTINGS RESTRAINED w/ SERIES 1300/1350/1390 UNFLANGED RESTRAINERS c/w POURED THRUST BLOCK (RMOW STD DWG W12-A AND W12-B) OR LOCK BLOCK AS PER DETAIL ON SHEET 2

ALL COUPLERS TO BE ROMAC HP/ALPHA OR XR 501. CONSIDERED INCIDENTAL. ANY WORKS DESCRIBED OR SHOWN ON DRAWINGS, BUT NOT SPECIFIED IN SCHEDULE OF QUANTITIES TO BE CONSIDERED INCIDENTAL.

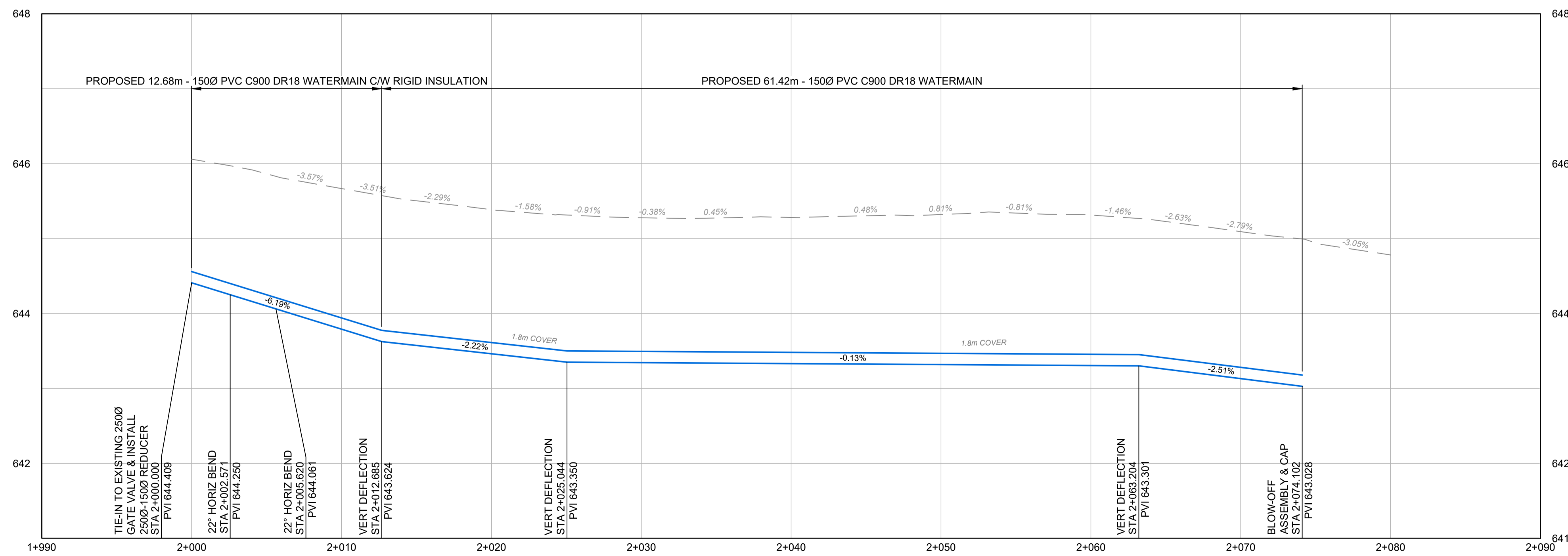
ALL RESTORATION INCLUDING BUT NOT LIMITED TO ASPHALT, CONCRETE, GRAVEL, GRASS, TOPSOIL/HYDROSEED TO BE RESTORED BACK TO EXISTING CONDITION OR BETTER & IS CONSIDERED INCIDENTAL.

REPLACE EXISTING WATER SERVICE AND EXISTING PROPERTY DAIGLE & CONNECT TO PR 1500 WM PER RMOW STD DETAIL W2-B & STD DETAIL W2-A (TYP) C/W:  
1 - SNAKESKIN ACCESS POINT AS PER MANUFACTURER'S SPECIFICATIONS (TYP)  
CONTRACTOR TO SUPPORT POLE AS REQUIRED

BLOW-OFF ASSEMBLY PER RMOW STD DWG W8 C/W:  
1 - 1500 END CAP  
1 - SNAKEKIT ACCESS POINT WITH GROUNDING ROD AS PER MANUFACTURER'S SPECIFICATIONS  
CONTRACTOR TO REMOVE ALL EXISTING WATER INFRASTRUCTURE AS REQUIRED.  
CONTRACTOR TO SUPPORT POLE AND RESET ANCHOR AS REQUIRED.



PLAN  
SCALE: 1:200



PROFILE  
SCALE: 1:200H / 1:40V



File: G:\Projects\33000\33516\_RMOW\_Creekside\_Water\_Main\_Upgrade\02\_Drafting\02\_Productions\SummerLane\_33516.dwg

PLOT DATE: December 20, 2023

REV NO.	REVISION DESCRIPTION	DATE	DRAWN	APPRD
1	50% DESIGN	2023/09/22	JT	GS
2	ISSUED FOR TENDER	2023/12/19	PO	GS



**WATER WORKS**

**2024 WATERMAIN UPGRADES**  
WATERMAIN PLAN / PROFILE 2+000 - 2+080



#101 - 38026 Second Avenue Squamish, BC V8B 0C3  
T: (604) 815-4646 F: (604) 815-4647

ISSUED FOR TENDER DESIGN NO.

SCALE	1:200	CREATION DATE	2023/12/19	DWG. NO.
DRAWN BY	JT	DESIGN BY	GS	08
CHECKED BY	GS	APPROVED BY	GS	08
				REV. 2

**33516**

*Appendix B*  
*Geotechnical Report*

ISL Engineering and Land Services Ltd.  
101 – 38026 2<sup>nd</sup> Avenue  
Squamish, BC  
V8B 0C3

July 7, 2023  
File: 2000

Attention: Mr. Graham Schulz, P.Eng.

**RE: Preliminary Geotechnical Report, Proposed Watermain Replacement,  
Taylor Way and Lake Placid Road, Resort Municipality of Whistler, BC**

## **1.0 INTRODUCTION**

The Resort Municipality of Whistler (RMOW) is proposing to replace the watermain beneath Lake Placid Road and along Taylor Way in the Creekside neighbourhood in Whistler. We understand that geotechnical recommendations are required for the project which would be considered in the civil engineering design for the project. Frontera Geotechnical Inc. (Frontera) has been engaged to provide geotechnical recommendations for the project.

Issued for tender drawings prepared by ISL Engineering dated, June 21, 2023, have been reviewed in preparing this report. The proposed improvements include installation of approximately 300 metres of 200 mm diameter watermain to be installed approximately 1.5 m to 2.0 m below grade along the same alignment as the existing pipe.

Frontera completed a drill-based geotechnical investigation along the proposed alignment. This report presents the findings of our investigation and provides geotechnical recommendations for the design and construction of the proposed improvements.

This report has been prepared exclusively for our client, for their use, and the use of others on their design team, however, it remains the property of Frontera Geotechnical Inc.

## **2.0 SITE DESCRIPTION**

The proposed watermain is to be installed along Lake Placid Road from 2220 to 2204 Lake Placid Road and along the length of Taylor Way between Lake Placid Road and Highway 99. The roads are currently paved with asphalt and used to access residential properties in the neighbourhood.

Lake Placid Road slopes gently to the north with grades ranging from approximately 634 m at the south end of the cul-de-sac down to approximately 631 m geodetic elevation its intersection with Taylor Way according to the RMOW GIS Webmap. Taylor Way slopes gently from Highway 99 down to its intersection with Lake Placid Road from approximately 633 m geodetic elevation to 631 m.

---



### 3.0 SUBSURFACE CONDITIONS

#### 3.1 Soil Conditions

Frontera completed a geotechnical investigation on April 25, 2023. The investigation comprised a total of 5 solid stem auger holes each supplemented with a dynamic cone penetration test (DCPT) sounding. The auger test holes allowed for the soils to be logged in the field and sample collection for laboratory analysis. The DCPT soundings allow us to infer the in-situ density of the underlying soils.

DCPT soundings are completed by driving steel rods with a blunt tip into the ground using a standardized mechanical drop hammer. The number of blows from the drop hammer required to advance the rods are recorded in 300 mm intervals. The number of blows required to drive the rods 300 mm can be used for inference of the in-situ density of granular soils and fills.

The approximate locations of the test holes are shown on the attached site plan, our Drawing No. 1302-C-01.

### 4.0 SUBSURFACE CONDITIONS

#### 4.1 Soil Conditions

In general, the soil encountered along the alignment consists of asphalt over crushed rock and sand and gravel fill underlain by peat over sand and gravel along the southern portion of Lake Placid Road and peat over interbedded silt, peat and sand over sand and gravel along Taylor Way and near to its intersection with Lake Placid Road. A general description of the soils encountered is as follows:

Unit	Name	Description	Depth to top of layer (m)	Thickness of Layer (m)
1	FILL	Sand and gravel, compact to dense, dry becoming wet with depth.  0.2 metres of 19 mm minus crushed rock road base over approximately 0.9 to 1.8 m of well graded fine to coarse grained sand with subangular gravel.	0 m	0.9 to 1.8 m
2	PEAT	Fibrous to amorphous, soft to firm, wet.	1.2 to 1.8 m	0.6 to 3.0 m
3	INTERBEDDED SILT, PEAT AND SAND	Interbedded thin layers of organic silt, fibrous peat and fine grained sand, traces of rotten wood debris, soft, wet.	1.8 to 4.9 m	4.0 to 6.0 m
4	SAND and GRAVEL	Fine to coarse grained sand with gravel, well graded, dense, wet.	3.4 to 4.0 m	> 1.2 m

Test hole TH23-04 was terminated when refusal was met at approximately 0.9 m depth on an inferred buried log.

For a more detailed description of the subsurface conditions refer to test hole logs in Appendix A.





## 4.2 Groundwater Conditions

The groundwater elevation was encountered in the test holes between 0.5 m to 1.5 m below existing grade. The water table the deepest at test hole TH23-01 in the south and shallowest at TH23-03 to the north of the investigated alignment along Lake Placid Road where site elevations are lower.

## 5.0 DISCUSSION

### 5.1 General

In general, the proposed works are considered feasible from a geotechnical standpoint provided the recommendations in this report are followed.

The soil conditions consist of highly compressible peat and soft silt often containing wood fibres, and other organic debris. Where encountered these materials would require excavation and replacement with well compacted granular fill within trenches. Stumps, logs and woody debris may be encountered in excavations as was identified in test hole TH23-04. However, as the proposed alignment is along the existing watermain trench, granular fill materials are assumed. Provided the existing trench fill is of good quality, we expect it would be suitable for re-use as trench backfill.

The underlying silt and peat are susceptible to consolidation settlement when exposed to an increase in stress such as that expected from the dense backfill above the pipe.

Conditions within the excavation trench with respect to soil variability and groundwater elevation may vary along the alignment and should be considered for project planning and execution.

### 5.2 Settlement

The soil profile consists of granular fill over peat over interbedded peat, silt and sand over sand and gravel. The peat and underlying interbedded peat and silt are considered susceptible to consolidation settlement when exposed to an increase in stress.

Approximately 1.8 m of granular fill was identified above the peat along Lake Placid Road and the peat was only identified to approximately the same depth over silty deposits along Taylor Way. We understand that the new watermain is to be installed in the same location as the existing watermain and will be generally within the upper 1.8 m below existing ground level. Therefore, the induced loads from the proposed utility construction are expected to be negligible as the weight of the backfill within the trench would be expected to be similar to that prior to installation.

Where the elevation of the new watermain is lower, it could be within the peat which is considered susceptible to primary consolidation, secondary compression, and long-term degradation which would contribute to prolonged settlement. Over time settlement will accumulate at the surface due to the degradation of the peat. Therefore, additional mitigation measures may be required in the form of use of lightweight fill or other alternatives as we would anticipate some long-term settlement due to consolidation or compression of the underlying soils beneath the new utilities.

Once the design elevations have been confirmed, they should be provided to Frontera for review and additional recommendations can be made at that time. Regardless of the elevation of the proposed pipe, we recommend the use of flexible connections where tying into existing pipes at the extents of the project boundary and at service connections.



Settlement may occur due to the lowering of the groundwater table. Remedial work may be required. The specialty dewatering contractor should provide a design sealed by a professional engineer which includes an estimate of dewatering related settlement.

Any ponding of water in the pipe trench in combination with disturbance due to the pipe installation work may soften the subgrade soil which could possibly cause settlement. The contractor must take care to ensure the excavation is maintained in a dry state, seepage is controlled, and disturbance to the pipe subgrade soils is prevented. Any pipe subgrade soils disturbed during the work for whatever reason should be excavated and be replaced with approved pipe bedding material.

### **5.3 Seismic Considerations**

The proposed improvements are located within a seismically active zone. It is generally accepted that loose to compact sand and non-plastic silt are prone to liquefaction or strain softening during cyclic loading caused by large earthquakes. Once liquefaction has been triggered, experience has shown that permanent vertical and horizontal ground movements may be experienced.

We understand that typically, services in Whistler are not designed to resist the effects of liquefaction which would include vertical settlement and horizontal movements. A detailed liquefaction assessment is beyond the scope of this report. It should be appreciated that following a major earthquake event such as the 1 in 475 or 1 in 2,475 seismic hazard events that significant damage to services may occur.

## **6.0 RECOMMENDATIONS**

### **6.1 Site Preparation**

#### *6.1.1 Stripping*

Prior to the watermain installation, any variable fill, topsoil, peat, or organic materials should be removed from the trench to expose a subgrade of granular fill. Any soft, loose, disturbed or otherwise unsuitable soil should be removed from beneath the service alignment prior to placing pipe bedding.

If peat is encountered at the base of the trench, we recommend that it be over-excavated by 0.45 m, and that the peat is overlain by a non-woven geotextile (such as Nilex 4545) prior to placing 19 mm minus crushed rock to the base of pipe.

#### *6.1.2 Excavations*

Open cut excavations are expected to be temporarily stable at slopes of 1H:4V or flatter to allow for installation of temporary shoring cages. Sloughing of trench walls should be expected. Temporary cut slopes could be covered in polyethylene sheeting to help reduce erosion and sloughing in wet weather. Excavations advanced below the water table are expected to be unstable and will be prone to sloughing, soil migration, and could lead to undermining of the adjacent unsaturated soils and asphalt. Therefore, as discussed below, dewatering is recommended.

All work must be carried out in accordance with WorkSafe BC regulations.

#### *6.1.3 Dewatering*

The water table is estimated to be as high as at least 0.5 m below existing site grades and could be higher following large precipitation events. All installations are expected to be below the groundwater table.



There is potential to produce a high volume of water into excavations which extend below the groundwater table.

Further, the existing water services trench may be backfilled with clear crushed gravel which may produce high flows and require that extensive dewatering be carried out. In some cases, localized sumps with pumps installed below the base of excavation may be sufficient to control flows. For deeper excavations well point dewatering may be necessary; requiring that a specialty dewatering contractor be engaged. The contractor should ensure that the water table has been lowered at least 0.3 m below the base of excavation prior to excavating.

The entire area is underlain by peat. Lowering the water table will increase the effective stress on the peat and has potential to cause large settlements. Therefore, it is critical that the depth and time of dewatering is kept to a minimum.

#### 6.1.4 Backfill

We recommend that all work be carried out in general accordance with MMCD specifications.

We recommend that all backfill be clean sand to sand and gravel fill, containing less than 5% fines, compacted in 300 mm loose lifts to a minimum standard of 95% of its Modified Proctor Maximum Dry Density (ASTM D 1557) while at a moisture content that is within 2% of its optimum for compaction.

We expect that some of the excavated granular material will be suitable for reuse. Frontera should be asked to review the material at time of construction to confirm.

Density testing should be completed to demonstrate that the specified level of compaction is being achieved.

## 6.2 Off-Site Pavement Structures

We expect that the following pavement structure would be sufficient to support the anticipated traffic.

Table 2. Recommended **minimum** pavement structure:

<b>Material</b>	<b>Thickness (mm)</b>
<i>Asphalt (60 mm base course, 40 mm surface course)</i>	100
<i>19 mm minus crush gravel base</i>	150
<i>100 mm minus, well graded, clean, sand and gravel subbase course</i>	300

All base and sub-base materials should be compacted to a minimum of 95% of their Modified Proctor Maximum Dry Density (ASTM D1557) at a moisture content that is within 2% of optimum for compaction.

## 7.0 FIELD REVIEWS

Frontera Geotechnical Inc. should be asked to carry out sufficient field reviews during construction to ensure that the Geotechnical Design recommendations contained within this report have been adequately communicated to the design team and to the contractors implementing the design. These field reviews are not carried out for the benefit of the contractors and therefore do not in any way affect the contractor's obligations to perform under the terms of their contract.



It is the contractors' responsibility to advise Frontera Geotechnical Inc. (a minimum of 24 hours in advance) that a field review is required. Geotechnical field reviews are normally required at the time of the following:

- |                    |  |
|--------------------|--|
| 1. Stripping       | Review of stripped subgrade prior to any fill placement or pipe installation |
| 2. Trench Backfill | Review of materials, placement, and compaction                               |
| 3. Road Structure  | Review of materials, placement, and compaction                               |

It is critical that these reviews are carried out to ensure that our intentions have been adequately communicated. It is also critical that contractors working on the site view this document in advance of any work being carried out so that they become familiarized with the sensitive aspects of the works proposed. It is the responsibility of the developer to notify Frontera Geotechnical Inc. when conditions or situations not outlined within this document are encountered.

### 8.0 CLOSURE

This report is prepared solely for use by our client and their design team for this project as described to the general standards of similar work for similar projects in this area and no other warranty of any kind is expressed or implied. Frontera Geotechnical Inc. accepts no responsibility for any other use of this report.

We are pleased to assist you with this project, and we trust this information is helpful and sufficient for your purposes at this time. Please do not hesitate to call the undersigned if you require clarification or additional details.

Yours truly,

**Frontera Geotechnical Inc.**

Will Gerrard, P.Geo.  
Geoscientist

Reviewed by:


EGBC  
Permit to Practice  
#1001392

Steven Fofonoff, M.Eng., P.Eng.  
Principal



Geotechnical Investigation Plan  
 Proposed Fish Weir  
 Taylor Way and Lake Placid Road,  
 Whistler, BC

FILE NO.  
 2000  
 DWG NO.  
 2000 - 01

LEGEND  
 Auger Test Hole

Date: 2023-04-24

Drawn By: SG	Approved By: DS	Reviewed By:
-----------------	--------------------	--------------

Scale: NTS, Locations Approximate





**APPENDIX A**

**TEST HOLE LOGS**





**APPENDIX A**

**TEST HOLE LOGS**



**Test Hole Log: TH23-01**

**Project No.:** 2000      **Client:** ISL Engineering and Land Services Ltd.  
**Project Title:** Proposed Watermain Upgrades  
**Address:** Taylor Way and Lake Placid Drive, Whistler, BC  
**Geographic Coordinates:** 500147.35262, 5548846.42509



#1 - 38920 Queens Way  
 Squamish, BC V8B 0K8  
 604-898-1093  
 www.fronterageo.ca

Depth (m)	Strata	Description	Dynamic Cone Penetration Test (DCPT)					Sample No.	Moisture Content (%)	Groundwater / Well	Remarks
			0	12	24	36	48				
Ground Surface EL 631.85 m											
0	ASPHALT										
		0.09 m EL 631.76 m									
	ROAD BASE										
		19 mm minus crushed rock, well graded, very dense, dry, grey.									
		0.3 m EL 631.55 m									
	FILL										
		Sand and gravel fill, fine to coarse grained sand, fine to medium grained subangular gravel, well graded, dry to moist, brown.									
		1.83 m EL 630.02 m									
	PEAT										
		Amorphous, soft, wet, dark brown.									
		3.35 m EL 628.5 m									
	SAND and GRAVEL										
		Fine to coarse grained sand and fine to coarse grained, subrounded gravel, well graded, dense, wet, yellow/brown.									
		4.57 m EL 627.28 m									
	Test Hole Terminated at 4.5 m depth										

RSLog / Frontera Geotechnical - 9.1 m / frontera-geotechnical-inc / admin / May 16, 2023 05:09 PM

**Date of Drilling:** April 25, 2023  
**Drilling Method:** Truck Mounted Solid Stem Auger  
**Logged By:** SG

**Datum:**  
**Hole Diameter (mm) :** 6  
**Page:** 1 of 1



**Test Hole Log: TH23-02**

**Project No.:** 2000

**Client:** ISL Engineering and Land Services

**Project Title:** Proposed Watermain Upgrades

**Address:** Taylor Way and Lake Placid Drive, Whistler, BC

**Geographic Coordinates:** 500147.35262, 5548846.42509



#1 - 38920 Queens Way  
Squamish, BC V8B 0K8  
604-898-1093  
www.fronterageo.ca

Depth (m)	Strata	Description	Dynamic Cone Penetration Test (DCPT)					Sample No.	Moisture Content (%)	Groundwater / Well	Remarks
			0	12	24	36	48				
Ground Surface EL 630.94 m											
0	ASPHALT										
		0.09 m EL 630.84 m									
	ROAD BASE										
		19 mm minus crushed rock, well graded, very dense, dry, grey.									
		0.3 m EL 630.63 m									
	FILL										
		Sand and gravel fill, fine to coarse grained sand, fine to medium grained subangular gravel, well graded, dry to moist, brown.									
		1.83 m EL 629.11 m									
	PEAT										
		Fibrous, soft to firm, wet, dark brown.									
		3.96 m EL 626.97 m									
	SAND and GRAVEL										
		Fine to coarse grained sand and fine to coarse grained, subrounded gravel, well graded, dense, wet, yellow/brown.									
		4.57 m EL 626.36 m									
		Test Hole Terminated at 4.5 m depth									
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											

**Date of Drilling:** April 25, 2023

**Drilling Method:** Truck Mounted Solid Stem Auger

**Logged By:** SG

**Datum:**

**Hole Diameter (mm) :** 6

**Page:** 1 of 1

RSLog / Frontera Geotechnical - 9.1 m / frontera-geotechnical-inc / admin / May 16, 2023 05:09 PM

**Test Hole Log: TH23-03**

**Project No.:** 2000

**Client:** ISL Engineering and Land Services

**Project Title:** Proposed Watermain Upgrades

**Address:** Taylor Way and Lake Placid Drive, Whistler, BC

**Geographic Coordinates:** 500147.35262, 5548846.42509



#1 - 38920 Queens Way  
Squamish, BC V8B 0K8  
604-898-1093  
www.fronterageo.ca

Depth (m)	Strata	Description	Dynamic Cone Penetration Test (DCPT)					Sample No.	Moisture Content (%)	Groundwater / Well	Remarks
			0	12	24	36	48				
0		Ground Surface EL 629.72 m									
0.09	ASPHALT										
0.63	ROAD BASE										
0.63		19 mm minus crushed rock, well graded, dense, dry, grey.									
1.83	FILL										
1.83		Silty sand and gravel fill, fine to coarse grained sand, fine to medium grained subangular gravel, well graded, dense, dry to moist, grey.									
1.83	PEAT										
1.83		Fibrous to amorphous, soft to firm, wet, dark brown.									
4.88	Interbedded silt, peat and sand										
4.88		Interbedded fine layers of organic silt, amorphous peat and fine sand with traces of rotten wood, soft, wet, grey/brown									
8.53	Silty GRAVEL										
8.53		Fine to coarse grained, angular gravel with silt, poorly graded, compact, wet, blue/grey.									
9.14		Test Hole Terminated at 9.1 m depth									
1.83 - 4.88								1	280		
4.88 - 8.53								2	129		
8.53 - 9.14								3	94		
8.53 - 9.14								4	74	8.5 m - 9.0 m - Poor recovery.	

**Date of Drilling:** April 25, 2023

**Drilling Method:** Truck Mounted Solid Stem Auger

**Logged By:** SG

**Datum:**

**Hole Diameter (mm) :** 6

**Page:** 1 of 1

**Test Hole Log: TH23-04**

**Project No.:** 2000      **Client:** ISL Engineering and Land Services  
**Project Title:** Proposed Watermain Upgrades Ltd.  
**Address:** Taylor Way and Lake Placid Drive, Whister, BC  
**Geographic Coordinates:** 500147.35262, 5548846.42509 ↗



#1 - 38920 Queens Way  
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Depth (m)	Strata	Description	Dynamic Cone Penetration Test (DCPT)						Sample No.	Moisture Content (%)	Groundwater / Well	Remarks
			0	12	24	36	48	60				
Ground Surface			EL 0 m									
0	X	<b>FILL</b> Sand and gravel fill with trace wood, fine to coarse grained sand, fine to coarse grained subrounded gravel, well graded, dry to moist, brown.										0.9 m - Test hole terminated on buried log.
0.91		Test Hole Terminated at 0.9 m depth										
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												



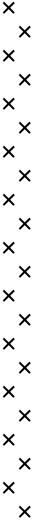
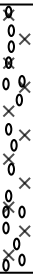
**Date of Drilling:** April 25, 2023  
**Drilling Method:** Truck Mounted Solid Stem Auger  
**Logged By:** SG

**Datum:**  
**Hole Diameter (mm) :** 165  
**Page:** 1 of 1

**Test Hole Log: TH23-05**

**Project No.:** 2000      **Client:** ISL Engineering and Land Services Ltd.  
**Project Title:** Proposed Watermain Upgrades  
**Address:** Taylor Way and Lake Placid Drive, Whistler, BC  
**Geographic Coordinates:** 500147.35262, 5548846.42509

#1 - 38920 Queens Way  
 Squamish, BC V8B 0K8  
 604-898-1093  
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Depth (m)	Strata	Description	Dynamic Cone Penetration Test (DCPT)					Sample No.	Moisture Content (%)	Groundwater / Well	Remarks
			0	12	24	36	48				
Ground Surface EL 630.94 m											
0		<b>FILL</b> Sand and gravel fill with trace wood fibers, fine to coarse grained sand, fine to coarse, subrounded gravel, well graded, compact, dry to wet, brown.									
1.22		EL 629.72 m									
1.83		<b>PEAT</b> Fibrous, firm, wet, dark brown.						1	125		
1.83		EL 629.11 m									
2.0		<b>Interbedded silt, peat and sand</b> Interbedded fine layers of organic silt, amorphous peat and fine sand with traces of rotten wood, soft, wet, grey/brown						2	84		
6.71		EL 624.23 m									
7.0		<b>Silty GRAVEL</b> Fine to coarse grained, angular gravel with silt, poorly graded, wet, grey.									
9.14		EL 621.79 m									
9.14		Test Hole Terminated at 9.1 m depth									

RSLog / Frontera Geotechnical - 9.1 m / frontera-geotechnical-inc / admin / May 16, 2023 05:09 PM

**Date of Drilling:** April 25, 2023  
**Drilling Method:** Truck Mounted Solid Stem Auger  
**Logged By:** SG

**Datum:**  
**Hole Diameter (mm) :** 6  
**Page:** 1 of 1