Contract No.
T.O.M 2025-001

Trailer Court Subdivision & Howe Street Reconstruction

TENDER DOCUMENTS

The Corporation of the Town of Marathon

Prepared By:

March 19th, 2025

TENDERER'S CHECK LIST

Before submitting your tender, check the following points:

1.	Has your tender been signed, sealed and witnessed?	( )
2.	Have you enclosed the Tender Deposit, i.e. certified check or bid bond?	( )
3.	Have you enclosed the Agreement to Bond, signed and sealed by your proposed Surety?	( )
4.	Have you completed all schedules and prices in the Tender Form?	( )
5.	Have you indicated the number of addenda included in the Tender Price?	( )
6.	Have you completed the Certificate of Compliance with the Town of Marathon's Policy on Contractor Safety?	( )
7.	Have you listed your Sub-Contractors and major suppliers? (if applicable)	( )
8.	Have you listed your Experience in Similar Work?	( )
9.	Have you listed your Senior Staff?	( )
10.	Have you completed Tendering Statements "A" to "G" (if applicable)	( )
11.	Are the documents complete?	( )

LIST OF CONTRACT DOCUMENTS

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00600 Insurance Requirements
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- Tenderer's Senior Supervisory Staff – Statement "B"
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LIST OF DRAWINGS

Contract Drawings - Book 1 of 1

LIST OF QUANTITY SHEETS

Quantity Sheets - Book 1 of 1

LIST OF OPSS SPECIFICATIONS

Other reference standards, specifications and publications referred to in these specifications also form part of the documents.

No.	Type	Date	No.	Type	Date
100	Muni	Nov, 2024	602	Muni	Nov, 2017
102	Muni	Nov, 2018	603	Muni	Nov, 2024
127	Prov	Apr, 2024	615	Muni	Nov, 2022
180	Muni	Nov, 2021	616	Muni	Apr, 2018
201	Muni	Apr, 2019	539	Muni	Nov, 2024
206	Muni	Apr, 2019	617	Muni	Nov, 2019
310	Muni	Nov, 2017	703	Muni	Apr, 2019
314	Muni	Nov, 2023	706	Muni	Apr, 2018
351	Muni	Nov, 2021	802	Muni	Nov, 2019
353	Muni	Nov, 2021	803	Muni	Apr, 2018
401	Muni	Nov, 2024	804	Muni	Nov, 2014
402	Muni	Nov, 2024	805	Muni	Nov, 2021
404	Muni	Nov, 2017	1002	Muni	Nov, 2013
407	Muni	Nov, 2021	1003	Muni	Nov, 2013
408	Muni	Nov, 2021	1004	Muni	Nov, 2021
410	Muni	Nov, 2018	1010	Muni	Nov, 2013
421	Muni	Nov, 2018	1101	Muni	Nov, 2016
441	Muni	Nov, 2021	1150	Muni	Nov, 2020
442	Muni	Nov, 2020	1350	Muni	Nov, 2023
490	Muni	Nov, 2020	1351	Muni	Nov, 2024
491	Muni	Nov, 2017	1801	Muni	Nov, 2019
492	Muni	Nov, 2020	1840	Muni	Nov, 2019
493	Muni	Nov, 2019	1841	Muni	Nov, 2019
501	Muni	Nov, 2017	1850	Muni	Nov, 2020
510	Muni	Nov, 2018	1860	Muni	Nov, 2018
517	Muni	Nov, 2021			

LIST OF OPSD DRAWINGS

Other reference standards, specifications and publications referred to in these specifications also form part of the documents.

No.	Date	No.	Date
219.110	Nov, 2021	701.100	Nov, 2024
219.210	Nov, 2020	705.010	Nov, 2019
310.020	Nov, 2019	705.030	Nov, 2019
310.033	Nov, 2019	708.010	Nov, 2016
310.039	Nov, 2019	708.020	Nov, 2016
310.050	Nov, 2019	801.010	Nov, 2024
401.010	Nov, 2018	972.130	Nov, 2012
403.010	Nov, 2017	972.132	Nov, 2012
600.040	Nov, 2012	987.101	Apr, 2019
605.030	Nov, 2012	987.110	Apr, 2019
610.010	Nov, 2018	1003.033	Nov, 2021
701.010	Nov, 2014	1006.010	Nov, 2021
701.030	Nov, 2014	2200.010	Nov, 2012

AS REFERENCED IN CONTRACT DOCUMENTS.

For the text of all OPS specifications and copies of OPS drawings, please refer to the MTO

Library website at

https://www.library.mto.gov.on.ca/SydneyPLUS/TechPubs/Portal/tp/opsViews.aspx?lang=en-US This Webpage lists the most current published version of all OPS specifications and drawings. Previous versions of OPS specifications and drawings can be found in the OPS archive at

https://www.library.mto.gov.on.ca/SydneyPLUS/TechPubs/Portal/tp/opsViews.aspx?lang=en-US

SECTION 00100 - INFORMATION TO TENDERERS

1.1 TENDERS

Digital tender submission shall be clearly labeled as to contents, will be received for:

Trailer Court Subdivision & Howe Street Reconstruction
Contract No. T.O.M 2025-001

Tenders must be addressed to:

The Corporation of the Town of Marathon
P.O. Bag "TM", 4 Hemlo Road
Marathon, Ontario, P0T 2E0
Email: worksmanager@marathon.ca

and will be received by:

Greg Maki
E.I.T. – Municipal Engineering
TBT Engineering Limited
1918 Yonge Street
Thunder Bay, Ontario, P7E 6T9
Email: ggmaki@tbte.ca

not later than:

2:00:00 p.m. local time on April 9th, 2025

1.2 FORM OF TENDER AND CONTRACT FORM

.1 Tenders must be completed in ink or typed and submitted digitally.

.2 Each tender shall include the completed copies of each of the following:

- .1 Tender Form (original),
- .2 Agreement to Bond (original),
- .3 A tender deposit (original).
- .4 Certificate of Insurance

.3 The Tenderer will submit supplemental information to his Tender that will

be used in the evaluation of his Tender, as follows:

.1 Statements "A" to "G"
.2 Project Specifications, if in a separate document, need not be submitted with the Tender; however, the Tenderer accepts and acknowledges by his provision of a Tender that he has read and understood all of the requirements of the Contract Documents.
.3 The Tenderer shall give the Total Tender Price both in words and figures and shall fill in all blank spaces for figures and shall fill in all blank spaces for unit prices, item prices, lump sums and other information in the Tender Form and in the Schedule of Tender Prices.
.4 Tenders submitted by facsimile, telex, or telegraph will not be considered.

1.3 TENDER DEPOSIT

Each Tenderer shall include a tender deposit in the form of a Bid Bond payable to The Corporation of the Town of Marathon in the amount of 10% of the bid price.

Bid Bonds shall be submitted on CCDC Form 220.

Tender deposits shall be returned to unsuccessful Tenderers within a reasonable time after the consideration and award of the Contract has elapsed.

The tender deposit of the successful Tenderer shall be exchanged for the Performance Bond for 100% of the total value of the work and a Labour and Materials Payment Bond for 50% of the total value of the work, upon the award of the Contract.

Should the successful Tenderer fail to enter into a Contract with the Owner or fail to produce the required Performance and Labour and Materials Payment Bonds within 14 days of the date of acceptance of the Tender, or to start work as directed, the tender deposit will be forfeited to the Owner.

1.4 DISQUALIFICATION OF TENDERS

Under no circumstances will tenders be considered which:

(a) Are received after the above-advertised closing time for tenders.
(b) Are not accompanied by a Bid Bond in the amount specified
(c) Are not signed.

1.5 INFORMAL OR UNBALANCED TENDERS

Tenders which are incomplete, conditional, illegible or obscure or that contain additions not called for, reservations, erasures, alterations, or irregularities of any kind, may be rejected as informal.
Tenders that contain prices, which appear to be so unbalanced as likely to affect adversely the interests of the Owner, may be rejected.
The Owner reserves the right to waive informalities at its discretion.

Tenderers who have submitted tenders that have been rejected by the Owner because of informalities will normally be notified of the reasons for the rejection within 10 days after the closing date of tenders.

1.6 SUBSEQUENT WITHDRAWAL OR QUALIFYING OF A TENDER

A Tenderer who has already submitted a Tender may submit a further Tender at any time before the official closing time. The last Tender received shall supersede and invalidate all Tenders previously submitted by the Tenderer.

A Tender may be withdrawn by the Tenderer by written notice delivered to the TBT Engineering prior to the time fixed for opening tenders.

1.7 TENDER VALIDITY

This Tender shall constitute an irrevocable offer by the Tenderer, open for acceptance by The Corporation of the Town of Marathon for a period of 60 days, after which time, if not accepted; the Tender shall be null and void. It is understood that errors in the Tender, whether accidental, caused by negligence of the Tenderer or otherwise shall not confer any additional rights of withdrawal upon the Tenderer.

1.8 OMISSIONS/DISCREPANCIES

Should a Tenderer find discrepancies in, or omissions from the drawings, specifications or other Tender documents, or should he be in doubt as to their meaning, he should notify TBT Engineering who may send a written instruction to all Tenderers. Verbal answers are only binding when confirmed by written addenda.

Should the Tenderer not agree that the materials and methods specified, or designated on the drawings, would provide an installation to meet the requirements of the project, he shall notify TBT Engineering in writing, stating his reason of

objection and may submit a suggested alternative. In such an event, TBT Engineering may choose to issue an addendum.

1.9 ERRORS AND OMISSIONS ON TENDER FORM

Whenever in a Tender the amount tendered for an item does not agree with the extension of the estimated quantity and the tendered unit price, the unit price shall govern and the amount of the Total Tender Price shall be corrected accordingly.

If a Tenderer has omitted to enter a price for an item of work set out in the Tender Form, he shall, unless he has specifically stated otherwise in his Tender, be deemed to have allowed elsewhere in the Tender Form for the cost of performing the said item of work and, unless otherwise agreed to by the Owner, no increase shall be made in the total Tender price on account of such omission and the Tenderer shall be deemed to have tendered for the entirety of the scope of work set out in the Tender Form.

1.10 QUALIFICATION OF TENDERERS

The Owner, The Corporation of the Town of Marathon, may make such investigations as it deems necessary to determine the ability of the Tenderer to perform the work, and the Tenderer shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Tender if the evidence submitted by or investigation of such Tenderer fails to satisfy the Owner that such Tenderer is properly qualified to carry out the obligations of the Contract and to complete the work as contemplated therein.

1.11 PROOF OF ABILITY

In order to aid the Owner in determining the ability of each Tenderer to complete the work, the Tenderer shall complete the following Statement sheets which are bound herein.

Statement “A” – Stating the Tenderer’s experience in similar work which it has successfully completed.

Statement “B” – Giving a list of the Tenderer’s senior supervisory staff with a summary of the experience of each.

Statement “C” – Giving the location and description of the construction plant which the Tenderer proposes to use. If applicable.

Statement “D” – Giving the name and address of each proposed sub-contractor used in making up his Tender and shall state the portion of the work allotted to each. Only one sub-contractor shall be named for each part of the work to be sub-contracted.
Statement “E” – Listing the sources of supply for materials. Tenderers will be required to submit sources for the supply of materials under this Contract. No changes in manufactures or materials from those listed are to be made by the Contractor after TBT Engineering has approved the sources.

Statement "F" – Schedule of Materials, when an article is specified by its trade or other name (whether such name is followed by the phrase “or approved equal” or not), the Tenderer shall base its Tender Price on the supply of the named article and no other.

The successful Tenderer may submit alternatives upon award of the Contract in accordance with in The General Conditions of Contract.

Statement “G’ – Local Content, Tenderers are required to make a reasonable effort to include Local Labor, Equipment, Material, and Facilities in the preparation of their bid and execution of the project work.

If applicable, the Tenderer shall list the sources of local sub-contractors to be used to complete the work. If local content is listed under this section, changes in the use of local content after award must be approved by the Contract Administrator.

1.12 AGREEMENT TO BOND

Every Tender shall be accompanied by an “Agreement to Bond” in the form included with the Tender Form and shall be executed under its corporate seal by a Surety Company lawfully doing business in the Province of Ontario from which the Tenderer proposes to obtain the required Bonds prescribed in the Contract. In the event that the Tenderer proposes to submit an alternate Performance Guarantee, a letter from the Bank confirming that the institution is providing the Performance Guarantee as required to be submitted with the Tender.

1.13 HARMONIZED SALES TAX

The tendered unit prices shall include the Harmonized Sales Tax and this amount shall be shown separately on the Tender Form and on invoices submitted by the Contractor.

1.14 TAXES AND DUTIES

The Tenderer shall include sales tax in accordance with current sales tax legislation taking into account any changes that have been made known by the Government and that will occur during the life of the Contract.
If sales taxes are increased or decreased, or other amendments are made in the legislation during the course of the Contract that alter tax amounts carried in the Contract price, an adjustment will be made accordingly to the Total Contract Price.

The Contractor shall keep records and invoices of accounts subject to Harmonized Sales Tax for the purpose of establishing taxes paid and for substantiation in the event of changes to the tax legislation during the course of the Contract.

The Tenderer shall contact the Sales Tax authorities and determine what the applicable taxes are and the procedures for tax exemption and/or refunding and include related administrative costs in the Tender.

1.15 LIMIT OF LIABILITY

1. The liability of the Tenderer to the Owner for loss and damage arising out of the Tenderer 's breach of the "Tender contract" shall be limited to the lesser of the actual loss suffered by the Owner and the amount of Tender Deposit described in Section 1.3 Tender Deposit.

2. The liability of the Owner to any Tenderer for loss and damage arising in tort or for the breach by the Owner of the " Tender Contract" shall be limited to the lesser of the amount of Tender Deposit described in paragraph 1.3 Tender Deposit and the reasonable cost to the Tenderer of preparing its Tender.

1.16 GENERAL CONDITIONS

Ontario Provincial Standards for Roads and Public Works (OPS) General Conditions of Contract OPSS.MUNI 100, November 2024 shall apply to the Contract.

1.17 LUMP SUM FOR MOBILIZATION AND DEMOBILIZATION

The mobilization and demobilization item in the Tender Form is to cover the Tenderer's cost of mobilization at the beginning of the construction period and demobilization at the close of the construction period. The price entered for this item shall be consistent with the costs involved but shall not, in any event, exceed 7.5% of the Total Tender Price.

If the Tenderer has entered against this item in his Tender a price in excess of 7.5% of the Total Tender Price the Owner shall, in preparing Contract Documents based upon the Tender, reduce the price for the said item to an amount not exceeding 7.5% of the Total Tender Price and shall add the amount of the reduction to other items in the Tender breakdown as he deems to be fair and reasonable so the Total Tender Price shall not be affected.

60% of the price for mobilization and demobilization item shall be considered as relating to mobilization and the balance to demobilization.

The payment for mobilization shall be included in the first payment certificate issued for the Contract subject to the Owner being satisfied that total mobilization has been performed. Otherwise, it shall be paid in part over a number of payments until mobilization is deemed to be totally performed.

The payment for demobilization shall become due following substantial performance of the Work and subject to the Owner being satisfied that full demobilization and clean-up of any construction related debris has been performed. The Owner may, in its discretion, allow part payment for demobilization before total demobilization has been affected.

1.18 NON-RESIDENT CONTRACTOR

If the Contractor is a non-resident of Ontario, it shall, immediately after it has received TBT Engineering's written order to commence work, obtain from the Retail Sales Tax Branch a certificate showing that the Contractor has registered with the Retail Sales Tax Branch and shall submit such certificate to The Corporation of the Town of Marathon at the same time that it furnishes the Performance Bond and the Labour and Material Payment Bond.

The Contractor shall not commence work or order any materials or equipment for the Contract until it has registered with the Retail Sales Tax Branch. The Contractor shall ensure that all sub-contractors proposed for carrying out any of the work required by the Contract and which are non-residents of Ontario have registered with and have complied with the requirements of the Retail Sales Tax Branch before they commence any such work.

1.19 RESERVED RIGHTS OF THE OWNER

1. Reserved Rights of the Owner, the Owner may:

    1. Make public the names and Tender Prices of any or all Tenderers;
    2. Request written clarification or the submission of supplementary written information in relation to the clarification request from any Tenderer and incorporate a Tenderer's response to that request for clarification into the Tenderer's Tender;
    3. Reject a Tenderer's Tender on the basis of:
        1. The Tender being limited by way of addition or omission of information,
        2. The requirements for Tender Deposit not being satisfied,
        3. It not being signed by an authorized person or it was not properly witnessed or sealed,
        4. It not being submitted on the prescribed Tender Forms,
        5. Changes being made to the Tender Forms,
        6. Information provided by references,
        7. The Tenderer's past performance on previous contracts awarded by the Owner,
        8. The information provided by a Tenderer pursuant to the Owner exercising its clarification rights under this Tender Call process, or,
        9. Other relevant information that arises during this Tender Call process;
    4. Waive formalities and accept Tenders which substantially comply with the requirements of this Tender Call;
    5. Verify with any Tenderer or with a third party any information set out in a Tender;
    6. Check references other than those provided by any Tenderer;

7. Disqualify any Tenderer whose tender contains misrepresentations or any other inaccurate or misleading information;
8. Disqualify any Tenderer or the Tender of any Tenderer who has engaged in conduct prohibited by this Tender Call;
9. Make changes, including substantial changes, to this Tender Call provided that those changes are issued by way of addenda in the manner set out in this Tender Call;
10. Cancel this Tender Call process at any stage;
11. Cancel this Tender Call process at any stage and issue a new Tender Call for the same or similar deliverables;
12. Accept any Tender in whole or in part;
13. Discuss with any Tenderer different or additional terms to those contemplated in this Tender Call or in any Tenderer's Tender;
14. If a single Tender is received, reject the Tender of the sole Tenderer and cancel this Tender Call process or enter into direct negotiations with the sole Tenderer; or,
15. Reject any or all Tenders in its sole and absolute discretion.

2. These reserved rights are in addition to any other express rights or any other rights which may be implied in the circumstances and the Owner shall not be liable for any expenses, costs, losses or any direct or indirect damages incurred or suffered by any Tenderer or any third party resulting from the Owner exercising any of its express or implied rights under this Tender Call.

1.20 BID PROCESS DISPUTES

1. In the event of a dispute arising in connection with this Tender process including, without limitation, a dispute concerning the existence of the "Tender contract" or a breach of the "Tender contract", or a dispute as to whether the Tender of any Tenderer was submitted on time or whether a Tender is compliant, the Owner may refer the dispute to a confidential binding arbitration pursuant to the Arbitration Act, 1991, as amended, before a single arbitrator with knowledge of procurement/ Tendering law. In the event that the Owner refers the dispute to arbitration, the Tenderer agrees that it is bound to arbitrate such dispute with the Owner. Unless the Owner shall refer such dispute to binding arbitration, there shall be no arbitration of such dispute.

2. In the event the Owner refers a dispute to binding arbitration, the Owner may give notice of the dispute to one or more of the other Tenderers who submitted Tender s, whether or not they may be compliant, each of whom shall be a party to and shall be entitled to participate in the binding arbitration, and each of whom shall be bound by the arbitrator's award, whether or not they participated in the binding arbitration.

3. In the event the Owner refers a dispute to binding arbitration, the parties to the arbitration shall exchange brief statements of their respective positions on the dispute, together with the relevant documents, and submit to a binding arbitration hearing which shall last no longer than two days, subject to the discretion of the arbitrator to increase such time. The parties further agree that there shall be no appeal from the arbitrator's award.

4. This Article is not intended to form part of any "Tender Contract" that may come into being between a Tenderer and any prospective Subcontractor or Supplier of that Tenderer.

1.21 MUNICIPAL FREEDOM OF INFORMATION AND PROTECTION PRIVACY ACT

The Corporation of the Town of Marathon is governed by the Municipal Freedom of Information and Protection of Privacy Act, therefore, Tenderers must accept that Tender Contents can be made public as a condition of the tendering process.

1.22 OCCUPATIONAL HEALTH AND SAFETY ACT

To ensure Tenderer conformity to the Occupational Health and Safety Act, the Tenderer shall provide the Town with such assurance by completion of form provided in the Form of Tender "Occupational Health and Safety Agreement".

1.23 WORKPLACE SAFETY AND INSURANCE BOARD (WSIB)

A "Statement of Good Standing" from the Workplace Safety and Insurance Board (WSIB) is to be completed by the Tenderer within seven (7) calendar days of the Tender opening if The Corporation of the Town of Marathon so requests.

1.24 SITE MEETING

A site meeting can be arranged upon request. A meeting request shall be placed at least 72 hours prior to the start of the meeting by emailing:

Mr. Marc Paris,
Works, Operations, Facilities and Parks Manager
The Corporation of the Town of Marathon
Email: worksmanager@marathon.ca

If notification is not received at least 72 hours prior to the meeting, the site meeting will be cancelled.

1.25 EXAMINATION OF SITE CONDITIONS

Should Tenderers opt to visit the site during bidding, only questions submitted in writing and to the proper contact shall be taken into consideration. Under no circumstance shall Tenderers direct verbal or otherwise questions directly to employees of The Corporation of the Town of Marathon.

Each Tenderer is encouraged to visit the site of the work before submitting its Tender and must satisfy itself by personal examination as to the local conditions to be encountered during the construction and conduct of the work. It shall make its own estimate of the surface facilities, and difficulties to be encountered. It is not to claim at any time after submission of its Tender that there was any misunderstanding of the terms and conditions of the Contract relating to site conditions or access to the site.

A maximum of 1 business day will be permitted for each bidder's field review. The bidder shall submit a request for a field investigation no later than 5 business days after the date of advertising the Contract. The Owner will determine the scheduling for all bidders that have submitted a request on time by using a random selection method. Site investigations shall be limited to Monday to Friday and between the hours of 8:00 AM and 4:30 PM (EST).

Bidders that opt to conduct site reviews prior to the Tender date, shall submit to The Corporation of the Town of Marathon, a site investigation plan, clearly identifying the location and extent of investigations, as well as a detailed site restoration plan, for approval by the Town. Prior to commencing field investigations, bidders shall obtain clearance, scheduling and operational constraints from:

Mr. Marc Paris,
Works, Operations, Facilities and Parks Manager
The Corporation of the Town of Marathon
Ph.: (807)229-1340, Ext. 2229
Fax: (807)229-1999
Email: worksmanager@marathon.ca

1.26 QUESTIONS DURING TENDER PERIOD

.1 No oral interpretations shall be made to any Tenderers as to the meaning of any of the contract documents or to modify any of the provisions of the contract documents. All inquiries shall be submitted by email no later than 72 hours before closing time and directed to:

Greg Maki
E.I.T. – Municipal Engineering
TBT Engineering Limited
Email: ggmaki@tbte.ca

Copy to:

Don Bowes, P. Eng.,
Manager – Municipal Engineering
TBT Engineering Limited
Email: dbowes@tbte.ca

Mr. Marc Paris,
Works, Operations, Facilities and Parks Manager
The Corporation of the Town of Marathon
Email: worksmanager@marathon.ca

1.27 ISSUING OF ADDENDUMS

It is solely the responsibility of the Tenderer to ensure that all issued Addendums to the Tender have been included in the Tender Bid submission. Addendums will be issued via MERX, Biddingo and The Town of Marathon's Bids and Tenders webpage.

1.28 AWARD OF CONTRACT

The Award of the Contract is subject to the receipt of the following approval:

Portions of the work as identified in the Tender Form may be deleted to meet budget constraints, government approvals or other reasons that prevent the Owner from proceeding with the full scope of work in the Tender.
The Lowest Price Tender will be identified by the Owner based on the lowest Total Tender Price determined before the deletions have been deducted.

1.29 REJECTION OF BIDS

The Owner reserves the right to reject any or all Bids and the lowest or any Bid will not necessarily be accepted. The owner will not be responsible for any costs incurred by any Tenderer in preparing and making its bid.

SECTION 00200 - TENDER FORM

1. TENDER FOR THE CONSTRUCTION OF:

CONTRACT NO. T.O.M 2025-001
REHABILITATION AND NEW CONSTRUCITON
TRAILER COURT SUBDIVISION & HOWE STREET

1.1 SUBMISSION

The following Tender is hereby submitted to:

The Corporation of the Town of Marathon
P.O. Bag "TM", 4 Hemlo Road
Marathon, Ontario, P0T 2E0

Hereinafter called the "Owner"

On behalf of:

_____
Contractor

_____
Address

Hereinafter called the "Tenderer"

1.1.1 (We), the undersigned, having fully examined the locality and Place of the Work, having fully investigated the conditions of the Work, having read and understood the Contract Documents (comprised of the tendering information, supplementary general conditions, general conditions, specifications and drawings, including all supplements, addenda and revisions to same to the date of this tender) and having secured all of the information necessary to enable the submission of this tender, hereby agree and offer to perform the totality of the Work described in the Contract Documents, in accordance with the Contract Documents, for the total Tender Price including H.S.T. of:

_____($_____)

1.2 QUANTITIES

1.2.1 The Tender Price is compiled from the Schedule of Tender Prices included hereinafter. The quantities in the schedule being approximate, we agree that the final evaluation will be made on the basis of actual quantities measured during and on completion of the Work at the unit prices in the schedule.

1.3 ADDITIONS AND DEDUCTIONS

1.3.1 The Tenderer agrees that, if this tender is accepted by the Owner:

(i) it will carry out any additional or extra work (including the supplying of any additional Products pertaining thereto) or will delete any work as may be required by the Contract Administrator in accordance with the Contract; and,

(ii) the carrying out of any work referred to in paragraph (i) above or the issuance by the Contract Administrator of a Contract Change Order relating to such work or the acceptance by the Tenderer of such Contract Change Order shall not, except as expressly stated in such Contract Change Order, waive, affect or vary any of the terms of the Contract or of an Contract Change Order previously issued by the Contract Administrator or any of the rights of the Owner or of the Contract Administrator under the Contract.

1.3.2 The Tenderer agrees that, if this tender is accepted by the Owner the prices applicable to work referred to in paragraph 1.3.1 above shall be determined as follows:

(i) The Schedule of Tender Prices shall apply where applicable;

(ii) If the above Schedule is inapplicable the prices shall be determined in accordance with the General Conditions as amended by the Supplementary General Conditions.

1.3.3 The Tenderer agrees that it is not entitled to payment of the Contingency Allowance except for additional work carried out by him in accordance with the Contract and only to the extent of such additional work, as authorized by the Contract Administrator in writing.

1.4 ADDENDA

We agree that we have received Addenda _____ to _____ inclusive, and the tender price includes for the provisions set out in such Addenda.

1.5 CONTRACT TIME AND AWARD

1.5.1 We agree to commence the Work as specified, to proceed continuously to completion and to complete the Work as follows:

The Contractor shall begin the Work no earlier than Tuesday, May 21st, 2025.

The Contractor shall complete all the Work in its entirety by Thursday, October 30th, 2025.
(Refer to Supplementary General Conditions 8.02.09 Liquidated Damages)

1.5.2 The Tenderer is advised that it is the Town of Marathon's intent to maintain full vehicular access to the Pebble Beach located at 39 Howe St during the peak season of tourism. Access to Pebble Beach shall be maintained until September 8th, 2025.

1.6 PROVISIONAL, OPTIONAL AND DELETED TENDER ITEMS

1.6.1 Where in the Form of Tender (Schedule of Tender Prices) under the column headed OPS Spec. No., a number is shown, such number shall be taken to mean and refer to the Ontario Provincial Standard Specifications (OPSS). When a section number is referenced, refer to the applicable specification in this tender document.

1.6.2 Where in the Form of Tender under the column headed OPS SPEC, the initials "**SP**" appear, such initials shall be taken to mean and refer to the "Special Provisions".

1.6.3 For those Tender items noted with an asterisk ***** in the Schedule of Tender Prices are considered to be provisional items and the Owner may delete all or a portion of the item price to Contract award without affecting the remaining Contract prices, without penalty or recourse.

1.6.4 The quantities shown for the unit price items where the notation **(P)** does not occur are estimates only and are for the sole purpose of establishing a dollar amount based on the unit price.

1.6.5 The Owner reserves the right to delete all or any portion of the work prior to Contract award and during the construction period without affecting the remaining Contract prices, without penalty or recourse.

1.7 SCHEDULE OF TENDER PRICES

PART ONE - TRAILER COURT SUBDIVISION
TRAILER COURT ROAD (From Howe Street to Yawkey Avenue) - DWG 24-256-C0 to 24-256-C10

Section A - Grading

Item No.	OPS SPEC	Description	EST. QTY	UNIT	UNIT BID PRICE	TOTAL BID PRICE
A-001	201 (SP)	Clearing & Grubbing	7336	m2	$	$
A-002	206 (SP)	Earth Excavation, Filling and Grading	2989	m3	$	$
A-003	206 (SP)	Removal of Excess Material (SP)	233	m3	$	$
A-004	313 (SP)	Hot Mix Asphalt - 50mm Depth HL-4	1925	m2	$	$
A-005	314 (SP)	Granular A	801	t	$	$
A-006	351 (SP)	Concrete Sidewalk	320	m2	$	$
A-007	353 (SP)	Concrete Curb & Gutter	532	m	$	$
A-008	510 (SP)	Removal of Asphalt Pavement	936	m2	$	$
A-009	510 (SP)	Removal of Curb	41	m	$	$
A-010	511	R-10 Rip Rap	60	m2	$	$
A-011	541	Chain Link Fence	96	m	$	$
A-012	703	Removal of existing Signs	1	Each	$	$
A-013	703 (SP)	Small Signs, Ground Mounted	7	Each	$	$
A-014	803 (SP)	150mm Topsoil and Sod	6204	m2	$	$
A-015	804 (SP)	Seed and Cover	7358	m2	$	$

A-016	805	Light-Duty Silt Fence Barrier	421	m	$	$
A-017	805	Rock Flow Check Dams	3	Each	$	$
A-018	(SP)	Deciduous Tree, 50mm Caliper	16	Each	$	$
A-019	(SP)	Removal of Utility Poles	10	Each	$	$
Total Section A - Grading						$
Section B - Storm Sewers						
B-001	407(SP)	Storm Maintenance Holes (OPSD 701.010)	9	Each	$	$
B-002	407	Catchbasins (OPSD 705.010)	9	Each	$	$
B-003	407	Ditch Inlet Catchbasins (OPSD 705.030)	2	Each	$	$
B-004	410 (SP)	Catchbasin Leads 250 mm (PVC SDR 35)	77	m	$	$
B-005	410 (SP)	300mm PVC Storm Pipe Sewer	198	m	$	$
B-006	410 (SP)	450mm HDPE Storm Sewer	10	m	$	$
B-007	410 (SP)	600mm HDPE Storm Sewer	227	m	$	$
B-008	410 (SP)	750mm HDPE Storm Sewer	40	m	$	$
B-009	441 (SP)	Temporary Storm Service	1	LS	$	$
B-010	510 (SP)	Removal of Storm Sewer	307	m	$	$
B-011	510 (SP)	Removal of Catch Basins	3	Each	$	$
B-012	510 (SP)	Removal of Maintenance Holes	1	Each	$	$
Total Section B - Storm Sewers						$
Section C - Watermain						
C-001	441,510 (SP)	Remove and Dispose of Existing Watermain Pipes and Appurtenances	270	m	$	$
C-002	441,510 (SP)	Remove and Salvage of Existing Fire Hydrant Sets	1	Each	$	$
C-003	441, 442 (SP)	Supply and Install 19mm Dia. Soft "K" Copper Water Service (Open Cut)	303	m	$	$
C-004	441, 442 (SP)	Supply and Install 19mm Service Connection Appurtenance Set	19	Each	$	$
C-005	441, 442 (SP)	Supply and Install 150 mm dia. PVC Watermain (Open Cut)	263	m	$	$
C-006	441, 442 (SP)	Supply and Install 150 mm dia. Ductile Watermain (Open Cut)	9	m	$	$
C-007	441, 442 (SP)	Supply and Install 150 mm dia. Gate Valve and Box	6	Each	$	$
C-008	441, 442 (SP)	Supply and Install Pumper Port Hydrant Set	1	Each	$	$
C-009	441, 442 (SP)	Connection to Existing 150mm dia. Watermain (-0+004)	1	LS	$	$
C-010	441, 442 (SP)	Connection to Existing 150mm dia. Watermain (0+242)	1	LS	$	$

C-011	493 (SP)	Supply and Install 100mm Potable Watermain for Temporary Water Supply System (Incl. All Appurtenances)	1	LS	$	$
C-012	314 (SP)	Supply and Place Additional Granular 'A' Bedding for Watermain - Provisional	20	m3	$	$
C-013	510 (SP)	Supply and Place Unshrinkable Fill - Provisional	10	m3	$	$
C-014	(SP)	Supply and Install Insulation For Watermain and Services - Provisional	58	m2	$	$
C-015	(SP)	Supply and Install Additonal Nitrile Gaskets for PVC Watermain - Provisional	5	Each	$	$
Total Section C - Watermain						$
Section D - Sanitary Sewers						
D-001	407 (SP)	Sanitary Maintenance Holes (OPSD 701.010)	9	Each	$	$
D-002	408 (SP)	Breaking into Maintenance Holes	2	Each	$	$
D-003	410 (SP)	200mm PVC Sanitary Pipe Sewer	293	m	$	$
D-004	410 (SP)	125mm Sanitary Sewer Services	283	m	$	$
D-005	410 (SP)	Temporary Sewer Service	1	LS	$	$
D-006	510 (SP)	Removal of Maintenance Holes	4	Each	$	$
D-007	510 (SP)	Removal of Sanitary Sewer	308	m	$	$
Total Section D - Sanitary Sewers						$
Section E - Electrical						
E-001	603	50mm Rigid PVC Duct		m	$	$
E-002	603	100mm Rigid PVC Duct		m	$	$
E-003	604	High Voltage Cables, Direct Buried in Rigid PVC Duct		m	$	$
E-004	604	Low Voltage Cables, Direct Buried in Rigid PVC Duct		m	$	$
E-005	615	Aluminum Light Standards c/w Concrete Base		Each	$	$
E-006	616 (SP)	Concrete Transformers Bases		Each	$	$
E-007	617	LED Roadway Lighting Luminaires and Bracket Assemblies		Each	$	$
Total Section E - Electrical						$

Section F - General (PHASE ONE)						
F-001		Bonds & Insurance	1	LS	$	$
F-002		Mobilization & Demobilization	1	LS	$	$
F-003	706	Temporary Traffic Control	1	LS	$	$
Total Section F - General (PHASE ONE)						$

PART TWO - HOWE STREET RECONSTRUCTION (PROVISIONAL SCOPE)
HOWE STREET (From Pebble Beach to Yawkey Avenue) - DWG 24-450-C11 to 24-450-C17

Item No.	OPS SPEC	Description	EST. QTY	UNIT	UNIT BID PRICE	TOTAL BID PRICE
Section A - Grading						
A-001	206 (SP)	*Earth Excavation (Grading)	528	m3	$	$
A-002	206 (SP)	*Removal of Excess Material (SP)	516	m3	$	$
A-003	313 (SP)	*Hot Mix Asphalt - 50mm Depth HL-4	1560	m2	$	$
A-004	314 (SP)	*Granular A	375	t	$	$
A-005	351 (SP)	*Concrete Sidewalk	294	m2	$	$
A-006	353 (SP)	*Concrete Curb & Gutter	339	m	$	$
A-007	353 (SP)	*45 Concrete Gutter Outlets (OPSD 605.030)	2	Each	$	$
A-008	510 (SP)	*Removal of Asphalt Pavement	1610	m2	$	$
A-009	510 (SP)	*Removal of Curb	40	m	$	$
A-010	510 (SP)	*Removal of Concrete Sidewalk	12	m2	$	$
A-011	511	*R-10 Rip Rap	50	m2	$	$
A-012	703	*Small Signs, Ground Mounted	1	Each	$	$
A-013	803	*150mm Topsoil and Sod	371	m2	$	$
Total Section A - Grading						$
Section B - Storm Sewers						
B-001	407	Catchbasins (OPSD 705.010)	6	Each	$	$
B-002	408	Breaking into Catch Basins	1	Each	$	$
B-003	410 (SP)	Catchbasin Leads 250 mm (PVC SDR 35)	32	m	$	$
B-004	410 (SP)	300mm PVC Storm Pipe Sewer	19	m	$	$
B-005	421 (SP)	400mm CSP Pipe Culvert	14	m	$	$
B-006	510 (SP)	Removal of CSP Pipe Culvert	12	m	$	$
Total Section B - Storm Sewers						$
Section C - Watermain						
C-001	441,510 (SP)	Remove and Dispose of Existing Watermain Pipes and Appurtenances	110	m	$	$
C-002	441,510 (SP)	Remove and Salvage of Existing Fire Hydrant Sets	1	Each	$	$
C-003	441, 442 (SP)	Supply and Install 19mm Dia. Soft "K" Copper Water Service (Open Cut)	12	m	$	$
C-004	441, 442 (SP)	Supply and Install 50mm Dia. Soft "K" Copper Water Service (Open Cut)	10	m	$	$
C-005	441, 442 (SP)	Supply and Install 64mm Dia. Soft "K" Copper Water Service (Open Cut)	6	m	$	$

C-006	441, 442 (SP)	Supply and Install 19mm Service Connection Appurtenance Set	1	Each	$	$
C-007	441, 442 (SP)	Supply and Install 50mm Service Connection Appurtenance Set	1	Each	$	$
C-008	441, 442 (SP)	Supply and Install 64mm Service Connection Appurtenance Set	1	Each	$	$
C-009	441, 442 (SP)	Supply and Install 100 mm dia. PVC Watermain (Open Cut)	13	m	$	$
C-010	441, 442 (SP)	Supply and Install 150 mm dia. PVC Watermain (Open Cut)	129	m	$	$
C-011	441, 442 (SP)	Supply and Install 150 mm dia. Ductile Watermain (Open Cut)	10	m	$	$
C-012	441, 442 (SP)	Supply and Install 100 mm dia. Gate Valve and Box	1	Each	$	$
C-013	441, 442 (SP)	Supply and Install 150 mm dia. Gate Valve and Box	6	Each	$	$
C-014	441, 442, SP	Supply and Install Pumper Port Hydrant Set	1	Each	$	$
C-015	441, 442, SP	Connection to Existing 50mm dia. Watermain (10+092.5)	1	LS	$	$
C-016	441, 442, SP	Connection to Existing 150mm dia. Watermain (10+225)	1	LS	$	$
C-017	493, SP	Supply and Install 50mm Potable Watermain for Temporary Water Supply System (Incl. All Appurtenances)	1	LS	$	$
C-018	493, SP	19mm Potable Temporary Water Service (connected at curb stop)	1	Each	$	$
C-019	493, SP	50mm Potable Temporary Water Service (connected at curb stop)	1	Each	$	$
Total Section C - Watermain						$
Section D - Sanitary Sewers						
D-001	407 (SP)	*1200mm Maintenance Holes (OPSD 701.010)	3	Each	$	$
D-002	408	*Breaking into Maintenance Holes	2	Each	$	$
D-003	410	*200mm PVC Sanitary Pipe Sewer	12	m	$	$
D-004	410	*Sanitary Service Connections	2	Each	$	$
D-005	410	*Temporary Sewer Service (SP)	1	LS	$	$
D-006	410	*300mm PVC Sanitary Pipe Sewer	7	m		$
D-007	410	*525mm PVC Sanitary Pipe Sewer	168	m	$	$
D-008	510	*Removal of Maintenance Holes	4	Each	$	$
D-009	510	*Removal of Sanitary Sewer	88	m	$	$
D-010	510	*Abandon Sanitary Sewer in Place	215	m	$	$
D-011	510	*Abandon Sanitary Structure in Place	1	Each	$	$
D-012	SP	*50mm Rigid Styrofoam Insulation	90	m2	$	$
Total Section D - Sanitary Sewers						$
Section E - Electrical						

E-001	617	LED Roadway Lighting Luminaires and Bracket Assemblies on Existing Poles		Each	$	$
Total Section E - Electrical						$
Section F - General (PHASE TWO)						
F-001		Bonds & Insurance	1	LS	$	$
F-002		Mobilization & Demobilization	1	LS	$	$
F-003	706	Temporary Traffic Control	1	LS	$	$
Total Section F - General (PHASE ONE)						$

SUMMARY OF TENDER PRICES **PART ONE** **TRAILER COURT ROAD (From Howe Street to Yawkey Avenue) - DWG 24-256-C0 to 24-256-C10**	
Section A - Grading	$
Section B - Storm Sewers	$
Section C - Watermain	$
Section D - Sanitary Sewers	$
Section E - Electrical	$
Section F - General	$
SUB-TOTAL	$
13% HST	$
TOTAL TENDER PRICE PART ONE	**$**
PART TWO (PROVISIONAL SCOPE) **HOWE STREET (From Pebble Beach to Yawkey Avenue) - DWG 24-450-C11 to 24-450-C17**	
Section A - Grading	$
Section B - Storm Sewers	$
Section C - Watermain	$
Section D - Sanitary Sewers	$
Section E - Electrical	$
Section F - General	$
SUB-TOTAL	$
13% HST	$
TOTAL TENDER PRICE PART TWO	**$**
TOTAL TENDER PRICE*	**$**

*Enter this amount in clause 2.1.1

Company HST Registration Number _____

1.9 DECLARATIONS OF TENDERER

(i) The Tenderer declares that no person, firm or corporation other than the Tenderer has any interest in this tender or in the proposed Contract for which this tender is made.

(ii) The Tenderer declares that this tender is made without any connection, comparison of figures or arrangement with, or knowledge of, any other corporation, firm or person making a tender for the same Work and is in all respects fair and without collusion or fraud.

(iii) The Tenderer declares that any omissions in Tendering Statements A to E will be submitted within two working days after the opening of tenders.

1.10 CONDITIONS OF TENDER

This tender is irrevocable from the official closing time and is unconditionally open for acceptance for 60 days after the official closing time, whether any other tender has been previously accepted or not.

1.11 DISCLAIMER

The Tenderer agrees and acknowledges there is no representation, warranty, collateral agreement or condition, whether direct or collateral, or expressed or implied, which induced the Tenderer to submit this tender, or on which reliance is placed by the Tenderer, or which affects this tender.

1.12 SIGNATURES

Offered by the Tenderer _____ this _____ day of _____ 2025.

_____ _____
Signature of Tenderer, Title Signature of Witness

_____ _____
Signature of Tenderer, Title Signature of Witness

NOTE: In the case of a tender submitted by a Corporation, the signatory or signatories warrant as follows:

"I/We have authority to bind the Corporation."

If the tender is submitted by an individual or partnership, it is deemed to be given under seal."

SECTION 00300 - AGREEMENT

The Corporation of the Town of Marathon
Contract No. T.O.M. 2025-001

Trailer Court Subdivision & Howe Street Reconstruction

A G R E E M E N T

This Agreement made in triplicate this _____ day of _____, between

_____ hereinafter called "The Contractor"

AND

The Corporation of the Town of Marathon hereinafter called "The Owner"

WITNESSETH that The Contractor agrees with The Owner to perform all the work in accordance with the Contract Documents referred to in the tender of The Contractor dated the ____ day of _____(which shall be deemed to form part of this Contract) to the satisfaction of the Owner for the total contract price of $_____ which Contract Documents are attached hereto and which are hereby expressly made part of this Contract.

The Owner hereby agrees with The Contractor that, in consideration of the work being performed by The Contractor as specified, The Owner shall pay The Contractor for said work in accordance with the provisions set out in the attached Contract Documents.

Time shall be deemed the essence of this Contract.

IN WITNESSD WHEREOF the parties hereto have executed this Agreement under their respective corporate seals and by the hands of their proper officers thereunto duly authorized.

SIGNED, SEALED AND DELIVERED
In the presence of:

OWNER

_____
Name

_____
Signed

_____
Name and Title

_____
Witness

_____
Signed

_____
Name and Title

_____
Name and Title
CONTRACTOR

	_____ Name
	_____ Signed
	_____ Name and Title
_____ Witness	_____ Signed
_____ Name and Title	_____ Name and Title

Note: In the case of a tender submitted by a Corporation, the signatory or signatories warrant as follows:

"I/We have the authority to bind the Corporation"

If the tender is submitted by an individual or partnership, it is deemed to be given under seal.

SECTION 00400 - AGREEMENT TO BOND

Date: _____, 20___

"Name & Address of Surety Company"

The Corporation of the Town of Marathon
P.O. Bag "TM", 4 Hemlo Road
Marathon, Ontario, P0T 2E0

Gentlemen:

CONTRACT NO. _____

Should The Corporation of the Town of Marathon [hereinafter referred to as the "Owner"] accept the Tender of and execute an Agreement with _____ [hereinafter referred to as the "Tenderer"], we, the undersigned Surety Company, do hereby consent and agree to become bound to the Owner as Surety for the Tenderer in any of the following Bonds, on the standard format of the Canadian Construction Association.

1. Performance Bond for an amount equal to 100% of the Total Tender Price.

2. Labour and Material Payment Bond for an amount equal to 50% of the Total Labour and Total Material Price.

We, the undersigned Surety Company, agree to furnish the Owner with the said Bonds within 7 days after written notification that the Owner has requested the said Bond or Bonds. We hereby further declare that our Company is legally entitled to do business in the Province of Ontario.

Yours truly,

_____
[Name of Surety Company]

_____
[Address]

[Seal]

NOTE: This Agreement must be executed on behalf of the Surety Company by its authorized Officers under the Company's corporate seal.

SECTION 00500 – CERTIFICATE OF COMPLIANCE
UNDERTAKING TO COMPLY WITH THE CORPORATION OF THE CORPORATION ON THE TOWN OF MARATHON POLICY ON CONTRACTOR SAFETY
(TO BE COMPLETED UPON AWARD)

Name of Contractor:_____(the "Contractor")

Description of Contract:_____(the "Contractor")

Name of Authorized Representative
of the Contractor:

---

1. I/We hereby undertake:

   (a) To comply with all health and safety and environmental legislation in the performance of this contract;

   (b) To maintain a safe and healthy work environment during the performance of this contract;

   (c) To comply with The Corporation of the Town of Marathon Contractor Safety Policy as set out in the Supplementary General Conditions.

2. I/We hereby agree:

   (a) That compliance with all health and safety and environmental legislation is a condition of the contract and that non-compliance with same may, at the discretion of The Corporation of the Town of Marathon (hereinafter the Owner), lead to the termination of this Contract;

   (b) To permit the Owner to audit my/our health and safety and environmental records during the term of the contract and upon its conclusion and to co-operate fully with any such audit(s).

3. (a) I/We understand that contractor safety deficiencies will be addressed by the Owner in the following progressive steps:

   (i) The problem will be identified to the Contractor (site supervisor).

   (ii) The Contractor's head office will be contacted about the problem, orally and later inwriting.

   (iii) If required by law to immediately report the problem to a provincial

and/or federal Ministry, the Owner will immediately do so.

(iv) If not required by law to immediately report the problem, and the problem remains unresolved, the Owner may report the problem to the appropriate Ministry(ies).

(v) The Contract may, in the Owner's discretion, be suspended or terminated and/or payment withheld by the Owner.

(b) I/We acknowledge and agree that, depending upon the nature and/or seriousness of the deficiency, the Owner reserves the right to bypass any or all of the steps described in subsection 3(a).

I/We have the authority to bind the Contractor.

_____
(Date)

SIGNED, SEALED AND DELIVERED (Name of Contractor) in the presence of: Per:

_____ _____
(Print name of Signing Party under each signature)

_____ _____

Section 00600
CERTIFICATE OF INSURANCE
(MINIMUM REQUIREMENTS)

Contract Number:_____

Description of Contract:_____

INSUREDS: (Contractor)_____
AND The Corporation of the Town of Marathon **AND** the Consultants (TBT Engineering) **AND** all Sub-Contractors of either employed directly or in the work to be performed.

POLICY	COMPANY NUMBER AND POLICY NUMBER	DATE		LIMITS OF LIABILITY
		Effective	Expiration	
GENERAL LIABILITY BODILY INJURY PROPERTY DAMAGE				Minimum Requirement $5,000,000 inclusive
AUTOMOBILE LIABILITY BODILY INJUREY PROPERTY DAMAGE				Minimum Requirement $5,000,000 inclusive
OTHER(Describe)				

IMPORTANT: This certificate confirms that the Policies listed above are in full force and effect and that these Policies will not be cancelled without thirty (30) days prior written notice being given to The Corporation of the Town of Marathon, and further that the General Liability Policy listed above includes all coverage outlined less than 1, 2, 3, 4, and 5.

GENERAL LIABILITY COVERAGE INCLUDES:

1. Completed Operations, which coverage shall be maintained continuously in force for a period of not less than 24 months from the date of the Certificate of Total Performance of the Work
2. Blanket Contractual Liability
3. Contingent Employer Liability
4. Non-owned Automobile Liability
5. Occurrence Property Damage
6. Broad Form Property Damage
7. Pollution/Environment Damage

DATE: _____ _____
Name of Insurance Company (ies) (not broker)

_____ _____
Address of Insurance Company or Broker Signature of Authorized Representative or Official of Broker

TENDERING STATEMENTS

A Tenderer's Experience in Similar Work

B Tenderer's Senior Supervisory Staff

C Tenderer's Construction Plant

D Sub-Contractors and Suppliers

E Sources of Materials

F Schedule of Alternatives

G Schedule of Local Content (if applicable)

STATEMENT "A" – TENDERER'S EXPERIENCE IN SIMILAR WORK

Year	Description of Contract	Owner's Name	Value

STATEMENT "B" – TENDERER'S SENIOR SUPERVISORY STAFF

Name	Appointment	Qualification and Experience

STATEMENT "C" – TENDERER'S CONSTRUCTION PLANT

STATEMENT "D" – SUB-CONTRACTORS AND SUPPLIERS

The Tenderer shall quote the name and address of each proposed subcontractor or supplier. After the Tender has been accepted by the Owner, the Contractor shall not be allowed to substitute other subcontractors or suppliers in place of those named below without written approval of the Engineer.

NOTE: Indicate "N/A" or "None" if you intend on performing all aspects of this Work.

Sub-Trade Section or Equipment	**Name and Address of Sub-Contractor or Supplier**

Name of Concrete Flatwork: _____

ACI Certified Person On-site: _____

(new mandatory qualification)

STATEMENT "E" – SOURCES OF MATERIALS

Material	**Supplier**	**Supplier's Pit Location**
HL4 Hot Mix Asphalt	_____	_____
Granular "A"	_____	_____
Concrete	_____	_____
Topsoil	_____	_____
Sod	_____	_____

Tenderer's may be required to provide proof of both quality of the listed source and quantity available from the listed source prior to acceptance of the submitted bid.

STATEMENT "F" – SCHEDULE OF ALTERNATIVES

Specified Article	Name of Submitted Alternative	Catalogue No. etc. of Submitted Alternative

STATEMENT "G" – SCHEDULE OF LOCAL CONTENT

To be attached by Contactor indicating local content summary of equipment, materials, and labour (if applicable).

SECTION 00800 - OPS
SUPPLEMENTARY GENERAL CONDITIONS

The Ontario Provincial Standards [OPSS 100] MUNI General Conditions of Contract, November 2024, are modified as follows:

SECTION GC1 - INTERPRETATION

GC1.04 Definitions

The definition of "Owner" in Subsection GC1.04 are deleted and replaced by the following:

> **"**Owner**"** means the party to the Contract for whom the Work is being performed, as identified in the Agreement, and includes, with the same meaning and import, "Authority." For the purpose of this Tender and Contract, The Corporation of the Town of Marathon is as prime proponent, considered to be the Owner

The definition of "Subcontractor" in Subsection GC1.04 are deleted and replaced by the following:

> "Subcontractor" means a person, firm or corporation undertaking the execution of a part of the Work by virtue of an agreement with the Contractor which has been approved by the Owner.

Subsection GC1.04 is amended by the addition of the following definitions:

> "Consultant" means the same as the "Contract Administrator".
>
> "Corporation" means the same as the "Owner".
>
> "Engineer" means the same as the "Contract Administrator".
>
> "Project Specifications" means Ontario Provincial Standard Specifications, and these Special Provisions.
>
> "Provide" means supply all labour, materials, equipment, handling and cartage required to complete installation of the item concerned.

Add new GC1.04.02 as follows:

"GC 1.04.02 Any reference in this Contract to any statute includes all regulations and subordinate legislation made under or in connection with that statute at any time and is to be construed as a reference to that statute as amended, modified, restated, supplemented, extended, re-enacted, replaced or superseded at any time."

GC1.06 Final Acceptance

Subsection GC1.06 is amended by the addition of the following paragraph:

.01 In addition to all other prior requirements, Final Acceptance will not occur until the Work has passed all inspections and testing requirements.

SECTION GC2 – CONTRACT DOCUMENTS

GC2.01 Reliance on Contract Documents

Paragraph .01(a) is replaced by the following:

"(a) The Contractor shall assume full responsibility and all costs for obtaining the exact locations of all Utilities. The Contract Administrator does not warrant the correctness or completeness of the Plans with respect to the Utilities and services whether underground or on the surface. The Contractor shall have no claim for additional compensation, if in uncovering and carrying out the Work, it should find that the actual location of the Utilities does not correspond with the locations shown on the plans."

GC2.02 Order of Precedence

Paragraph GC 2.02.02(b) is amended by adding the words "of the same date" to the end of this paragraph.

SECTION GC3 - ADMINISTRATION OF THE CONTRACT

GC3.01 Contract Administrator's Authority

Paragraph .03 of subsection 3.01 is amended by the addition of the following paragraphs:

"(a) The Contract Administrator will not be responsible for and will not have control, charge, or supervision of construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs required in connection with the Work in accordance with the Applicable Laws or general construction practice. The Contract Administrator will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Contract Administrator will not have control over, charge of, or be responsible for the acts or omissions of the Contractor, Subcontractors, suppliers or their agents, employees and any other Person performing portions of the Work."

"(b) Whenever the Contract Administrator considers it necessary or advisable, the Contract Administrator will have authority to require inspections or testing of the Work, whether or not such Work is Provided. However, neither the authority of the Contract Administrator to act, nor any decision either to exercise or not to exercise such authority, shall give rise to any duty or responsibility of the Contract Administrator to the Contractor, Subcontractors, suppliers or their agents, employees or other Person performing any of the Work."

Paragraph .03 of subsection GC3.01 is replaced by the following paragraph:

.05 The Contract Administrator shall, with reasonable promptness, review and take appropriate action upon the Contractor's submissions such as shop drawings, product data, and samples in accordance with the Contract Documents.

Paragraph .16 of subsection GC3.01 is amended by replacing the words "applicable laws or bylaws" with the words "applicable laws"

Subsection GC3.01 is amended by the addition of the following paragraph .18:

.18 All certificates issued by the Contract Administrator shall be to the best of the Contract Administrator's knowledge, information and belief. By issuing any certificate, the Contractor Administrator does not guarantee the work is correct or completed."

GC3.06 Extension of Contract Time

Paragraph .01 of Subsection GC3.06 is amended by replacing the words "as soon as" with the words "within 15 Days of the Date".

GC3.07 Delays

Paragraph .01 of Subsection GC3.07 is replaced by the following:

.01 If the Contractor is delayed in the performance of the Work by:

a) war, blockades, and civil commotion, errors in the Contract Documents, an act or omission of the Owner, Contract Administrator, other contractors, or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the Contract Documents; or

b) a stop work order issued by a court or public authority, provided that such order was not issued as the result of an act or omission of the Contractor or anyone employed or engaged by the Contractor directly or indirectly; or

c) the Contract Administrator giving notice under Subsection GC7.10, Suspension of Work; or

d) abnormal inclement weather; or

e) archaeological finds in accordance with subsection GC3.15, Archaeological Finds,

then the Contractor shall **not** be reimbursed by the Owner for any costs incurred by the Contractor as the result of such delay. Any delay in the performance of the work shall be considered for the extension of Contract Time only.

In the case of an application for an extension due to abnormal inclement weather, the Contractor shall, with the Contractor's application, submit evidence from Environment Canada in support to such application. Extension of Contract Time will be granted in accordance with Subsection GC3.06, Extension of Contract Time.

Subsection GC3.07 is further amended by the addition of the following paragraph:

.05 The Contractor shall not have any claims for compensation or damages against the Corporation for any stoppage or delay from any cause whatever, whether such

stoppage or delay shall be caused by or result from the action or neglect of any other contractor, or shall be caused by or result from the work being out of the hands of the Contractor, or any other contractor, by the Corporation under the provisions of this Contract made with such other contractor.

GC3.08 Assignment of Contract

Subsection GC3.08 is amended by the addition of the following paragraph:

.02 No assignment of this contract in whole or in part shall be valid unless it shall contain a provision that the funds to be paid to the assignee under the assignment are subject to the prior lien for services rendered or material supplied for the performance of the work called for in the Contract in favor of persons, firms, or corporations rendering such services or supplying such materials.

GC3.10.01 Changes in the Work

Paragraph .03 of subsection 3.10.01 is deleted and replaced by the following:

.03 The valuation of additions to, and deductions from the Contract shall be made as follows:

a) The prices in the Schedule of Prices or Provisional Items shall apply where appropriate as determined by the Contract Administrator.
b) If the prices in Clause (a) are not appropriate, valuation will be made by one of the following methods:
    i. Contract Administrator may ask for the Contractor for a Quotation for the proposed work.
    ii. If the Quotation referred to in (i) above is not accepted by the Contract Administrator, the actual cost of the work will be determined on a Time and Material Basis in accordance with the OPS General Conditions, Supplementary General Conditions, Project Specifications and Special Provisions.
c) Whenever extra work is being performed under Subsection (b) (ii) above, the Contractor shall submit daily reports in writing, to the Contract Administrator, indicating the total chargeable costs incurred, for the day. Valuation of the extra work being so performed will be made by the Contract Administrator on the basis of approved daily reports.

GC3.10.03 Additional Work

Paragraph .03 of Subsection GC3.10.03 is deleted and replaced by the following:

.03 Any additional work shall be renegotiated, and the negotiated unit rates shall not exceed the bid unit rate as provided in the original Tender.

GC3.16 Town of Marathon Policy on Contractor Safety

.01 Policy Statement:

All contractors or land developers working on the Town of Marathon projects are required to work in compliance to The Ontario Occupational Health and Safety Act and Regulations. All contractors working on Municipal streets and roads will comply with the Ministry of Transportation – Ontario Traffic Manual for Roadway Work Operations.

Failure to comply to will be considered a breach of contract and may result in work stoppage, Ministry of Labour involvement, or in termination of the contract.

.02 Contractor safety deficiencies will be addressed by the Town of Marathon in the following progressive steps:

a) The problem will be identified to the Contractor (site supervisor).

b) The contractor's head office will be contacted about the problem, orally and later in writing.

c) If the problem remains unresolved then the Ministry of Labour will be notified of the violation and if necessary the work will be stopped until the problem is corrected.

d) The contract may be terminated by the Owner.

SECTION GC6 - INSURANCE, PROTECTION AND DAMAGE

GC6.01 Protection of Work, Persons and Property

Subsection 6.01 is amended by the addition of the following paragraph:

.06 When carrying out excavation work, the Contractor may encounter such underground utilities as sewers, gas mains, telephone cables, power cables, and watermains. The Contractor shall be fully responsible for any breakage or damage to such utilities, and the Contractor shall pay the full breakage or damage to such utilities, and the Contractor shall pay the full cost of repairing such damage and making good any losses or damages which are caused as a result of his operation in carrying out this Contract.

GC6.03.02 Commercial General Liability Insurance

Paragraph .01 and .02, of Clause GC6.03.02 are deleted and replaced with the following:

.01 The Contractor shall obtain and maintain Comprehensive General Liability Insurance against Bodily Injury and Property Damage claims with respect to all work to be performed under this contract. Such Insurance shall:

a) be in the joint names of the Contractor, the Town of Marathon, TBT Engineering Limited, and all sub-contractors of either employed directly or indirectly in the work to be performed;

b) contain a Cross Liability Clause;

c) include coverage for:

i] Completed Operations, which coverage shall be maintained continuously in force for a period of not less than 24 months from the date of the Certificate of Total Performance of the Work

ii] Blanket Contractual Liability

iii] Contingent Employers Liability

iv] Non-owned Automobile Liability

v] Broad Form Property Liability

vi] Excavation

d) where applicable, include coverage for:

i] Underpinning, shoring

ii] Demolition

iii] Building raising or moving

iv] Blasting or the Use of Explosives

v] Tunneling

vi] Pile driving, caisson work

vii] Use of aircraft or watercraft, owned or non-owned

e) contain a clause stating that such Insurance shall remain in force and not be amended, cancelled or allowed to lapse without 30 days prior written notice being given to each of the named insureds;

f) be subject to a limit of not less than $5,000,000.00 inclusive per occurrence for Bodily Injury, Death and Damage to Property, including loss of use thereof;

.02 Prior to the commencement of any work under this Contract the Contractor shall file with the Town of Marathon, Certificates evidencing full compliance with the above clauses, in accordance with the prescribed Certificate which is located after the "Tender Form" in the Documents.

GC6.03.06 Contractor's Equipment Insurance

Subsection 6.03.06 is amended by the addition of the following paragraph:

.02 If this Contract includes the construction of or alterations to a bridge, dam, culvert or building, the Contractor shall provide Property Insurance, to insure the Work against all risk including floods and earthquakes."

GC6.03.08 Insurance Claims

Subsection 6.03.08 is added as follows:

.01 It shall be the duty of the Contractor to fully comply with the terms and conditions of the Liability Insurance coverage, including, without limiting the generality of the foregoing, the requirement to promptly report claims to the Insurer.

.02 The Contractor shall also promptly notify the Contract Administrator of all such claims in writing.

.03 If a claim is settled, the Contractor shall thereupon provide the Contract Administrator with a copy of the Claimant's Release.

.04 If a claim is rejected, the Contract Administrator shall be notified at the time of rejection.

.05 The Contract Administrator shall be provided full information as to such claims at all times as the Contract Administrator may require and in any event should 30 days elapse after the claim has been received by the Contractor and the Contractor

is not able to report settlement or rejection of the claim, the Contractor will provide a full report to the Contract Administrator as to the status of and steps being taken with respect to the claim.

GC6.04 Bonding

Paragraphs .01 and .02 of subsection 6.04 are replaced by the following:

.01 The Contractor shall prior to commencement of the Work, provide to the owner a performance bond, in the form required by the Construction Act, in an amount equal to 100% of the Contract price, covering the performance of the Contract, including the Contractor's requirements with respect to the correction of deficiencies and the fulfillment of all warranties.

.02 The Contractor shall prior to commencement o the Work, provide to the Owner a labour and material payment bond, in the form required by the Construction Act, in an amount equal to 50% of the Contract price covering payment for labour, Product, or both.

Subsection 6.04 is amended by the addition of the following paragraphs .03 and .04:

.03 The bonds referring to in paragraph GC 6.04 shall be issued by a duly licensed surety company authorized to transact the business of suretyship in the province of Ontario and Shall be maintained in good standing until the fulfillment of the Contract, including all warranty and maintenance periods set out in the Contract Documents. Unless otherwise stated in the Contract Documents, the form of such bonds shall be in accordance with the form o g bonds set out in the Construction Act.

.04 It is the intention of the parties that the performance bond shall be applicable to all of the Contractor's obligations in the Contract Document and, wherever a performance bond is provided with language which conflicts with this intention, it shall be deemed to be amended to comply. The Contractor represents and warrants to the Owner that is has provided its surety with a copy of the Contract Documents prior to the issuance of such bonds.

SECTION GC7 - CONTRACTOR'S RESPONSIBILITIES AND CONTROL OF THE WORK

GC7.01 General

Paragraph .01 of Subsection 7.01.02 Commencement of Work is deleted and replaced with the following:

.01 The Contractor shall commence the Work within 7 days after receiving Notice from the Contract Administrator. The Contractor will not commence the work until the contract has been officially accepted by the Municipality of Shuniah, the Insurance Certificates and the Performance Bonds are satisfactory to the Municipality of Shuniah, and the Contractor has received Notice from the Contract Administrator to commence the work.

Subsection GC7.01.04.01 Compliance with the Occupational Health and Safety Act is amended by the addition of the following paragraph:

(h) in order to eliminate the possibility of the Town of Marathon being designated as "Constructor" as defined in the Occupational Health and Safety Act, RSO, 1990, two or more contractors cannot have work progressing in the same area. It is the Contractor's responsibility as "Constructor" under the provisions of the Occupational Health and Safety Act to co-ordinate the activities of all employees and workers operating within the contract limits to ensure that the requirements of the Occupational Health and Safety Act are satisfied. A minimum distance of separation between Contractors will be as stipulated by the Ministry of Labour.

GC7.01.05 Contactor's Representatives

Subsection GC7.01.05 is amended by the addition of the following paragraphs:

The Contractor shall maintain a daily, hard bound diary of the signs in use for temporary and long-term traffic control. The diary shall be submitted with the final payment documents. For the duration of the Contract and within 24 hours of a request by the Contract Administrator, the Contractor shall provide the Contract Administrator full access to the diary. The following information shall be included in the diary:

a) A schematic of the location of each existing sign by station, offset, and height above pavement.

b) A schematic of the placement and re-location of all construction signs by station, offset, and sign mounting height.

c) Traffic accidents, including time of inspection, location of incident, and photographs.

d) Time and date of daily sign inspections.

GC7.02 Layout

Paragraphs .01, .03 and .07 of Subsection GC7.02 are deleted and replaced with the following:

.01 Prior to commencement of construction, the Contract shall locate on site those Monuments that delineate the Working Area and may be used to lay out the Work, all as shown on the Contract Drawings. Property Monuments shall be inventoried in the report formatted required by the Owner.

.03 The Contractor shall be responsible for the preservation of all Property Monuments while the Work is in progress, except those Property Monuments that must be removed to facilitate the Work as identified. Monuments removed to facilitate the Work shall be replaced at the Owner's expense, and all others shall be replaced at the Contractor's expense.

.07 The contractor shall provide qualified personnel to lay out and establish all lines and grades necessary for construction. The Contractor shall notify the Contract Administrator of any layout work carried out.

Subsection GC7.01.02 paragraph .06 is amended to include the following:

.06 The Contactor shall provide the layout for all contract work unless otherwise noted.

GC7.03 Working Area

Subsection GC7.03 paragraph .01 is amended by inserting the words "waste products and" prior to the word "debris" in the second line.

Subsection GC7.03 is amended buy the addition of the following paragraphs:

.06 The location of all temporary buildings used for construction purposes must be submitted to the Contract Administrator for approval before erection work commences. Temporary buildings must be kept clean and sanitary and must not become a hazard to health or a nuisance to the adjoining properties.

.07 The Contractor shall ensure that during night Work the Working Area is adequately floodlit to the Contract Administrator's satisfaction for Work operations, inspections and advance warning to traffic.

.08 Streets beyond the limits of the Working Area and other construction areas shall be kept clean. Dusty materials shall be transported in covered haulage vehicles. Wet materials shall be transported in suitable watertight haulage vehicles.

.09 The Contractor shall take such steps as may be required to prevent dust nuisance resulting from its operations either within the limits of the Working Area or elsewhere or by public traffic where it is the Contractor's responsibility to maintain a Roadway through the work.

.10 Where the Work requires the sawing of asphalt or the sawing or grinding of concrete, blades and grinders of the wet type shall be used together with sufficient water to prevent the incidence of dust, where dust would affect traffic or wherever dust would be a nuisance to residents in the vicinity of the Working Area.

.11 Permitted dust control measures may include the application of calcium chloride, tall oil emulsion or water. In general, the use of calcium chloride and tall oil emulsion shall be kept to a minimum and is restricted to vehicle rights-of-way; there shall be more frequent applications of water in close proximity to watercourses. The Contract Administrator's acceptance shall be obtained before chemicals or tall oil emulsion for dust control are used."

GC7.01.09 Utilities

Replace Subsection GC7.01.09 paragraph .01 with the following:

.01 The Contractor shall arrange with the appropriate Utility authorities for the stake out of all underground Utilities and service connections, which may be affected by the Work. The Contractor shall be responsible, at its expense, for any damage or interference to the Utilities, pole lines, pipe lines, conduits, farm tiles or other public or privately owned works or property by the Contractor or by those for whom the Contractor is responsible at law, during construction. The Contractor shall attend such meetings with the Contract Administrator and the Utility authorities for each Utility affected by the Contract, The Contractor shall notify the local gas authority at least 48 hours in advance of the commencement of any Work, which may affect pipes belonging to the gas Utility company. The locate boundaries shall include areas required for Owner layout and work activities required by the Owner. The Contractor shall provide to the Owner a copy of the locate paperwork.

GC7.12 Environmental Incident Management under Legislation Protecting the Environment and Natural Resources

Subsection GC7.12 is amended by the addition of the following paragraphs:

(a) Paragraph GC 7.12.01 is amended by inserting, following the words "with the requirements of" the words "all Applicable Laws, including, without limitation,".

Paragraph GC 7.12 is amended by the addition of the following paragraphs:

.06 Any Release of a Hazardous Substance under the control of the Contractor, or those for whom the Contractor is responsible at law, and any Release of a Hazardous Substance that is a result of the Contractor's operations, or operations of those from whom the Contractor is responsible at law, shall forthwith be reported to the Contract Administrator.

.07 All Releases of liquid, other than accumulated rainwater from luminaires, internally illuminated signs, lamps and liquid type transformers under the control of the Contractor, and all Releases from Equipment that are a result of the Contractor's operations, or operations of those for whom the Contractor is responsible at law, shall, unless otherwise indicated in the Contract, be assumed to contain Polychlorinated biphenyls or PCBs and shall forthwith be reported to the Contract Administrator. This reporting will not relieve the Contractor of its legal responsibilities under the Contract or under Environmental Laws regarding such Releases.

SECTION GC8 - MEASUREMENT AND PAYMENT

GC8.02.04.01 Progress Payment

Paragraph GC 8.02.04.01 is amended by the addition of the following paragraphs:

.05 One [1] electronic copy of each progress payment certificate shall be delivered by the Contract Administrator to the Contractor. The Contractor shall present to the Contract Administrator a signed electronic copy of the estimate certified to be correct. Upon receipt of the progress payment certificate verified as aforesaid and upon its approval by the Contract Administrator, the Owner will process the payment to the Contractor."

.06 Notwithstanding GC 8.02.04.01.04, the Owner may withhold any or all payments to the Contractor or portion thereof in circumstances where the Contractor is considered by the Owner or Contract Administrator to be unreasonably in default of specified times for completion of the Work.

.07 The Contractor shall furnish the Contract Administrator with satisfactory evidence in the form of a WSIB certificate of clearance that the Contractor has made suitable provision for meeting any liability under the WSIA, prior to the release of any monthly progress payment.

.08 The Contractor shall furnish the Contract Administrator with a statutory declaration that all liabilities incurred by the Contractor and its Subcontractors in carrying out the Contract have been discharged and that all liens in respect of the Contract have expired or have been satisfied, discharged or provided for by payment. The statutory declaration shall be provided prior to all monthly progress payments except the first one.

.09 The Contractor shall furnish the Contract Administrator with such additional documents as the Contract Administrator may reasonably require.

GC8.02.04.03 Sub-contract Statutory Holdback Release Certificate and Payment

Sub-section 8.02.04.03 is deleted and replaced with the following:

If any lien is registered or if the Town of Marathon receives notice of any claim for lien, then the Town of Marathon may hold back from the money due to the Contractor hereunder, in addition to the normal statutory lien holdback, sufficient monies to cause a discharge or vacation of the registration of any such lien or any certificate of action relating thereto and to indemnify it completely against such lien or claim for lien or proceedings arising therefrom and from all expenses and costs related thereto, including, but not limited to, legal fees and disbursements on a solicitor and client basis.

GC8.02.04.08 Interest

Subsection 8.02.04.08 is deleted and replaced with the following:

The Owner is not liable to pay interest on any amount which may at any time become payable to the Contractor under this Contract whether or not the payment is in default

and whether or not any action or other proceeding has been commenced in respect thereof.

GC8.02.04.09 Interest for Late Payment

Subsection 8.02.04.09 is deleted.

GC8.02.04.10 Interest for Negotiations and Claims

Subsection 8.02.04.10 is deleted.

GC8.02.05.06.02 Stand-by Time

Subsection 8.02.05.06.02 is deleted and replaced with the following:

The Owner is not liable to pay Stand-by Time for any labour or equipment rental under this Contract.

GC8.02.09 Liquidated Damages

Subsection GC8.02.09 is deleted and replaced by the following:

GC8.02.09 Time for Completion and Liquidated Damages

01. Time

Time shall be strictly of the essence of this Contract.

02. Progress of the Work and Time for Completion

The Contractor shall complete this Contract in its entirety by the completion dates specified in the Tender Form.

If the time limit specified is not sufficient to permit completion of the Work by the Contractor working a normal number of hours each day or week on a single daylight shift basis, it is expected that additional and/or augmented daylight shifts will be required throughout the life of the Contract to the extent deemed necessary by the Contractor to ensure that the Work will be completed within the time limit specified. Any additional costs occasioned by compliance with these provisions will be considered to be included in the prices bid for the various items of Work and no additional compensation will be allowed therefor.

An Extension of Time may be granted in writing by the Contract Administrator in his or her sole discretion in the event of the Work being delayed beyond the prescribed time for completion. Such extension shall be for such time as the Contract Administrator may prescribe and the Contract Administrator shall fix the terms on which such an extension may be granted. An application for an Extension of Time shall be made in writing by the Contractor to the Owner at least 15 days prior to the date of completion fixed by the Contract. The date of expiry of all Bonds and other Surety furnished to the Owner by the Contractor shall be extended at the expense of the Contractor.

Any Extension of Time that may be granted to the Contractor shall be so granted and accepted without prejudice to any rights of the Owner whatsoever under this Contract and all of such rights shall continue in full force and effect after the time limited in this Contract for completion of the work and whenever in this Contract, power or authority is given to the Owner or the Contract Administrator or any person to take any action consequent upon the act, default, neglect, delay, breach, non-observance or non-performance by the Contractor in respect of the Work or Contract or any portion thereof, such powers or authorities may be exercised from time to time, and not only in the event of the happening of such contingencies before the time limited in this Contract for the completion of the Work but also in the event of the same happening after the time so limited in the case of the Contractor being permitted to proceed with the execution of the Work under an Extension of Time granted by the Owner. In the event of the Owner granting an Extension of Time, time shall continue to be deemed strictly of the essence of this Contract.

.03 Liquidated Damages

It is agreed by the Parties to the Contract that in case all the Work for each Phase called for under the Contract is not finished by the completion date specified in the Tender Form or as amended by the Contract Administrator, damage will be sustained by the Owner, and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the Owner will sustain in the event of and by reason of such delay and the Parties therefore agree that the Contractor will pay to the Owner the sum of $1,200.00 for Liquidated Damages for each and every calendar day's delay in completing the Work beyond the date of completion prescribed and it is agreed that amount is an estimate of actual damage to the Owner which will accrue during the period in excess of the prescribed date of completion.

The Owner may deduct any amount under this paragraph from any monies that may be due or payable to the Contractor on any account whatsoever. The Liquidated Damages payable under this paragraph are in addition to and without prejudice to any other remedy, action or other alternatives that may be available to the Owner.

The Contractor shall not be assessed with Liquidated Damages for any delay caused by Acts of God, or of the Public Enemy, Act of the Corporation, the Contract Administrator, or of any Foreign State, Fire, Epidemics, Quarantine Restrictions, Embargoes, or Delays of sub-contractors due to such causes. If the Contractor is delayed by reason of alterations or changes made under Section GC.03.11 of the General Conditions, the time of completion shall be extended as determined by the Contract Administrator at his or her sole discretion.

SECTION 0900 – GENERAL REQUIREMENTS

1. DESCRIPTION OF WORK

The Work of the Contract includes:

- Clearing & Grubbing of the Residential lots and Stormwater Management Area
- Earth Excavation, Grading
- Milling, stripping and/or pulverizing of existing asphalt pavements
- Construction of new roadway including Granular Base and HL-4 Asphalt
- Removal of existing Storm, Sanitary and Watermain Infrastructure
- Removal of Existing Fire Hydrants, Valves, Catch Basins, Maintenance Holes,
- Installation of New Storm main and Infrastructure
- Installation of New Sanitary Sewer and Infrastructure
- Installation of New Watermain and Infrastructure
- Construction of Stormwater Management Facility
- Installation of Buried Electrical Ducts
- Concrete sidewalk, transformer slabs, curb and gutter work.
- Seed, Mulch, Topsoil and Sod
- Trees and Tree Planting Pits
- Installation of Ground Mounted Signs
- Installation of Street Illumination

2. LOCATION OF CONTRACT

The location of the Contract in the Town of Marathon, Ontario as indicated in the Contract Drawings and Key Plan.

3. LIMITS OF CONTRACT

The limits, of the Contract, are the limits of property and/or allowances in which the work is to be performed or is otherwise shown on the drawings.

4. PRECONSTRUCTION MEETING

1. Following award of the Contract and the instruction to commence the Work, the Contract Administrator will convene a preconstruction meeting with the Owner's representative, the Contractor, and the Owner.

2. The meeting agenda will include:

   (i) the appointment and notification of official representatives of participants in the Work;

   (ii) requirements for temporary facilities, site signs, offices, storage sheds, utilities, hoarding, site access and use;

   (iii) Health and Safety issues;

   (iv) site security;

   (v) the Work schedule as a project Gantt Chart that has to be completed and supplied to the owner. and the Contract Administrator 2 days prior to the meeting, including the Products delivery schedule;

   (vi) a schedule for submission of shop drawings, samples and similar documents;

   (vii) a schedule for site meetings;

   (viii) a review of administrative procedures, including change notices, change orders, site instructions, record drawings, maintenance manuals, take-over procedures, progress claims;

   (ix) the appointment of inspection and testing agencies or firms; and

   (x) other items as arise at the meeting.

3. The Contract Administrator will arrange space and facilities for the meeting, and document the responsibilities and necessary activities of the participants during construction as discussed, and prepare and distribute minutes of the meeting to each attendee.

4. The successful contractor is to complete and / or fill out the "Pre-Construction Meeting Contractor Safety Checklist."

5. WORK ADJACENT TO PUBLIC OR PRIVATE PROPERTY

The Contractor will obtain written consent from the owner of adjacent property before proceeding with a part of the Work that necessitates entry onto such property for the underpinning of adjacent structures and where overswing of cranes may occur. Such written consent will not limit the Contractor's responsibility for property damage or personal injury.

All road fences, above ground features, signs and/or mailboxes requiring removal during construction shall be reinstalled to suit the new conditions of the site and applicable standards. All road fences, above ground features, signs and/or mailboxes removals and reinstallations are to be included in the Contract costs. During excavation work, the Contractor shall exercise due care to not undermine existing pavement, sidewalks, and adjacent structures or damage existing utilities or services.

6. REFUELING

Carry out all equipment maintenance and refueling out so as to prevent the entry of petroleum products into the ground or watercourses at all times.

7. SPILLS REPORTING

In the event of a spill or other emission of a pollutant into the natural environment, every person responsible of the emission of who causes or permits it must forthwith notify:

5. The Ministry of Environment, Conservation and Parks (1-800-268-6060)

6. The municipality or the regional municipality within the boundaries of which the spill occurred

7. The owner of the pollutant, if known

8. The person having control of the pollutant, if known

9. The Contract Administrator of the spill, of the circumstances thereof, and of the action taken or intended to be taken with respect thereto.

8. CONTINGENCY PLAN

Prior to commencing construction, prepare a contingency plan for the control and clean up of a spill. Submit for the Contract Administrator's review and the review of other responsible Parties a copy of the Contingency Plan and make appropriate changes to it based on review comments received. The plans shall be reviewed at the pre-construction meeting. The contingency plan shall include:

1. The names and the telephone numbers of the persons in the local municipalities to be notified forthwith of a spill

2. The names and the telephone numbers of the representatives of the fire, the police and the health departments of the local municipalities who are responsible to respond to emergency situations

3. The names and the telephone numbers of the companies experienced in the control and cleanup of hazardous materials that would be called upon in an emergency involving a spill

4. The Contractor's proposal for the immediate containment and control of the spill, the cleanup procedures to be initiated immediately and any other action to be taken to mitigate the potential environmental damage while awaiting additional assistance; and

5. The name and the office and home telephone number of the Contractor's representative responsible for preparing, implementing, directing and supervising the contingency plan.

9. MUNICIPAL REQUIREMENTS

1. Ensure the Work complies with the requirements of the municipality.

2. The Consultant's acceptance of the Work may be withheld until the municipality has issued its acceptance.

10. SETTING OUT THE WORK

1. Perform setting out, working from benchmarks and points of reference supplied by the owner.

2. In setting out, include the preparation of grade sheets, installation of stakes, offsets, site rails and similar operations.

3. Be responsible for the correctness of the position, levels dimensions and alignment of the Work and for the provision of necessary instruments and labour in connection thereof.

4. Carefully protect and preserve stakes, lot pins, marks and reference points, and replace if destroyed or removed.

5. Wherever necessary, suspend Work temporarily to permit the Consultant to inspect

and check the line and grade of any portion of the Work.

11. SITE CLEARING AND PLANT PROTECTION

1. Protect trees and plants on site and adjacent properties where indicated.

2. Protect roots of designated trees to dropline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping, and storage of material over root zones.

3. Minimize stripping of topsoil and vegetation.

4. Restrict tree removal to areas indicated or designated by Contact Administrator.

12. TEMPORARY CONSTRUCTION FACILITIES, SERVICES AND CONTROLS

1. Provide temporary facilities, services and controls required as construction aids or by regulatory authorities.

2. Paint the public side of the site enclosure in selected colours with one prime coat and one coat of exterior paint with colour as directed. Maintain the public side of the enclosure in a clean condition.

3. Provide a sturdy, temporary site enclosure around the entire perimeter of the site 1.8 m high. Provide a lockable truck gate. Maintain the fence in good repair.

13. ROADS AND TRAFFIC CONTROL

When public thoroughfares are to be closed, or traffic restricted notify the Road Authority, the Fire department, the Police Department, the Transit Authority and Ambulance Service, giving at least seven days notice of the closing or restriction.

Close thoroughfares or restrict normal traffic flow only with the consent of the Authorities having jurisdiction, and in accordance with their requirements.

When arterial streets are scheduled to be closed in either direction for a duration exceeding 7 days, provide detour signage as per OTM Book 7. Submit detour plan to the Contract Administrator for review.

14. PERMIT TO TAKE WATER

The Contractor is advised that a Permit to Take Water has not been included in this Contract. The Contractor shall not exceed 50,000 L/day water for this Contract. If volumes

are required that exceed this value, the Contractor shall contact the Town of Marathon to negotiate the use of water, or submit an application for a Permit to Take Water as required by the MOECC.

If the Contractor applies for a PTTW, care must be taken to not impact the Contract schedule. The Contractor accepts full responsibility for maintaining the original Contract completion date and no extension of time shall be granted to accommodate the application period.

15. TAKING WATER FROM THE GREAT LAKES

It is the responsibility of the Contractor to ensure that water taken from a Great Lake Basin, as described in the Ontario Water Resources Act (OWRA) is not transferred to another water body, as dictated by the Act.

16. TREE PROTECTION

The Contractor's operations shall not cause damage to the trunk or branches of trees not designated for removal.

Unless the contract requires work within the Dripline of trees, equipment shall not be operated within that dripline area. When the contract requires work within the Dripline of trees, operation of equipment within that Dripline shall be kept to the minimum necessary to perform the work required.

Equipment or vehicles shall not be parked, repaired or refueled, construction materials shall not be stored, and earth materials shall not be stockpiled within the Dripline area of any tree not designated for removal.

17. RELOCATION AND SUPPORT OF EXISTING UTILITIES

Any adjustment or relocation of gas, cable television, telecommunications, or power plan shall be carried out by others and the Contractor shall have no right to monetary claim for delay or interference caused by such adjustment or relocation. Should the Contractor, however, be delayed because of such an adjustment or relocation, he may submit in writing to the Contract Administrator, a request for an extension of time, setting out in detail the reasons for the request. Should the Contract Administrator deem the request well founded and valid, he may grant such an extension.

The Contractor shall be responsible for the temporary support of all existing underground and overhead utility plan during the construction of the Works. Any costs associated with the support of such utilities will be considered to be included in the unit prices for the various items of work and no additional compensation will be allowed. The Contractor shall, at all times, provide the Public Utilities Commission, Bell Canada, Shaw Cable, and

Union Gas with access to the work site to facilitate plant relocations and modifications that are required to accommodate the work.

Under no circumstance shall the Contractor move, support, or otherwise contact overhead wires, including low voltage wires, or any other above-ground PUC Distribution Electrical Facilities. With the exception of the support of electrical ducts, subject to approval by PUC Services Inc., no contact shall be allowed of buried PUC Distribution Electrical facilities.

18. UNIT PRICES

1. Unit prices included in the Agreement and submitted as part of the tender are to be based on units of measurement specified in the bidding documents and are to include for labour, materials, preparation of shop drawings, delivery, handling, disposal of surplus material, overhead and profit, and any other direct or indirect expenditures of such work measured complete in place, and as further specified in the Contract Documents.

2. Unit price for specified units of measurement are to apply to all work that can be measured in the said units regardless of the variations in productivity and job conditions, or the time when instructions to perform such work are issued.

19. MEASUREMENTS FOR PAYMENT

1. The Contractor will notify the Contract Administrator sufficiently in advance of operations to allow required measurements for payment. Unless otherwise specified, measurements will be taken in the horizontal plane.

20. QUANTITY ESTIMATES

The quantities shown for the unit price items where the notation (P) does not occur are estimates only and are for the sole purpose of establishing a dollar amount based on the unit price.

For any work completed under these items the Contractor will be paid for the actual measured quantities at the respective unit prices bid.

The Contract Administrator may increase or reduce these quantities or omit any item or portion of the work at his sole discretion. The Contractor shall not be entitled to any compensation whatsoever as a result of the deletion or reduction or increase in quantity under any of these items except as stipulated under GC 8.01.02.

21. MATERIAL TICKETS

Material tickets to be used on automatic weigh scales must be approved by the Contract Administrator. A daily summary accompanied by the tare sheet must be submitted within 24 hours of the day for which the summary is provided. A truck registry must also be completed. It is the Contractor's responsibility to ensure that all material tickets are submitted to the Contract Administrator within 24 hours of the material being delivered to the site, in order to be eligible for payment.

Overloading is not permitted. Any portions of load that exceed the loading capacity of the vehicle will not be paid.

Tickets supplied by the Contractor shall contain the following:

a) License plate number of unit(s)
b) Time and date of transaction
c) Truck Owner
d) Contract number
e) Type of material
f) Source of material
g) gross weight
h) overload notation
i) Running total of each material
j) a place for the checker to sign

For each contract, the following reports shall be produced daily:
- Truck register including allowable gross weight for all vehicles
- Truck tare report for all vehicles, including old and new tares, and time recorded
- Summaries for each type of material
- Summaries for all cancelled loads

22. SALVAGABLE MATERIAL TO BE REMOVED

Any materials such as manhole covers, catch basin frame and grates, hydrants, utility poles, etc. deemed salvageable by the Contract Administrator shall remain the property of the Owner and be delivered to the Town's Public Works yard at no extra cost to the Owner. All other removed material unless noted elsewhere shall be disposed of at the Town's landfill site.

23. EXCAVATING IN THE VICINITY OF GAS MAINS, INCLUDING PROTECTION SUPPORT AND BACKFILLING

Excavating gas mains, where encountered in the excavation and trenching operations shall be protected at all times and extreme caution shall be taken when diffing within close proximity to any existing gas mains.

Submit a Gas Line Protection Plan for approval by Union Gas prior to commencing work.

Any excavation work carried out within the vicinity of the existing gas mains, shall

be carried out in strict compliance with the attached Section 12.3 – Procedures for Uncovering Active Pipelines and Section 12.5 – Gas Line Supports of the Union Gas Construction and Maintenance Manual.

Union Gas shall be notified when excavating near or around their existing plant to allow them to monitor the condition of their existing gas main and ensure proper supporting and backfilling requirements are carried out.

The Contractor shall be responsible for any costs related to excavating in the vicinity of existing or relocated gas mains, and supporting and backfilling of these mains.

24. GUIDELINES FOR EXCAVATION IN THE VICINITY OF UTILITY LINES

The Contractor's work shall comply with the guidelines recommended in the "Guidelines for Excavation in the Vicinity of Utility Lines" as furnished by the Technical Standards & Safety Authority.
Overhead and underground utilities are located within the project limits.

Contractors are required by law, under the Occupational Health and Safety Act of Ontario, to ascertain the location of all utilities before breaking ground. The Contractor shall request the owner of the utility or service to locate and mark the location of the utility or service. All gas mains and connections, telephone and power cables, and other such utility items, shall be located by the respective agencies in advance of breaking ground for any work.

The Contractor shall be responsible for any damages resulting from his operations. The Contractor is responsible for determining the respective owner's of any utilities present within the work areas and arranging the required utility locates.

The Contractor shall work around all poles, guide wires, and gas lines and shall exercise necessary care and precautions to safeguard these poles and gas lines from damages during grading operations. Earth excavation by mechanical or manual methods may be required around existing utilizes. The Contractor shall utilize appropriate sized equipment to complete grading work while maintaining the minimum operating distances from overhead utilizes as identified in the Occupational Health and Safety Act Regulations for Construction Projects and all other applicable guidelines and regulations. All costs for the required excavation and approvals shall be borne by the Contractor.

Contractors must hand dig within one meter from either side of the outside edge of the underground facility service. Hydro-excavation may be permitted by some utilities in place of hand digging. The Contractor is required to confirm with the respective utility for any requirements or conditions they may have before hydro

excavating.

The Contractor shall have a dedicated signaler directing the machine operator when Work is carried out adjacent to existing utilities, sewers, water mains, gas mains, pavement, sidewalks, structures, etc., to ensure that these items are not damaged.

No additional payment over and above the unit price for the relevant tender items shall be made for the above work.

25. FINAL ASPHALT ACCEPTANCE/ REJECTION

Where material supplied or workmanship is found to be unacceptable or borderline, the Contract Administrator reserves the right to order the removal and replacement or overlay of the subject asphalt. The Contract Administrator shall also have the right to, at his discretion, delay acceptance of the subject asphalt and/or extend the maintenance period for additional time.

Where the Contract Administrator chooses to exercise this right, the Contractor's maintenance security, or an appropriate portion thereof, shall be retained until the Contract Administrator is either satisfied as to the quality of the materials and workmanship or orders removal and replacement of the subject asphalt.

26. SAMPLES

1. Submit, in duplicate unless otherwise noted, samples as specified in Specification sections. Label samples as to origin and intended use in the Work.

2. Contractor to deliver samples prepared to the testing company as directed.

3. The Contractor shall retain the services of a consulting firm with CCIL Certified Lab Type-C and Type-B designation for Quality Control testing of materials and compaction of backfill.

4. Notify the Contract Administrator in writing, at the time of submission, of any deviations in samples from requirements of the Contract Documents and state the reason for such deviations.

5. Adjustments made on samples by the Contract Administrator are not intended to change the Contract Price. If adjustments effect the value of the Work, state such in writing to the Contract Administrator prior to proceeding with the Work.

6. Make changes in samples which the Contract Administrator may require, consistent with the Contract Documents.

7. Where changes or modifications of the Products for which samples are submitted are required, re-submit samples embodying the required changes or modifications.

8. Reviewed samples will become the standard of workmanship and material against which the performed Work will be verified and accepted.

27. TESTING AND QUALITY CONTROL

1. Unless otherwise noted, the Contract Administrator will select and the Owner will pay for the services of a testing agency or laboratory for tests that are required but not specified other than tests required by by-laws, statutes and regulations applicable to the work.

2. Quality Control test results shall be used for acceptance, unless a Quality Assurance sample is obtained, then QA samples will be used for acceptance. The Contractor is responsible for quality control testing to ensure workmanship and materials are in compliance with the Contract Documents.

3. The Contractor will remove and replace products indicated in inspection and test reports as failing to comply with the Contract Documents.

4. The Contractor will correct improper installation procedures reported in the inspection and test reports.

5. The Contractor will pay the costs for the re-inspection and testing of replaced work.

6. It is not the responsibility of the inspection and testing agents to supervise, instruct in current methods or accept or reject a part of the Work, but only to inspect, test and to report conditions.

7. The Contractor will notify the Contract Administrator and the appropriate inspection and testing agent not less than forty-eight hours prior to the commencement of the part of the Work to be inspected and tested.

8. All materials supplied under this Specification shall be subject to inspection and testing by the Contract Administrator and/or by the Testing Laboratory designated by the Contract Administrator.

9. The Owner reserves the right to perform quality control verification inspection and testing on all workmanship and materials. Substandard workmanship and materials shall be removed or repaired by the Contractor to the satisfaction of the Contract Administrator at no additional cost the Owner.

(i) The Contractor will ensure the presence of the authorized inspection and testing agent at the commencement of the part of the Work specified to be inspected or tested.

(ii) The Contractor will ensure the inspection and testing reports are issued promptly (normally within forty-eight hours), and that the Contract Administrator is notified forthwith if the report indicates improper conditions or procedures.

(iii) The Contractor will co-operate with and provide facilities for the inspection and testing agents to perform their duties.

(iv) The Contractor will provide proper facilities for the storage of concrete specimens at correct temperature, free from vibration or damage in accordance with the instruction of the inspection and testing agent and governing standard.

(v) The Contractor will submit four copies of each laboratory test report, unless specified otherwise, each copy signed by a responsible officer of the inspection and testing laboratory. Each report is to include:

a) Date of issue

b) Contract name and number

c) Name and address of inspection and testing company

d) Name and signature of inspector or tester

e) Date of inspection or test

f) Identification of the Product and specification section covering inspected or tested work

g) Location of the inspection or the location from which the tested product was derived

h) Type of the inspection or test

i) The remarks and observations on compliance with the Contract Documents

(vi) The Contractor will correct defective work within the Contract Time; the performing of such work is not a cause for an extension of the Contract Time.

All required supporting test data and certificates shall be less than twelve (12) months old from the date of submission.

28. INSPECTION AND TESTING FOR SANITARY SEWERS, STORM SEWERS AND FORCEMAINS

1. All new and replaced Sanitary Sewers, force main, maintenance holes, connections and chambers shall be inspected and tested to ensure integrity of the installed material for water tightness prior to placing into service.

2. All inspections and testing shall be performed as outlined in the MECP's Design Criteria for Sanitary Sewers, Storm Sewers and Forcemains for Alterations Authorized under an Environmental Compliance Approval, and the Special Provisions of the appropriate tender item(s).

3. Inspection and testing plans including; procedure, equipment, schedule, safety requirements, and emergency response plan shall be submitted to the Contract Administrator/Owner at least two (2) weeks prior to the inspection or testing. Plans must be accepted by the Owner prior to proceeding with the inspection or testing.

4. The Owner and Contract Administrator shall be notified, and a confirmation of receipt shall be acquired at least five (5) business days prior to inspection or testing.

5. All inspection reports and test results shall be provided to the Owner in PDF copies or digital files.

6. A single testing plan can be used for similar tests on the same project; however, each test shall be recorded separately.

7. Seasonal variation (e.g., spring freshet) on groundwater conditions shall be considered on selecting appropriate testing method.

8. In special circumstances, specific inspection and testing requirements may apply, refer to MECP's Watermain Design Criteria for Future Alterations Authorized Under a Drinking Water Works Permit for additonal inspection and testing requirements for Sanitary Sewers, forcemain, and associated Appurtenances when;

    (i) Installed within areas the works would pose a Significant Drinking Water Threat; and
    (ii) If the required separation distance from watermains and associated Appurtenances cannot be achieved.

29. CODES AND STANDARDS

1. In the case of a conflict or discrepancy between the Contract Documents and the governing standards, the more stringent requirements apply.

2. Unless the edition number and date are specified, the reference to the manufacturer's and published codes, standards, and specifications are to the latest edition published by the issuing authority, current at the date of tender closing.

3. Reference standards and specifications are quoted in this Specification to establish minimum standards. Work in quality exceeding these minimum standards conforms with the Contract.

4. Where reference is made to a manufacturer's direction, instruction, or specification it is deemed to include full information on storing, handling, preparing, mixing, installing, erecting, applying, or other matters concerning the Products pertinent to their use and their relationship to the Products with which they are incorporated.

5. Where reference is made to regulatory authorities, it includes all authorities who have, within their constituted powers, the right to enforce the laws of the Place of Work.

30. LABOUR, PRODUCTS AND WORKMANSHIP

1. Products, named in the Specifications or on the Drawings by manufacturer's name and model number, establish the size, quality and performance standards for the Work. In most cases, alternate manufacturers' Products are listed as acceptable for the named manufacturer's Product. Base the Tender Price on the named manufacturers Product or the Product of an alternate manufacturer. If no alternate manufacturers are listed, base the tender price on the named manufacturer's Product.

2. The Work has been designed based on the named manufacturer's Product. If the tender price is based on an alternate, acceptable, manufacturer's Product, ensure the alternate, acceptable manufacturer's Product is equivalent in size, quality and performance to the named manufacturer's Product. Include in the tender price for any modifications to the Work necessary to accommodate the alternate, acceptable manufacturer's Product and submit for the Contract Administrator's review a dimensioned layout of the space into which such Product is to be installed.

3. Give preference to the hiring of local workers, provided they are available and physically fit and qualified by training and experience to perform the Work. The foregoing does not apply to Superintendent, Timekeeper, Supervisor and construction equipment and machine operators, or until ten days after the commencement of the Work. Make available at all reasonable times for

examination by the Owner, the labour rolls for the determination of the domicile of the workers.

31. SUBMITALS

1. Unless otherwise noted, make submittals to the Contract Administrator for review.

2. Make submittals with reasonable promptness and in an orderly sequence to avoid any delay in the Work. Failure to submit in ample time is not considered cause for an extension of Contract Time, and no claim for extension by reason of such default will be allowed.

3. Do not proceed with Work affected by submittals until review is complete.

4. The Contractor's responsibility for errors and omissions, for providing the specified Products and for the construction of the Work in accordance with the Contract Documents is not relieved or diminished in any way by the Contract Administrator's review of submittals.

32. SCHEDULES

1. Within fourteen (14) days of the written notification of tender acceptance, submit for the Contract Administrator's review, the following schedules:
   (i) A construction schedule
   (ii) A submittal schedule for shop drawings and product data sheets
   (iii) A submittal schedule for samples
   (iv) A product delivery schedule and
   (v) A cash flow schedule

2. Prepare each schedule in the form of a horizontal bar chart, with a separate bar for each trade or operation, and a time scale identifying the first work day of each week.

   (i) The construction time shown on the initial schedule shall not extend beyond the specified Contract completion date. The construction schedule shall include all non-working periods and appropriate allowances for inclement weather.

   (ii) The Contractor shall select the activities so that the work is identifiable and the progress of each activity can be determined. At a minimum, each trade and operation shall be identified on the schedule. The City reserves the right to limit or increase the number of activities on the diagram.

(iii) Each activity in the initial and updated construction schedules shall include a description of the operation and the number of days allocated or actually used for it. When the duration of an activity is dependent on weather conditions, the number of days allocated shall include an allowance for normal frequency of inclement weather. When the activity has an associated tender item quantity, the approximate quantity shall also be shown.

(iv) The construction schedule shall show the sequence and interdependence of all activities required to complete the work under the Contract. All network connections used to create a logical schedule and the corresponding durations shall be shown. The time scale of the construction schedule may be divided into days or weeks.

3. Consult with the Contract Administrator during preparation of the schedules; make any corrections agreed to during the review period, and issue final copies to the Contract Administrator.

4. Periodically, update each schedule during the course of construction and issue revised copies.

5. If the progress of any part of the construction falls behind schedule, immediately notify the Contract Administrator in writing giving the reason for the delay and the action to be taken to regain the construction schedule to complete the Work at the Contract Time.

6. The Contractor shall not be permitted to start work until the Contract Administrator receives a construction schedule, in conformance with the contract.

7. If, for any reason, the Contractor cannot produce an acceptable construction schedule within 30 business days of initial submission of the construction schedule, the Contractor shall be in default of the contract.

33. SHOP DRAWINGS AND PRODUCT DATA

1. Submit the shop drawings and Product data sheets as specified in sections of the Specification.

2. Show on the shop drawings the Products, methods of construction an attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for proper performance of the Work. Where products attach or connect to other products indicate that such items have been coordinated, regardless of the Section under which the various products have been specified. Identify by cross reference to design drawings and Specifications.

3. Product data sheets are defined as manufacture's catalogue sheets, brochures, literature, technical data, performance charts and diagrams and similar data used to illustrate quality, characteristics, capacity and performance of the specified, manufactured Products.

4. Submit one clear and legible sepia print or AutoCAD disk and one white print of each shop drawing.

5. The Contact Administrator will review the shop drawings and Product data sheets and will indicate their review status by stamping shop drawings and product data sheets copies as follows

   (i) "Reviewed" or "Reviewed as Noted" – If the Contract Administrator's review of a shop drawing or Product data sheet is final, the Consultant will stamp the shop drawing or Product data sheet "Reviewed" or "Reviewed as Noted" (appropriately marked) and keep his own required number of copies. The sepia or AutoCAD disk and one white print will be returned to the Contractor.

   (ii) "Revise and Resubmit" – If the Contract Administrator's review of a shop drawing or Product data sheet is not final, the Contract Administrator will stamp the shop drawing or Product data sheet "Revise and Resubmit", mark the submission with his comments, keep one copy for his records, and return the sepia and a marked print to the Contractor. Revise the shop drawing or Product data sheet in accordance with the Contract Administrator's notations and resubmit.

6. The shop drawings and the Product data sheet reviews do not authorize changes in cost or time. Changes involving cost or time are authorized only by a signed change order.

7. It is understood that the following is to be read in conjunction with the wording on the Contract Administrator's shop drawing review stamp applied to each and every data sheet or drawing submitted:

"This review by the Contract Administrator is for the sole purpose of ascertaining general conformance with the Contract design concept. This review does not mean that the Contract Administrator approves the detail design inherent in the shop drawings, responsibility for which remains with the Contractor, and such review does not relieve the Contractor of the responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. Be responsible for confirming and correlating dimensions at the Place of the Work, for information that pertains solely to fabrication processes or to techniques of construction and installation, and for coordination of the work of all subtrades."

34. RECORD DRAWINGS

1. When work begins at the site, obtain from the Contract Administrator a white print set of the Contract Drawings.

2. Record on the white prints on a daily basis, work constructed differently than shown on the Contract Documents. Record all changes in the Work caused by site conditions, or originated by the City, the Contract Administrator, the Contractor, or a Subcontractor and by addenda, supplemental drawings, site instructions, supplementary instructions, change orders, correspondence, and directions of regulatory authorities. Accurately record the location of concealed mechanical services and electrical main feeders, junction boxes and pull boxes. Do not conceal critical Work until its location has been recorded. Do not use these drawings for daily working purposes and make the set available for periodic inspection by the Contract Administrator.

3. Make records in a neat and legibly printed manner with a non-smudging medium.

4. Dimension the installed locations of concealed service lines on the site or within the structure by reference from the center line of the service to structure column lines or other main finished faces or other structural points easily identified and located in the finished work.

5. Sumit record drawings to the Contract Administrator for review.

35. WARRANTY INSPECTION

1. The Owner will arrange and conduct with the consultant and the Contractor a warranty inspection at the site prior to expiration of the items covered by the one-year warranty period.

36. CLEAN-UP & TIDY CONDITION

1. On a daily basis, as the Work progresses, and on completion of the Work, clean up and remove the rubbish and debris from the site. Remove excess material that is not required to be left on the site by the conditions of the Contact.

2. Keep the site and the Work as tidy as practicable at all times.

37. SIDEWALK ACCESSIBILITY

1. Provide signage and barricades at locations of concrete sidewalk removal (traffic cones not acceptable).

2. Signage to advise of sidewalk closure and direct pedestrians to other side.

3. Provide temporary asphalt ramps at locations of curb ramps when top lift paving is deferred more than one week after base.

38. RESTORATION OF WORK SITES

1. Sidewalk Projects

(i) Restore driveway access 72 – 96 hours after pouring of concrete.
(ii) Complete landscaping within three (3) weeks of final concrete pour.

2. Paving Projects

(i) Apply top lift paving within three (3) weeks of asphalt milling operations.
(ii) Apply base paving within two (2) weeks of final grading (subject to any curb and gutter work.)

3. Sewer and Water Projects

(i) Provide suitable backfill and grading to allow property access within one (1) week after pipe installations.
(ii) No more than two (2) successive blocks under construction without curbing or final grading work underway.

4. Street Lighting Projects

(i) Existing residential streets should not be left in darkness for more than two (2) weeks without suitable provisions for temporary lights or new lights erected.
(ii) Existing commercial areas will require lights at all times. Some fixtures may be temporarily decommissioned while work is underway but critical locations shall remain on via any temporary wiring.

5. Regulatory Signs

(i) At no point will open streets be left without proper regulatory signs (ie stop signs) in place.

(ii) Failure to meet interim cleanup schedules will result in the City stopping the workflow to other sites/blocks or otherwise calling a default on the work progress.

(iii) New construction streets shall not be commenced until final grading/base paving work is underway on existing locations.

39. CONTRACTOR COMMUNICAITON

The successful Contractor must provide City Administration with a valid email account. It is expected that this email account is checked periodically and a reply will be received before the end of the following business day.

SECTION 01000
OPERATIONAL CONSTRAINTS AND CONDITIONS

Operational Constraint – Site Supervisor and Project Manager

The Contractor shall ensure that all Site Supervisors and Project Managers have a minimum of 7 years of relevant experience. If a change in Site Supervisor and or Project Manager is required, the Contractor shall provide the Contract Administrator with relevant documentation outlining their experience for approval.

Operational Constraint – Laydown Area

The Contractor may set up a site office and store equipment at the residential lots throughout the Trailer Court Development. The Contractor shall not stockpile material or fuel equipment in the laydown area. The laydown area shall be fenced to prevent unauthorized access. The Contractor shall ensure that the laydown area is restored to its original condition upon demobilizing.

Operational Constraint – Hours of Work

All work shall be scheduled and carried out within sunrise and sunset unless otherwise approved by the Contract Administrator.

No work shall be completed on Sundays or Statutory Holidays unless specifically approved by the Contact Administrator.

PENALTY FOR LATE WORK
On each occasion that is not approved by the Contract Administrator, when the Contractor fails to complete the work by sunset, the Contract Administrator will assess the Contractor and initial penalty of $500.00.

If work is not finished within 15 minutes of sunset, a further penalty of $250.00 will be assessed against the Contractor.

After that, a further penalty of $25.00 per minute will be assessed against the Contractor for the work that is progressing. The Contract Administrator will be the sole judge of the length of time of the work.

The determination of sunset will be based on Environment Canada weather report for Marathon, Ontario for that day.

Operational Constraint – Equipment and Noise Constraints

The Contractor shall include in his bid price, the use of an excavator with a counterweight that does not extend into the live traffic lane.

The equipment used shall be capable of doing the work in accordance with the applicable specifications. The equipment shall be suited to the material being compacted, excavated, removed, graded and placed; to the degree required within the constraints of available space accordingly.

The successful bidder on the contract will be required, before commencement of the Work, to submit a complete inventory of all his and any subcontractor's equipment expected to be used on the project. This information shall comply with OPSS 127 for the identification of Equipment.

Prior to Construction start-up, the Contractor shall review the jobsite with the Contract Administrator in order to layout locations that will be permissible to park construction equipment. Parking of construction equipment and storage of materials within the roadway corridor and on private land shall be at the approval of the Corporation of the Town of Marathon and the affected property owners.

Equipment shall be maintained in an operating condition that prevents unnecessary noise, including but not limited to no-defective muffler systems, properly secured components, and the lubrication of moving parts.

Idling of equipment shall be restricted to the minimum necessary to perform the specified work.

Operational Constraint – Existing Utilities

The Contractor is advised that grading and trenching work will be required within the vicinity of existing overhead and buried utilities. The Contractor shall coordinate and cooperate with utility companies as necessary to facilitate construction. All existing utilities shown on contract drawings are for informational purposes only. The Contractor is responsible to verify the presence and exact location of all existing utilities.

Operational Constraint – Existing Utility Pole Removal/Relocations

The removal, relocation or modification of hydro electric utility poles is the sole responsibility of Hydro One. The Contractor shall not modify, remove, or relocate these utility poles in any way.

Telecommunication and Illumination utility poles identified for removal are to be removed by the Contractor. The Contractor shall wait for written approval from the Contract Administrator before modifying this infrastructure in anyway. Existing Telecommunication and Illumination may be active and must be disconnected from the utility provider before removal can be completed.

The Contractor must coordinate and cooperate with the utility provider, ensuring they have access to the site as required. The Contractor shall accommodate the utility provider's schedule within reason and take all necessary steps to facilitate their work without interference.

The following table lists the utility poles designated for modification, removal, or relocation:

Owner	Co-ordinates (UTM Zone 16U)		Owner	Co-ordinates (UTM Zone 16U)	
	Northing:	Easting:		Northing:	Easting:
Hydro-One	5395206.7 m	545288.6 m	Town of Marathon	5395126.3 m	545350.8 m
Hydro-One	5395183.5 m	545318.1 m	Town of Marathon	5395128.9 m	545376.6 m
Hydro-One	5395162.4 m	545358.9 m	Rodgers	5395100.4 m	545305.5 m
Bell	5395186.0 m	545274.6 m	Rodgers	5395085.8 m	545346.2 m
Bell	5395154.8 m	545297.2 m	Rodgers	5395093.8 m	545377.7 m
Town of Marathon	5395123.4 m	545320.4 m			

Operational Constraint – Phased Construction & Coordination of Construction

The Contractor shall complete the construction in phases. Interruptions to businesses, parks, and residential buildings shall be avoided as much as reasonably possible. The Contractor shall coordinate their construction activities with the Contract Administrator.

The Contractor shall maintain public access to the Pebble Beach lookout until September 8th, 2025.

Temporary support of the Watermain, Storm Sewer and Sanitary Sewer shall be provided at all times without interruption.

Lane restrictions outside of the current phase are permitted with approval from the Contract Administrator.

The Contractor shall be responsible to ensure pedestrian traffic always has access through the Howe Street reconstruction site in a safe and efficient manner. The Contractor shall take necessary safety precautions when working in close proximity to pedestrian traffic areas. These shall include use of equipment to delineate the work zones. All road closures, detour signage and traffic control shall be in conformance with or exceed the requirements outlined in the MTO's OTM Book 7.

Construction shall be carried out in the following phases to be completed in chronological order. No phase shall be started until the prior phase and completed, and approval from the Contract Administrator has been given in writing:

Phase 1

- All pedestrian traffic shall be restricted within the Trailer Court Subdivision project limits during phase 1.
- Complete all grading, storm sewer, watermain and sanitary work within phase 1.
- Construct Trailer Court Road to the top of granular 'A'.
- The intersection of Trailer Court Road and Yawkey Avenue may only be closed when necessary and with written approval from the Contract Administrator.

Phase 2

- Vehicular access on Trailer Court Road shall be permitted.
- Complete all grading, storm sewer, watermain and sanitary work within phase 2.
- Construct howe street to the top of granular 'A'.
- Trailer Court Road/Howe Street intersection reduced to one lane. Conduct traffic control as necessary as per OTM book 7.

Phase 3

- Vehicular access on Trailer Court Road shall be permitted.
- Complete all grading, storm sewer, watermain and sanitary work within phase 3.
- Construct howe street to the top of granular 'A'.
- The intersection of Howe Street and Yawkey Avenue may only be closed when necessary and with written approval from the contract administrator.

Phase 4

- Phase 4 shall not commence before September 8th, 2025.
- Vehicular traffic on Trailer Court Road & Howe Street shall be permitted, with the exception of the Phase 4 Zone.
- Construct a temporary entrance to provide vehicular access to the Royal Canadian Legion.
- Complete all grading, storm sewer, watermain and sanitary work within phase 4.
- Restriction of public access to Pebble Beach during phase 4 is permitted.

The contractor shall complete all work within Phase 4 by September 22nd, 2025.

Operational Constraint – Protection of Public Traffic

Applies to vehicular, pedestrian, bicycle and other forms of public traffic.

The Contractor shall prepare and submit a detailed, written Traffic Control Plan within 14 days of issuance of the Written Order to Start Work. The Plan shall be prepared in consultation with the Contract Administrator and the Town of Marathon and, as a minimum, shall include the following:

- Proposed timing and duration of lane closures;
- Construction staging to minimize disruption to traffic; and,
- Detour routes.

If, in the opinion of the Contract Administrator, the Contractor is not taking all reasonable steps to minimize the disruption of traffic, he shall have the authority to order the Contractor to alter his work procedures and scheduling.

The Contractor shall coordinate all traffic control operations in accordance with the most current version of the Ontario Traffic Manual (OTM), Book 7 - Temporary Conditions.

The Contractor shall, at the Contractor's own expense, remove any equipment or material which, in the opinion of the Contract Administrator, constitutes a traffic hazard. The Contractor shall provide temporary fencing around potential hazardous construction zone(s) as a protective barrier to the general public during the life of the Contract. Fencing shall be set up prior to commencement of any operations and removed upon completion of the operation.

All necessary traffic control devices such as signs, barricades, delineators, lanterns, and flashing lights shall be supplied and erected in accordance with the Ontario Traffic Manual – Temporary Conditions – Book 7. The Contractor shall be responsible for all traffic control and shall supply and properly place all signs required to maintain traffic control.

The Contractor shall schedule the work so that there will be no open excavation adjacent to a lane carrying traffic overnight and on non-working days except where a traffic barrier designed to restrain errant vehicles is located between the traffic and the excavation.
The Contractor shall make every effort to minimize the disruption to traffic during the construction of the works including access to the local residences and businesses located within the construction limits. The Contractor must provide and maintain at all times access to the local business including the provision for truck access to any commercial or industrial entrances located within the work.

The Contractor shall provide, in writing, notification of any temporary entrance closures (start and duration) to the Contract Administrator and the property owners(s)/occupants a minimum of 48 hours in advance of closure. If any entrance cannot be fully restored prior to shutting down at the end of the day, access to the adjacent section of roadway shall be made available for temporary parking until the entrance can be fully restored and reopened for use by the owner/occupant.

Construction operations shall be located at sufficient intervals to allow for the smooth flow of traffic. Under no circumstance is the traffic from one operation to be backed up into another operation. A maximum 10 minute delay to queued vehicles is allowed for the entire project length. Operations which result in longer queues must be altered to allow for the passage of vehicles.

The two (2) lanes shall be re-instated to the full width for overnight traffic other than situations covered under the 24 hour flagging operations constraint such that there is no grade separation between the two (2) lanes. Access to sideroads, entrances and businesses shall be maintained throughout the course of the project.

When public thoroughfares are to be restricted, the Contractor will notify the Contract Administrator, road authority, the fire department, the police department, the ambulance service, giving at least seven days notice of the restriction.
The Contractor will restrict normal traffic flow only with the consent of the authorities having jurisdiction, and in accordance with their requirements.

Any embankment opened to traffic shall be graded and packed sufficient for vehicular traffic or capped with Granular A at the Contractor's expense.

The Contractor is responsible for any removal and replacement of existing signs required to do the work.

Payment for traffic control shall be included in the applicable tender items.

Operational Constraint – 24 Hour Flagging

If it is not possible to reinstate two lanes of traffic at the end of the days operations, the Contractor shall be responsible for night time flagging, at the Contractor's expense. Flagging shall be in accordance with the Ontario Traffic Manual (OTM) Book 7 and the Occupational Health and Safety Act.

Operational Constraint – Road Maintenance, Compaction & Dust Control

The Contractor shall be responsible for maintaining all roads within the Contract Limits in a safety and traversable condition from the date his forces commence work until Final Completion is issued by the Contract Administrator. The condition of all roads must meet the Contract Administrator's approval at all times.

Water for Compaction and Dust Control is available from The Corporation of the Town of Marathon at the rates and conditions prescribed by the Town.

The Contractor shall take such steps as may be necessary to prevent dust nuisance resulting from the operation.

The Contractor shall ensure that its dust and mud control procedures are effective, sufficient, in force and to the satisfaction of The Corporation of the Town of Marathon and/or the Contract Administrator. As the work progresses, the Contractor shall clean up the streets and again at the completion of the construction works. The Contractor shall be responsible for daily cleaning of all asphalt surfaces which have been muddied or littered with debris, as a result of construction operations and for the duration of the Contract.

The Corporation of the Town of Marathon reserves the right, without prior notice to the Contractor, to provide additional dust control measures, or street clean up, or grading, as required, as a result of the construction works, and shall then deduct the cost of such works from the payment due to the Contractor.

Operational Constraint – Grade Checks

The Contract Administrator shall be notified when the base course has been completed. At no additional cost to the Owner, the Contractor shall not commence with the next stage of work until the Contract Administrator has completed any necessary Quality Assurance grade checks.

Operational Constraint - General Environmental

The Contractor is responsible for protection of people, property, and the natural environment from environmental impacts and damage that may result from this contract.

Environmental protection during construction shall:

a) comply with commitments and conditions of environmental approvals, permits, exemptions, agreements, reports, and clearances provided by the owner;
b) comply with any other formal environmental approvals, permits, exemptions, agreements, reports, and clearances that must be procured by the Contractor in order to perform the work; and
c) be integrated with environmental and other requirements specified in the contract.

Environmental protection shall include; but not be restricted to the control of materials, equipment and construction operations in order to avoid and minimize:

a) direct physical damage;
b) sediment, noise, vibration, dust, chemical, and other emissions; and
c) interference with local use, access and passage.

Such control shall include but not be restricted to the selection and management of:

a) materials, equipment and method of construction, including the management of excess materials and contaminated materials;
b) construction site disturbance limits; construction site access and haul roads; material storage and disposal areas; equipment storage areas; construction yards; and
c) timing, duration and staging of the work.

Operational Constraint – Migratory Bird Protection

The Contractor shall avoid destroying the nests of migratory birds. The Contractor shall visually inspect the area prior to clearing to confirm there is no nesting activity. If nests are observed, the Contractor shall notify the Contract Administrator immediately. The Contract Administrator shall provide written documentation should any additonal action be required by the Contactor.

Operational Constraint – Temporary Stormwater Support

The Contractor shall provide temporary support for the existing Stormwater Sewer traveling through Trailer Court Road. The Contractor shall construct all new stormwater infrastructure from the downstream to upstream end. The existing stormwater sewer shall be maintained until connection into the new storm infrastructure is possible to ensure no flooding or erosion occurs upstream/downstream of the site during construction.

Operational Constraint – Temporary Sanitary Sewer Support

The Contractor shall provide a temporary Sanitary Sewer during the replacement of the Sanitary Sewer on Howe Street and connecting into the existing sewer on Trailer Court. The sanitary service shall be maintained without interruptions during construction.

SECTION 01100
ITEM SPECIFICATIONS AND SPECIAL PROVISIONS

These items refer to Schedule of Tender Prices under Section 00200 Tender Forms

CLEARING AND GRUBBING

Scope of Work

The Work under these items shall be in accordance with OPSS 201 and the following provisions for the locations identified elsewhere in the Contract Documents. Clearing and Grubbing shall be performed at areas as indicated in the Removals Drawing.

Basis of Payment

Payment for this Item shall include all costs of removal and disposal of trees and stumps 150 mm in diameter or greater, measured 600 mm above existing grade.

No Payment will be made for trees that require removal but are less than 150 mm in diameter.

EARTH EXCAVATION, FILLING AND GRADING
REMOVAL OF EXCESS MATERIAL

Scope of Work

The Work under these items shall be in accordance with OPSS 206.

Construction

Where possible, excavated material shall not be placed on the travelled portion of streets, access to lots, lawns, walks, driveways, etc. Material shall be thrown to one side of the trench only, unless otherwise directed.

Any excavated material or excess material remaining after backfilling of trenches shall remain the property of the Owner and shall be disposed of at the Town of Marathon's Landfill site to be used for disposal of cover material. The Contractor is responsible to level all excavated material at the disposal site. No additional compensation will be paid to the Contractor for performing this work. Contractor to coordinate with the Town of Marathon's Manager of Works, Operations, and Parks before disposal of any materials.

Measurement of Payment

Measurement for payment shall be by the cubic meter computed by:

a) The truck box volume measurements for each truck

The Contract Administrator will calculate the volume of each truck box. The Contract Administrator will make a field assessment on actual excavation payment volumes based on partial or complete filling of the truck boxes taking into account void spaces left and/or weight overload restrictions. The contractor shall provide a truck haul summary for each day excess soil is removed from site.

The Contract Administrator shall be the sole judge as to the amount of excavated material which can be stockpiled alongside the sewer trench and may order any or all of the excavated material removed and stockpiled.

HOT MIX ASPHALT – 50MM DEPTH HL4

Materials

HL4 Asphalt and Aggregates in accordance to OPSS 1150. SP12.5 Asphalt and Aggregates in accordance to OPSS 1151. Submit asphalt mix design to Consultant 10 business days prior to paving.

Asphalt cement shall conform to OPSS 1101. The PGAC Grade shall be 52-34 and Traffic Category A.

The percentage by weight of asphalt cement contained in the pavement mixture of HL4 shall be between 4.5% and 5.5%.

Construction

Construction of asphalt roadways, driveways and parkways to be in accordance to OPSS 310 & OPSS 311.

The hot mix asphalt depth shall be as specified on the Contract Drawings.

Section 310.07 of OPSS 310 is amended with the addition of the following:

> The Contractor shall notify the CA of paving operations in writing 24 hours prior to work.
>
> All asphalt cuts for excavation and removal limits, trenching and installation of curb and/or walkways shall be performed by saw cutting prior to removal of asphalt.
>
> If a uniform edge of the trench is not obtained, the Contractor shall re-cut prior to final paving.
>
> The Contract shall provide saw cutting at all locations where the paving operations matches into existing asphalt or asphalt that has had time to cool to ambient air temperature.

Subsection 310.07.01 Quality Control is amended with the addition of the following:

> The Contractor's paving superintendent shall continuously monitor the paving distribution to ensure the appropriate depth of asphalt is maintained throughout the paving operation. The Contractor shall document, certify and sign the distribution checks and provide the documentation to the CA on a daily basis.

The Contractor is responsible for all quality control testing of materials to ensure conformance with the Contract documents. Upon request, the Contractor shall provide to the CA with test results meeting applicable OPSS specifications.

Should any of the samples fail to meet the specifications, the Contractor shall remove the pavement and replace it with asphalt pavement as specified. The Contractor shall patch the holes where samples have been taken at his own expense.

Subsection 310.07.02 Preparation of Foundation and Existing Pavement is amended by the addition of the following:

The Contractor is responsible for all grading work and base preparation prior to placement of asphalt paving, grades shall be constructed to the elevations specified within the Contract drawings. If elevations are not provided, the Contractor shall ensure the intent of the work using smooth transitions and lines. The Contractor shall ensure positive drainage and smooth transitions when matching existing features.

The Contractor shall do all cleaning, tack coating, patching of holes, and padding of depressions and irregularities, and other preparatory work necessary to produce a uniform surface in the finished work.

Subsection 310.07.05.01.04 Delivery is deleted in its entirety and replaced by the following:

Samples of asphalt cement shall be provided to the CA, if requested, free of charge.

Subsection 310.07.05.02.05 Delivery is deleted in its entirety and replaced by the following:

Samples for the Owner shall be delivered within 24 hours of sampling.

Section 310.08 Quality Assurance is amended with the addition of the following:

310.08.07 Surface Tolerance

The surface tolerances of any pavement surface shall be such that when tested with a 3 m straight edge placed anywhere, including the edge of the pavement, in any direction on the surface, except across the crown or drainage gutters, there shall not be a gap between the bottom of the straight edge and the surface of the pavement.

a) Greater than 6 mm for all binder courses, levelling courses and padding, or

b) Greater than 3 mm for all surface courses. The Contractor shall provide all traffic control, as required, for the Owner to conduct surface tolerance measurements. All tolerance-related repairs shall be carried out according to the Repairs subsection.

Longitudinal joints shall be constructed such that the elevation difference across the

longitudinal joints shall not exceed 5 mm, when measured with a straight edge placed on the asphalt surface with the higher elevation and overhanging the joint by not more than 50 mm. All joints which exceed the 5 mm tolerance shall be repaired such that the tolerance is met.

313.08.08 Surface Appearance

HMA deemed by visual appearance to have flushing, bleeding, segregation, fat spot, surface damage, cracking, chatter, or surface contamination but not limited to these, shall be considered deficient material or work. The Contractor shall provide traffic control, for all surface appearance assessments. Deficient material, mixture, and work shall be removed and replaced or repaired or assessed a payment reduction.

313.08.09 Segregation

HMA exhibiting medium or severe mid-lane segregation shall be assessed a payment reduction or shall be repaired at the discretion of the Contract Administrator. From the time the Contract Administrator provides notification of mid-lane segregation, a maximum of 200 m^2 of HMA may be placed, to demonstrate the effectiveness of any repairs or adjustments or both made to a defective paver. The repairs or adjustments or both shall be demonstrated to the Contract Administrator. If the repairs or adjustments or both to the paver do not eliminate midlane segregation to the satisfaction of the Contract Administrator within the allowable 200 m^2 of HMA, then the use of that paver shall be discontinued.

Other segregation shall be addressed in accordance with the following:

a) Slightly segregated mix shall be accepted into the work with no payment reduction.

b) Medium segregation in levelling courses or padding with a thickness greater than 40 mm, and binder courses shall normally be left in place with no payment reduction. However, any areas of medium segregation that deteriorates prior to being overlaid by another pavement course shall be repaired at no cost to the Owner.

c) Medium segregation in surface courses shall be assessed a payment reduction or repaired at the discretion of the Contract Administrator.

d) Severely segregated mix shall be repaired by removal and replacement. Levelling courses and padding with a total thickness less than 40 mm, bullnoses, and tapers that were not machine-laid and any areas of handwork shall not be assessed on the basis of segregation but on the basis of other workmanship-related problems. However, if they deteriorate prior to being overlaid by another pavement course, the Contract Administrator shall assess the causes of the deterioration before determining

responsibility for the cost of repairs.

Segregation severity levels are defined as follows:

a) Slight Segregation – a pavement matrix is in place between the coarse aggregate particles; however, there are slightly more coarse aggregate particles in comparison with the surrounding acceptable mix.

b) Medium Segregation – the pavement has significantly more coarse aggregate particles than the surrounding acceptable mat and usually exhibits some lack of surface matrix.

c) Severe Segregation – the pavement appears very coarse, with coarse aggregate particle against coarse aggregate particle and the pavement has little or no matrix.

Subsection 310.09.010.02 of OPSS 310 is amended by the addition of the following:

The unit of measure for all HMA on this Contract shall be by area.

Payment at the Contract Price for the above tender item shall be full compensation for all labour, Equipment and Material to do the work including excavation (stripping) of underlying organic soils.

Granular backfill, as specified in the Contract Drawings, shall be paid under the appropriate item.

GRANULAR A

Scope of Work

Granular A material and construction shall be in conformance with OPSS 314, OPSS 1010 and the following special provisions.

Subsection 314.07.01 Granular Subbase, Base and Surface is amended by the addition of the following:

Granular material shall be provided, placed, graded, and compacted at the locations and depths as indicated in the contract drawings or as directed by the Contract Administrator.

Subsection 1010.08.01 General of OPSS 1010 is amended with the addition of the following:

Samples for the Owner shall be delivered within 24 hours of sampling.

Measurement of Payment
Measurement for Granular A material shall be by Tonne as outlined in Section 314.09.01.01.01. Material tickets must be available for all material delivered to the site. Tickets must be submitted to the Contract Administrator within 24 hours of the material being delivered to the site, in order to be eligible for payment.

Basis of Payment
Payment at the contract price for the above tender item shall be full compensation for all labour, Equipment, and material required to do the work.

CONCRETE SIDEWALK
CONCRETE CURB AND GUTTERS

Scope of Work
Concrete Sidewalk shall be in accordance OPSS 1350 and OPSS 351

Concrete Curb and Gutter shall be in accordance with OPSS 1350 and OPSS 353.

The Contractor shall provide the Contract Administrator with 24 hours notice prior to pouring/placing concrete. The Contract Administrator must provide the Contractor with a permission to pour prior to pouring/placing concrete.

No more than 72 hours shall pass from the time that the Contractor removes a section of concrete sidewalk, places the new concrete sidewalk and reopens it to pedestrian foot traffic.

Subsection 351.07.04 Preparation of Work is amended by the addition of the following:

c) Sidewalk to be reinforced at all driveways and lane crossings with MW 13.3 x MW 13.3 wire - 152 mm x 152 mm opening wire mesh.

Subsection 351.10.03 Excavation of Section is deleted in its entirety and replaced with the following:

Payment for the unit price for the above tender item shall be full compensation for all labour, Equipment and Material to do the excavation work required for preparation of the subgrade.

Subsection 1350.08.02.01.01 Quality Assurance Testing and Laboratory Requirements of OPSS 1350 is amended with the addition of the following:

Samples for the Owner shall be delivered within 24 hours of sampling.

REMOVAL OF ASPHALT PAVEMENT

Scope of Work

The Removal of Asphalt Pavement shall be completed in accordance with the requirements of OPSS 510 and as detailed in the Contract.

The asphalt pavement removed shall remain the property of the Owner and shall be hauled and stockpiled as directed by the Contract Administrator to the Town's asphalt disposal site.

Subsection 510.10.01 is modified with the addition of the following:

> When the Contract does not contain a separate item for saw cutting existing pavement, the contract price for the items directly associated with the saw cutting shall include full compensation for all labour, Equipment and Materials to do the work described in this specification.

Basis of Payment

Payment at the Contract price for the above tender item shall be full compensation for all labour, Equipment and material to do the work including removal and disposal of material at the designated disposal site within Town limits.

REMOVAL OF CURB
REMOVAL OF SIDEWALK

Scope of Work

The Removal of concrete curb and sidewalk shall be completed in accordance with the requirements of OPSS 510 and as detailed elsewhere in the Contract Documents.

All removed concrete shall become the property of the Owner, and the Contract shall be responsible for its delivery to a designated site within the Town limits as directed by the Contract Administrator. The Contractor shall be responsible to level off the disposed concrete at the disposal site before the end of the year, prior to snowfall.

Basis of Payment

Payment at the Contract price for the above tender item shall be full compensation for all labour, Equipment and material to do the work including removal and disposal of material at the designated disposal site within Town limits.

SMALL SIGNS, GROUND MOUNTED

Scope of Work

The work under these items shall be in accordance with OPSS 703, for the locations indicated elsewhere in the Contract Documents. Traffic signs shall be in accordance with the Ontario Traffic Manual – Book 5 – Regulatory Signs. The following signs are approved for use:

- RA-001 Stop Sign (600mm X 600mm)
- RB-011 No Right Turn (600mm X 600mm)
- RB-019 Do Not Enter (600mm X 600mm)
- RB-021 One Way (300mm X 900mm)

150MM TOPSOIL AND SOD

Scope of work

This specification covers the requirements for the supply and placement of Topsoil (150mm Depth) and Seed or Sod for reinstatement of excavated and disturbed areas as indicated in the contract drawings.

Construction

Excavated and disturbed areas shall be replaced with topsoil and sod as specified. Contractor to supply and install topsoil and sod as per OPSS 802 and OPSS 803.

Sod shall be staked on slopes of 3:1 and greater.

Section 803.07.05 of OPSS 803 is amended with the addition of the following:

If the thirty day maintenance period extends after October 15th, the portion of the period after October 15th will continue the following year after May 15th.

The Contractor shall place 150mm topsoil and Sod in all locations identified in the contract documents. All other excavated and disturbed areas shall be seeded and mulched as per OPSS 804.

The Contractor shall be responsible for all Quality Control sampling and testing required to show complete conformance of the topsoil with this specification. These records shall be made available to the Contract Administrator upon request. The Owner reserves the right to further test the material.

Measurement for payment

Measurement for topsoil and sod shall be by area in meters squared imported and placed. The unit price bid for this item shall include fine grading.

Measurements shall be taken of the area of sod placed upon completion of the work.

The Owner will not pay for sod restoration, as a result, of areas damaged by the Contractor beyond the original sod limits identified in the field.

Basis of payment
Payment at the Contract Price for the above tender item shall be full compensation for all labour, Equipment and Materials required to do the work.

SEED AND COVER

Scope of Work
Seed and Cover materials and placement shall be in accordance with OPSS.MUNI 804.

Top dress, fertilize and over seed all sparse areas to obtain substantial growth throughout the warranty period.

Seed and cover shall be applied to all distributed areas within the project limits, with the exception of areas indicated for Sod, Asphalt or Concrete in the contract documents.

Measurement for payment
Measurement for payment shall be as per OPSS 804, except that the unit price bid of this Item shall include fine grading and the supply and placing of topsoil as specified.

EROSION AND SEDIMENT CONTROL

Scope of Work
This special provision covers the requirements for erosion and sediment control for operations other than the item specific erosion and sediment control measures of the contract, including the winter shut-down period if required.

A plan shall be prepared for the control of erosion and sediment. The plan shall complement the erosion and sediment control measures specified elsewhere in the contract. The plan shall be comprehensive, and shall provide descriptions and schedules, as well as sketches and/or plans and/or drawings and shall include all required materials. The plan shall be designed to control erosion and sediment for a 5 year Design Storm Event.

Any work to correct ineffective erosion and sediment control measures, that is caused by a storm event, not exceeding that specified in this special provision, shall be at the Contractor's expense. The Contractor will provide the Contract Administrator with a copy of the plan prior to undertaking any work covered by the plan.

Implementation, inspection, maintenance and removal of erosion and sediment control measures, identified in the plan, shall be in accordance with OPSS 805.

Materials
Materials may include, but are not limited to, those specified in OPSS 805, Construction Specification for Temporary Erosion and Sediment Control Measures. Alternative materials or methods are acceptable provided they meet industry standards and protect the environment from the impacts of erosion and sedimentation.

Payment
Except for specific environmental tender item(s) the Erosion and Sediment Control Plan, and work necessary to control erosion and sediment under the provisions of the plan, shall be included in the bid price under the appropriate items.

DECIDUOIS TREE, 50MM CALIPER

Scope of Work
Deciduous trees shall be installed in the grassed boulevards as indicated elsewhere in the Contract documents.

Materials
Trees shall be Nursery grown, first grade (Number 1) stock and meet specifications of the latest editions of the Canadian Standards for Nursery Stock. Trees will be proven hardy to Canadian Plant Hardiness Zone 3A or 3B or better. Trees shall be of the species and size indicated in the Contract. Depending on species, the minimum caliper will be either 50 mm or 60 mm, measure 300mm above final grade, with heights of 2,500 to 3,400 mm.

Warranty
Warranty trees for two years from the date of planting. Replace non-healthy trees during warranty period. Prune dead or broken branches at the end of the warranty period as directed by the Contract Administrator.

Basis of Payment
The unit price per tree shall include excavation, supply and placing of planting, supply and placement of required soil volume after excavation, fertilizing, watering, staking, pruning, mulching, dead wood pruning, water bag, and rodent guard.

REMOVAL OF UTILITY POLES

Scope of Work
Utility poles identified for removal elsewhere in the Contract documents shall be removed, and backfilled. All associated anchors, cables, and overhead wires shall be removed.

Removal of utility poles shall not commence until disconnection from the Utility provider has been confirmed by the Contract Administrator. All materials deemed salvageable by the Contract Administrator shall be stockpiled at the Marathon Public Works Yard at no extra cost to the Owner.

Basis of Payment
The unit price per utility pole shall include removal of the utility pole and all associated items, backfilling, placement of topsoil and seed.

MAINTENANCE HOLES (OPSD 701.010)

Materials
Reinforced precast concrete maintenance holes shall be in accordance with OPSS 1351.

All maintenance hole frames and covers shall be Bibby AutoStable, Model C-50M-ONT or equal as approved by the Contract Administrator. Manhole frame and cover shall be as per OPSD 401.010 (Type A) and as per OPSS 1850. No logos or lettering required on the frame.

Frames, Grates, Coverings and gratings shall be in accordance with OPSS 1850.

Construction
Installation of new maintenance holes, catch basins and ditch inlets shall be in accordance with OPSS 407.

External Frost Straps shall be installed on Maintenance Holes as per OPSD 701.100.

Inspection
All new sanitary and storm maintenance holes/ access structures shall be inspected for any defects, leaks, debris, and to ensure proper benching.

Acceptable inspection methods for maintenance holes include:

1. Closed-Circuit Television (CCTV) Inspection as per OPSS.MUNI 409;
2. Zoom Camera Inspections as per OPSS.MUNI 432;
3. Sonar Inspections as per OPSS.MUNI 435; and
4. Laser Inspections as per OPSS.MUNI 434

All new maintenance holes shall be video inspected to evaluate the physical condition and to identify any obstructions or defects. Any issues identified in the inspections shall be corrected and the respective maintenance holes shall be-inspected.

Maintenance holes can be inspected through visual observation. The visual observation

inspections shall be completed using digital cameras and recorders and cover both surface and internal inspections. The procedure shall comply with all applicable health and safety requirements, including, but not limited to Occupational Health and Safety Act, R.S.O. 1990, c. O.1.

Leakage Testing

Leakage testing shall be performed on all new Sanitary and Storm maintenance holes to ensure integrity of the conveyance system.

Prior to performing a leakage test, both active and inactive service connections and stubs shall be identified using dye testing or other equivalent methods.

All new and inactive service laterals shall be plugged using plugs designed to withstand test pressures, plugs and shall be suitably braced for additional safety. All inactive service connections shall be sealed.

For replacements of existing sanitary sewers with active service connections that cannot be plugged to complete leakage testing:

1. The service lateral connection to the sanitary sewer shall be completed with a manufactured gasketed tee connection or a cored connection with a manufactured insert. The work shall be inspected to ensure a water-tight connection is established between the service lateral and the sanitary sewer.

2. A waterproof membrane may be wrapped around the connection point of the service lateral to the main sanitary sewer, encasing the fitting and extending around the service lateral for added protection.

3. The sanitary maintenance holes shall be externally wrapped with Waterproof membrane placed externally around all precast joints, including joints below the maintenance hole frame and cover, with a minimum 300mm wide strip.

Pipe Sections and associated components that are subject to pressure testing shall be fully restrained against movements in the event of failure. Components that are not intended to be pressurized shall be isolated.

Prior to leakage testing potential risks and hazards shall be identified and appropriate safety measure shall be taken. The procedure shall l conform to all applicable health and safety requirements, including, but not limited to: Occupational Health and Safety Act, R.S.O. 1990, c. O.1, and Fire Protection and Prevention Act, 1997, S.O. 1997, C.4

The following are acceptable leakage tests for maintenance holes:

1. Low Pressure Air Testing (OPSS.MUNI 410, ASTM F1417, ASTM C924M)
2. Water (Hydrostatic Testing) (OPSS.MUNI 410, ASTM C 969)
3. Vacuum Testing (ASTM C1244/C1244M)

Groundwater elevations shall be considered for selection of the appropriate testing method

Low pressure air test is not recommended when groundwater elevation is 600 mm or greater above the crown of the pipe being tested a the time of testing. Where groundwater elevation is less than or equal to 600 mm test pressure shall be adjusted to compensate for ground water pressure.

Low pressure air testing equipment shall include a pressure relief valve set to 9 psi (max) to avoid over pressurizing.

Clean water shall be used for hydrostatic testing. Water used in the hydrostatic testing shall be disposed as per all the applicable requirements.

If a segment of the system fails during leak testing, the source of leaked shall be identified, and all defective material shall be repaired or replaced to the satisfaction of the Contract Administrator. The repaired or replaced sections shall be re-tested until results acceptable to the Contract Administrator are obtained. During retesting, maintenance holes shall be tested separately to pipe sewers.

BREAKING INTO MAINTENANCE HOLES, CATCH BASINS AND VALVE CHAMBERS
ADJUSTING MANHOLES, CATCH BASINS, DITCH INLETS AND VALVE CHAMBERS

Scope of Work

Adjustable Maintenance Hole Frame and Cover and Adjusting, breaking into or Rebuilding Maintenance Holes, Catch Basins, Ditch Inlets and Valve Chambers shall be in accordance with OPSS 408 and OPSS 1850 as amended by the following:

Section 408.01 SCOPE is amended by the addition of the following:

Adjustable Maintenance Hole Frame and Cover

The Contractor shall remove the existing frames along with any decaying cinderblock construction and replace with new adjustable maintenance hole frame and cover, concrete adjustment rings, and internal and external parging/concrete. Manufacturer’s instructions for installation shall be followed.

Section 408.03 DEFINITIONS is amended by the addition of the following:

> Adjustable Maintenance Hole Frame and Cover means the same as Adjusting or Rebuilding Maintenance Holes, Catch Basins, Ditch Inlets, and Valve Chambers. Supply and placing of the new frames and covers complete with adjusting of the final grade of the frame and cover to match the new roadway grade is included.

Section 408.05 MATERIALS is amended by the addition of the following:

> The new frames and covers for Adjustable Maintenance Hole Frame and Cover shall be Bibby AutoStable, Model C-50M-ONT or equal as approved by the Contract Administrator. Manhole frame and cover shall be as per OPSD 401.010 (Type A) and as per OPSS 1850. No logos or lettering required on the frame.

Subsection 408.07.01 General is amended by the addition of the following:

> All existing frames/grates/cover/lids that are deemed salvageable by the Contract Administrator shall be salvaged and stockpiled at The Town of Marathon's Works and Operations yard at no extra cost to the owner.
>
> The final top of cover elevation is to match the final elevation of the asphalt.

Subsection 408.07.08.01 General is amended by the addition of the following:

> Provide approved watertight gaskets at all joints.

Section 408.10 BASIS OF PAYMENT is modified with the addition of the following:

> **Adjustable Maintenance Hole Frame and Cover**
> Payment for the above tender item includes supply of the new adjustable maintenance hole frame and cover, placing the new frame and cover, adjusting the frame and cover to match the new roadway grade, and removal, salvage, hauling and stockpile of the existing maintenance hole frames and covers.

200MM PVC SANITARY PIPE SEWER
300MM PVC SANITARY PIPE SEWER
525MM PVC SANITARY PIPE SEWER

Scope of Work

The construction of the Sanitary Sewer shall be in accordance with the latest version of OPSS

410. Related work references of the OPSS shall also apply.

Materials
PVC sewer piping shall be in accordance with OPSS 1841. All Sanitary sewer pipes shall be PVC SDR-35 interior smooth wall pipe.

Line and Grade
The contractor shall be responsible for establishing the survey line and grade for this Contract. Grade of the pipe shall be set by laser methods.

Bedding and Cover
The method of bedding for all pipes shall be Class ‘B’ as detailed in the Contract Drawings. Granular Bedding Material shall be compactable granular material free of stones larger than 26.5mm. The supply and placement of bedding and cover material shall be included in the price per linear metre of the applicable Sanitary Sewer Item.

Backfilling Materials
All materials to be used for backfilling the sewer trench are to be approved by the Contract Administrator prior to commencement of backfilling operations.

Gravel Fill
Where the excavated material is in the Contract Administrator's opinion unsuitable for backfilling, gravel fill shall be used. This material shall conform to Ontario Provincial Specification No. 1010 for Granular ‘B’, unless otherwise specified. Where suitable excess excavated material is available from other streets for backfilling, this material shall be used first.

No additional compensation will be paid if imported material from other streets in the Contract is used.

De-Watering
De-watering shall conform to the latest version of OPSS 517.

The Contractor shall at all times have sufficient pumping equipment ready for immediate use. The drainage of the trench shall be so affected as not to allow water to run through the newly laid pipe.

The Contractor shall not hold the Owner liable for leakage from existing services or services under construction. This shall also apply to existing water valves.

Maintaining Flow in Drains

The contractor shall, at his own cost and expense, provide for and maintain the flow, where required, of all sewers, drains, ditches and gutters, house or inlet connections, and all watercourses which may be met with during the progress of the work. The Contractor shall not allow the contents of any sewer, drain, house or inlet connection or watercourse to flow into the trench or the sewers to be constructed under this Contract, except where permission is given by the Contract Administrator, and shall at his own cost and expense immediately remove all offensive matter from the proximity of the work, using such precautions in so doing as may be directed by the Contract Administrator.

Inspection

All new sanitary sewers and associated Appurtenances shall be inspected by the Contractor to confirm alignment and to ensure that the Sewer pipe is free from obstructions, debris, and defects.

Acceptable inspection methods for Sanitary Sewers include:

5. Closed-Circuit Television (CCTV) Inspection as per OPSS.MUNI 409;
6. Zoom Camera Inspections as per OPSS.MUNI 432;
7. Sonar Inspections as per OPSS.MUNI 435; and
8. Laser Inspections as per OPSS.MUNI 434

All new Sanitary Sewers shall be video inspected to evaluate the physical condition and to identify any obstructions or defects. Any issues identified in the inspections shall be corrected and the respective maintenance holes shall be-inspected.

Sonar Inspections can be used for Sanitary Sewers under submerged and partially submerged conditions.

Laser inspections are recommended for more accurate measurement of defects and deflection in the Sanitary Sewers and Storm Sewers.

Leakage Testing

Leakage testing shall be performed on all new Sanitary Sewers to ensure integrity of the conveyance system.

Prior to performing a leakage test, both active and inactive service connections and stubs shall be identified using dye testing or other equivalent methods.

All new and inactive service laterals shall be plugged using plugs designed to withstand test pressures, plugs and shall be suitably braced for additional safety. All inactive service

connections shall be sealed.

For replacements of existing sanitary sewers with active service connections that cannot be plugged to complete leakage testing:

4. The service lateral connection to the sanitary sewer shall be completed with a manufactured gasketed tee connection or a cored connection with a manufactured insert. The work shall be inspected to ensure a water-tight connection is established between the service lateral and the sanitary sewer.

5. A waterproof membrane may be wrapped around the connection point of the service lateral to the main sanitary sewer, encasing the fitting and extending around the service lateral for added protection.

6. The sanitary maintenance holes shall be externally wrapped with Waterproof membrane placed externally around all precast joints, including joints below the maintenance hole frame and cover, with a minimum 300mm wide strip.

Pipe Sections and associated components that are subject to pressure testing shall be fully restrained against movements in the event of failure. Components that are not intended to be pressurized shall be isolated.

Prior to leakage testing potential risks and hazards shall be identified and appropriate safety measure shall be taken. The procedure shall l conform to all applicable health and safety requirements, including, but not limited to: Occupational Health and Safety Act, R.S.O. 1990, c. O.1, and Fire Protection and Prevention Act, 1997, S.O. 1997, C.4

The following are acceptable leakage tests for Sanitary Sewers:

4. Low Pressure Air Testing (OPSS.MUNI 410, ASTM F1417, ASTM C924M)
5. Water (Hydrostatic Testing) (OPSS.MUNI 410, ASTM C 969)
6. Vacuum Testing (ASTM C1244/C1244M)

Groundwater elevations shall be considered for selection of the appropriate testing method

Low pressure air test is not recommended when groundwater elevation is 600 mm or greater above the crown of the pipe being tested a the time of testing. Where groundwater elevation is less than or equal to 600 mm test pressure shall be adjusted to compensate for ground water pressure.

Low pressure air testing equipment shall include a pressure relief valve set to 9 psi (max) to avoid over pressurizing.

Clean water shall be used for hydrostatic testing. Water used in the hydrostatic testing shall be disposed as per all the applicable requirements.

If a segment of the system fails during leak testing, the source of leaked shall be identified, and all defective material shall be repaired or replaced to the satisfaction of the Contract Administrator. The repaired or replaced sections shall be re-tested until results acceptable to the Contract Administrator are obtained. During retesting, maintenance holes shall be tested separately to pipe sewers.

Deflection Testing

A deflection test shall be completed for all new flexible sanitary sewers at least 30 calendar days after backfilling but prior to paving.

Pipe segments failing the deflection test shall be removed and replaced.

Mandrel testing and laser profiling are acceptable tests for pipe deflection testing.

Mandrel test shall be performed in accordance with OPSS.MUNI 438.

Laser profiling shall conform to OPSS.MUNI 434.

Equipment used to perform Mandrel tests shall be specifically designed for the pipe material being tested.

PVC & HDPE STORM PIPE SEWER

Scope of Work

The construction of the Storm Sewer shall be in accordance with OPSS 401.

Materials

Polyethylene (PE) sewer piping products shall be in accordance with OPSS 1840. All PE storm Sewer pipes shall be SDR-35 interior smooth wall pipe.

Polyvinyl Chloride (PVC) sewer piping products shall be in accordance with OPSS 1841. All PVC Storm Sewer pipes shall be SDR-35 interior smooth wall pipe.

Inspection

All new storm sewers, including connections shall be inspected to confirm alignment and to ensure that the sewer pipe is free from obstructions, debris and defects.

All new, replaced and rehabilitated storm sewers shall be video inspected to evaluate the physical condition and to identify any obstruction or defects. Any issues identified in the inspections shall be corrected and the respective maintenance holes shall be re-inspected.

Acceptable inspection methods for storm sewers include:

- Closed-Circuit Television (CCTV) Inspection as per OPSS.MUNI 409
- Zoom Camera Inspections as per OPSS.MUNI 432
- Sonar Inspections as per OPSS.MUNI 435
- Laser Inspections as per OPSS.MUNI 434

Sonar inspections can be used for Storm Sewers under submerged and partially submerged conditions.

Laser inspections are recommended for more accurate measurement of defects and deflection in the storm sewers.

TEMPORARY STORM SEWER SERVICE
TEMPORARY SANITARY SEWER SERVICE

The contactor is responsible for temporary bypass pumping and re-direction of stormwater and sewage flows as required during sanitary and storm sewer replacement and repairs to avoid interruption of sewer services to the residents and existing upstream drainage infrastructure. Cost for temporary sewer services for the sanitary and storm sewer replacement shall be included in the appropriate tender items. Cost for any required temporary manholes associated with bypass pumping shall be included in the appropriate tender item. The Temporary Sanitary and Storm Sewer Services shall be constructed as per OPSS 410.

125MM SANITARY SEWER SERVICES

All sanitary service connections shall be constructed as per OPSS 410. Materials shall be PVC SDR 28 pipe. All sanitary connections shall be 125 mm diameter. Service pipes shall be constructed with a grade of 2% when possible, with a minimum grade of 1%. Connect to existing new sanitary sewer using approved couplings.

Service caps shall be used at all residential lots. Services shall be constructed and capped at 3m beyond the road right of way or utility easement, whichever is further.

REMOVAL OF MAINTENACE HOLES, CATCH BASINS AND VALVE CHAMBERS
REMOVAL OF PIPES AND CULVERTS
REMOVAL OF WATER VALVES AND CURB STOPS

Scope of Work

The Removal of Pipe Culverts shall be completed in accordance with the requirements of OPSS 510 and as detailed elsewhere in the Contract Documents. Work shall include the removal and disposal of debris located at the inlet and outlet end of the existing culvert.

Any materials such as manhole covers, catch basin frame and grates, hydrants, etc. deemed

salvageable by the Contract Administrator shall remain the property of the Owner and to be delivered to the Town's Public Works yard at no extra cost to the Owner.

During the removal of culverts, watermains, sanitary and storm sewers care shall be taken to salvage culverts and limit damage. Culverts shall be delivered by the Contractor to the Marathon landfill on Camp 19 Road during the landfills operating hours.

Basis of Payment
Payment at the Contract price for the above tender item shall be full compensation for all labour, Equipment and material to do the work including removal and disposal of material.

CONCRETE TRANSFORMER BASES

The work under these items shall be in accordance with OPSS 616, for the locations indicated elsewhere in the Contract Documents.

The concrete shall be in accordance with OPSS 1350. The Contractor shall provide the Contract Administrator with 24 hours notice prior to pouring/placing concrete. The Contract Administrator must provide the Contractor with a permission to pour prior to pouring/placing concrete.

MOBILIZATION / DEMOBILIZATION

Scope of work
The work specified in this section comprises the provision of all labour, equipment and materials, and the performance of all work necessary for mobilization to and demobilization from the site, insurance and bonding requirements.

Mobilization shall include transportation to the site of the Contractor's labour, facilities equipment and materials in readiness to start the work.

Demobilization shall include the dismantling and removal from the site of all of the Contractor's equipment and materials and cleanup of the site.

Measurement for payment
Mobilization will be measured for payment on a lump sum basis, which includes but not limited to the following:

- Supervision, overhead and profit associated with the mobilization operation.
- Preparation and submission of shop drawings (if applicable), product data, samples and mockups as described in this Contracts General Requirements Section.
- Preparing and conducting health and safety as per the Ontario Health and Safety Act.

- Arranging and obtaining work permits as required.
- Arranging utility locates.
- Contractor's responsibilities associated with testing of materials as described in this Contacts
  Special Provisions Section.
- Temporary facilities supply, installation and maintenance.

Demobilization will be measured for payment on a lump sum basis, which includes but not limited to the following:

- Repair to damaged areas cause by the Contractors equipment or personnel by means of hand seeding or other means necessary to the satisfaction of the Owner;
- Cleaning site (road sweeping, garbage etc.);
- Removal of temporary facilities.

Mobilization / Demobilization will be measured for payment on a lump sum basis and will be paid in two (2) installments, **60%** for satisfactorily setting up all necessary equipment to complete the work and **40 %** upon satisfactory cleanup of the site and removal from site all equipment and material.

Basis of payment
Payment at the Contract Price for the above tender item shall be full compensation for all labour, equipment and materials required to do the work.

The Contract Price for this item shall be consistent with the costs involved but shall not, in any event, exceed **7.5%** of the Total Tender Price

400MM PIPE CULVERT

Scope of Work
The work under this item shall be constructed in accordance with OPSS 421 and the following special provision for the locations indicated elsewhere in the Contract Documents.

Material
All culverts shall have a galvanized coating with a minimum wall thickness of 2.0 mm.

Basis of Payment
Payment at the Contract price for the above tender item shall be full compensation for all labour,

Equipment, and material to do the work including granular material for culvert cover, bedding and embedment.

DUST SUPRESSION AND WATER FOR COMPACTION

Scope of Work

OPSS 506 Construction Specification for Dust Suppressants (Nov 2017) and 501 Construction Specification for Compacting (Nov 2017) are modified by the following:

Dust Suppression

The Contractor shall take such steps as may be necessary to prevent dust nuisance resulting from their operation whether within the right-of-way or elsewhere or by public traffic where it is the Contractor's responsibility to maintain a road through the work.

Where the work requires the sawing of asphalt or the sawing or grinding of concrete, blades and grinders of the wet type shall be used together with sufficient water to prevent the incidence of dust wherever dust would affect traffic or wherever dust would be a nuisance to residents of the area where the work is being carried out.

Water, calcium chloride flake or calcium chloride solution may be used for dust suppression and shall conform to OPSS 506.

Water for Compaction

Water shall be used for compaction and shall conform to OPSS 501.

Basis of Payment

Section 506.10 of OPSS 506 and subsection 501.10.02 of OPSS 501 are deleted in their entirety.

Payment for all labour, equipment and materials to do the work for dust control and water for compaction shall be included in the applicable tender item(s).

2025 SPECIFICATION FOR WATERWORKS – STANDARD TENDER ITEMS

ITEM NO.: C-001 REMOVE AND DISPOSE OF EXISTING WATERMAIN PIPES AND APPURTENANCES, PART ONE AND PART TWO

The contract price for this item shall include all labour, equipment and materials for the following:

- Removal and disposal of existing watermain pipes as identified in the contract drawings or directed on site;
- Removal and disposal of existing valve boxes from abandoned or removed valves; and,
- Restoration in removal areas including supply, placement and compaction of suitable native backfill material, where applicable.

All work shall be completed as shown on the contract drawings and in accordance with the latest PUC Special Provisions for Waterworks, Pre-Approved Materials and PUC Standard Drawings and as specified herein.

All pipe material not specifically designated for removal in the contract drawings but encountered during excavation or underground service installations shall be removed and no separate payment will be made.

Excavated material that contains pipe material shall not be re-incorporated into the work except at the discretion of the Contract Administrator. All materials rejected as unsuitable by the Contract Administrator shall be disposed of by the Contractor at their expense in accordance with O.Reg. 406/19 and OPSS 180 ‘Management of Excess Materials’.

The Contractor will be responsible for all work relating to the cutting and temporary capping of the existing watermains including supply of fittings and materials, pipework, excavation, bedding, backfill etc. along with engineered thrust blocks, as specified.

Measurement for payment will be based on the field measured length of the watermain pipe removed in metres.

ITEM NO.: C-002 REMOVE AND SALVAGE OF EXISTING FIRE HYDRANT SET, PART ONE AND PART TWO

The contract price for this item shall include all labour, equipment and materials for the following:

- Excavate, remove and salvage existing fire hydrants;
- Remove existing hydrant lead and isolation valve;
- Deliver the salvaged fire hydrant to the Town of Marathon, Public Works Facility, 2 Penn Lake Road, Marathon Ontario; and,
- Provide verification to the Contract Administrator that the salvaged unit has been received by Public Works.

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All work shall be completed as shown on the contract drawings and as specified herein.

Measurement for payment will be by each hydrant removed, salvaged and delivered to Town of Marathon with verification.

ITEM NO.: C-003 SUPPLY AND INSTALL 19 mm DIA. SOFT 'K' COPPER WATER SERVICE (OPEN CUT), PART ONE AND PART TWO

ITEM NO.: C-004 SUPPLY AND INSTALL 50 mm DIA. SOFT 'K' COPPER WATER SERVICE (OPEN CUT), PART TWO

ITEM NO.: C-005 SUPPLY AND INSTALL 64 mm DIA. SOFT 'K' COPPER WATER SERVICE (OPEN CUT), PART TWO

The contract price for this item shall include all labour, equipment and materials required to supply and install the specified water service and appurtenances as shown on the contract drawings and in accordance with the latest PUC Special Provisions for Waterworks, Pre-Approved Materials and PUC Standard Drawings and as specified herein.

Costs associated with excavation, bedding, cover, backfill, as well as dewatering and temporary shoring/support shall be included.

The Contractor shall include all costs associated with the protection and support of any existing utilities (including but not limited to buried mains, cables or ducts; overhead wires; poles, pedestals, structures, valves) wherever required.

Measurement for payment will be by the field measured length in linear metres.

ITEM NO.: C-004 SUPPLY AND INSTALL 19 mm SERVICE CONNECTION APPURTENANCE SET, PART ONE
ITEM NO.: C-006 SUPPLY AND INSTALL 19 mm SERVICE CONNECTION APPURTENANCE SET, PART TWO
ITEM NO.: C-007 SUPPLY AND INSTALL 50 mm SERVICE CONNECTION APPURTENANCE SET, PART TWO
ITEM NO.: C-008 SUPPLY AND INSTALL 64 mm SERVICE CONNECTION APPURTENANCE SET, PART TWO

The contract price for this item shall include all labour, equipment and materials required for the supply and installation of the specified service connection appurtenance set as shown on the contract drawings and in accordance with the latest PUC Special Provisions for Waterworks, Pre-Approved Materials and PUC Standard Drawings and as specified herein.

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500 Second Line East, P.O. Box 9000
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Service connection appurtenance sets shall include the following items:

a) Service saddle, PVC tapped coupling or approved tee;
b) Main stop or tapping valve;
c) Curb stop/service valve;
d) Curb box assembly / valve box assembly;
e) Coupler for connection to private piping (if required);
f) Blue painted timber marker at service termination (if required);
g) Tracer wire (if required);
h) Cathodic protection as per OPSS 442;
i) Joint restraints (if required); and,
j) Petrolatum tape (if required).

Nitrile gaskets are not specified under this contract and will be supplied as directed by the Engineer under the related Provisional Item.

Measurement for payment will be by each service connection appurtenance set installed.

ITEM NO.: C-009 SUPPLY AND INSTALL 100 mm DIA. PVC WATERMAIN (OPEN CUT), PART TWO
ITEM NO.: C-005 SUPPLY AND INSTALL 150 mm DIA. PVC WATERMAIN (OPEN CUT), PART ONE
ITEM NO.: C-006 SUPPLY AND INSTALL 150 mm DIA. DUCTILE WATERMAIN (OPEN CUT), PART ONE
ITEM NO.: C-010 SUPPLY AND INSTALL 150 mm DIA. PVC WATERMAIN (OPEN CUT), PART TWO
ITEM NO.: C-011 SUPPLY AND INSTALL 150 mm DIA. DUCTILE WATERMAIN (OPEN CUT), PART TWO

The contract price for this item shall include all labour, equipment and materials required for the supply and installation of the specified watermain and appurtenances as shown on the contract drawings and in accordance with the latest PUC Special Provisions for Waterworks, Pre-Approved Materials and PUC Standard Drawings and as specified herein.

Costs associated with excavation, bedding, cover, backfill, as well as dewatering and temporary shoring/support shall be included.

The Contractor shall include all costs associated with the protection and support of any existing utilities (including but not limited to buried mains, cables or ducts; overhead wires; poles, pedestals, structures, valves) wherever required.

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Nitrile gaskets are not specified under this contract and will be supplied as directed by the Engineer under the related Provisional Item.

The price shall also include supply and installation of any bends required to maintain the specified alignment regardless of if they are shown on the Contract Drawings or not.

Measurement for payment will be by the field measured length in linear metres.

ITEM NO.: C-012 SUPPLY AND INSTALL 100 mm DIA. GATE VALVE AND BOX, PART TWO
ITEM NO.: C-007 SUPPLY AND INSTALL 150 mm DIA. GATE VALVE AND BOX, PART ONE
ITEM NO.: C-013 SUPPLY AND INSTALL 150 mm DIA. GATE VALVE AND BOX, PART TWO

The contract price for this item shall include all labour, equipment, materials, and appurtenances required to supply and install the specified water valve as shown on the contract drawings and in accordance with the latest PUC Special Provisions for Waterworks, Pre-Approved Materials and PUC Standard Drawings and as specified herein.

Nitrile gaskets are not specified under this contract and will be supplied as directed by the Engineer under the related Provisional Item.

Measurement for payment will be by each gate valve and box installed.

ITEM NO.: C-008 SUPPLY AND INSTALL PUMPER PORT HYDRANT SET, PART ONE
ITEM NO.: C-014 SUPPLY AND INSTALL PUMPER PORT HYDRANT SET, PART TWO

The contract price for this item shall include all labour, equipment and materials for the construction of the new hydrant including tee, valve, valve box, fittings, thrust restraints, hydrant lead, and related appurtenances, as shown on the contract drawings and in accordance with the latest PUC Special Provisions Waterworks, Pre-Approved Materials and PUC Standard Drawings, and as specified herein.

Costs associated with excavation, bedding, cover, backfill, as well as dewatering and temporary shoring/support shall be included.

The Contractor shall include all costs associated with the protection and support of any existing utilities (including but not limited to buried mains, cables or ducts; overhead wires; poles, pedestals, structures, valves) wherever required.

The Contractor shall be responsible for notifying and updating the local Fire Department of any changes to the available ‘live’ hydrants during the construction as existing hydrants are

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Sault Ste. Marie, ON P6A 6P2

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decommissioned and new hydrants are commissioned. Access to all available live hydrants must be maintained at all times.

Nitrile gaskets are not specified under this contract and will be supplied as directed by the Engineer under the related Provisional Item.

Measurement for payment will be each hydrant set installed.

ITEM NO.: C-009 CONNECTION TO EXISTING 150mm WATERMAIN (-0+004), PART ONE
ITEM NO.: C-010 CONNECTION TO EXISTING 150mm WATERMAIN (0+242), PART ONE
ITEM NO.: C-015 CONNECTION TO EXISTING 50mm WATERMAIN (10+092.5), PART TWO
ITEM NO.: C-016 CONNECTION TO EXISTING 150mm WATERMAIN (10+225), PART TWO

The contract price for this item shall include all labour, equipment, materials and appurtenances required to connect the proposed watermain system to the existing watermain as shown on the contract drawings and in accordance with the latest PUC Special Provisions for Waterworks, Pre-Approved Materials and PUC Standard Drawings and as specified herein.

Piping, valves, unshrinkable fill and insulation shall be paid under their respective tender items.

Costs associated with excavation, bedding, cover, backfill, as well as dewatering and temporary shoring/support shall be included.

Measurement for payment will be by each connection completed but in the case of the Yawkey/Howe Street intersection connections and the Yawkey/Trailer Court intersection connections they will each be considered one connection under this item.

ITEM NO.: C-017 SUPPLY AND INSTALL 50 mm POTABLE WATERMAIN FOR TEMPORARY WATER SUPPLY SYSTEM (INCL. ALL APPURTENANCES), PART TWO
ITEM NO.: C-018 SUPPLY AND INSTALL 19 mm POTABLE WATER SERVICES FOR TEMPORARY WATER SUPPLY SYSTEM (INCL. ALL APPURTENANCES), PART TWO
ITEM NO.: C-019 SUPPLY AND INSTALL 50 mm POTABLE WATER SERVICES FOR TEMPORARY WATER SUPPLY SYSTEM (INCL. ALL APPURTENANCES), PART TWO
ITEM NO.: C-011 SUPPLY AND INSTALL 100 mm POTABLE WATERMAIN FOR TEMPORARY WATER SUPPLY SYSTEM (INCL. ALL APPURTENANCES), PART ONE

The contract price for the above items shall include all labour, equipment, materials and appurtenances to provide a temporary water supply system to each serviced property as shown on the contract drawings and in accordance with the latest PUC Special Provisions for Waterworks, Pre-Approved Materials and PUC Standard Drawings and as specified herein.

The temporary water system must be approved by Contract Administrator prior to installation.

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500 Second Line East, P.O. Box 9000
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705-759-6576
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Sixty percent (60%) of the price for temporary water system item shall be considered as relating to the installation and commissioning of the system and the balance to remove and satisfactorily clean up.

Measurement for payment for all temporary watermains shall be lump sum, and measurement for payment for temporary services shall be by each service connected to the temporary water system as per methods stipulated under the Clause 493.07.01 (a) of the PUC Special Provisions. No separate payment shall be made for temporary hydrants.

WATERWORKS PROVISIONAL ITEMS

ITEM NO.: C-012 SUPPLY AND PLACE ADDITIONAL GRANULAR 'A' BEDDING FOR WATERMAIN – PROVISIONAL

The contract price for this item shall include all labour, equipment and materials required to supply and install additional granular 'A' bedding for waterworks.

Use of additional granular 'A' bedding shall be as directed by the Contract Administrator.

Measurement for payment will be based on the in-place volume in cubic metres based on a theoretical trench width of 0.8 metres plus outside diameter of pipe and a field measured depth and length.

ITEM NO.: C-013 SUPPLY AND PLACE UNSHRINKABLE FILL – PROVISIONAL

The contract price for this item shall include all labour, equipment and materials for the supply and placement of unshrinkable fill as specified on the contract drawings or as directed by the Contract Administrator, and in accordance with OPSS.MUNI 578.

Measurement for payment will be by the field measured volume in cubic metres.

ITEM NO.: C-014 SUPPLY AND INSTALL INSULATION FOR WATERMAIN AND SERVICES – PROVISIONAL

The contract price for this item shall include all labour, equipment and materials for the supply and installation of polystyrene insulation for watermains as specified on the contract drawings or as directed by the Contract Administrator, and in accordance with the latest PUC Special Provisions for Waterworks, Pre-Approved Materials and PUC Standard Drawings, and as specified herein.

The above item shall also include insulation where required between watermains or services and storm drainage structures.

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500 Second Line East, P.O. Box 9000
Sault Ste. Marie, ON P6A 6P2

705-759-6576
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Insulation material shall be minimum 50 mm, expanded, extruded polystyrene meeting the requirements of OPSS 1605 having a minimum compressive strength of 690 kPa as per OPSS 1605.05 type “C”. Cutting of insulation materials shall be with a sharp knife or saw to produce a clean straight edge.

Measurement for payment will be by the field measured area in square metres.

ITEM NO.: C-015 SUPPLY AND INSTALL ADDITIONAL NITRILE GASKETS FOR PVC WATERMAIN – PROVISIONAL

The contract price for this item shall include all labour, equipment and materials for supply and installation of additional nitrile gaskets for bell & spigot joints, mechanical joints or service saddles on the PVC watermain, where not specified within the contract documents, and as directed by the Contract Administrator.

Measurement for payment will be by each additional nitrile gasket supplied and installed.

Engineering Department
500 Second Line East, P.O. Box 9000
Sault Ste. Marie, ON P6A 6P2

705-759-6576
ssmpuc.com
eng-dept@ssmpuc.com

W.1. GENERAL

These Special Provisions are provided as supplementary to OPSS 441 and OPSS 493 and are specifically for use on municipal watermain projects with test-pressures of 1,034 kPa (150 psi) constructed for the Corporation of the Town of Marathon. The Town of Marathon Drinking Water System (DWS) including all watermain, services, valves and hydrants is owned by the Corporation of the Town of Marathon and is subject to regulations pursuant to the Safe Drinking Water Act. The DWS is operated under provincial licence and permit by the Corporation of the Town of Marathon. Throughout this document, Owner shall mean the Corporation of the Town of Marathon or their authorized agent as the case requires. Under the terms of the licence, the Owner has implemented a Drinking Water Quality Management System. All chemicals and materials that will be in contact with drinking water shall conform to applicable standards of the American Water Works Association, and NSF International, including NSF 60, NSF 61, and NSF 372 as applicable. The Owner reserves the right to make updates or changes to this document at any time. The Owner and PUC Services Inc. accept no liability whatsoever for the unauthorized use of this document. These Special Provisions are requirements of the Contract.

The Contractor shall indemnify the Owner and PUC Services Inc., their officers, employees, agents and affiliates, from all loss, damages, costs, charges and expenses of every nature and kind whatsoever which may be made or brought against the Owner and PUC Services Inc. their officers, employees, agents and affiliates, by reason or in consequent of the execution and performance or maintenance of work performed pursuant to the Contract by the Contractor, its employees, agents, officers, or those for whom at law the Contractor is responsible.

The Contractor shall deposit with the Owner liability insurance in a form and with an insurer satisfactory to the Owner in its sole discretion. The limit of liability shall not be less than $5,000,000.00 inclusive of public liability and property damage. The policy shall name the **Corporation of the Town of Marathon and PUC Services Inc.** as additional named insureds. The Contractor shall pay any applicable policy premiums and provide evidence that such insurance is in effect prior to the commencement of work and until the expiry of the Warranty Period.

The Contractor shall not operate any valve or hydrant or make any connection to mains or services in the existing distribution system, or on live mains (including temporary mains) within the contract limits, unless so directed by the Owner. In the event of an emergency, the Contractor shall immediately contact the Contract Administrator and the Owner.

As the Constructor, the Contractor shall retain control of the Work Area with respect to the Occupational Health and Safety Act, and make accommodations for the Owner to access the site and execute specific tasks related to the operation and maintenance of the Owner's Drinking Water System and is the licensed Operating Authority. Specifically, the Owner will operate and maintain the municipal drinking water system that remains in service within the Project Limits and the temporary potable water systems, once placed in service. Activities involved in operation and maintenance may include water quality sampling and testing, monitoring the Contractor's work for compliance within the scope of the Safe Drinking Water Act, quality assurance, tapping in-service mains, pipefitting for connection to in-service mains, operation of valves and hydrants to control flow or pressure in in-service watermains, flushing, and repair of in-service potable water systems.

The costs to comply with these Special Provisions shall be included in the Contract prices; no additional payment will be made to accommodate these requirements. These Special Provisions include amendments to Ontario Provincial Standard Specifications (OPSS) and shall be read in conjunction with the current issue of OPSS at the time of tender.

The most recent issue of the Ontario Provincial Standard Drawings (OPSD) shall apply as referenced or amended herein and in the Contract Documents.

In addition to National Sanitation Foundation (NSF), American Society of Mechanical Engineers (ASME), ASTM International, CSA, and American Water Works Association (AWWA) standards referenced in OPSS 441, the following standards shall apply as referenced or amended herein and in the Contract Documents:

AWWA B300-24 Hypochlorites

AWWA C111-23 Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings

AWWA C509-23 Resilient-Seated Gate Valves for Water Supply Service

AWWA C511-17 Reduced-Pressure Principle Backflow Prevention Assembly

AWWA C600-23 Installation of Ductile-Iron Mains and their Appurtenances

AWWA C605-21 Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water.

AWWA C651-23 Disinfecting Water Mains

AWWA C655-18 Field Dechlorination

Ministry of the Environment, Conservation & Parks (MECP) – Watermain Disinfection Procedures. Rev 2.1

The following PUC Standard Drawings shall apply:

WCS-1A, Temporary Water Supply - Source From Watermain Rev 4

WCS-1B, Temporary Water Supply - Source From Hydrants Rev 5

WCS-2, Temporary Water Supply Flushing and Swabbing Rev 11

WCS-3, Swab Retrieval and Flushing Rev 4

WCS-4, Hydrostatic Pressure Test Rev 9

WCS-5, Disinfection Assembly Rev 10

WCS-6, Sample Site From Services <50mm Rev 3

WCS-7, Sample Site From Pipe 50mm or Greater Rev 5

WCS-8, Tracing Wire Detail at Hydrants Rev 7

WCS-9, Backflow Enclosure Rev 4

WCS-10, Manual Flushing Station Rev 3

WCS-12, Service Decommissioning 50mm Diameter and Smaller Rev 7

WCS-14, Service Decommissioning at the Watermain Rev 3

WCS-15, Curb Box Installation in Roadway Rev 2

WCS-17, Watermain Tracing Copper & Plastic Services Rev 4

WCS-18, Service Detail Copper and Plastic Services 19mm – 50mm Rev 7

WCS-19, Automatic Flushing Detail Rev 3

WCS-20, New Watermain Bacteriological Sample Points Rev 6

WCS-22, Sidewalk/Driveway Curb Box Rev 0

WCS-23, Temporary Capping of Watermain Rev 1

WCS-24, New Water Service Lateral 100mm Diameter and Larger Rev 1

WCS-25, Self Draining Hydrant Installation Rev 0

W.2. DESIGN AND SUBMISSION REQUIREMENTS (OPSS 441)

441.04	Submittals	Clause 441.04 is added: This specification covers the requirements for submittals on the waterworks items of the Contract.
441.04.01	Materials	Clause 441.04.01 is added: The Contractor shall prepare a submittal including an itemized list identifying manufacturer, quantity, and part description for all waterworks materials for review and approval by the Contract Administrator within two (2) weeks of award. The Contractor shall provide manufacturer's certificates of product conformance with applicable standards upon request. No waterworks shall be installed prior to approval of the materials list. The following submittals shall be required for all watermain pipe larger than 300mm (12") diameter: i) Shop drawings; ii) Letter of compliance from manufacturer, complete with proof of certification to applicable CSA, NSF and AWWA standards; iii) Summary of fittings and method of restraint, including acceptance by the manufacturer; and iv) Installation guide.
441.04.02	Backflow Preventers	Clause 441.04.02 is added: Backflow preventers shall be delivered to the site new or in good working condition. and complete with recent certificate of testing by an OWWA Certified Tester and the certificate shall be submitted to, the Contract Administrator for verification. Backflow preventers shall be supplied in sufficient quantity and be of such a size and capacity as to achieve required flush velocities.
441.04.03	Pipe Support	Clause 441.04.03 is added: The Contractor shall submit drawing(s) sealed by a Professional Engineer and detailing temporary thrust restraint for existing watermains that are cut and capped, or otherwise dead-ended on a temporary basis. Designs shall be prepared in accordance with the Owner's Design Criteria for Watermain Thrust Restraints. The Contractor shall submit drawing(s) sealed by a Professional Engineer detailing a support plan where the work involves excavation parallel to an in-service watermain or where the work undermines an in-service watermain, and the Contract Administrator determines the work will compromise the soils supporting the in-service watermain.

Thrust restraint and support plans must be submitted for approval by the Contract Administrator at least two (2) weeks prior to the work taking place.

Temporary thrust restraint and pipe support installations shall be inspected and approved by the design engineer for conformance with the design prior to applying loads. Written proof of acceptance shall be provided to the Contract Administrator.

441.04.04 Disinfection Plan

Clause 441.04.04 is added:

The Contractor shall submit a Disinfection Plan for each section of pipe being disinfected for approval by the Contract Administrator no less than two (2) weeks in advance of the work. The plan shall describe:

i. Schedule for swabbing, flushing, disinfection, de-chlorination, residual and bacteriological sampling;
ii. List of materials and equipment to be used;
iii. Proof of conformance of disinfectant with AWWA B300, latest edition;
iv. A plan drawing showing the source water location(s), backflow preventers, number and size of connections, sampling locations and distances between sampling locations;
v. The sequence pipes to be swabbed and flushed;
vi. Description of the process for mixing disinfectant for the Continuous Feed Method;
vii. Method to prevent entry of trench water into watermains being swabbed and flushed;
viii. Field de-chlorination plan according to AWWA C655 and OPSS 441.07.27 as amended herein.

441.04.05 Connection Plan

Clause 441.04.05 is added:

The Contractor shall submit a Connection Plan for each section of new watermain to be commissioned for approval by the Contract Administrator no less than two (2) weeks in advance of the work. The Connection Plan shall include:

i) Schedule, including the Owner's monitoring of testing and connection;
ii) Record drawings showing all differences, design changes and deviations from the original Contract Drawings in marked in red;
iii) Connection drawing(s) showing pipe alignment and grade, fittings and list of all materials, equipment and labour required to carry out the connection;
iv) The method of dewatering;
v) Method of preventing movement of live watermain due to system pressure;
vi) Proof of conformance of disinfectant with AWWA B300, latest edition.

The process to be used to disinfect connecting pipe shall be in conformance with the Owner's standards.

W.3. MATERIALS (OPSS 441)

441.05.01 General

Clause 441.05.01 is amended by the addition of the following:

In order of precedence, materials shall be in accordance with sealed “for construction” drawings, Special Provisions, the PUC Services Inc. Waterworks Pre-Approved Materials, and OPSS 441.

W.4. CONSTRUCTION (OPSS 441)

441.07.01 General

Clause 441.07.01 amended by the addition of the following:

The work of installing watermains shall include installation of accessories including anodes, tracing wire, petrolatum tape systems and disinfecting and hydrostatic testing of the new waterworks systems.

441.07.03 Removals

Clause 441.07.03 shall be amended by addition of the following:

a) Remove and dispose of Existing Watermain Pipes

The Contractor is responsible for designing and providing adequate thrust restraint at all locations where temporary dead-end watermains are created through the removal of existing watermains. The Contractor shall submit engineered stamped drawing(s) of the proposed thrust restraint for each dead end for review and approval by the Contract Administrator. Cut ends of existing watermains shall be fitted with one (1) temporary, 50mm blow off complete with 50mm corporation stop at the main and 50mm valve at the end of the blow off. One 19mm blow off c/w check valve piped to nearest catch basin with a minimum 300mm air gap. See dwg WCS-23. The 50mm pipe and fittings shall be maximum 10 meters in length. Disinfection and installation shall be according to AWWA C651 and OPSS 441.07.25 as amended by the Owner and shall be monitored by the Contract Administrator and an Owner’s Operator.

b) When a hydrant is identified to be removed, the hydrant shall be removed and salvaged with its boot intact and delivered to the Town of Marathon, Public Works Facility, 2 Penn Lake Road, Marathon Ontario. The Contractor shall make arrangements with the Owner for delivery.

441.07.13 Backfilling and Compacting

Clause 441.07.13 is amended as follows:

a) Bedding and cover material for watermain and copper services shall be Granular “A” manufactured from natural stone unless directed otherwise by the Contract Administrator. Bedding and cover for PEX water service pipes shall be sand or river run gravel. Depth of

bedding for watermain and services shall be according to the Contract documents and in no case less than 150mm. Cover material for watermain shall be minimum 300mm above pipe. Cover material for water services 50mm diameter and smaller shall be 150mm above pipe. Granular "A" used for bedding and cover shall not contain recycled asphalt pavement (RAP), slag or slag by-products. Compaction shall be according to OPSS and contract specifications.

b) Backfill material shall be approved by the Contract Administrator and free of organic inclusions or other contamination.

441.07.14 Installation of Pipes

Clause 441.07.14 is amended by the addition of the following:

a) Watermains shall be laid to the elevation and grade shown on the construction drawings. No lateral deviation of more than 75mm from line or 25mm from grade will be allowed. Standard depth for water services is 2.2 meters for PVC and copper services, and 2.4 meters for PEX services. Changes to depth of bury shall be according to the contract documents or as approved by the Contract Administrator.

b) The Contract Administrator may raise or lower the invert of the watermain by up to 300mm without constituting a Change in the Work.

c) Corrections to grade and alignment to match existing pipe at project limits shall be made prior to establishing connections as directed by the Contract Administrator.

d) For all crossings of sewer pipe over watermain, adjust grade to ensure a minimum clear separation of 500mm. For crossings of watermain over sewer pipe, ensure sufficient clear separation for proper bedding. Center one full length of watermain pipe and sewer pipe over/under the crossing. Clearance at crossings shall be approved by the Contract Administrator.

e) A continuous insulated tracer wire shall be installed with all PVC piping and hydrant leads, with tracer wire brought to the surface at each hydrant consistent with the Owner's Standard Drawing WCS-25.

f) Tracer wire shall be grounded, by means of a grounding rod, at the end of all dead-end runs of PVC pipe.

g) Tracing wire must be satisfactorily tested by the Owner at the time of final connection of new watermains as a condition of acceptance of the work.

441.07.15.04	Polyvinyl Chloride Plastic Pressure Pipe – PVC and PVCO	Clause 441.07.15.04 is amended by the addition of the following: When installation of replacement (nitrile) gaskets is required, the work shall be checked by the Contract Administrator prior to assembly of pipes.
441.07.16	Cutting of Pipe	Clause 441.07.16 is amended by the addition of the following: a) All pipe shall be cut square, free of burrs and cut ends of PVC pipe chamfered according to manufacturer's instructions. b) A new stop reference mark (insertion line) shall be clearly marked according to manufacturer's dimensions on cut pipe. c) Cuts in copper and polyethylene pipe shall be made with a tubing cutter designed for use on the pipe to produce a clean-cut edge free of burrs.
441.07.17.03	Change in Line and Grade, Polyvinyl Chloride Pipe – PVC and PVCO	Clause 441.07.17.03 is amended by the addition of the following: Bending of PVC pipe barrel to achieve correct alignment shall not be allowed.
441.07.18.01	Installation of Valves and Fittings	Clause 441.07.18.01 is amended by the addition of the following: a) Filter fabric shall be wrapped and secured around the base of all valve boxes and around the joint between the valve box top and the valve box extension to prevent entry of soils. b) All valve box sections shall be installed plumb and set vertically over the operating nut and guide plate in accordance with manufacturer's instructions. Minimum 150mm overlap is required between telescopic sections. The bottom section shall not restrict movement of the upper section. Valve box joints and base shall be wrapped with filter fabric to prevent entry of soils. The valve box shall be adjusted so that the lid is 5mm below the finished asphalt grade. Plow-type valve boxes shall be adjusted so the lid is flush with the finished asphalt grade. c) Apply Petrolatum Tape system according to manufacturer's instructions and OPSS 441.05 as amended by the Owner to all ductile fittings and all valves.
441.07.19	Installation of Hydrant Sets	Clause 441.07.19 is amended by adding the following: a) All hydrants shall be set plumb and installed as required to ensure elevation and grade according to Contract Drawings without the use of hydrant extensions. Final elevation of break-away flange of the hydrant shall be 100mm to 150mm above finished grade. The

Contractor shall field verify the required hydrant length prior to installation. Hydrant extensions will not be accepted. Where a hydrant elevation is deemed by the Contract Administrator to be incorrect, the Contractor shall correct the hydrant installation in accordance with contract specifications prior to completing the hydrostatic test. The Contractor shall be responsible for all labour, materials, equipment and restoration as required to correct the installation and shall not be eligible for payment for any costs associated with correcting the final grade of hydrants.

b) All joints on hydrants laterals shall be restrained using approved pipe restrainers.

c) The Contractor shall be responsible for maintaining the hydrants free of stones, gravel or any other foreign material, which may enter during construction.

d) The Contractor shall use only such wrenches as are approved by the Contract Administrator for operating the hydrants. Hydrant wrenches shall not exceed 30cm in length.

e) Tracing wire shall be provided above grade as per WCS-8. The Owner will complete the tracing wire connection to the hydrant lug.

f) Upon completion of the work or after each use, all hydrants shall be pumped dry by the Contractor.

g) Petrolatum Tape System including paste, profiling mastic and tape shall be applied to each hydrant according to manufacturer's instructions and OPSS 441.05 as amended by the Owner at the hydrant base and the mechanical joint connection.

h) The lower barrel shall be wrapped with two separate layers of 8 mil polyethylene wrap conforming to AWWA C-105 from the hydrant base to grade level and secured with tape.

i) Hydrants shall be installed as per WCS-25. The connection of the hydrant lead to the watermain shall be by a MJ X MJ X MJ tee fitting or swivel hydrant tee and MJ X MJ valve unless shown otherwise on the Contract Drawings.

441.07.20 Installation of Service Connections

Clause 441.07.20 shall be amended as follows:

a) Service saddles for connections 50mm and smaller shall be double-studded, broad-band stainless steel service saddles. Direct tapping of PVC mains is not acceptable. Tapping of PVC mains through service saddles shall be done according to manufacturer's specifications. The tapping of the main shall be made with a proper cutting tool which must be a 'core cutter'. The use of regular twist bits, core saws or auger type bits is not allowed and taps made using these tools will be cause for non-acceptance of the pipe for installation. The coupon shall be retained for inspection by the Contract Administrator to ensure proper tapping

procedures. Striations or ‘crowning’ of the coupon indicates improper tapping procedure or damaged tools and shall be cause for the Contract Administrator to reject the pipe.

b) Curb boxes shall be marked with a blue-painted 50 x 50 x 1200mm stake.

c) Curb boxes shall be plumb and in good working order.

d) Curb boxes shall be 50mm below finished grade for lawns and gravel areas according to drawing WCS-18, or 150mm below finished grade for paved road areas according to drawing WCS-15 or 75mm below finished grade if installed in sidewalks and driveways according to drawing WCS-22. Use of repair caps will not be accepted. Curb boxes may be shortened by cutting the top section to length and threading the cut end and re-installing the cap or separate the top section by cutting the flattened end, remove the top section, cut it to required length, reinstall to the bottom section, hammer to flatten the end preventing it separating from the bottom section.

e) OPSD 1104.01 and 1104.02 water service connection detail applies.

f) Services installed for future connection (no private pipe is available for connection), the service connection shall include a 300mm stub of service pipe downstream of the curb stop, complete with brass coupling (compression by AWWA) and brass plug (AWWA thread) as per WCS-18.

g) A sacrificial zinc anode shall be installed on each copper service according to OPSD 1109.011 and OPS 442.07.04.04.

h) Copper water service laterals shall be installed with a minimum of 2.2 meters cover below finished grade. PEX water service laterals shall be installed with a minimum of 2.4 meters cover below finished grade. Where private service piping is shallow, adjust to grade on private side of curb box. Insulate water services at ditch crossings and other areas where cover is less than the specified depth, as shown on the drawings. Insulation material shall be 50 mm, extruded expanded polystyrene meeting the requirements of OPSS 1605 having a minimum compressive strength of 690 kPa as per OPSS 1605.05 type “C” and shall be installed according to drawings. Cutting of insulation materials shall be with a sharp knife or saw to produce a clean straight edge. Include insulation in the unit bid price.

i) Avoid installation of curb stops in sidewalk or driveways. The Owner may, at its sole discretion, reject services installed in driveways and sidewalks.

j) All trenching and backfilling shall conform to OPSS 401 with 150mm cover.

k) After new watermain has passed required tests and is put in service, the Contractor will transfer services from the temporary supply to the new system. Scheduling service transfers shall be by the Contractor. Notice of such schedule shall be provided to the Owner at least one (1) week in advance. The Contractor will carry out transfers of temporary services connected at the curb stop under the supervision of the Owner and the Contract Administrator. The Contractor shall notify all affected consumers at least 24 hours in advance of the interruption.

l) Approved tracing wire shall be installed on water services in accordance with WCS-17. The tracing shall be connected to the tracing wire on the watermain with an approved splice connector. Tracer wire shall be connected to copper water services with an approved clamp. If PEX are specified in the Contract Documents, a tracing wire shall be installed in accordance with WCS-17 on the PEX service and connected to the electrical lug on the curb stop and an approved splice connector to ensure continuity on the tracer wire from the meter to the watermain.

m) The Contractor is advised of a possible electrical safety hazard caused by stray current in metallic water service piping used to ground electrical systems. The Contractor is advised to consult the ESA Flash titled Potential Electrical Hazards Associated with the Replacement of Metallic Water Meters or Water Supply Lines and to implement appropriate measures to protect worker safety.

n) Grounding for Water Services.

   i. Existing water service connections shall not be cut within 3.0 meters of the serviced building without prior approval from the Contract Administrator.

   ii. Where new water service pipe is connected to an existing copper water service and the connection is made within 3.0 meters of a building, an approved ground plate or approved equal shall be bonded to the private side of the water service connection.

   iii. Installation and materials shall conform to the latest edition of the Ontario Electrical Safety Code. A copy of the Electrical Safety Authority Authorization shall be issued to the Contract Administrator. The work of grounding services shall be undertaken by a Licensed Electrical Contractor. The Contractor shall complete all grounding to Electrical Safety Authority requirements prior to cutting existing water service connection pipe within 3.0 meters of a building. The method of grounding services shall be approved by the Contract Administrator.

441.07.21 Shutting Down or Charging Mains

Clause 441.07.21 shall be amended by the addition of the following:

a) The Contractor shall not operate valves or hydrants outside the limits of the contract, or on live mains larger than 37mm (including temporary mains) within the contract limits unless the Owner's Operator licensed under the Safe Drinking Water Act is present and monitoring the work.

b) At any time before the expiry of the guarantee period, in an emergency, the Owner may operate valves, and repair damage to the water system to prevent excessive loss of water and damage to property and to restore service to consumers. The Owner may perform such work without prior notification to the Contractor and may recover the cost of repairs from the Contractor.

441.07.22 Connections to Existing Watermains

Clause 441.07.22 shall be amended by addition of the following:

a) This section applies to all connections to in-service watermains for the purposes of obtaining temporary supply, temporary water services and final connections of new watermain.

b) The Contractor shall prepare and submit a Connection Plan for approval by the Contract Administrator at least two (2) weeks prior to making a connection to in-service watermains.

c) Following approval by the Contract Administrator, the Contractor shall request a date for connection through the Contract Administrator at least one (1) week in advance to allow the Owner to schedule an appropriately licensed operator and determine any special measures required. As a condition of scheduling the work, the Contractor shall demonstrate to the satisfaction of the Contract Administrator that all materials necessary to complete the work are on site and the Record Drawings shall have been accepted by the Contract Administrator.

d) The location where temporary supplies are connected to the drinking water system shall be approved by the Owner. Temporary water supplies must be from a backflow-protected connection to the existing water distribution system. Connection from an approved hydrant location is preferred. All cutting into, capping and connections to existing waterworks, including temporary connections, shall be monitored by the Owner's Water Distribution Operator, licensed under the Safe Drinking Water Act according to the provisions of the Safe Drinking Water Act. Final connections shall be in accordance with paragraph m). Availability of the Owner's Operator is subject to operational requirements in the Drinking Water System. The Owner accepts no responsibility for project delays resulting from operational requirements.

e) The Contractor shall not initiate the connection without written approval from the Contract Administrator.

f) Failure by the Contractor to attend at the scheduled time with labour and materials listed in the approved plan may result in cancellation of the connection and the Contractor being charged by the Owner for the cancelled connection.

g) Temporary water supply for commissioning of watermains and services shall be in accordance with paragraph (d) and the following requirements:

   i) The length of 50mm diameter temporary supply connections shall not exceed 10 meters when measured between the supply watermain and the backflow preventer. The new piping, fittings and valves required for the connection shall be spray-disinfected and swabbed with a minimum 1% and maximum 5% solution of chlorine just prior to being installed. If a length greater than 10 meters is required the pipe shall be disinfected and tested in accordance with paragraph (m), Final Connections of New Watermains prior to connection.

   ii) Temporary supply connections of diameter 100mm and larger shall be disinfected and tested in accordance with paragraph (m), Final Connections of New Watermains, prior to connection.

   iii) The Contract Administrator must approve temporary water supply from fire hydrants. The connection method shall ensure that the hydrant will be available for Fire Department use. Only the Owner may operate the hydrant. The Contractor shall not operate or connect to the hydrant without the Owner present to oversee the hydrant disinfection, flushing and connection.

   iv) Where a hydrant is used for a source for commissioning a temporary potable water supply system, the length of 50mm diameter piping measured between the hydrant and the backflow preventer shall not exceed 10 meters. If temporary piping is larger than 50mm diameter, the maximum length is 6 meters to the backflow preventer. The new piping, fittings and valves required for the connection shall be spray-disinfected and swabbed with a minimum 1% and maximum 5% solution of chlorine just prior to being installed. Operation of hydrants shall be by Owner.

   v) All disinfection must be monitored by the Owner.

   vi) Above-ground piping shall be fully restrained by the pipe design or by external restrained fittings. The restrained fittings shall be approved by the manufacturer for use with the pipe which it is restraining and for above-ground (non-buried) applications.

h) RP backflow preventers are required on all temporary connections used for testing and disinfecting watermains and services as well as all connections for temporary water service systems.

i) Backflow preventers shall be supplied by the Contractor complete with a well-drained, tamper resistant enclosure with provisions for installation of a pad lock consistent with the Owner's Standard Drawing WCS-9. The connection to the existing distribution system shall be done in a secure location and protected from freezing.

j) Anodes shall be supplied and installed at all connections by exothermic cad weld to existing cast iron or ductile iron piping according to OPSS 442.07.04.03, OPSS 442.07.07 and OPSS 442.07.08. Cadwelding shall be performed by the Contractor and shall include the supply of all equipment and materials.

k) Watermains shall be cut back to remove all temporary taps and pipe wall scoring from restrainers as part of final connections.

l) The Contractor shall ensure that the workers undertaking the disinfection process thoroughly wash their hands with antibacterial soap and use hygienic practices, and that care is taken to prevent entry of materials into the watermain.

m) Final Connections of New Watermains. The Contractor shall dewater the watermains and trench in a controlled manner to not allow backflow into the watermains and disinfect the connection watermain piping and fittings as outlined below:

   i) <u>Connections Equal to or Less Than 6 meters:</u>
   For a final connection length equal to or less than one pipe length (generally ≤ 6 m), the new piping, fittings and valves required for the connection shall be spray-disinfected and swabbed twice with a minimum 1% and maximum 5% solution of chlorine just prior to being installed. The Contractor will make provision for the Owner to collect bacteriological samples as required. Failure of test results may, at the option of the Contract Administrator and/or the Owner, require flushing and re-sampling or removal and re-disinfection. The Contractor shall not be eligible for additional claims resulting from failed bacteria tests.

   Final connections equal to or less than one pipe length shall be performed in accordance with MECP Watermain Disinfection Procedure, Section "1.1.4.1. Connecting New Watermains to the Existing System" and as specified herein. For final connections equal to or less than one pipe length the Contractor shall complete the connection by one of the following Methods. The Method required for each final connection is specified in the

Contract Documents. Where no method of final connection is specified in the Contract Documents, final connections shall be made by Method 2.

Method 1:
The Contractor shall complete the final connection to an isolated valve connected to the existing waterworks system. The connection shall be witnessed by the Owner's representative and the Contract Administrator. The Owner's Water Distribution Operator, licensed under the Safe Drinking Water Act, is not required to monitor the connection. Following the completion of the connection, a bacteriological sample will be collected by the Owner's Water Distribution Operator from water that has been directed through the connection performed by the Contractor. Except for sample collection by the Owner's Water Distribution Operator, all connections between the new watermain and existing waterworks system shall remain isolated until satisfactory bacteriological results are received from all connections made by Method 1. A failed bacteriological sample from water that has passed through the connection will constitute disconnection and re-disinfection of the new watermain. Under no circumstances shall the Contractor operate a main valve on the existing waterworks system.

Method 2:
The Owner will provide a Water Distribution Operator licensed under the Safe Drinking Water Act to monitor the installation and disinfection of the final connection performed by the Contractor. Microbiological samples are not required for the final connections made by this method unless determined necessary by the Water Distribution Operator. Availability of the Owner's Operator is subject to operational requirements in the Drinking Water System. The Owner accepts no responsibility for project delays resulting from operational requirements.

Where the newly constructed watermain is looped or ties into the existing waterworks system in two or more locations, the contract documents may stipulate a combination of Method 1 and Method 2 connections. Where both Method 1 and Method 2 final connections are stipulated for a project, satisfactory bacteriological results from all Method 1 connections must be received prior to making connections by Method 2.

No service transfers from the temporary water system to the new watermain shall take place until approval to do so has been granted by the Owner.

ii) Connections Greater than 6 meters:
Connections greater than 6 meters in length require the approval of the Contract Administrator. In the event that the final connection point of the new watermain to the existing watermain distribution system is in a location that is deemed by the Contract Administrator to require a connection length greater than one pipe length, the new piping, fittings and valves required for the connection shall be assembled, disinfected and sampled for bacteria above ground in accordance with AWWA C651. The pipe shall be properly supported and shall be guarded with a suitable mat or tapping blanket to contain the pipe in the event of breakage during testing. All pipe ends shall have restrained caps installed using restraints approved for use above grade. Flushing and Disinfection requirements of Clause 441.07.25 shall apply as amended herein.

Only after satisfactory chlorine residual and bacteriological results have been achieved, shall the pre-assembled connection be installed. The pre-assembled watermain shall not be drained following the start of chlorine residual and bacteriological testing protocol until just prior to the installation. All caps shall be kept in place during the installation procedure until immediately prior to making the connection.

n) If, in the opinion of the Owner or the Contract Administrator, the work practices are deemed to be unsanitary or substandard for any reason, the work shall be stopped, and the Contractor shall, at his cost, make good and/or resolve the deficiency to the satisfaction of the Owner and the Contract Administrator.

o) If, in the opinion of the Owner or the Contract Administrator, there is risk of contamination having occurred, the Contractor shall flush and disinfect the watermain as directed by the Contract Administrator and/or the Owner. The Owner reserves the right to require additional bacteriological samples, and the Contractor shall have no claim for additional charges for additional flushing, disinfection or sampling.

441.07.23 Thrust Restraints

Clause 441.07.23 shall be amended by adding the following:

a) Concrete thrust blocking and mechanical joint restraints, when required, shall be placed as shown on the construction drawings or as directed by the Contract Administrator. Bolts on mechanical restraints shall be tightened to manufacturer's specifications using a torque wrench. Over-tightening of bolts on restraints and MJ fittings shall be cause for the Contract Administrator to reject the pipe.

b) Petrolatum tape system shall be applied to all mechanical restraint devices according to OPSS 441.05.04 as amended by the Owner and manufacturer's instructions.

441.07.24.01 Hydrostatic Testing (General)

Clause 441.07.24.01 shall be amended by the addition of the following:

a) The Hydrostatic Test shall be monitored by a representative of the Owner and the Contract Administrator.

b) Hydrostatic testing with riser pipe above grade will not be accepted unless a mat or tapping blanket or other protection method accepted by the Contract Administrator has been installed.

c) Pumping carried out to maintain pressure during the test shall be by means of a small pump of such a capacity as to make accurate adjustments to the pressure.

d) The pipe shall be filled slowly and trapped air shall be relieved.

e) Only potable water from the distribution system may be used for hydrostatic tests.

f) The maximum length of watermain that can be hydrostatically tested is 300 meters, unless otherwise approved by the Owner.

441.07.25 Flushing and Disinfecting Watermains

Clause 441.07.25 is deleted in its entirety and replaced by the following:

a) All new parts of drinking water systems in contact with drinking water, including temporary and new watermains shall be disinfected and tested in accordance with the MECP Watermain Disinfection Procedure and AWWA C651 requirements as amended by the Owner. The same requirements for watermains shall apply to hydrant leads and services larger than 37mm diameter. Services 37mm diameter and smaller shall be cleaned and flushed prior to being put in service. The basic disinfection procedure consists of the following:

i. Inspect materials to ensure integrity and sanitation.

ii. Prevent contaminating materials from entering the watermain during storage, handling and construction.

iii. Isolate the new pipe from the distribution system with approved backflow preventer(s);

iv. Load swabs and gradually fill the main. The main shall be completely filled with water minimum 2 hours in advance of swabbing.

v. Flush in sequence and in accordance with an accepted plan.

vi. Disinfect using the Continuous Feed Method according to AWWA C651, as amended herein.

vii. Flush to de-chlorinate until the chlorine residual is equal to the source water, as confirmed by the Contract Administrator and the Owner.

viii. Sampling for bacteria in two consecutive rounds as carried out by the Owner, over approximately 24 hours after the Contractor completes the de-chlorination process, and subsequent submittal for laboratory analysis.

b) The Contractor shall submit a Flushing and Disinfection Plan for approval by the Contract Administrator and the Owner at least two (2) weeks prior to the work. The implementation of the plan shall be under the supervision of the Contract Administrator and shall be monitored by the Owner.

c) Swabbing & Flushing

i. The supply for flushing must provide enough flow to create a velocity of 3 feet per second (0.91 m/s) in the pipe being flushed. Refer to AWWA C651 Table 3 for guidance on supply pipes for required flows. If adequate velocity is not provided, additional tap(s) and supplies will be required unless otherwise approved by the Contract Administrator.

ii. New watermains and branches shall be filled from a potable supply prior to flushing and swabbing. The main shall be completely filled with water minimum 2 hours in advance of swabbing.

iii. All pipe and branches shall be flushed and swabbed and with sufficient volume to exchange at least 3 pipe volumes unless otherwise approved by the Contract Administrator.

iv. A riser pipe shall be installed at each swabbing outlet to ensure the pipe flows full, and to prevent entry of trench water. The riser pipe shall be supported to prevent damage to the watermain.

v. Hydrant leads must be manually cleaned and swabbed a minimum of two (2) passes using a new swab and a 1-5% chlorine solution, then flushed.

vi. All swabs shall be new. Swabs shall not be re-used. Swabs shall be one size larger than the pipe in which they are used.

vii. Swabs shall be numbered, dated, and a count of swabs used and recovered shall be made to ensure that all swabs and parts thereof have been retrieved from the system. The Contractor and the Construction Administrator shall co-sign a record confirming retrieval of all swabs.

viii. At least two (2) swabs will be used for each pipe. Swabbing shall be repeated until minimum one (1) clean swab (no discoloration of swab) and measured turbidity is consistent with the drinking water system. Velocity during flushing shall be 0.91 m/s (3 ft/s) unless otherwise approved by the Contract Administrator and the Owner.

d) Disinfection

i. Disinfection shall be carried out using the Continuous Feed Method described in AWWA C651 as amended in accordance with MECP and the Owner's requirements.

ii. The Contractor is advised that there are health and safety risks associated with handling sodium hypochlorite, calcium hypochlorite and the chlorine solutions used for disinfection. The Contractor shall ensure all their Employees understand and engage in safe handling practices.

iii. Liquid chlorine solution shall be introduced at a constant concentration of not less than 50 mg/L and not more than 125 mg/L. Chlorine shall be distributed uniformly throughout the section being disinfected. Access points for chlorination shall be within 3 meters of all dead ends. The chlorine shall be applied until the chlorine concentration in the pipe reaches the applied concentration throughout the section. The system shall be left charged with the chlorine solution for 24 hours during which time valves, hydrants and curb stops will be operated to ensure disinfection of appurtenances.

iv. Sampling and testing for chlorine residual will be carried out by the Owner. The maximum allowable decrease in chlorine concentration after 24 hours is 40% of the initial concentration to a maximum decrease of 50 mg/L. If all residual tests meet the chlorine loss criteria, the section shall be flushed completely and recharged with water normal to the operation of the system. If chlorine loss criteria are exceeded, flushing and disinfection procedures shall be repeated until satisfactory results are obtained.

v. The Owner will collect two consecutive sets of bacteriological samples from sample locations required in accordance with AWWA C651, MECP and the Owner's procedures. The Owner reserves the right to require additional sampling locations. A single failed bacteriological test will constitute a failure of that entire sampling round and will necessitate repeating the disinfection process. Samples will be analyzed for Escherichia Coli (E. coli), Total Coliform and Heterotrophic Plate Count (HPC). The bacteriological approval criteria below must be satisfied as part of the commissioning process for watermains. Any sample reported as overgrown is considered a failure.

Bacteriological Criteria for Approval of Watermain Commissioning	
Parameter	**Acceptance Criteria**
E. coli	0 cfu/100 mL
Total Coliform	0 cfu/100 mL
HPC	≤ 50 cfu/mL*

*Note: For bacteriological test results of HPC > 50 cfu/mL and ≤ 500 cfu/mL, the Contractor may elect to flush the tested pipe segment in accordance with these specifications or repeat the disinfection process. The Owner will then resample for E. coli, Total Coliform and HPC until acceptable results are achieved. HPC results > 500 cfu/mL shall constitute a failure and will necessitate repeating the disinfection process.

vi. Should subsequent failures of bacteriological tests occur, the Contractor may be directed by the Contract Administrator to locate and eliminate the source of contamination. The Contractor shall not be eligible for financial claims as a result of failed bacteriological tests.

vii. The Contractor is advised that bacteriological test results typically take 4 business days from the date of sampling. The Contractor shall not be eligible for any reimbursement resulting from delays in sampling and analysis.

viii. The Contractor shall under no circumstance initiate connection until such time as authorization is provided by the Contract Administrator, based on satisfactory test results, approval from the Owner, and the presence of the Owner's operator licensed under the Safe Drinking Water Act to monitor the connection process.

ix. After the watermain connection has been installed, the Owner and/or the Contract Administrator may elect to conduct additional chlorine residual and bacteriological testing in accordance with the requirements outlined for new watermains to verify the disinfection of the watermain. If the watermain connection fails either the chlorine residual or bacteriological requirements, the Owner and/or the Contract Administrator

will provide directions for corrective action and the Contractor shall cooperate fully without additional charge.

441.07.26 Site Restoration

Clause 441.07.26 is amended by the addition of the following:

Restoration shall include all site restoration required due to installation and/or removal of temporary water systems.

441.07.27 Management of Excess Material

Clause 441.07.27 is amended by the addition of the following:

a) Safe disposal of chlorinated water is the responsibility of the Contractor.

b) The Contractor shall supply de-chlorinating agent conforming to AWWA C655. Where de-chlorinated water is to be disposed of in ditches or storm sewer, the Contractor shall have regard for fisheries concerns when selecting the de-chlorinating agent.

c) Water disposed of in ditches or storm sewers shall be de-chlorinated to meet the Provincial Surface Water Quality Guidelines and shall have a chlorine residual of less than 0.002 mg/L.

d) Water disposed of in sanitary sewers shall be de-chlorinated and shall have a chlorine residual of less than 0.1 mg/L.

e) The Contractor shall obtain approval from the Owner prior to disposal of dechlorinated water in the municipal storm or sanitary sewer systems. A copy of the approval shall be provided to the Contract Administrator.

f) De-chlorination shall be monitored by the Contract Administrator.

W.5. TEMPORARY WATER SERVICES (OPSS 493)

493.04.01 Submission Requirements

Clause 493.04.01 is amended by the addition of the following:

The submitted plan will include:

i. a schedule;
ii. a list of affected properties including unit, apartment and suite numbers;
iii. plan drawing(s) showing planned service connection location(s), valves, hydrants and connections to supply;
iv. A list of spare parts to be kept on-site, for making repairs to the temporary water supply and means to ensure accessibility to the Owner for repair purposes.

The Contractor shall determine whether a hose bibb is available at each building.

Materials, General

Clause 493.05.01 is amended according to the following:

a) Rigid pipe for temporary mains shall be minimum DR-17.

b) Temporary mains for potable water supply shall be a minimum 50mm diameter.

c) Temporary mains for fire protection or potable and fire protection shall be of a diameter specified in the Contract Documents.

d) All materials shall be capable of withstanding 1034 kPa pressure and all other conditions of use.

493.05.02 Materials, Temporary Water Supply Services

Clause 493.05.02 is amended by the addition of the following:

a) Any temporary pipe being re-used shall have been used exclusively for potable water.

b) Pipe missing caps and any re-used rigid pipe shall be cleaned, inspected and hand-swabbed with 1-5% sodium hypochlorite solution according to AWWA C651 prior to assembly.

c) All fittings shall be cleaned and disinfected with 1-5% sodium hypochlorite solution prior to assembly.

493.07.01 Construction, General

Clause 493.07.01 is amended by the addition of the following:

a) Connection to the private plumbing system of a residential unit shall be via a wye at an outside tap. The property owner is under no obligation to allow the temporary water system to be connected to their internal system at any location other than on the public

side of the curb stop. If a hose bibb is not available for outside connection, and the customer refuses to allow the Contractor to install a hose bibb, and if access to the meter cannot be provided, or in the event that a property owner will not permit an above ground connection as typical, it shall be the Contractor's responsibility to make alternate arrangements for temporary service to the property. Such arrangements shall be subject to the approval of the Contract Administrator. Connection at the curb stop may be required for apartments, commercial, institutional and industrial water customers as specified in the Contract Documents.

b) A vacuum breaker will be installed on the leg of the wye opposite the temporary connection to a hose bibb.

c) All temporary water systems shall be properly protected and supported.

d) Following installation and pressurizing of the temporary water system, it shall be tested for leakage and the test shall be approved by the Contract Administrator and the Owner. In addition, the Contractor shall make a daily, visual inspection of the temporary water system, recording deficiencies and repairs in a log, and report the log on a daily basis to the Contract Administrator.

e) In the event of leakage or failure of a temporary potable water supply system, the Contractor shall immediately advise the Contract Administrator and the Owner. The Contractor shall provide all labour and materials and shall make the necessary repairs. This work shall be witnessed by the Owner's Water Distribution Operator. The Owner will invoice the Contractor for time and materials required to witness the repairs. The Contractor shall not be entitled to additional payment for repairs of leakage or failure of temporary potable water systems.

f) Where a service interruption is unavoidable, the Contractor shall make every effort to minimize the length of the interruption. Such interruptions shall be planned to ensure they occur between 9:00 am and 4:00 pm. At the discretion of the Owner, interruptions greater than 8 hours may require temporary servicing to be in place. The Contract Administrator and the Owner reserve the right to require this work be done at night to minimize inconvenience where large areas may have their water service interrupted for beyond the time stated above.

493.07.02 Construction, Temporary Watermains

Clause 493.07.02 is amended by the addition of the following:

a) Reduced Pressure type backflow preventers shall be installed at the point of supply to temporary water systems and shall be installed in accordance with the latest edition of

CAN/CSA-B64.10 in a well-drained, tamper resistant enclosure with provisions for installation of a pad lock consistent with drawing WCS-9. The backflow preventer will be maintained by the Owner when the temporary service is in use.

b) Water supply for temporary systems shall be from an approved location in accordance with the Contract Documents. The source of supply shall be approved by the Contract Administrator.

c) Each branch of the temporary water system shall be fitted with one extra 19mm (¾") service complete with curb stop, and DuC backflow preventer for the purpose of flushing temporary mains. Adequate drainage shall be provided for each to allow for continuous operation.

493.07.03 Construction, Temporary Potable Water Supply Services

Clause 493.07.03 is amended by the addition of the following:

a) Temporary services shall be supplied with adapters as required to connect to hose bibbs.

b) After the temporary system is placed in service and temporary services are installed to the point of connection, the Contractor will transfer those services to the temporary system identified in the Contractor's plan for connection at the hose bibb. Service connections at the hose bibb will be witnessed by the Owner. The Contractor shall be responsible for scheduling all transfers, including access with property owners/occupants for all buildings serviced at the hose bibb. Notice of such schedule shall be provided to the Owner at least one (1) week in advance. The Owner does not guarantee staff availability and accepts no responsibility for project delays as may be caused by lack of available staff. Service transfers at the curb stop shall be by the Contractor and carried out under the supervision of the Contract Administrator and the Owner. The installation of temporary water services up to the point of connection shall be approved by the Contract Administrator prior to the Contractor scheduling services transfers with customers.

c) Where a hose bibb is not available for temporary service connections, and the Contractor makes temporary connection to the existing service such as at the curb stop, the excavation shall be backfilled with sand. It is the intention to minimize open excavations for temporary water supplies.

d) Services shall not be transferred to the temporary system at the curb stop until the new system has passed all testing in 493.07.08 as amended herein, and written direction has been issued by the Contract Administrator.

493.07.04	Construction, Temporary Hydrants	Clause 493.07.04 is amended by the addition of the following: a) Subject to case-specific approval from the Owner and the Fire Department, one (1) municipal hydrant may be taken out of service at one time, such that there is not more than 300m between hydrants. In the event the hydrant spacing of 300m is exceeded, temporary hydrant(s) will be required in all cases. The Owner will bag hydrants out of service. b) The Contractor shall be responsible for maintaining water supply for fire service at all buildings with private fire hydrants and or fire systems and shall be responsible for maintaining at such facilities. Private facilities shall not be taken out of service. c) Should buildings with private fire hydrants and/or fire suppression systems be serviced from temporary servicing, the supply pipe shall be sized to provide adequate flow, and the pipe shall be buried a minimum of 600mm to prevent heating. d) Temporary fire hydrants shall be installed at such a height above grade to allow for easy connection to the ports and operation of the hydrant. The temporary fire hydrant installation shall be acceptable to the Owner, the Contract Administrator and the Fire Department.
493.07.06	Construction, Protection	Clause 493.07.06 is amended by the addition of the following: The temporary watermains shall be installed behind the sidewalk and within the project excavation limits. Alternative locations shall be subject to the approval of the Contract Administrator. The Contractor shall be responsible for any restoration costs resulting from alternate locations of temporary mains and services without remuneration from the Owner. No charges for additional restoration resulting from temporary systems will be allowed. Service piping shall be installed along the edge of existing driveways to avoid grass-cutting conflicts.
493.07.07	Construction, Leakage Testing	Clause 493.07.07 is amended by the addition of the following: Leakage testing at system pressure shall be witnessed by the Owner and the Contract Administrator. Leakage testing shall be made by visual observation of the entire temporary water system, charged to system pressure.
493.07.08	Construction, Flushing and Disinfecting Temporary	Clause 493.07.08 is amended by the addition of the following: a) Requirements of OPSS 441.07.25 as amended by the Owner shall apply in addition to the requirements of this section.

	Watermains and Services	b) Routine chlorine sampling of in-service temporary watermains will be undertaken by the Owner in accordance with the Safe Drinking Water Act.
493.07.09	Construction, Removal of Temporary Water Supply Services	Clause 493.07.09 is amended by the addition of the following: Temporary water systems shall be left in place until such time as the final connection of the new water works has been completed and accepted by the Owner, including transferring of all services from the temporary system to the new system.

W.1. GENERAL

Material approvals indicated herein are specifically for use on waterworks projects with test-pressures of 1,034 kPa (150 psi) constructed within the jurisdiction of the Town of Marathon Drinking Water System, and more specifically within the water distribution system. Materials shall conform to this specification. Where no approved product is specified for an item, product is subject to approval by the Contract Administrator. The costs to comply with this listing of pre-approved materials shall be included in the Contract prices. The Town of Marathon and PUC Services Inc. accept no liability whatsoever for the unauthorized use of this document.

This document shall be read in conjunction with the current issue of OPSS at the time of tender. This document shall have precedence over OPSS and shall be read in conjunction with the PUC Services Inc. Special Provisions – Waterworks and OPSS.

The Town of Marathon Drinking Water System (DWS) including all watermain, services, valves and hydrants is owned by the Corporation of the Town of Marathon and is regulated under the Safe Drinking Water Act and regulations established under the Safe Drinking Water Act. The DWS is operated under provincial licence and permit by the Corporation of the Town of Marathon. Materials used in the drinking water system are subject to a quality management standard. All chemicals and materials that will contact with drinking water shall conform to applicable standards of the American Water Works Association, and NSF International, including NSF 60, NSF 61, and NSF 372 as applicable. Throughout this document, Owner shall mean the Corporation of the Town of Marathon or their authorized agent as the case requires. The Owner reserves the right to make updates or changes to this document at any time.

In addition to National Sanitation Foundation (NSF), American Society of Mechanical Engineers (ASME), ASTM International, CSA, and American Water Works Association (AWWA) standards referenced in OPSS 441, the following standards shall apply as referenced or amended herein and in the Contract Documents:

AWWA B300-24 Hypochlorites

AWWA C511-17 Reduced-Pressure Principle Backflow Prevention Assembly

W.3. MATERIALS (OPSS 441)

441.05.01 General

Clause 441.05.01 is amended by the addition of the following:

All non-metallic watermain and service pipe shall be supplied and installed complete with solid 12 gauge TWU copper wire or copper clad steel core tracing wire to provide electrical continuity for location purposes. The wire must have a polyethylene insulated jacket suitable for protection against corrosion according to standard drawing WCS-17. For HDD applications, minimum two (2) tracer wires shall be secured to the pipe and tracer wire for HDD shall be 12 gauge TWU copper clad with steel core.

Tracing wire splices shall be connected with waterproof connectors. Approved splices are as follows:

i. Direct single wire to wire splices shall be DryConn King 6 Blue connectors, Snakebit Locking Connector or approved equal.

ii. Service splices shall be DryConn Direct Bury Lug Aqua style connectors or approved equal.

iii. Connection of tracing wire to copper service pipe to be made with Interprovincial Corrosion Control silicon bronze GA2XX series direct burial clamp for ½" to 1" services and GA3XX for 1-1/4" to 2" diameter services or approved equal.

iv. Thermite weld, tracing wire with anode wire twisted together to metal watermain at connections and apply protective barrier cover in accordance with OPSS 442.05.06.

A magnesium grounding rod shall be provided at all tracing wire dead ends. Acceptable materials: Copperhead ANO-12 Ground Rod, 12-AWG or approved equal.

The Contractor is responsible for all thermite welds and shall provide all equipment and materials. Acceptable Thermite Welding Systems: Erico Cadweld Plus exothermic welding system. Shots: Erico Cadweld Plus Welding Material – XF19, CU, #25 CA25PLUSXF19 or approved equal.

Petrolatum Tape Systems conforming to AWWA C217 shall be required for all mechanical restraint devices, hydrant boots, ductile iron fittings and valves. Petrolatum Tape Systems are NOT interchangeable and cannot be mixed. Petrolatum Tape Systems must be applied according to manufacturer specifications as a three-part system, and shall include:

i. Corrosion inhibiting petrolatum primer paste: Denso Paste S105, Petrowrap Primer Paste, or Petro Coating System (PCS) PP Series Primer Paste;

ii. Petrolatum molding mastic: Denso Profiling Mastic, Petrowrap 9190PM Profiling Mastic, or PCS PM Petrolatum Mastic; and,

iii. Petrolatum tape: Denso LT Tape, Petrowrap LT Anti-Corrosion Tape or PCS Standard Temperature tape.

Mechanical restrainers for connections to existing cast iron (CI) watermain require the approval of the Contract Administrator and the Owner. The following mechanical restrainers are approved for use on CI pipe when used according to the manufacturer's instructions:

CI Pipe to Mechanical Joint Fitting:

Romac Grip Ring with black serrated grip (100mm to 300mm diameter)
Hymax Grip Coupling Restraint (100mm to 300mm diameter)
Georg Fischer (GF) Multi/Joint 3007 restraint couplings (100mm to 300mm diameter)

441.05.02 Ductile Iron Pipe

Clause 441.05.02 is amended by the addition of the following:

a) Ductile iron pipe will not be accepted for watermains unless specified in the Contract Documents.

b) Mechanical restrainers require the approval of the Contract Administrator and the Owner. The following mechanical restrainers are approved for use on ductile iron (DI) pipe when used according to the manufacturer's instructions:

DI Pipe to Mechanical Joint Fitting:

Romac Grip Ring with black serrated grip (100mm to 300mm diameter)
Clow TUFGrip Dual Wedge Universal Series 1500 (100mm to 400mm diameter)
EBAA Megalug Series 1100 (100mm to 400mm diameter)
STAR Pipe Products Stargrip Series 3000 (100mm to 400mm diameter)

441.05.03 Concrete Pressure Pipe

Clause 441.05.03 is amended by addition of the following:

Concrete pipe will not be accepted for watermains unless specified in the Contract Documents.

441.05.04.01 PVC Pipe General

Clause 441.05.04.01 is amended by the addition of the following:

a) Gray iron fittings will not be accepted.

b) Ductile fittings shall be Mechanical Joint (MJ) unless specified in the Contract Documents.

c) MJ x MJ Adapter sizes 100mm through 300mm shall meet the requirements of OPSS 441.05.02.

i) STAR Pipe Products Series 100 (100mm to 300mm)

d) Tapping sleeves shall be used for tapping of existing watermains.

e) Connections to existing iron pipe shall be provided with cathodic protection according to OPSS 442 and OPSD 1109.011.

f) Injection moulded PVC fittings in sizes 100mm through 300mm shall conform to AWWA C907, latest edition, shall be UL listed and FM approved, and certified according to CSA B137.2.

g) Ductile Iron fittings used with non-metallic pipe shall be supplied according to OPSS 441.05.04 as amended by the Owner and complete with sufficient quantity of Petrolatum Tape System to wrap the entire fitting and restrainers according to manufacturer's instructions and AWWA C217.

h) Mechanical restrainers require the approval of the Contract Administrator and the Owner. The following mechanical restrainers are approved when used according to the manufacturer's instructions, in the range of pipe diameters noted:

i) Restraining PVC Pipe to PVC Injection Molded Fittings

EBAA Iron Series 2600 (100mm to 300mm diameter)

ii) Restraining PVC Pipe Standard Bell and Spigot Push-On Joints
Uni-Flange Series UFR-1399 (100mm to 300mm diameter)
EBAA Iron Series 1900 (100mm to 300 mm diameter)
STAR Pipe Products Series 1100G2 Bell Restrainers (100mm to 300mm diameter)

iii) Restraining PVC Pipe to Mechanical Joint Fitting
Uni-Flange Series UFR1500-CA Series (100mm to 300mm diameter)
Clow TUFGrip Dual Wedge Universal Series 1500 (100mm to 400mm diameter)
EBAA Iron Series 19MJ00 (100mm to 300mm diameter)
STAR Pipe Products Stargrip Series 4000G2 (100mm to 300mm diameter)

iv) The use of Hymax Grip Couplings is permitted (100mm to 300mm diameter), subject to the approval of the Owner and the Contract Administrator.

v) The use of Georg Fischer (GF) Multi/Joint 3007 restraint couplings is permitted (100mm to 300mm), subject to the approval of the Owner and the Contract Administrator.

441.05.04.02 Polyvinyl Chloride Pipe (PVC)

Clause 441.05.04.02 Polyvinyl Chloride Pipe is amended by addition of the following:

a) The dimension ratio for C-900 PVC watermain pipe in sizes 100mm to 300mm (4-12") shall be according to the Contract Documents and shall be DR18 or heavier. IPEX Blue Brute, Diamond

Plastics Corporation, JM Eagle, Westlake Pipe and Fittings, Royal Building Products Royal Seal CIOD Pressure Pipe are accepted.

b) PVC watermain pipe in sizes 350mm to 600mm (14-24”) shall be of dimension ratio and pressure class determined by the Engineer and shown on the Contract Documents.

441.05.04.03	Molecularly Oriented Polyvinyl Chloride (PVCO)	Clause 441.05.04.03 Molecularly Oriented Polyvinyl Chloride Pipe (PVCO) is amended by addition the of the following: a) The following AWWA C-909 PVCO in sizes 150mm (6”) through 300mm (12”) is accepted: IPEX Bionax and JM Eagle Ultra Blue with Cast Iron Outside Diameter (CIOD) and a Pressure Class of 235 psi.
441.05.05	Polyethylene Plastic Pipe	Clause 441.05.05 is amended by the addition of the following: a) Polyethylene plastic pressure pipe shall not be used for watermains or services unless specified in the Contract Documents. b) Cross-linked Polyethylene (PEX) shall not be used for watermains or services unless specified in the Contract Documents. When specified in the Contract Documents, Cross-linked Polyethylene (PEX) potable water service tubing for service connections shall be in accordance with ASTM F876-05, ASTM F877-05, CSA-B137.5-05 and NSF 61. c) Where specified in the Contract Documents, PEX water service tubing is to be used with standard copper O.D. brass fittings as specified in OPSS 441.05.09.02 and 441.05.12 as amended. Stainless steel inserts shall be installed in PEX tubing ends. PEX services shall be complete with tracer wire according to OPSS 441.07.14 as amended and standard drawing WCS-17. d) Where PEX products are specified in Contract Documents, PEX service pipe shall be REHAU Municipex and minimum 25mm diameter.
441.05.06	Steel Pipe	Clause 441.05.06 is amended by the addition of the following: Steel pipe shall not be used on watermains unless specified in the Contract Documents.
441.05.07	Copper Pipe	Clause 441.05.07 is amended by the addition of the following: Copper pipe shall be Type K only and clearly marked with ASTM B88, NSF 61 and NSF 372.

		Copper pipe shall be used for all water service pipes 50mm diameter and smaller unless alternative materials are specified in the Contract Documents.
441.05.08	Composite Pipe	Clause 441.05.08 is amended by the addition of the following: Cross-linked polyethylene/aluminum/Cross-linked polyethylene composite pressure pipe shall not be used unless specified in the Contract Documents.
441.05.09.01	Valves - General	Clause 441.05.09.01 is amended by the addition of the following: a) Valve box assemblies shall be 5-1/4" slide type with length selected according to depth of valve. b) Approved material assemblies (no substitutions) are as follows: i. Bibby VB2200 Series, complete with cover (7362), guide plate (7339), top (7347), bottom section (7353), with extensions (737x). ii. Sigma VB5000 Series including cover (825), centering ring (VB-875), top (VB-625), bottom section (VB-53x), with extension (VB 7xx). iii. Mueller MVB Composite Valve Box complete with bottom, guide plate, lid and 27" adjustable top. iv. STAR Pipe Products, VBDF514-48 Series slide type valve box assembly complete with lid, top, bottom, guide plate and extension. c) Valves shall be supplied complete with sufficient quantity of Petrolatum Tape System according to OPSS 441.05.04 as amended by the Owner to fully wrap the valve body from the bonnet down, according to manufacturer's instructions.
441.05.09.02	Service Line Valves	Clause 441-05.09.02 is amended by the addition of the following: a) Brass service line valves sized from 19mm to 50mm shall be according to AWWA C800 and shall conform to NSF 61 and NSF 372. b) Brass services line valves in sizes 19mm to 50mm shall be provided as follows: i. Curb stops shall be Cambridge Brass Type 202NL-HxHx or Ford Meter Box Co. B44-xxx-Q-NL, or Mueller B-25209N with compression fittings, or approved equal; ii. For PEX services only, curb stops shall be Cambridge Brass Type 202NL-HxHEx or Ford Meter Box Co. B44-xxx-TW-Q-NL with connection for tracer wire or approved equal;

iii. Corporation stops shall be Cambridge Brass Type 301NL-AxHEx, Ford Meter Box Co. FB1000-x-Q-NL type or Mueller B-25008NL, with AWWA Thread by Compression fittings.

441.05.09.03 Gate Valves

Clause 441.05.09.03 is amended by the addition of the following:

a) Approved gate valves from 100mm to 300mm diameter are:

i. Clow F6100 Series Model 2639

ii. Mueller Co. A-2362 RWGV

b) Unless specified in the Contract Documents, end connections on valves shall be Mechanical Joint X Mechanical Joint.

c) Valves shall conform to AWWA C-509.

441.05.09.04 Butterfly Valves

Clause 441.05.09.04 is amended by the addition of the following:

Butterfly valves shall not be used unless specified in the Contract Documents.

441.05.10 Hydrants

OPSS 441.05.10 is amended by the addition of the following:

a) Hydrants shall be self draining Canada Valve Mueller Century and equipped with:
- compression shut off;
- two-piece barrel with flange at ground line;
- Two - 2-1/2” (65mm) hose nozzles with 12B Ontario Standard Thread (ULC-S513-1978), CSA thread type;
- One - 4-1/2“(115mm) steamer (pumper nozzle) with 33B Ontario Standard Thread, CSA thread type;
- 150mm inlet connection with mechanical joint;
- non-rising spindle with O-ring seal;
- 32mm (1.25”) square operating- and cap-nuts;
- open counter-clockwise;
- factory painted yellow barrel and caps;
- drain holes.

b) Hydrants shall be supplied at an appropriate length to provide for required burial depth with 100mm to 150mm flange elevation above finished grade without use of extensions. Hydrants shall be supplied complete with sufficient quantity of 8 mil polyethylene wrap tube conforming to

AWWA C-105 to wrap the lower barrel from the hydrant base to grade level with two separate layers.

c) Tracer wire to be supplied in sufficient quantity to terminate at the breakaway flange in accordance with the Owner's standard drawings.

441.05.11 Reduced Pressure Principle Backflow Preventers

Clause 441.05.11 is deleted in its entirety and replaced by the following:

a) Reduced pressure (RP-type) shall be according to CAN/CSA B64.4 and AWWA C511-17 and Double check valve assembly (DCVA-type) backflow preventers shall be according to CAN/CSA B64.5 and AWWA C510.

b) Prior to installation, backflow preventers shall be cleaned and disinfected with 1-5% chlorine solution in accordance with AWWA C651. On the first installation, and each time it is disconnected and/or moved, all backflow preventers shall be recertified and tagged by a certified backflow prevention device tester (in accordance with CSA B64.10 and B64.10.01) prior to being placed in service. The Owner reserves the right to reject backflow preventers. The Owner reserves the right to require recertification of backflow preventers at any time.

c) Removal of a backflow device from the project site will void the certification.

441.05.12 Service Connection Fittings and Appurtenances

Clause 441.05.12 is amended by the addition of the following:

a) Tapping sleeves shall be full body 304 stainless construction. Body and bolts shall be 304L stainless steel. The outlet shall be stainless steel MJ connection and include a stainless steel test plug for hydrostatically testing the seal. The tapping sleeve shall incorporate triangular side bars in the design and shall meet the requirements of AWWA C223. Gasket shall be waffle style, nitrile material, full 360^0 seal. Approved saddles are:

i. Mueller H-304 MJ (100mm to 300mm diameter)
ii. Romac SSTIII-MJ (100mm to 200mm diameter)

b) Double studded broad band stainless steel service saddles with AWWA outlet shall be used for service connections to 150 – 300mm diameter PVC mains for all services 50mm in diameter and smaller. Approved saddles are:

i. Smith-Blair 372C series
ii. Romac 306 series
iii. Cambridge Brass 8403 series

c) Curb boxes shall be as follows:

i. Operating rod shall be type 304 stainless steel with welded U-clip and stainless cotter pin of a length to place the top of the rod a minimum of 0.3 meters below the curb box cover.
ii. For services up to 25mm diameter, accepted products include:
Mueller A-726; or,
Clow c/w D-10 cover, D-11 brass pentagon plug, T4 Rod, D-1 Base.
iii. For services 38mm diameter, accepted products include:
Mueller A-728; or,
Clow c/w D-10 cover, D-11 brass pentagon plug, T4 rod and D-2 base.
iv. For services 50mm diameter and larger, accepted products include:
Mueller A-728; or,
v. Clow c/w D-10 cover, D-11 brass pentagon plug and D-2 base included with a heavy duty operating rod, Trumbull Erie/Minneapolis Type, Item # 367-4092. For services installed in hardscaped driveways or sidewalks, curb boxes shall be installed with a Ford Meter Box A1 Style Cover in accordance with the Owner's standard drawings.
vi. Repair caps and repair couplings for newly installed curb boxes are not accepted.

d) Brass Service line couplings sized from 19mm to 50mm shall be according to AWWA C800. All brass in contact with potable water shall conform to NSF 372. Couplings shall be Cambridge Brass Type 119NL-HxHx, Ford Meter Box Co. C44-xx-Q-NL, or Mueller H-15403NL compression type.

e) Sacrificial zinc anodes shall be supplied and installed on each copper service according to OPSS 442.07.04.05 and OPSD 1109.011.

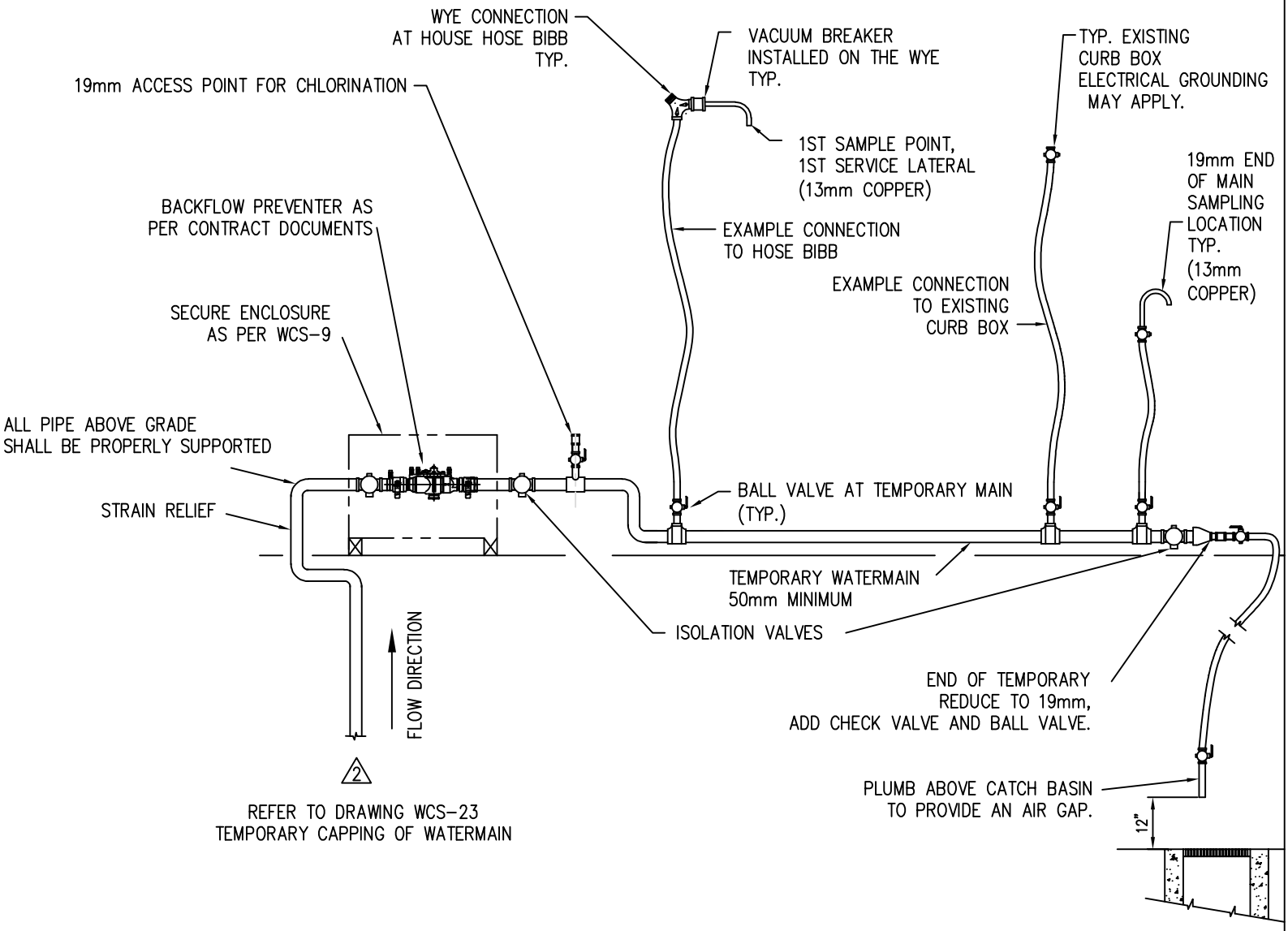
W.5. Temporary Water Services (OPSS 493)

493.05.01	Materials, General	Clause 493.05.01 is amended according to the following: a) All temporary mains shall be rigid pipe, minimum DR-17. Subject to approval by the Contract Administrator, flexible hose may be permitted to accommodate long radius bends in temporary water system piping. Flexible hose shall be in accordance with OPSS 493.05.02 and as amended herein. b) Temporary mains for potable water supply shall be a minimum 50mm diameter. c) Temporary mains for fire protection or potable and fire protection shall be of a diameter specified in the Contract Documents. d) All materials shall be capable of withstanding 1034 kPa pressure and all other conditions of use. e) Above-ground piping shall be fully restrained by the pipe design or by external restrained fittings. The restrained fittings shall be approved by the manufacturer for use with the pipe which it is restraining and for above-ground (non-buried) applications. Approved systems are fully restrained DR-17 pipe systems. Polyethylene pipe with Philmac restrained fittings (or approved equal) are permitted for use on source water supply piping only, and are subject to the approval of the Owner and the Contract Administrator.
493.05.02	Materials, Temporary Water Supply Services	Clause 493.05.02 is amended by the addition of the following: a) Any temporary pipe being re-used shall have been used exclusively for potable water. b) Pipe missing caps and any re-used rigid pipe shall be cleaned, inspected and hand-swabbed with 1-5% sodium hypochlorite solution according to AWWA C651 prior to assembly. c) All fittings shall be cleaned and disinfected with 1-5% sodium hypochlorite solution prior to assembly. d) Hose lining shall be phthalate-free and BPA-free and shall be of material that does not impart any taste or odour to the water according to NSF/ANSI 61.
493.05.04	Materials, Temporary Hydrants	Clause 493.05.04 is amended by the addition of the following: a) Temporary hydrants may be of appropriate length for above ground installation and shall be in general conformance with applicable requirements of AWWA C502.

b) Temporary hydrants shall be installed plumb and adequately supported.

c) Temporary hydrants shall be equipped with:

- Compression shut-off;
- Two, 2-1/2” (65mm) hose nozzles with 12B Ontario Standard Thread (ULC-S513-1978), CSA thread type;
- One 4-1/2” (115mm) steamer (pumper nozzle) with 33B Ontario Standard Thread, CSA thread type;
- 150mm inlet connection with mechanical joint;
- Non-rising spindle with O-ring seal;
- 32mm (1.25”) square operating- and cap-nuts;
- Open counter-clockwise.



NOTES:

1. THIS DRAWING IS FOR SCHEMATIC INFORMATION ONLY. THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING.
2. THE DISTANCE BETWEEN THE CONNECTION AND BACKFLOW PREVENTER SHALL NOT EXCEED 10 METERS FOR DIAMETERS < 100mm.
3. THE DISTANCE BETWEEN THE CONNECTION AND BACKFLOW PREVENTER SHALL NOT EXCEED 6 METERS FOR DIAMETERS 100MM AND LARGER.
4. ALL TEMPORARY RESTRAINTS REQUIRED FOR CONNECTIONS AND TESTING SHALL BE ACCORDING TO SEALED ENGINEERED DRAWINGS, AND SUBJECT TO APPROVAL BY THE CONTRACT ADMINISTRATOR.
5. ALL MATERIAL TO BE SUPPLIED BY CONTRACTOR AND CONFORM TO NSF 61, NSF 372 AND THE CONTRACT DOCUMENTS.
6. LIVE TAPS NOT PERMITTED
7. TEMPORARY WATER SUPPLY SYSTEM SHALL BE OPERATED BY PUC ONLY.
8. BACKFLOW PREVENTER TO BE IN GOOD WORKING ORDER, AND CERTIFIED FOLLOWING DISINFECTION, INSTALLATION OR RELOCATION.
9. PUC REQUIRES A MINIMUM OF ONE WEEK NOTICE FOR ANY WORK REQUEST.
10. THE CONTRACTOR SHALL MONITOR THE TEMPORARY WATER SYSTEM FOR LEAKS ON A DAILY BASIS.
11. ANY LEAKS OR DAMAGE TO THE TEMPORARY SYSTEM SHALL BE REPORTED IMMEDIATELY TO THE PUC.

SCALE: NTS

PUC SERVICES

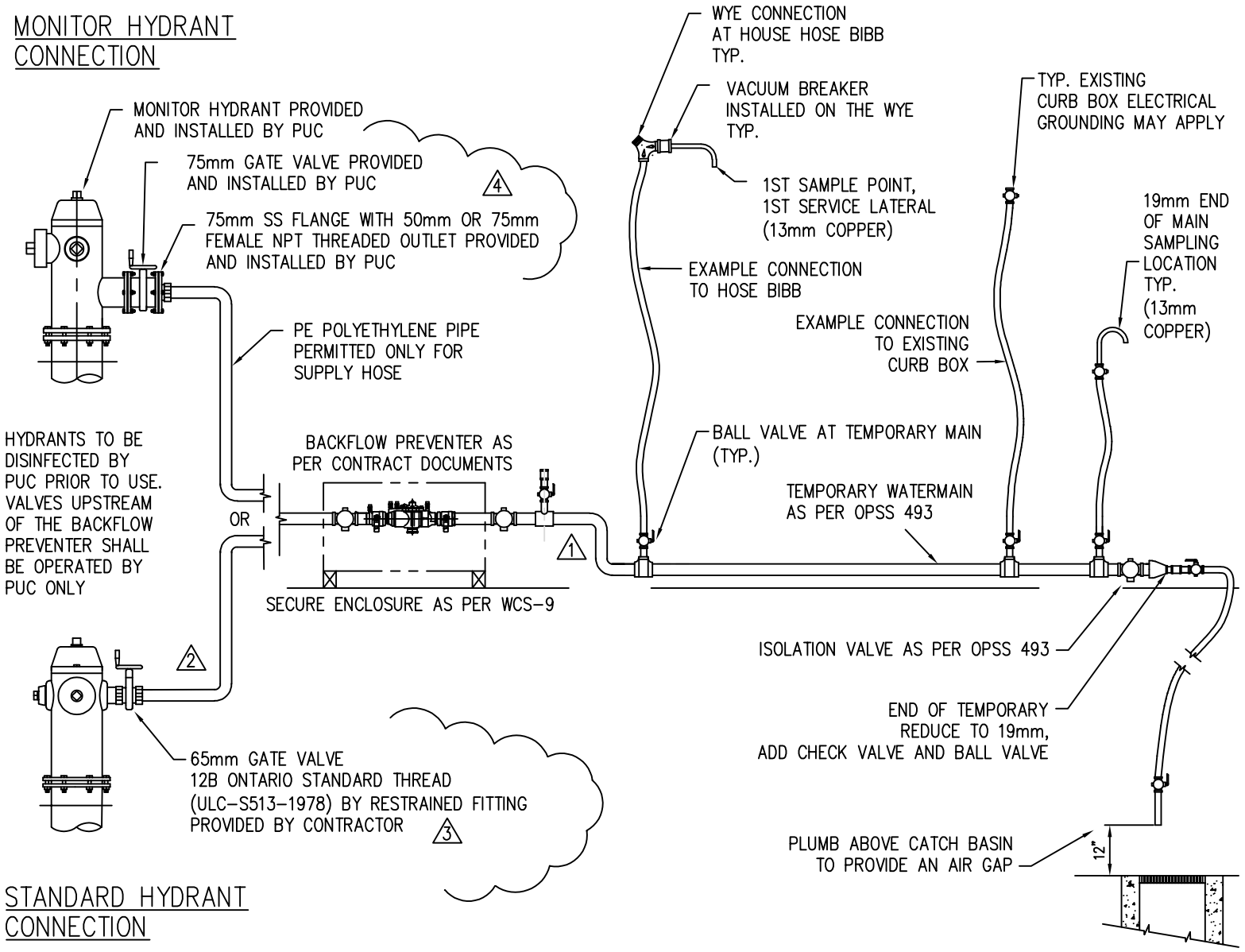
No.	REVISION	INITIAL	DATE
2	REMOVED EXISTING WM DETAIL AND REFERRED TO DWGS	KDW	JAN/19
3	GENERAL REVISIONS	JnT	JAN/23
4	UPDATED TITLE	LJD	JAN/25

SAMPLE DETAIL

TEMPORARY WATER SUPPLY - SOURCE FROM WATERMAIN

DRAWN BY: J. TOTEDA	DATE: JAN 2017
CHECKED BY: A. HALLETT	DATE: JAN 2017
APPROVED BY: A. HALLETT	DATE: JAN 2017
Drawing Number: WCS-1A	Rev. 4

MONITOR HYDRANT CONNECTION



STANDARD HYDRANT CONNECTION

NOTES:

1. THIS DRAWING IS FOR SCHEMATIC INFORMATION ONLY. THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING.
2. METHOD OF CONNECTION TO THE HYDRANT SHALL BE APPROVED BY THE CONTRACT ADMINISTRATOR.
3. ALL MATERIAL TO BE SUPPLIED BY CONTRACTOR AND CONFORM TO NSF 61, NSF 372 AND THE CONTRACT DOCUMENTS.
4. HYDRANT IS FULLY CHARGED.
5. TEMPORARY WATER SUPPLY SYSTEM SHALL BE OPERATED BY PUC ONLY.
6. BACKFLOW PREVENTER TO BE IN GOOD WORKING ORDER AND CERTIFIED FOLLOWING DISINFECTION, INSTALLATION OR RELOCATION.
7. PUC REQUIRES A MINIMUM OF ONE WEEK NOTICE FOR ANY WORK REQUEST. 3
8. THE CONTRACTOR SHALL MONITOR THE TEMPORARY WATER SYSTEM FOR LEAKS ON A DAILY BASIS.
9. ANY LEAKS OR DAMAGE TO THE TEMPORARY WATER SYSTEM SHALL BE REPORTED IMMEDIATELY TO THE PUC.

SCALE: NTS

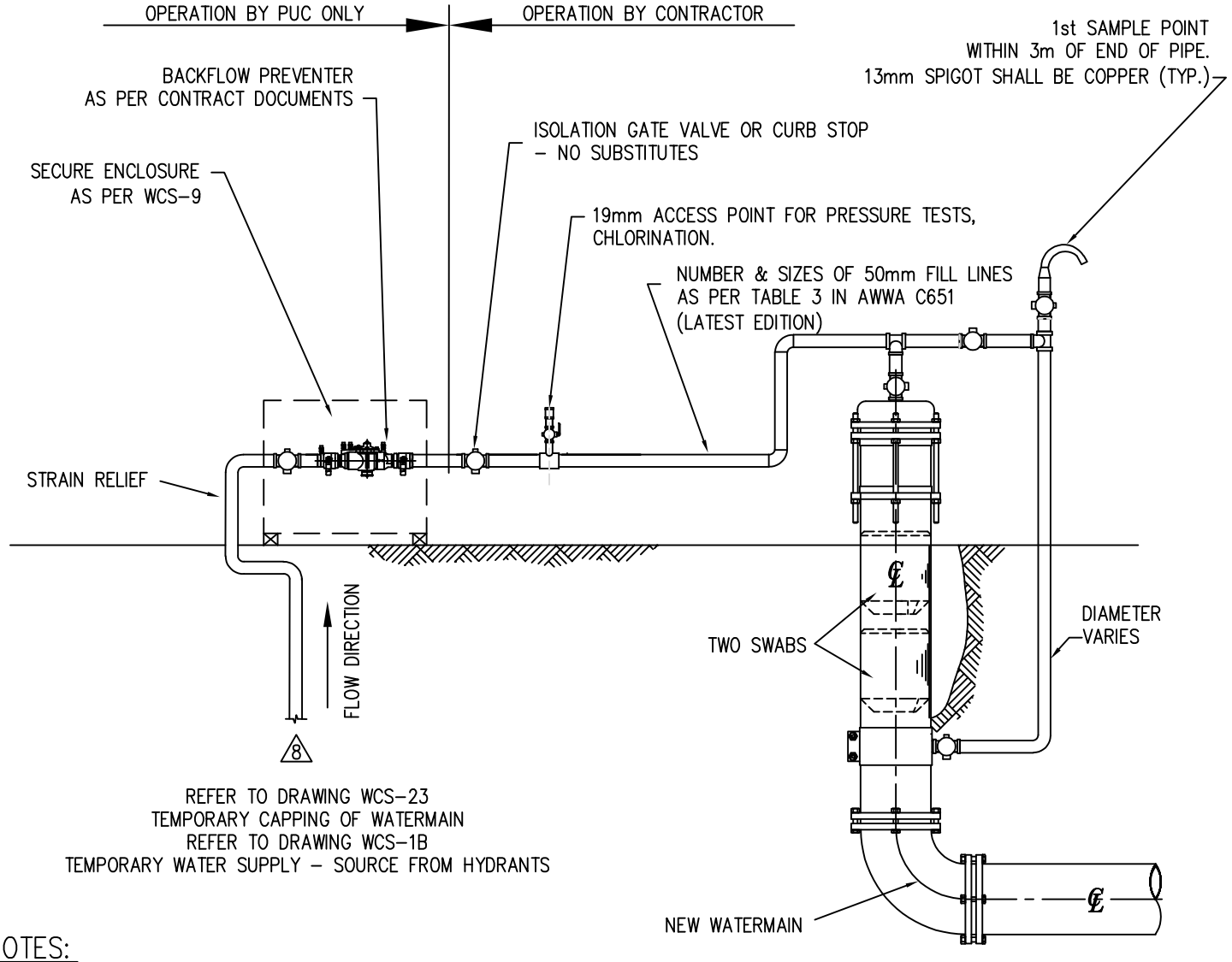
PUC SERVICES

No.	REVISION	INITIAL	DATE
3	ONE WEEK WAS 48 HOURS ADDED RETRAINED NOTE	JnT	JAN/23
4	MONITOR HYDRANT 75mm GATE VALVE REPRESENTATION	KDW	JAN/24
5	UPDATED TITLE	LJD	JAN/25

SAMPLE DETAIL

TEMPORARY WATER SUPPLY - SOURCE FROM HYDRANTS

DRAWN BY: J. TOTEDA	DATE: MAR 2018
CHECKED BY: A. HALLETT	DATE: MAR 2018
APPROVED BY: A. HALLETT	DATE: MAR 2018
Drawing Number: WCS-1B	Rev. 5



NOTES:

1. THIS DRAWING IS FOR SCHEMATIC INFORMATION ONLY. THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING.
2. THE WATER MAIN SHALL BE DRAINED BY CONTROLLED MEANS. SUFFICIENT TRENCH DEWATERING CAPACITY SHALL BE USED WHEN THE EXISTING AND NEW WATERMAINS ARE DRAINED PRIOR TO THE FINAL CONNECTION TO PREVENT CONTAMINATION OF WATERMAINS.
3. ALL NEW PIPING AND APPURTENANCES PLACED IN THE CONNECTION SHALL BE THOROUGHLY DISINFECTED WITH 1–5% SOLUTION OF SODIUM HYPOCHLORITE.(ANSI/NSF 60, AWWA B300 SERIES & NSF 61 FOR MATERIALS)
4. TRACING WIRE SHALL BE CONNECTED TO EXISTING METAL WATER MAINS OR EXISTING TRACING WIRE OR FINAL FITTING IF DEAD ENDED.
5. A PHYSICAL SEPARATION MUST BE MAINTAINED AT ALL CONNECTION POINTS OF NEW WATERMAINS TO THE EXISTING SYSTEMS UNTIL BACTERIOLOGICAL TESTS HAVE PASSED AND PUC APPROVES CONNECTION. A SAMPLING TAP MUST BE PROVIDED AT THE END OF EACH BRANCH OR STUB.
6. MAXIMUM DISTANCE BETWEEN THE EXISTING AND NEW WATERMAIN CONNECTION POINTS IS TO BE 6.0 METRES. (ONE PIPE LENGTH)
7. ALL RESTRAINTS TO BE ACCORDING TO THE CONTRACT DRAWINGS. ALL TEMPORARY RESTRAINTS REQUIRED FOR CONNECTIONS AND TESTING SHALL BE ACCORDING TO SEALED ENGINEERED DRAWINGS PROVIDED BY THE CONTRACTOR.
8. ALL MATERIAL TO BE SUPPLIED BY CONTRACTOR.
9. FOR PVC PIPING. NO TAP SHALL BE MADE CLOSER THAN 600mm FROM THE ENDS OF THE PIPE. MULTIPLE TAPS IN A SINGLE PIPE SHALL BE STAGGERED AROUND THE CIRCUMFERENCE AND AT LEAST 450mm APART WHEN MEASURED ALONG THE LONGITUDINAL AXIS OF THE PIPE.
10. BACKFLOW PREVENTER TO BE SUPPLIED IN GOOD WORKING ORDER AND CERTIFIED FOLLOWING DISINFECTION, INSTALLATION OR RELOCATION.
11. PUC REQUIRES A MINIMUM OF ONE WEEK NOTICE FOR ANY WORK REQUEST.
12. PIPE TO BE FILLED WITH WATER FROM THE DISTRIBUTION SYSTEM PRIOR TO FLUSHING THE NEW WATERMAIN.

10

SCALE: NTS

PUC SERVICES

No.	REVISION	INITIAL	DATE
9	REMOVED DEMARCATION NOTE	PJP	MAR/22
10	ONE WEEK WAS 48 HOURS	JnT	JAN/23
11	GENERAL REVISIONS	LJD	JAN/25

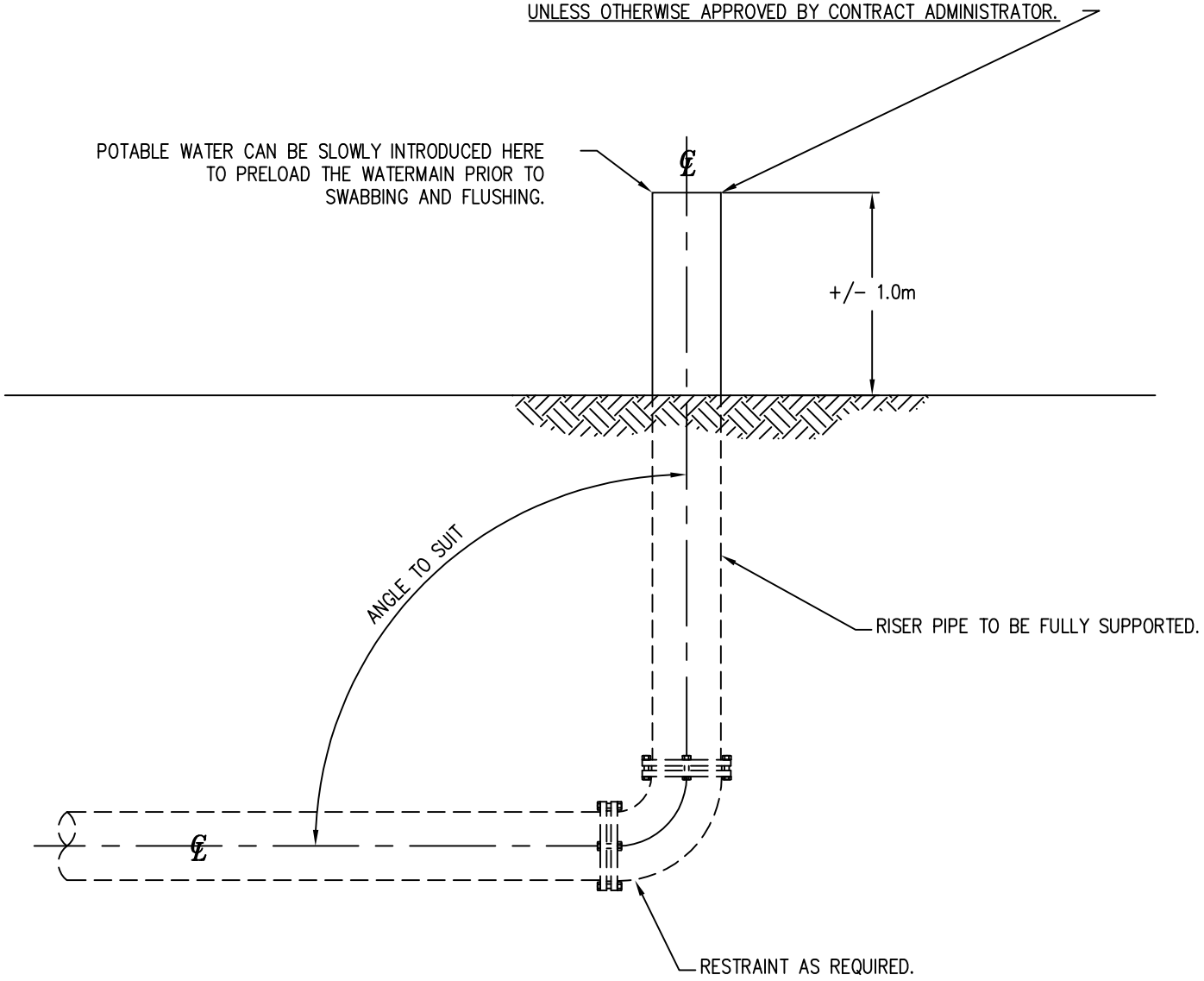
SAMPLE DETAIL

TEMPORARY WATER SUPPLY FLUSHING AND SWABBING

DRAWN BY: TOTEDA/PLANTING	DATE: JAN 2009
CHECKED BY: V. FAVARO	DATE: JAN 2011
APPROVED BY: A. HALLETT	DATE: JAN 2011
Drawing Number: WCS–2	Rev. 11

RISER PIPE TO BE INSTALLED IN A MANNER TO PROVIDE
FULL INTERIOR WALL SCRUBBING OF NEW MAIN AND TO PROVIDE
A SAFE SITE FOR TURBIDITY MEASUREMENT, AND WITNESS OF SWABBING.

*ABOVE GROUND SECTION OF PIPE SHALL BE REMOVED PRIOR TO THE PRESSURE TEST
UNLESS OTHERWISE APPROVED BY CONTRACT ADMINISTRATOR.



NOTES:

1. THIS DRAWING IS FOR SCHEMATIC INFORMATION ONLY. THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING
2. ALL RESTRAINTS TO BE ACCORDING TO THE CONTRACT DRAWINGS. TEMPORARY RESTRAINTS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER AND APPROVED BY THE CONTRACT ADMINISTRATOR.
3. FLUSHING FLOW VELOCITY TO BE (0.9m/3.0ft)/SEC MINIMUM UNLESS APPROVED BY CONTRACT ADMINISTRATOR.
4. CONTRACTOR TO ENSURE WATER FLOW FROM PIPE IS SAFELY CONTROLLED DURING FLUSHING.

SCALE: NTS

PUC SERVICES

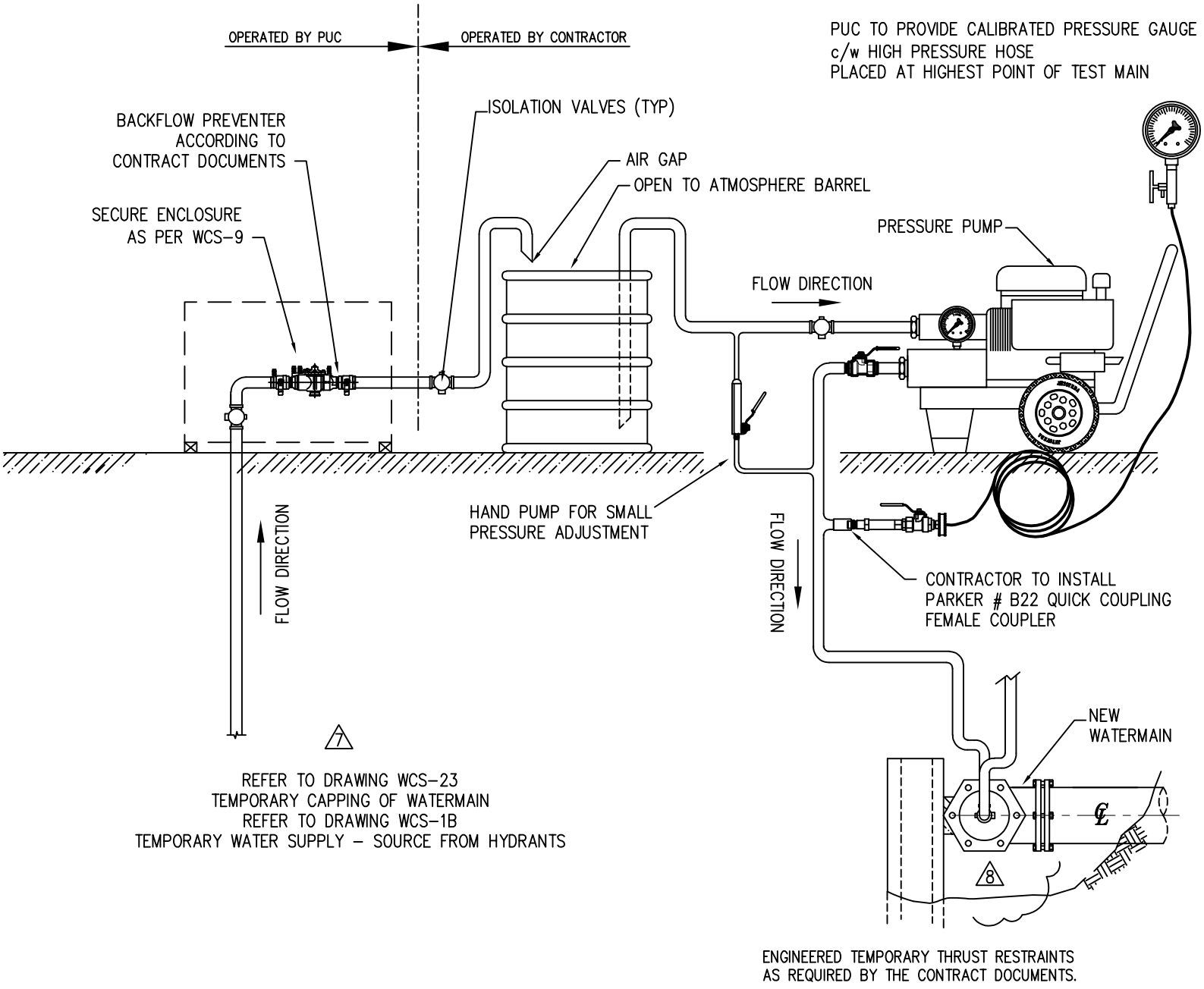
No.	REVISION	INITIAL	DATE
2	DRAWING MODIFIED	JnT	MAR/12
3	DRAWING MODIFIED & ADDED NOTE #4.	JnT	MAR/16
4	ADDED FLUSHING VELOCITY IN NOTE 3	JnT	FEB/17

SAMPLE DETAIL

SWAB RETRIEVAL AND FLUSHING

DRAWN BY: J. TOTEDA	DATE: JAN 2009
CHECKED BY: V. FAVARO	DATE: JAN 2011
APPROVED BY: A. HALLETT	DATE: JAN 2011
Drawing Number: WCS−3	Rev. 4

HYDROSTATIC PRESSURE TEST ASSEMBLY



NOTES:

1. THIS DETAIL IS FOR SCHEMATIC INFORMATION ONLY. THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING.
2. ALL RESTRAINTS TO BE ACCORDING TO THE CONTRACT DRAWINGS, TEMPORARY RESTRAINTS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER AND APPROVED BY THE CONTRACT ADMINISTRATOR.
3. THE PRESSURE PUMP MUST BE PHYSICALLY SEPARATED FROM THE SOURCE.
4. ALL PIPING/FITTINGS SUBJECTED TO TEST PRESSURE SHALL BE SUITABLE FOR TEST PRESSURES AND INSPECTED AND APPROVED BY THE CONTRACT ADMINISTRATOR BEFORE PRESSURE TEST.
5. DURING PRESSURE TEST, ENSURE THAT GAUGES AND WORKERS ARE POSITIONED IN A WAY THAT MINIMIZES RISK TO WORKERS SHOULD ANY PART BECOME DISLODGED.
6. TRAPPED AIR CREATES A HAZARD DURING PRESSURE TESTING. AIR RELIEF SHALL BE INSTALLED AT THE HIGHEST POINT. PIPE SHALL HAVE COVER AS REQUIRED BY THE CONTRACT ADMINISTRATOR DURING PRESSURE TEST.

SCALE: NTS

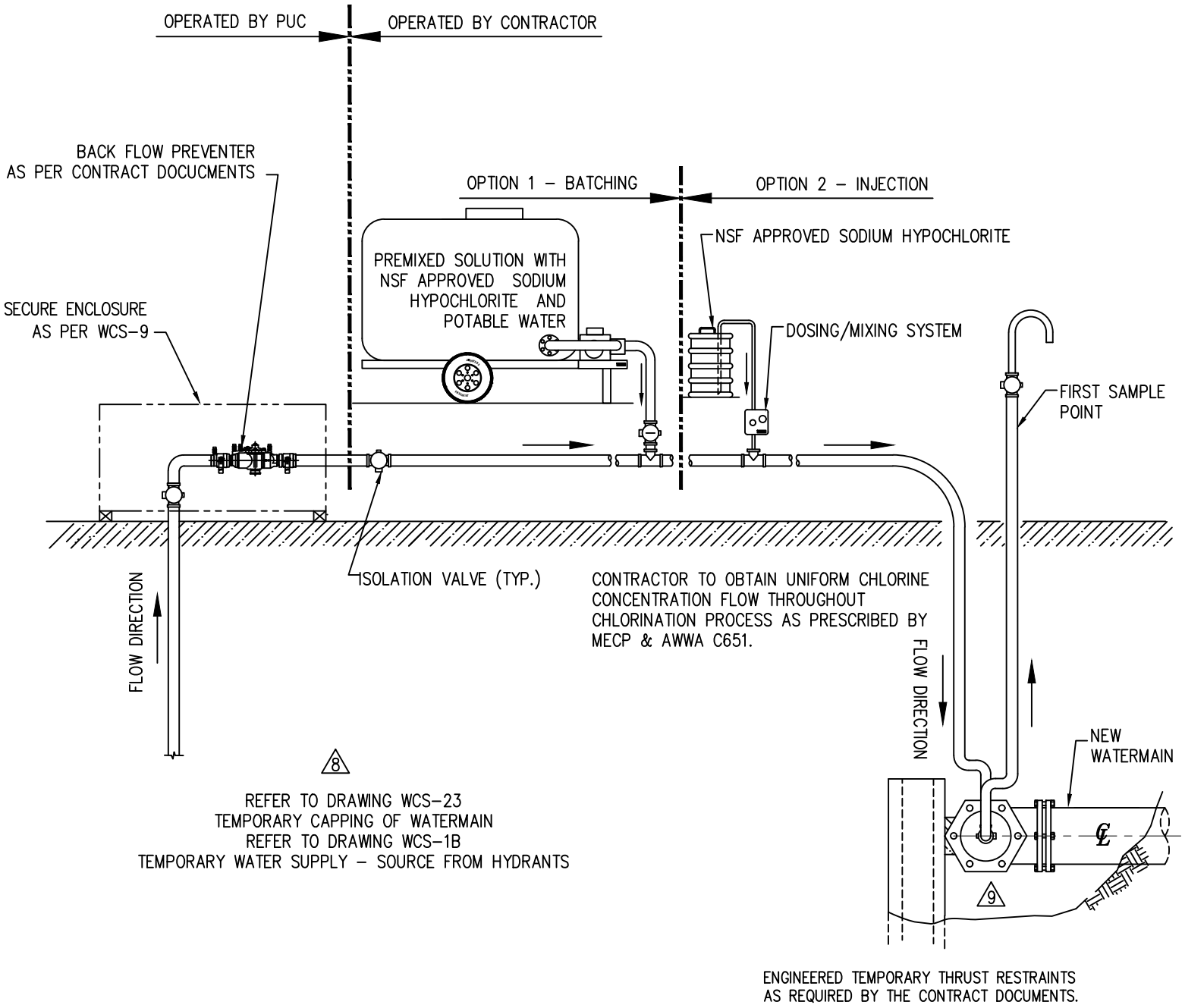
PUC SERVICES

No.	REVISION	INITIAL	DATE
7	REFERRED TO DWGS	KDW	JAN/30
8	UPDATED STANDARD SUPPLY	PJP	MAR/22
9	GENERAL REVISIONS	LJD	JAN/25

SAMPLE DETAIL

HYDROSTATIC PRESSURE TEST

DRAWN BY: J. TOTEDA	DATE: JAN 2009
CHECKED BY: V. FAVARO	DATE: JAN 2011
APPROVED BY: A. HALLETT	DATE: JAN 2011
Drawing Number: WCS-4	Rev. 9



NOTES:

1. THIS DETAIL IS FOR SCHEMATIC INFORMATION ONLY. THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING.
2. USE ONLY SODIUM HYPOCHLORITE THAT MEETS OR EXCEEDS ANSI/AWWA STANDARD B300 AND NSF60.
3. POOL SHOCK SHALL NOT BE USED AS A DISINFECTING AGENT.

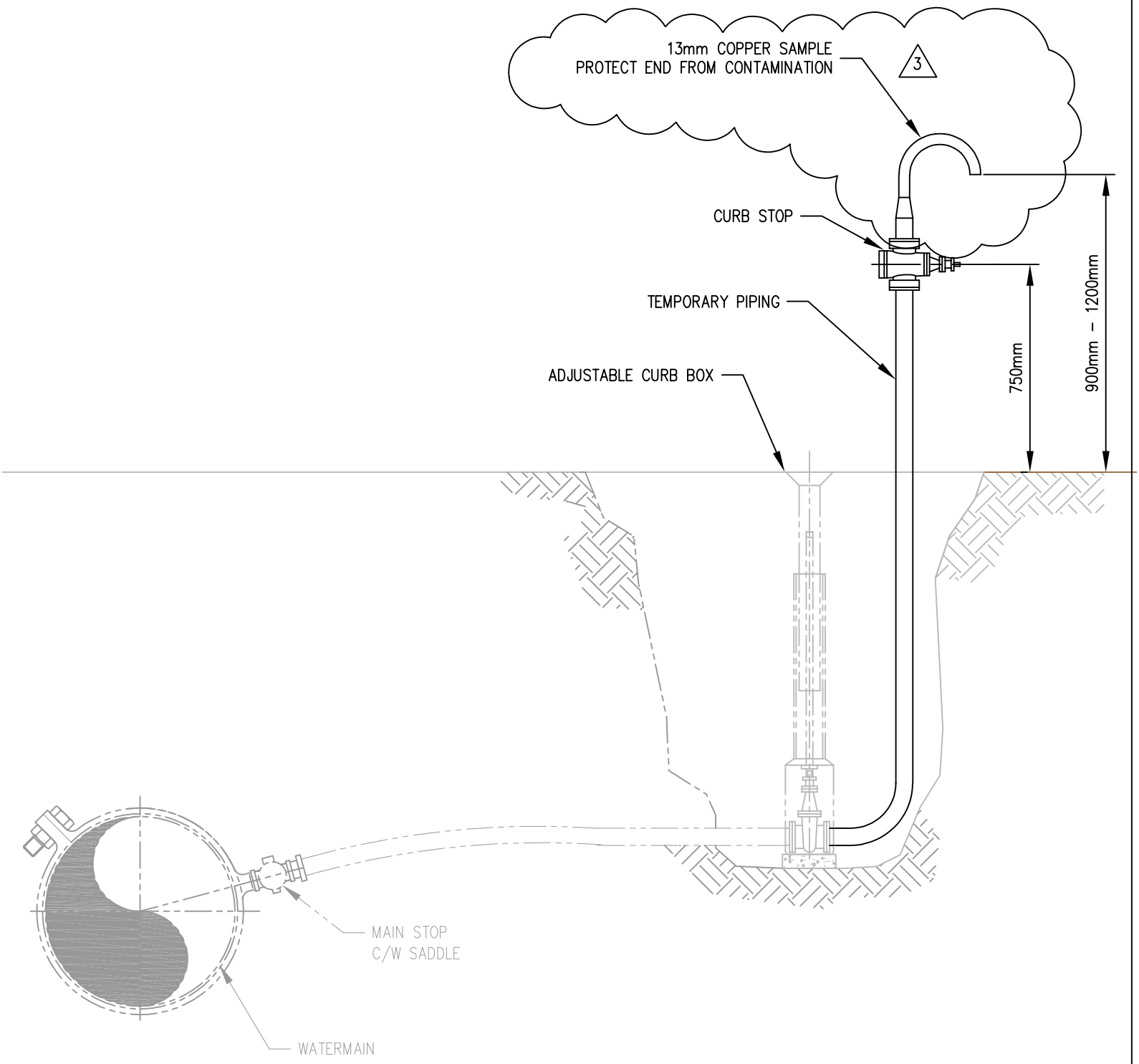
SCALE: NTS

No.	REVISION	INITIAL	DATE
8	REFERRED TO DWGS	KDW	JAN/19
9	UPDATED STANDARD SUPPLY CONNECTION	PJP	MAR/22
10	GENERAL REVISIONS	LJD	JAN/25

SAMPLE DETAIL

DISINFECTION ASSEMBLY

DRAWN BY: P. PLANTING	DATE: JAN 2009
CHECKED BY: V. FAVARO	DATE: JAN 2011
APPROVED BY: A. HALLETT	DATE: JAN 2011
Drawing Number: WCS-5	Rev. 10



NOTES:

1. THIS DETAIL IS FOR SCHEMATIC INFORMATION.
2. THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING
3. BID PRICE INCLUDES REMOVAL OF ALL TESTING BLOW-OFFS AFTER WATERMAIN IS COMMISSIONED.

SCALE: NTS

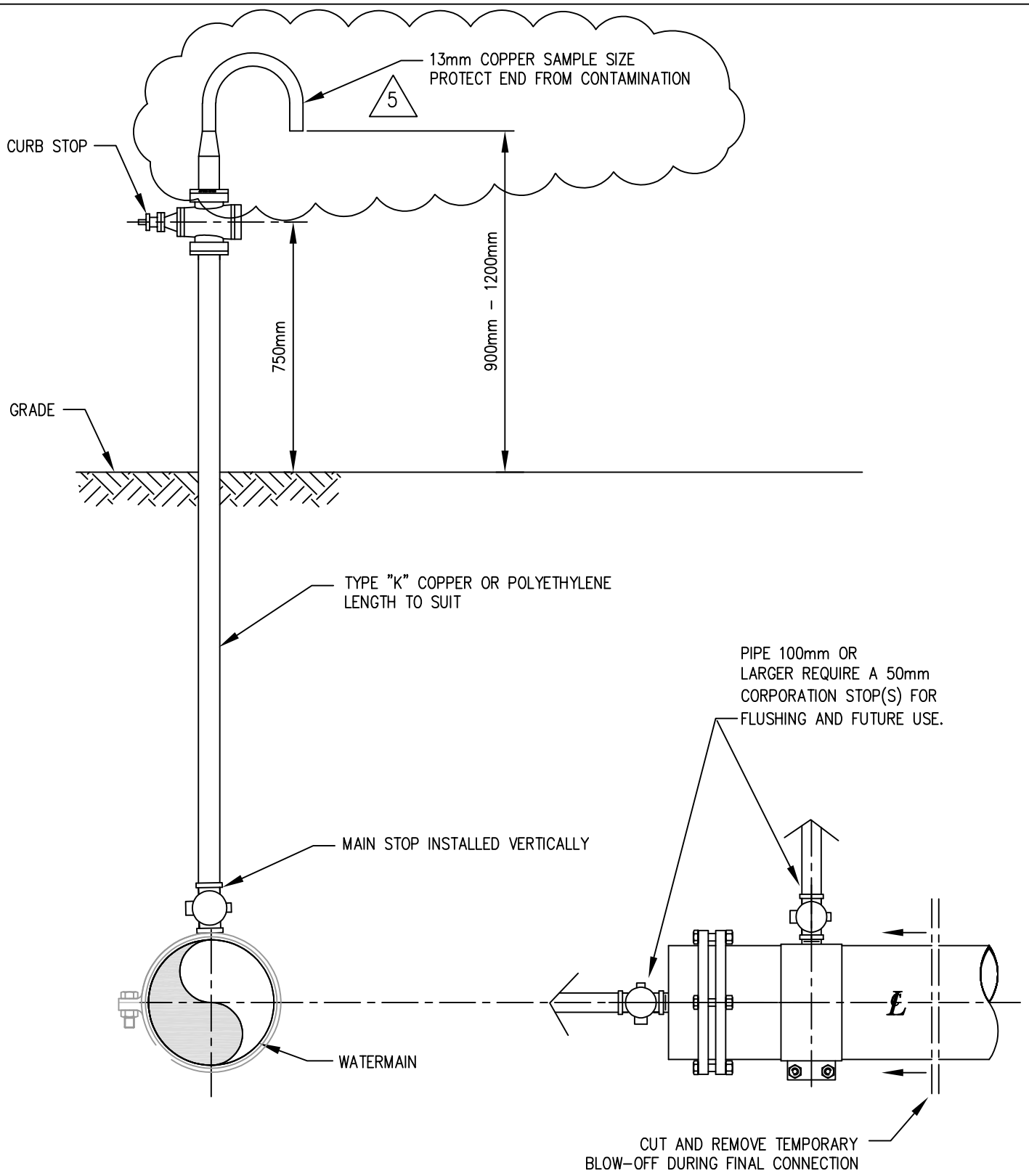
PUC SERVICES

No.	REVISION	INITIAL	DATE
1	DRAWING MODIFIED	JnT	JAN/11
2	DRAWING MODIFIED	JnT	MAR/12
3	13mm SAMPLE SPOUT WAS 19mm	JnT	MAR/15

SAMPLE DETAIL

SAMPLE SITE FROM SERVICES <50mm

DRAWN BY: J. TOTEDA	DATE: JAN 2009		
CHECKED BY: V. FAVARO	DATE: JAN 2011		
APPROVED BY: A. HALLETT	DATE: JAN 2011		
Drawing Number: WCS-6	Rev. 3		



NOTES:

1. THIS DETAIL IS FOR SCHEMATIC INFORMATION. THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING.
2. BID PRICE INCLUDES REMOVAL OF ALL TESTING BLOW-OFFS AFTER WATERMAIN IS COMMISSIONED.
3. FOR STUB SERVICE LEADS INTENDED FOR FUTURE USE, THE CORPORATION STOP IS TO REMAIN IN THE OFF POSITION, CAPPED AND PROTECTED WITH PETROLATUM TAPE.

SCALE: NTS

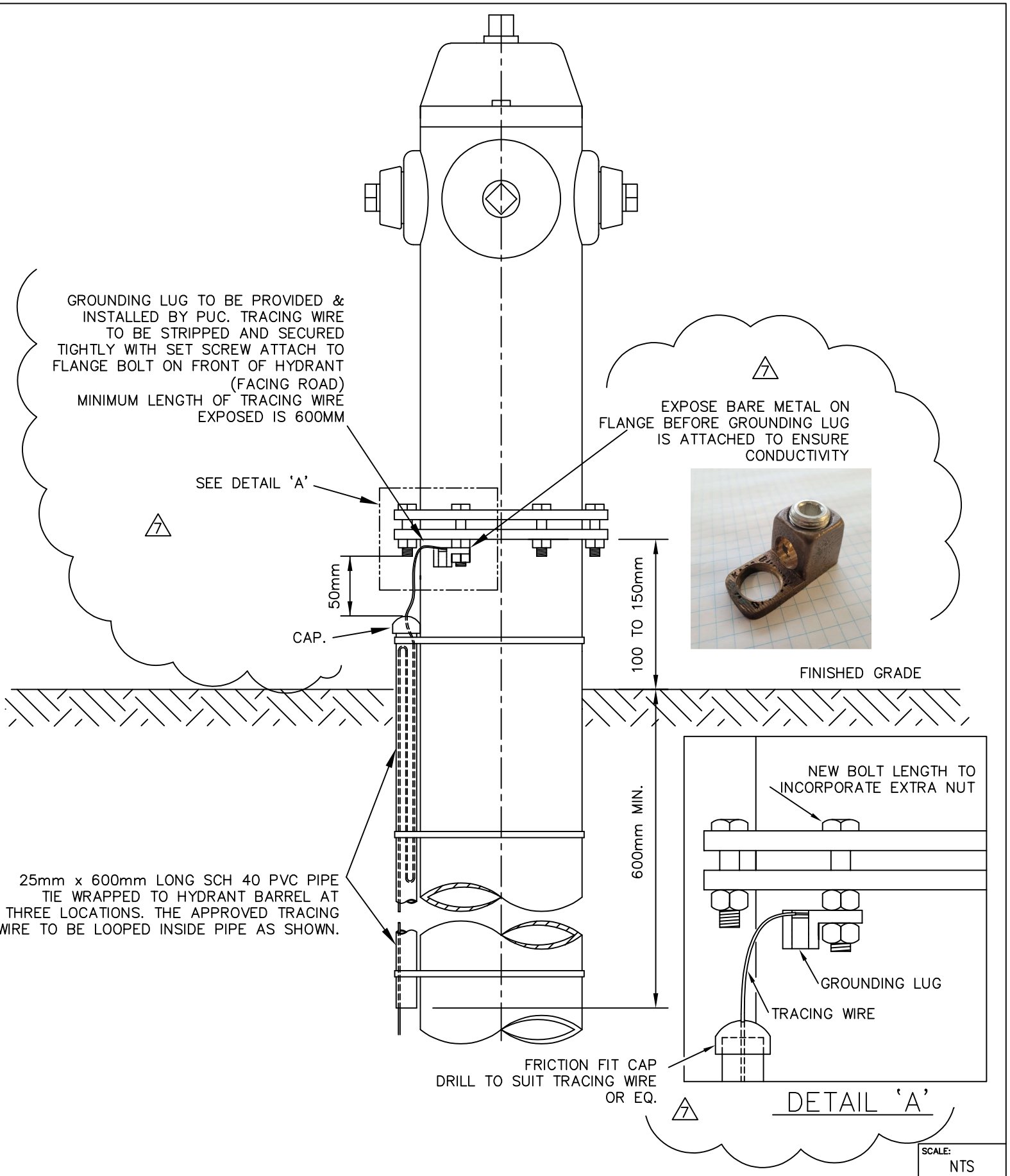
PUC SERVICES

No.	REVISION	INITIAL	DATE
3	REVISED	JnT	MAR/12
4	BLOW OFF INSTALLED VERTICALLY	JnT	APR/14
5	13mm COPPER WAS 19mm COPPER	JnT	MAR/15

SAMPLE DETAIL

SAMPLE SITE FROM PIPE 50mm or GREATER

DRAWN BY: P. PLANTING	DATE: FEB 2010		
CHECKED BY: V. FAVARO	DATE: JAN 2011		
APPROVED BY: A. HALLETT	DATE: JAN 2011		
Drawing Number: WCS-7	Rev. 5		



SCALE: NTS

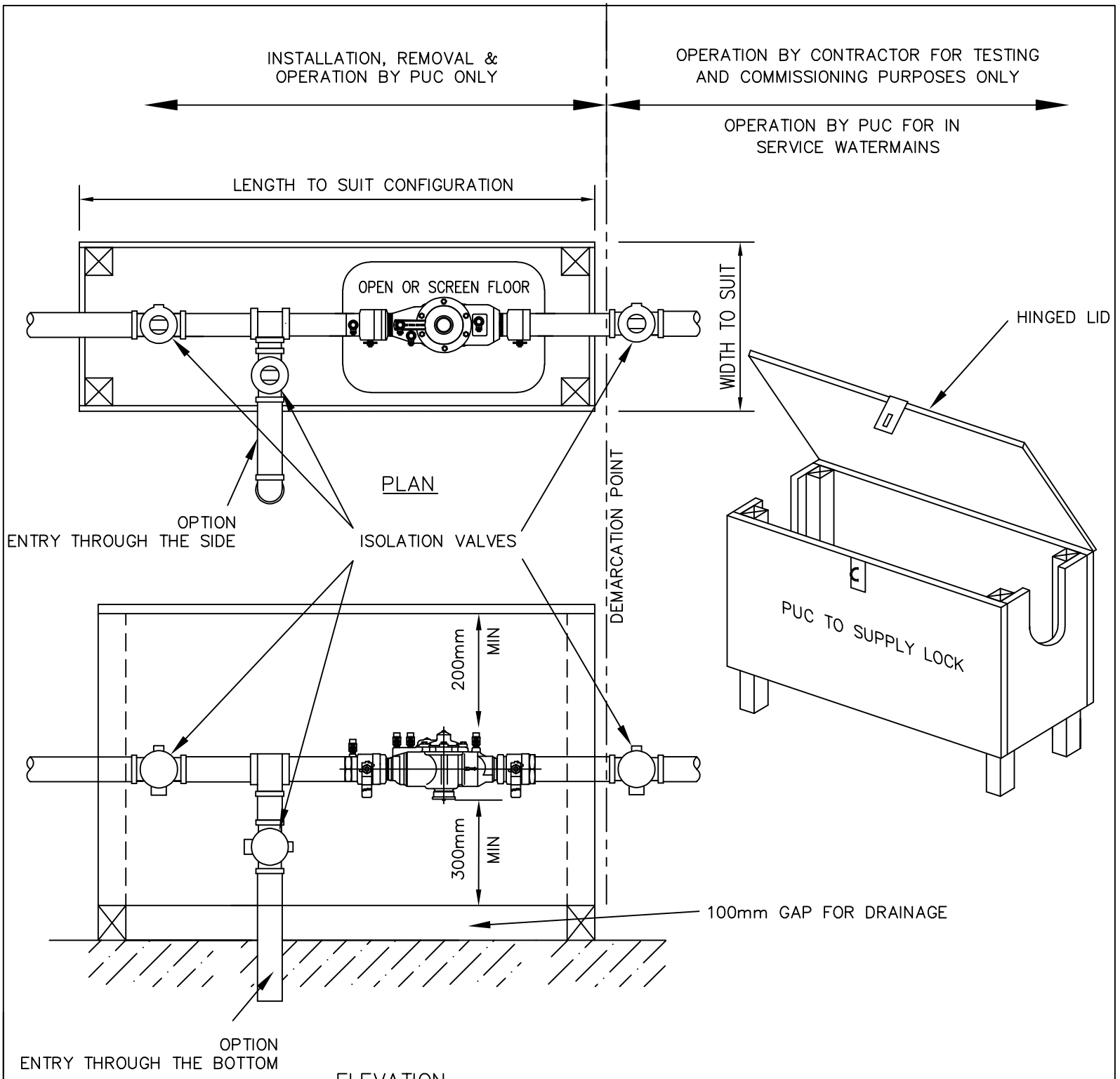
No.	REVISION	INITIAL	DATE
5	LUG TO BE INSTALLED AT TIME OF HYDRANT INSTALLATION	JnT	MAR/18
6	ABOVE-GROUND TRACER WIRE ACCESS BOX	JnT	FEB/20
7	REMOVED TRACING WIRE ACCESS BOX	JnT	JAN/23

PUC SERVICES

SAMPLE DETAIL

TRACING WIRE DETAIL AT HYDRANTS

DRAWN BY: P. PLANTING	DATE: MAR 2009
CHECKED BY: V. FAVARO	DATE: JAN 2011
APPROVED BY: O. EUALE	DATE: FEB 2020
Drawing Number: WCS-8	Rev. 7



NOTES:

1. THIS DETAIL IS FOR SCHEMATIC INFORMATION. THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING.
2. 300mm MINIMUM AIR GAP BENEATH RP DEVICE FOR VENT.
3. INSTALLATION AND REMOVAL OF BACKFLOW DEVICE BY PUC OPERATOR ONLY.
4. ALL MATERIAL TO BE SUPPLIED BY THE CONTRACTOR.
5. ALL PIPING AND APPURTENANCES TO BE PROTECTED FROM FREEZING.

4

SCALE: NTS

PUC SERVICES

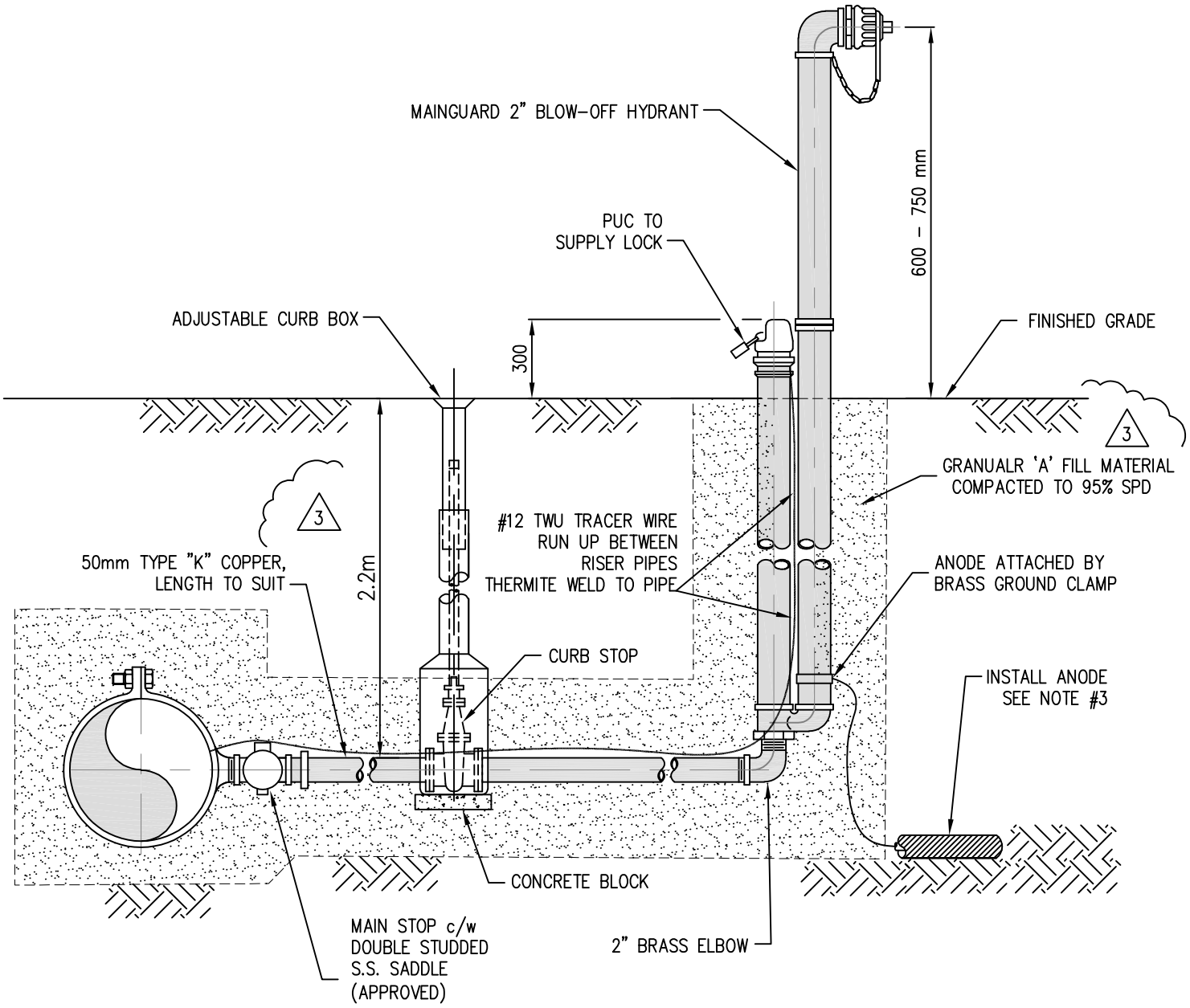
No.	REVISION	INITIAL	DATE
2	ENCLOSURE EXTENSION FOR TEMP SYSTEMS	PJP	MAY/05
3	ENCLOSURE MODIFIED FOR PRE FLUSH BY PUC	JnT	APR/14
4	ADDED NOTE 5.	JnT	MAR/16

SAMPLE DETAIL

BACKFLOW ENCLOSURE

DRAWN BY: P. PLANTING	DATE: MAR 2009		
CHECKED BY: V. FAVARO	DATE: JAN 2011		
APPROVED BY: A. HALLETT	DATE: JAN 2011		
Drawing Number: WCS-9	Rev. 4		

KUPFERLE MAINGUARD NO. 77 BLOW-OFF HYDRANT



NOTES:

1. THIS DETAIL IS FOR SCHEMATIC INFORMATION.THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING.
2. YARD HYDRANT SHALL BE KUPFERLE MAINGUARD MODEL NO. 77, SELF DRAINING.
3. ANODES WILL BE SIZED AND SELECTED AS PER OPSS 442.
4. ALL OPERATING PARTS OF THE HYDRANT WILL BE SERVICED OR REPLACED WITHOUT DIGGING UP OR DISTURBING THE SUPPLY LINE CONNECTION. HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE.
5. THE EXCAVATION SHALL BE BACKFILLED WITH COMPACTED GRANULAR A OR CLEAN NATIVE BACKFILL.

SCALE: NTS

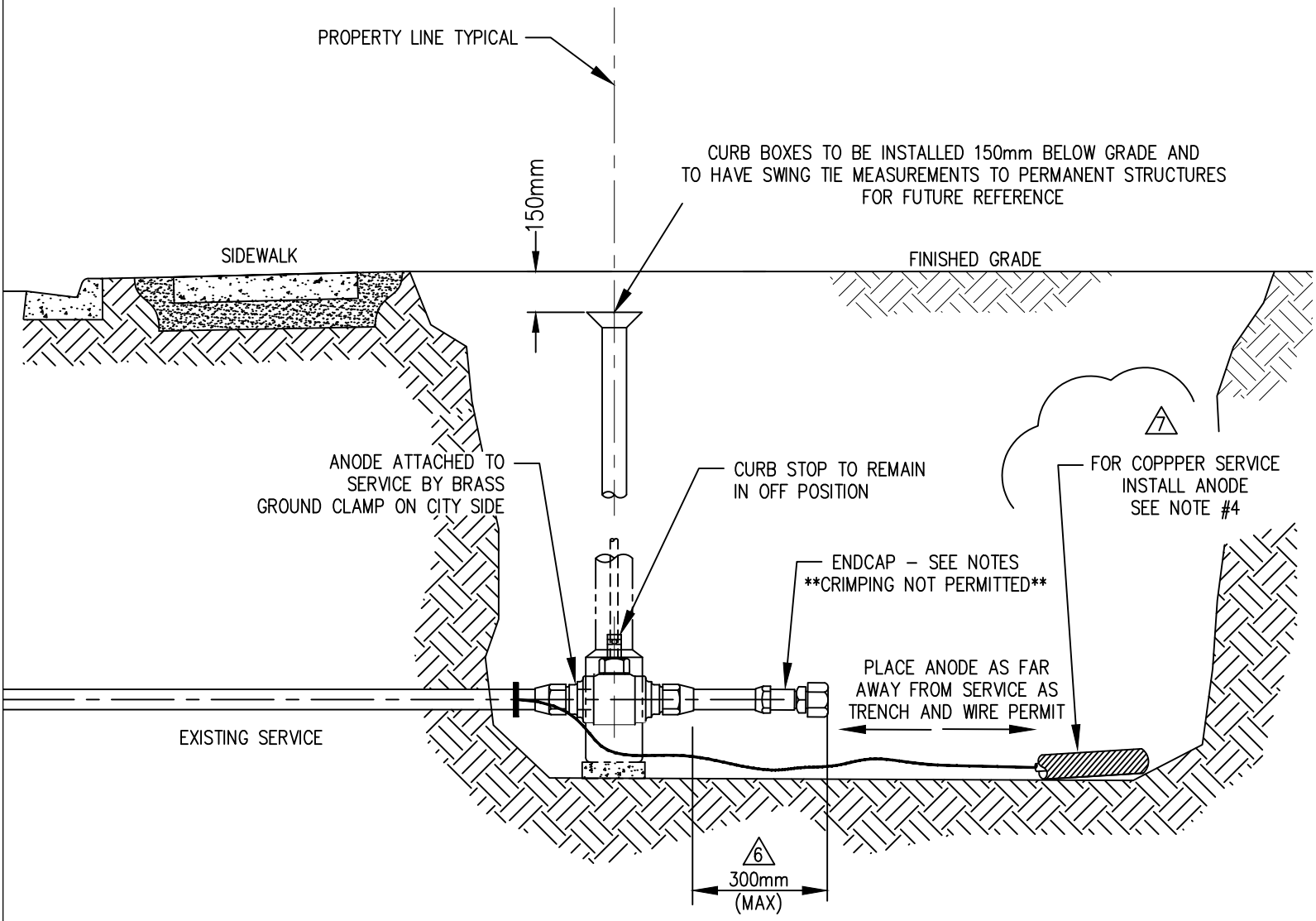
PUC SERVICES

No.	REVISION	INITIAL	DATE
1	OPSS REVISION	JnT	MAR/15
2	ADDED CONCRETE BLOCKING	JnT	MAR/14
3	ADDED 2.2m & GRANULAR 'A' NOTE	PJP	NOV/11

SAMPLE DETAIL

MANUAL FLUSHING STATION

DRAWN BY: P. PLANTING	DATE: MAR 2010
CHECKED BY: V. FAVARO	DATE: JAN 2011
APPROVED BY: A. HALLETT	DATE: JAN 2011
Drawing Number: WCS-10	Rev. 3



NOTES:

1. THIS DETAIL IS FOR SCHEMATIC INFORMATION.THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING.
2. DISINFECTION PROCEDURES SHALL BE ACCORDING TO AWWA C651–05 SECTION 4.6 WHEN CUTTING AND CAPPING SERVICES.
3. GALVANIZED, LEAD & LEAD ALLOY SERVICES TO BE REMOVED FROM THE MAIN BY PUC. REF. WCS–14.
4. ANODES WILL BE SIZED AND SELECTED AS PER OPSS 442. IF THE SERVICE IS CONNECTED TO A CAST IRON OR DUCTILE IRON WATERMAIN, ONE MAGNESIUM ANODE IS REQUIRED. IF THE SERVICE IS CONNECTED TO NON–METALLIC OR PVC WATERMAIN, ONE ZINC ANODE WILL BE INSTALLED.
5. THE EXCAVATION SHALL BE BACKFILLED WITH COMPACTED GRANULAR A OR CLEAN NATIVE BACKFILL.
6. FOR COPPER SERVICES 50mm OR SMALLER, ENDCAP INSTALLED BY USE OF A STRAIGHT COUPLING (MUELLER 110) PART #H–15428 OR EQUIVALENT. THIS COUPLING IS A CTS O.D. TUBING X M.I.P. (MALE IRON PIPE THREAD) COMPLETED WITH CORRESPONDING NO LEAD BRASS CAP OR EQUAL (SharkBite®) 4
7. FOR SERVICES LARGER THAN 50mm, SUBMIT A DECOMMISSIONING PLAN WITH ANODE AND RESTRAINT DESIGN CONSIDERATIONS.
8. PUC TO WITNESS ALL WORK, OWNER TO PROVIDE ALL MATERIALS AND SAFE EXCAVATION.
9. RESTORATION TO BE COMPLETED AT OWNERS EXPENSE.

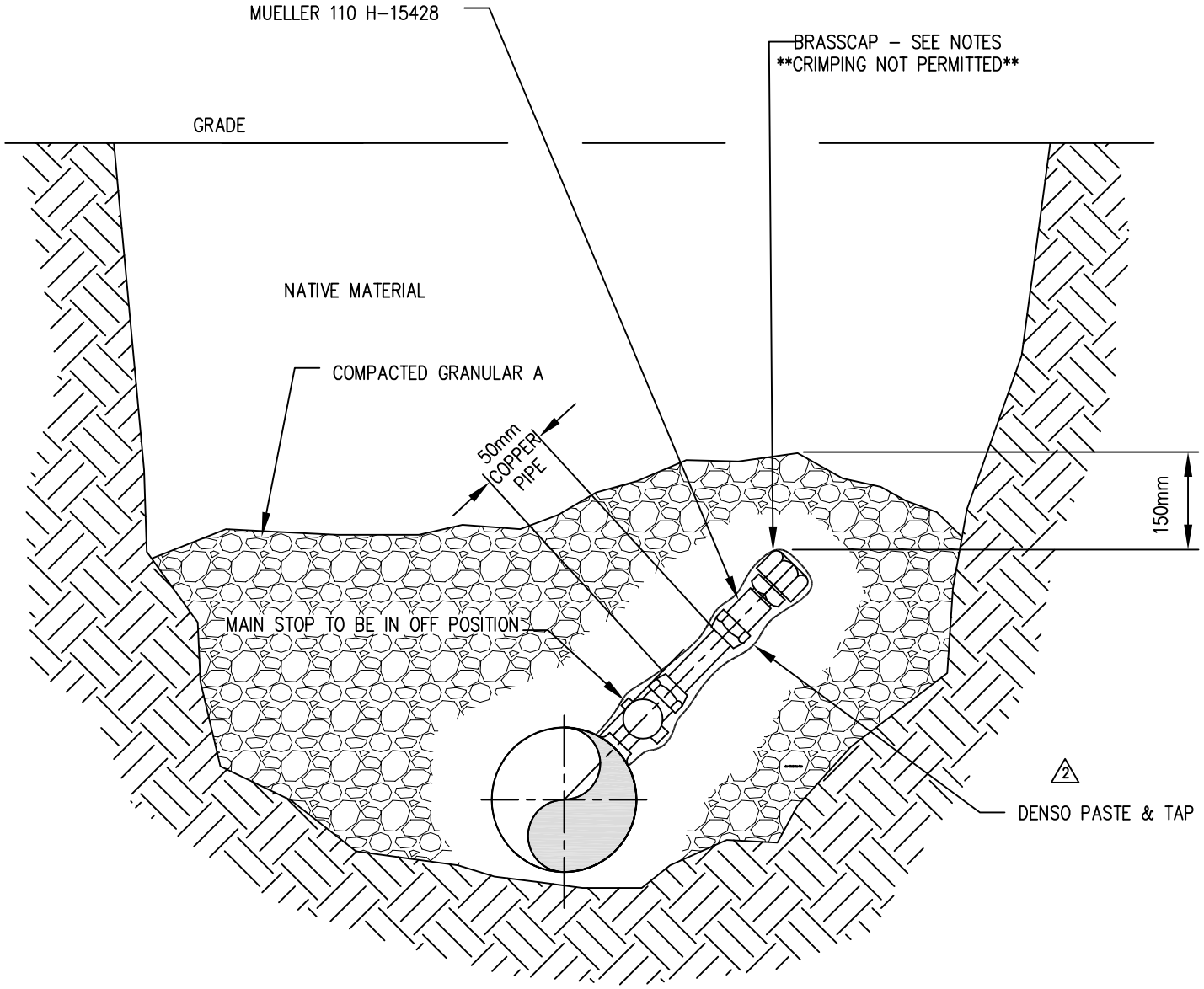
SCALE: NTS

No.	REVISION	INITIAL	DATE
5	ADDED CURB BOX	JnT	MAR/17
6	REVISED DIMENSION TO 300mm	JnT	FEB/20
7	ADDED "FOR COPPER SERVICE"	JnT	JAN/23

SAMPLE DETAIL

SERVICE DECOMMISSIONING 50mm DIAMETER AND SMALLER

DRAWN BY: P. PLANTING	DATE: FEB 2010		
CHECKED BY: V. FAVARO	DATE: JAN 2011		
APPROVED BY: O. EUALE	DATE: FEB 2020		
Drawing Number: WCS–12	Rev. 7		



NOTES:

1. THIS DETAIL IS FOR SCHEMATIC INFORMATION.THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING.
2. FOR COPPER SERVICES 50mm OR SMALLER, ENDCAP INSTALLED BY USE OF A STRAIGHT COUPLING (MUELLER 110) PART #H-15428 OR EQUIVALENT. THIS COUPLING IS A CTS O.D. TUBING X M.I.P. (MALE IRON PIPE THREAD) COMPLETED WITH CORRESPONDING NO LEAD BRASS CAP OR EQUAL (SharkBite®). 2
3. BACKFILL AND COMPACT AROUND THE WATER MAIN TO 150mm ABOVE THE END CAP.
4. THE REMAINING EXCAVATION SHALL BE BACKFILLED WITH COMPACTED GRANULAR 'A' OR CLEAN NATIVE MATERIAL.
5. PUC TO PERFORM THE PIPE WORK, PROVIDE LABOUR, ALL MATERIALS, A SAFE EXCAVATION AND RESTORATION.
6. WHENEVER A METALLATIC WATER MAIN IS EXPOSED IT MUST BE CATHODICALLY PROTECTED BY ATTACHING A MAGNESIUM TYPE M-32-22 ANODE BY CLAMPING TO COPPER STUB OR USING THE THERMITE WELD PROCEDURE ON THE MAIN ACCORDING TO OPSS 442.
3. 7. FOR DECOMMISSIONING WATER SERVICE AT THE EXISTING PVC WATERMAIN, REMOVE MAIN STOP AND TAPPING SADDLE AND INSTALL REPAIR CLAMP

SCALE: NTS

PUC SERVICES

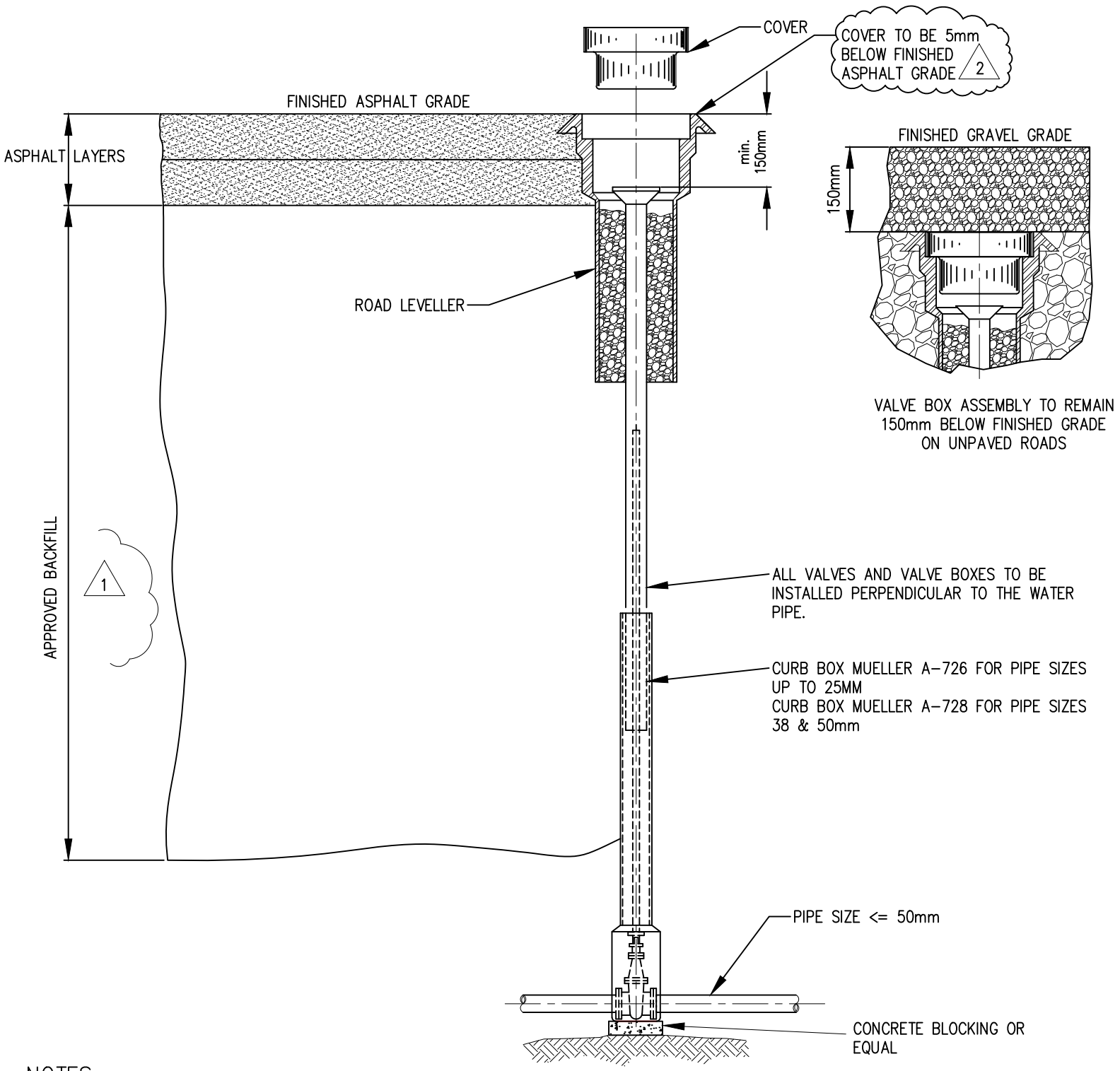
No.	REVISION	INITIAL	DATE
1	ADDED ITEMS 7 & 8	JnT	APR/14
2	ADDED SharkBite CAP & DENSO REFERNECE	JnT	MAR/16
3	ADDED NOTE #7	JnT	MAR/16

SAMPLE DETAIL

SERVICE DECOMMISSIONING AT THE WATERMAIN

DRAWN BY: J. TOTEDA	DATE: JUL 2011		
CHECKED BY: A. HALLETT	DATE: AUG 2011		
APPROVED BY: A. HALLETT	DATE: AUG 2011		
Drawing Number: WCS-14	Rev. 3		

ROADWAY CURBBOX VALVE BOX – GENERAL ARRANGEMENT



NOTES:

1. CENTER THE EXTENSION WITH THE CURB BOX, AND INSTALL TO A MINIMUM COVERAGE OF 50mm WITHIN THE TOP OF THE GRANULAR 'A'. SURVEY AND TIE IN THE VALVE BOX.
2. ENSURE TOP OF CURB BOX IS SET BELOW THE BOTTOM OF THE SEATED COVER ~ 6" (150mm).
3. THE VALVE BOX EXTENSION AND CURB BOX ARE TO BE RAISED TO SUIT THE 1ST ASPHALT LIFT.
4. THE VALVE BOX EXTENSION AND CURB BOX ARE TO BE RAISED TO SUIT THE FINAL ASPHALT LIFT.

SCALE: NTS

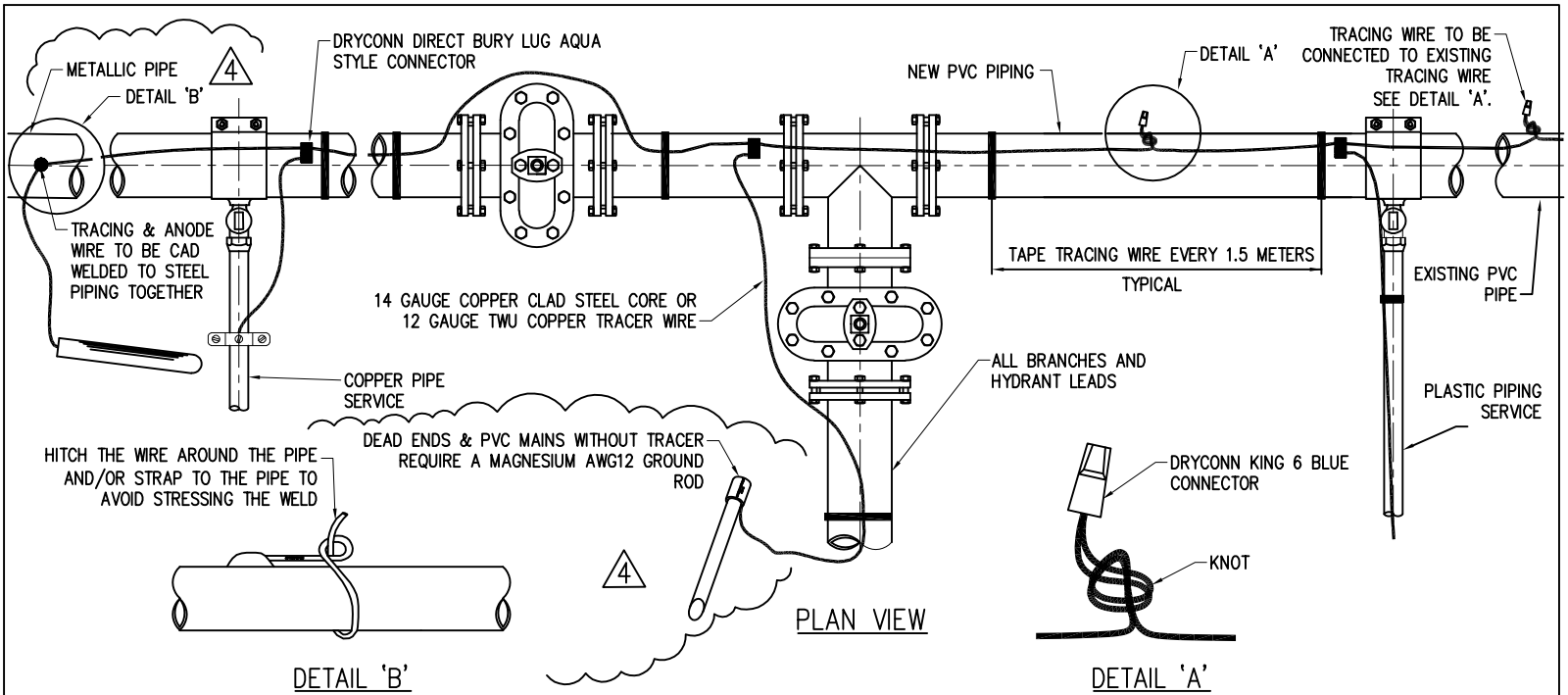
PUC SERVICES

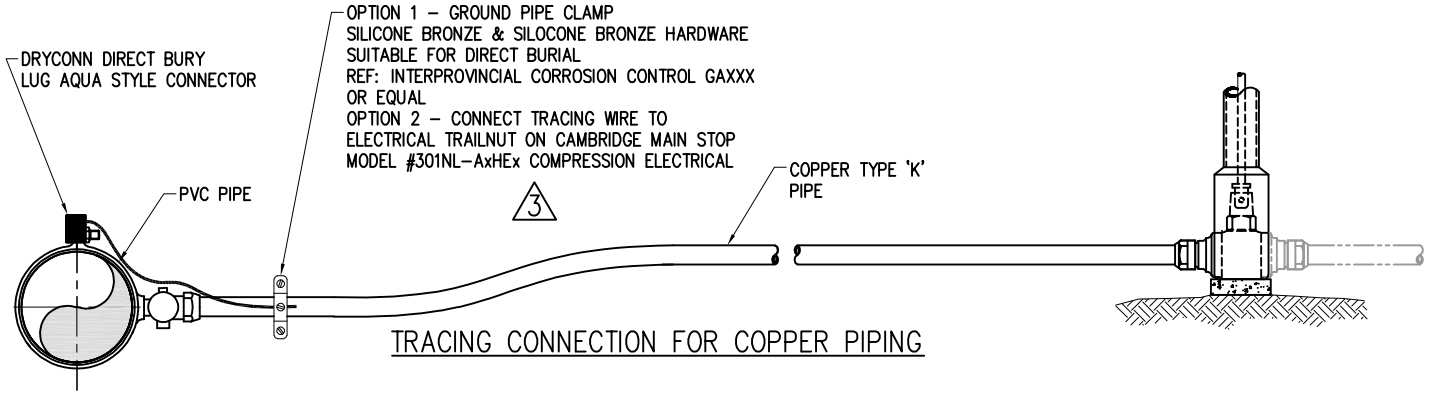
No.	REVISION	INITIAL	DATE
0	ISSUED FOR CONSTRUCTION	JnT	FEB/12
1	REVISED BACKFILL DESCRIPTION	JnT	APR/14
2	ADDED NOTE 5mm BELOW ASPHALT	LJD	JAN/25

SAMPLE DETAIL

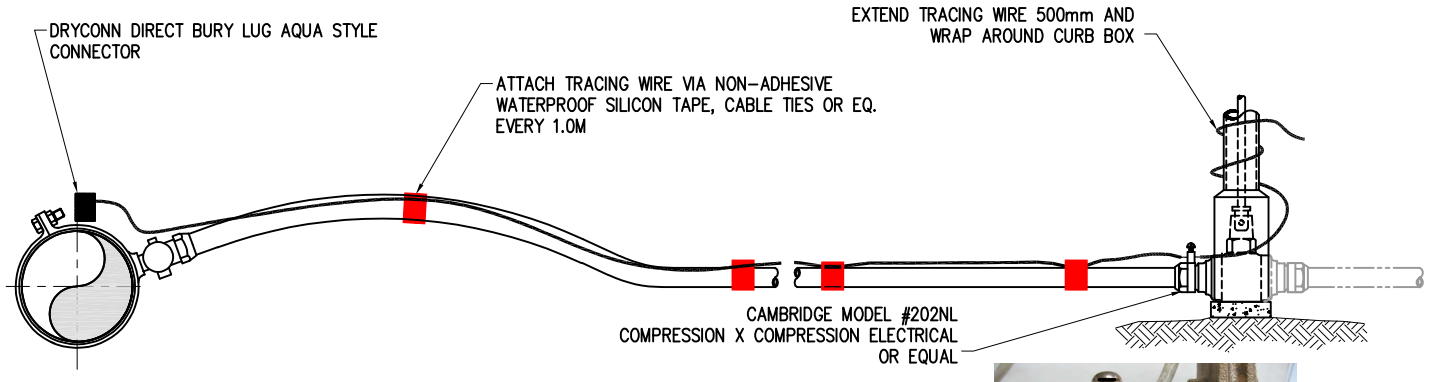
ROADWAY CURB BOX
WITHIN 150mm VALVE BOX EXTENSION

DRAWN BY: J. TOTEDA	DATE: JAN 2012		
CHECKED BY: P. DALSEG	DATE: FEB 2012		
APPROVED BY: A. HALLETT	DATE: FEB 2012		
Drawing Number: WCS-15	Rev. 2		





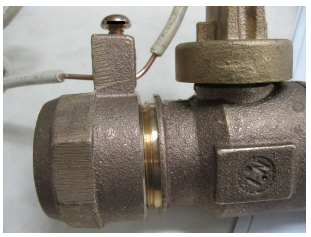
TRACING CONNECTION FOR COPPER PIPING



PLASTIC SERVICES

NOTES:

1. REFER TO SPECIAL PROVISIONS WATERMAIN – LATEST EDITION.
2. CONNECT TRACING WIRE TO EXISTING TRACING WIRE ON PVC WATER MAINS USING DRYCONN CONNECTORS.
3. CONNECT TRACING WIRE TO METALLIC WATER MAINS BY THE THERMITE PROCESS.
4. WHENEVER A METALLIC WATER MAIN IS EXPOSED IT MUST BE CATHODICALLY PROTECTED BY ATTACHING A MAGNESIUM TYPE M–32–22 ANODE AND USE THE THERMITE WELD PROCEDURE.



TRACING WIRE CONNECTION DETAIL

SCALE: NTS

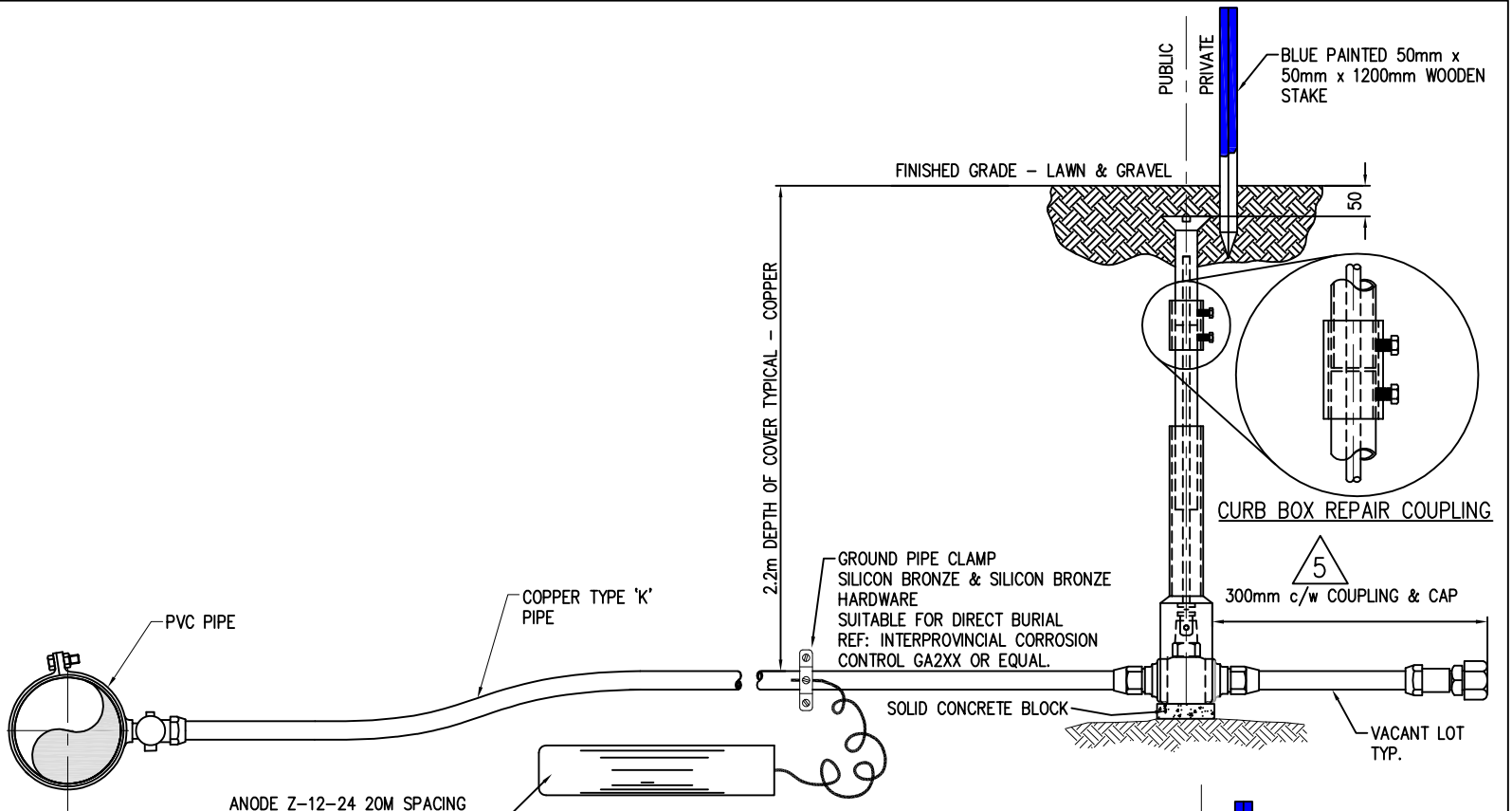
PUC SERVICES

No.	REVISION	INITIAL	DATE
2	TRACING WIRE CONNECTIONS TO EXISTING MAINS	JnT	FEB/2014
3	ADDED CAMBRIDGE MAIN STOP ELECTRICAL	JnT	MAR/2015
4	ADDED DETAIL B, DEAD END TW GR NOTE	KDW	MAR/2022

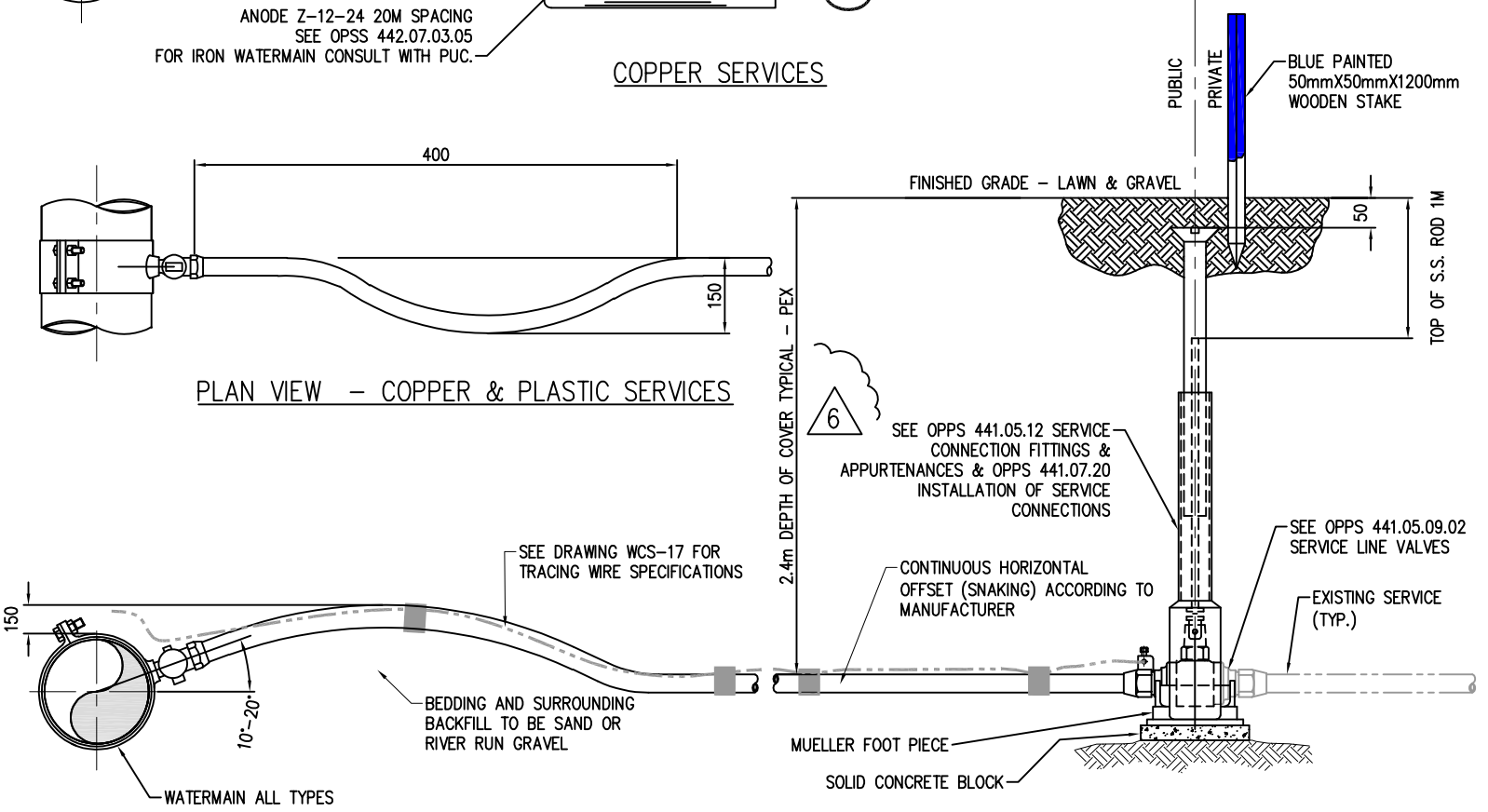
SAMPLE DETAIL

WATERMAIN TRACING COPPER & PLASTIC SERVICES

DRAWN BY: JOE TOTEDA	DATE: MAR. 2012
CHECKED BY: A. HALLETT	DATE: MAR. 2012
APPROVED BY: A. HALLETT	DATE: MAR. 2012
Drawing Number: WCS–17	Rev. 4



COPPER SERVICES



PLAN VIEW – COPPER & PLASTIC SERVICES

PLASTIC SERVICES

NOTES:

1. REFER TO PUC SPECIAL PROVISIONS WATERMAIN – LATEST EDITION.
2. ALL WATER SERVICES TO BE INSTALLED 90° TO THE LONGITUDINAL AXIS OF THE WATERMAIN.
3. COUPLINGS SHALL NOT BE PERMITTED UNLESS THE SERVICE LENGTH EXCEEDS 20m BETWEEN THE MAIN AND CURB STOP.
4. FOR 38mm AND 50mm SERVICES, GOOSENECK NOT REQUIRED.

7

SCALE: NTS

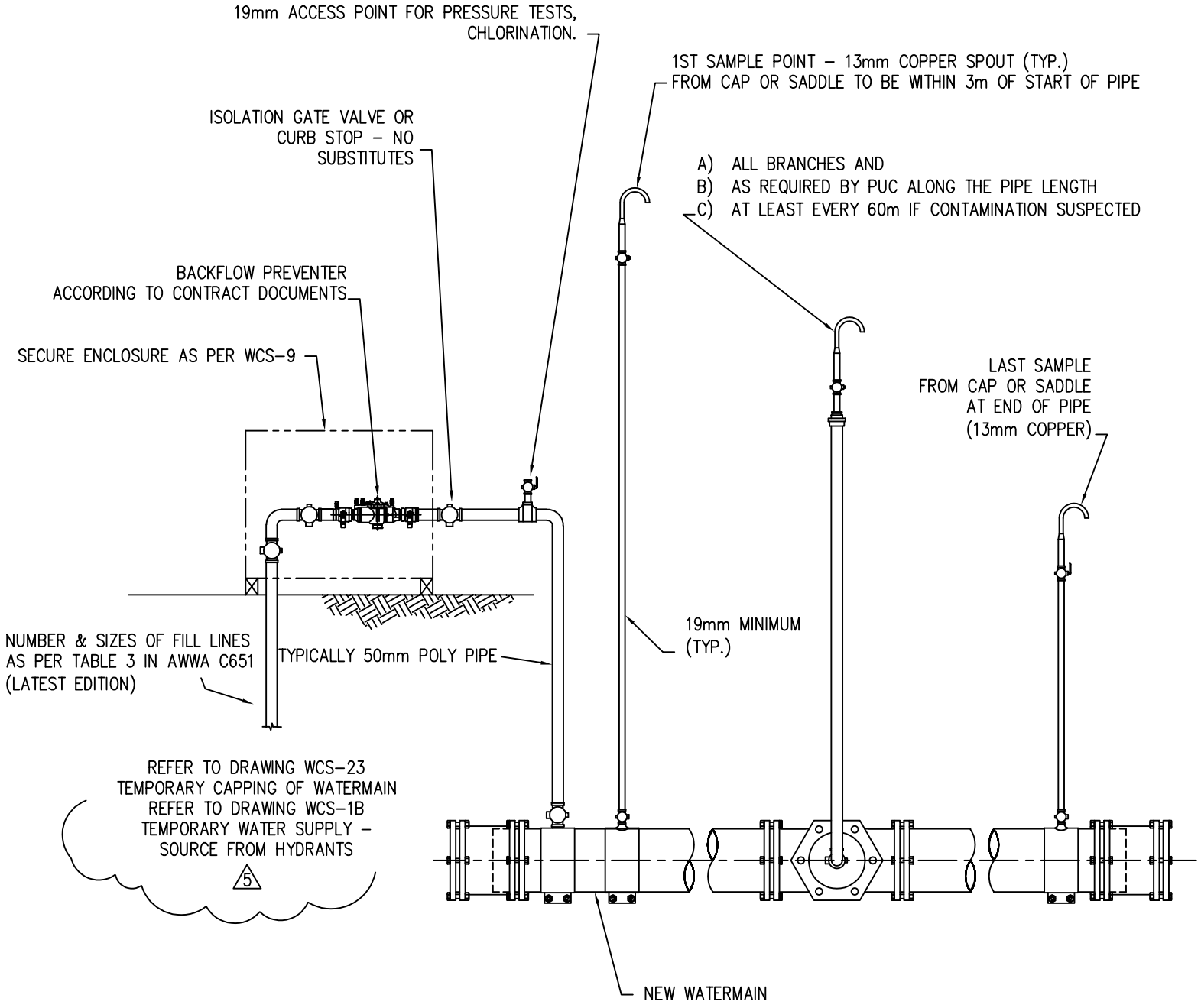
PUC SERVICES

No.	REVISION	INITIAL	DATE
5	REVISED DIMENSION TO 300mm	JnT	FEB/20
6	RELOCATED 2.4m DEPTH OF COVER TO PEX DETAIL	KW	MAR/22
7	ADDED NOTE #4 FOR UP TO 50mm SERVICES	LJD	JAN/25

SAMPLE DETAIL

SERVICE DETAIL
COPPER & PLASTIC SERVICES
19mm - 50mm

DRAWN BY: J. TOTEDA	DATE: APR 2012
CHECKED BY: A. HALLETT	DATE: MAR 2013
APPROVED BY: O. EUALE	DATE: FEB 2020
Drawing Number: WCS-18	Rev. 7



NOTES:

1. SEE DRAWING WCS–6 FOR SAMPLE SITE DETAIL FROM SERVICES <50mm.
2. SEE DRAWING WCS–7 FOR SAMPLE SITE DETAIL FROM PIPE 50mm OR GREATER.
3. SEE WCS–9 FOR BACKFLOW ENCLOSURE.
4. THIS DETAIL IS FOR SCHEMATIC INFORMATION ONLY. THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING.

SCALE: NTS

PUC SERVICES

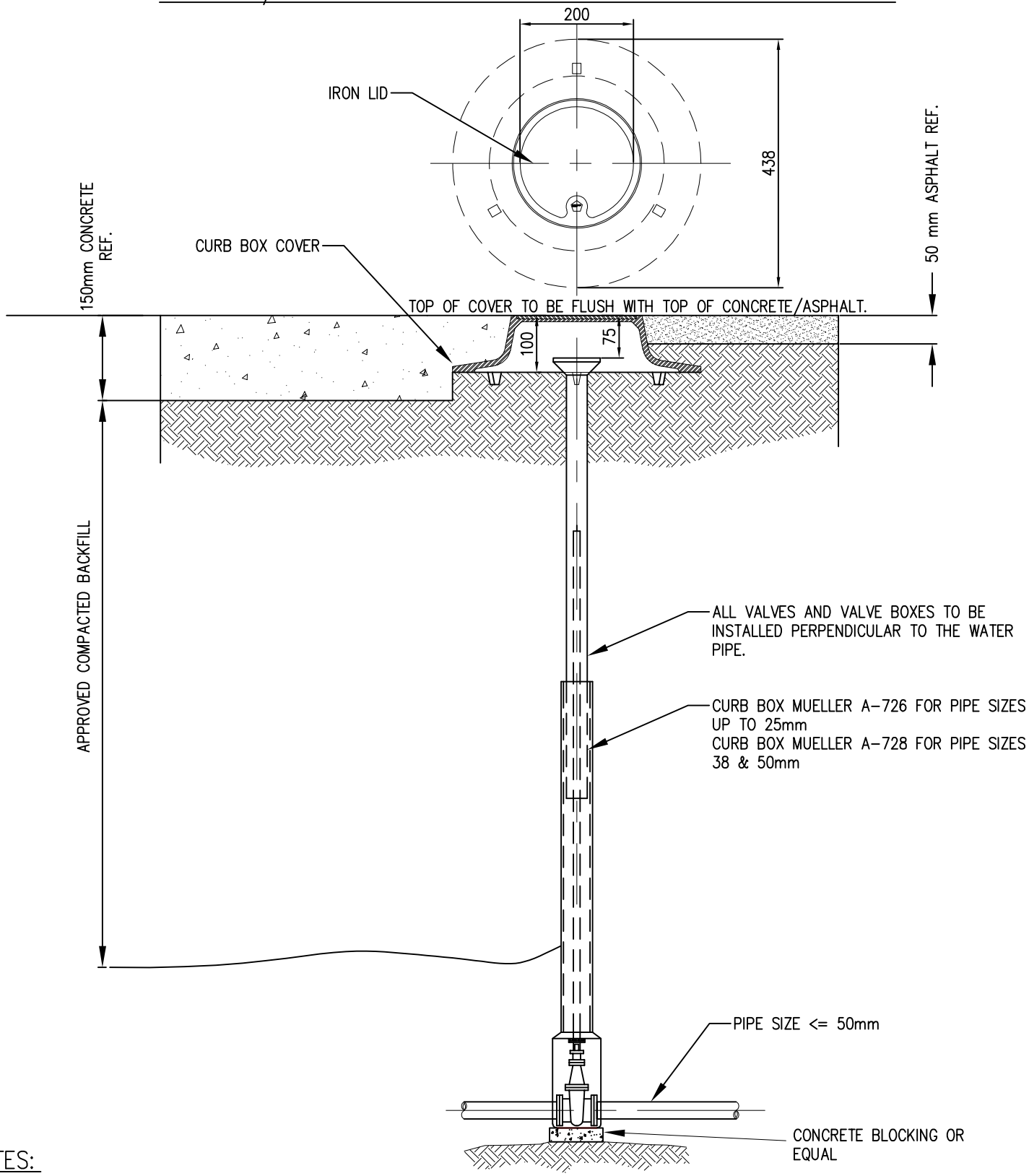
No.	REVISION	INITIAL	DATE
4	REMOVED DIMENSION 6.0 m	JnT	MAR/16
5	REFERRED TO DWGS	KDW	JAN/19
6	GENERAL REVISIONS	LJD	JAN/25

SAMPLE DETAIL

NEW WATERMAIN BACTERIOLOGICAL SAMPLE POINTS

DRAWN BY: J. TOTEDA	DATE: MAR 2013		
CHECKED BY: A. HALLETT	DATE: MAR 2013		
APPROVED BY: A. HALLETT	DATE: MAR 2013		
Drawing Number: WCS–20	Rev. 6		

SIDEWALK/DRIVEWAY CURBBOX COVER – GENERAL ARRANGEMENT



NOTES:

1. CENTER THE EXTENSION WITH THE CURB BOX, AND INSTALL TO A MINIMUM COVERAGE OF 50mm WITHIN THE TOP OF THE GRANULAR 'A'. SURVEY AND TIE IN THE VALVE BOX.
2. ENSURE TOP OF CURB BOX IS SET BELOW THE BOTTOM OF THE SEATED COVER ~ 3" (75mm).

SCALE: NTS

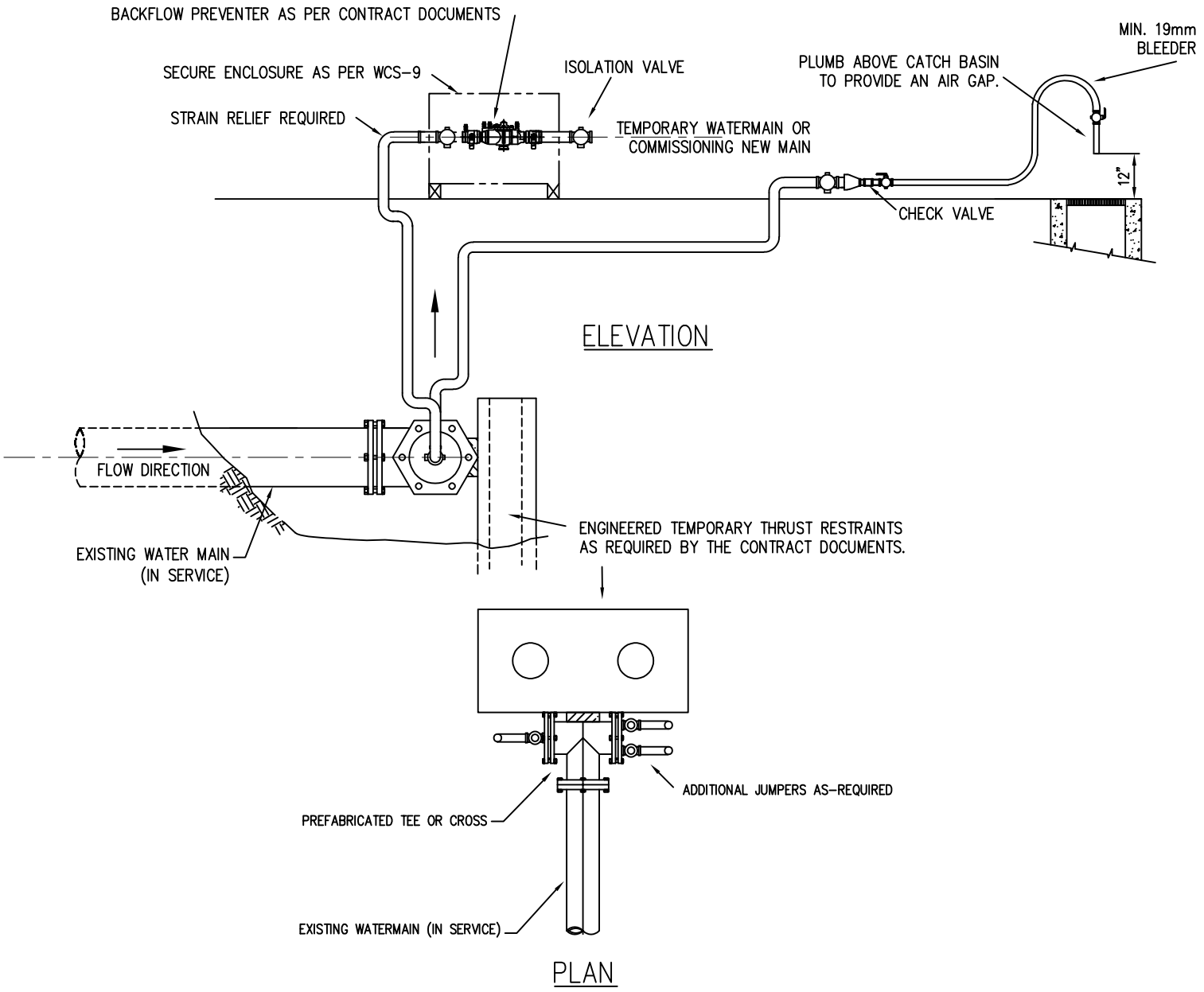
No.	REVISION	INITIAL	DATE
0	ISSUED FOR CONSTRUCTION	JnT	JAN/19

SAMPLE DETAIL

SIDEWALK/DRIVEWAY CURB BOX WITH FORD METER BOX COVER A1 STYLE

DRAWN BY: J. TOTEDA	DATE: JAN 2019
CHECKED BY: A. HALLETT	DATE: JAN 2019
APPROVED BY: A. HALLETT	DATE: JAN 2019
Drawing Number: WCS-22	Rev. 0

TEMPORARY CAPPING OF WATERMAIN



NOTES:

1. THIS DRAWING IS FOR SCHEMATIC INFORMATION ONLY. THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING.
2. THE DISTANCE BETWEEN THE CONNECTION AND BACKFLOW PREVENTER SHALL NOT EXCEED 10 METERS FOR DIAMETERS < 100mm.
3. THE DISTANCE BETWEEN THE CONNECTION AND BACKFLOW PREVENTER SHALL NOT EXCEED 6 METERS FOR DIAMETERS 100mm AND LARGER.
4. ALL TEMPORARY RESTRAINTS REQUIRED FOR CONNECTIONS AND TESTING SHALL BE ACCORDING TO SEALED ENGINEERING DRAWINGS SUPPLIED BY THE CONTRACTOR. RESTRAINT DRAWINGS ARE SUBJECT TO APPROVAL BY THE CONTRACT ADMINISTRATOR.
5. ALL MATERIAL TO BE SUPPLIED BY CONTRACTOR AND CONFORM TO NSF 61, NSF 372 AND THE CONTRACT DOCUMENTS.
6. LIVE TAPS NOT PERMITTED
7. TEMPORARY WATER SUPPLY SYSTEM SHALL BE OPERATED BY PUC ONLY.
8. BACKFLOW PREVENTER TO BE SUPPLIED IN GOOD WORKING ORDER AND CERTIFIED FOLLOWING DISINFECTION, INSTALLATION OR RELOCATION.
9. PUC REQUIRES A MINIMUM OF ONE WEEK NOTICE FOR ANY WORK REQUEST.
10. ANY LEAKS OR DAMAGE TO THE SYSTEM SHALL BE REPORTED IMMEDIATELY TO THE PUC.

1

SCALE: NTS

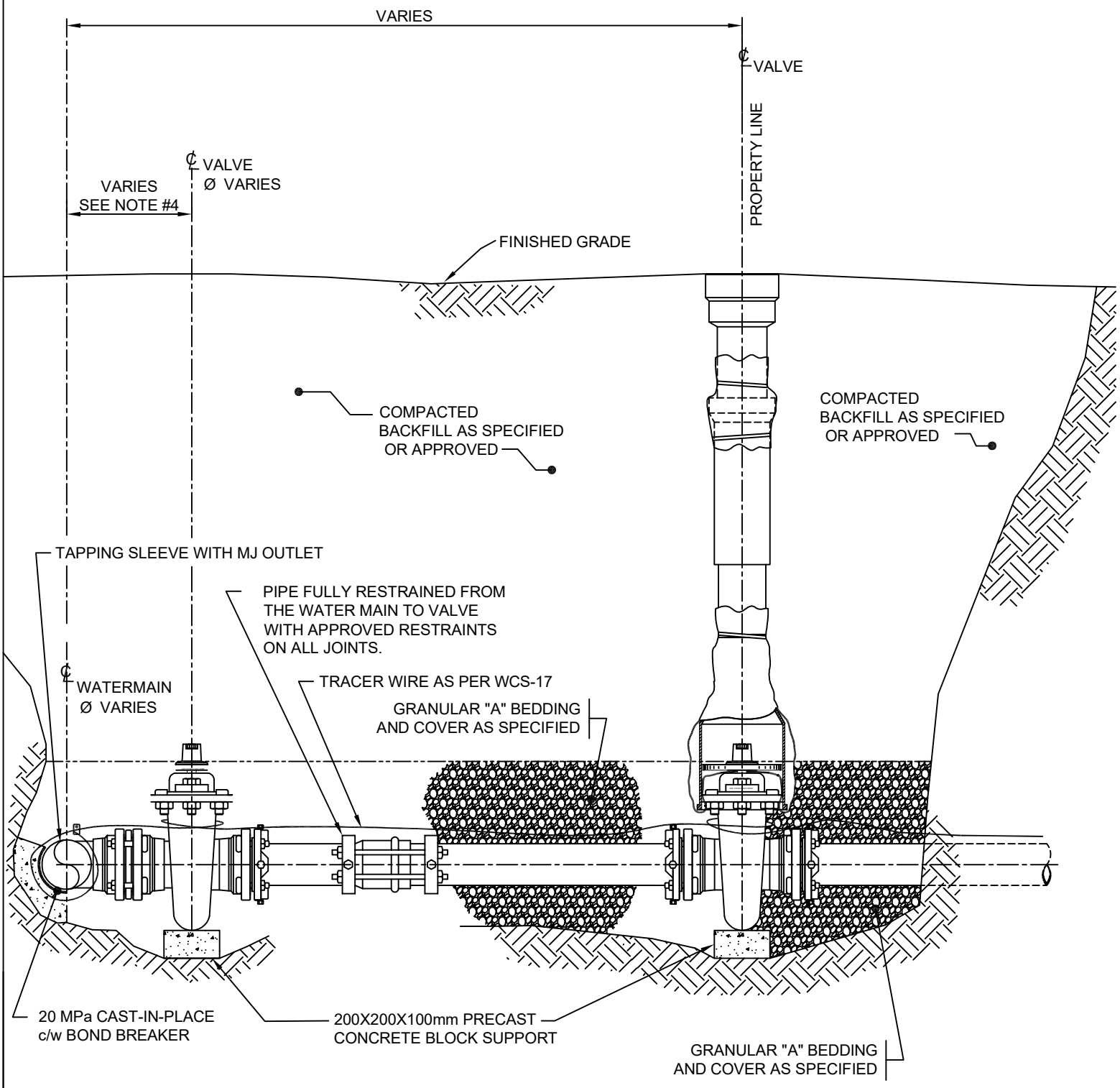
PUC SERVICES

No.	REVISION	INITIAL	DATE
0	ISSUED FOR CONSTRUCTION	KDW	JAN/19
1	ONE WEEK WAS 48 HOURS	JnT	JAN/23

SAMPLE DETAIL

TEMPORARY CAPPING OF WATERMAIN

DRAWN BY: K. WHITFIELD	DATE: JAN 2019
CHECKED BY: A. HALLETT	DATE: FEB 2019
APPROVED BY: A. HALLETT	DATE: FEB 2019
Drawing Number: WCS-23	Rev. 1



NOTES:

1. THIS STANDARD DRAWING IS TO BE READ IN CONJUNCTION WITH PUC STANDARD DRAWINGS AND SPECIFICATIONS.
2. ALL JOINTS TO BE FULLY RESTRAINED AND WRAPPED WITH PETROLATUM TAPE SYSTEM.
3. BOND BREAKER TO BE USED BETWEEN THE CONCRETE AND THE FITTINGS AND APPURTENANCES.
4. USE OF MJ ADAPTER OR PIPE LENGTH ACCORDING TO DRAWINGS.

SCALE: NTS

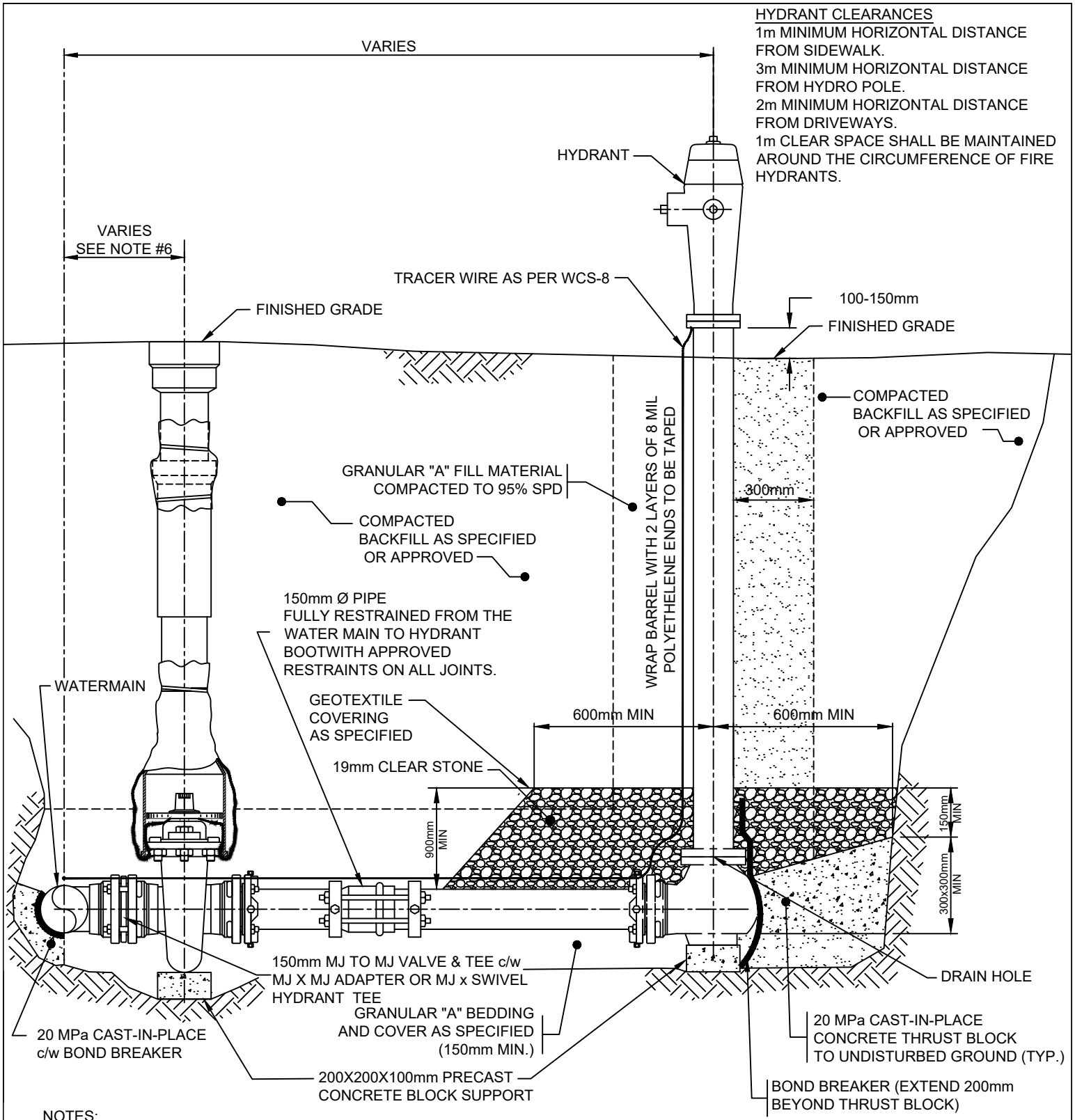
PUC SERVICES

No.	REVISION	INITIAL	DATE
0	ISSUED FOR CONSTRUCTION	JnT	MAR/22
1	GENERAL REVISION	JnT	JAN/23

SAMPLE DETAIL

NEW WATER SERVICE LATERAL 100mm DIAMETER AND LARGER

DRAWN BY: J. TOTEDA	DATE: MAR 2022		
CHECKED BY: O. EUALE	DATE: MAR 2022		
APPROVED BY: O. EUALE	DATE: MAR 2022		
Drawing Number: WCS-24		Rev. 1	



NOTES:

1. THIS STANDARD DRAWING IS TO BE READ IN CONJUNCTION WITH PUC STANDARD DRAWINGS AND SPECIFICATIONS.
2. ALL JOINTS TO BE FULLY RESTRAINED AND WRAPPED WITH PETROLATUM TAPE SYSTEM.
3. BOND BREAKER TO BE USED BETWEEN THE CONCRETE AND THE FITTINGS AND APPURTENANCES.
4. NO BENDS ON HYDRANT LEADS UNLESS APPROVED BY THE ENGINEER.
5. REFER TO OPSD 1105.010.
6. USE OF MJ ADAPTER OR PIPE LENGTH ACCORDING TO DRAWINGS.

SCALE: NTS

PUC SERVICES

No.	REVISION	INITIAL	DATE
0	CLEAR STONE FOR SELF DRAINING HYD	KDW	FEB/25

SAMPLE DETAIL

SELF DRAINING HYDRANT INSTALLATION

DRAWN BY: J. TOTEDA	DATE: APR 2013
CHECKED BY: K WHITFIELD	DATE: FEB 2025
APPROVED BY: O EUALE	DATE: FEB 2025
Drawing Number: WCS-25	Rev. 0