



Kingston Co-operative Homes

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119 Van Order Drive, Kingston, ON K7M 1B9 🏠 Fax (613) 546-9375 🏠 Phone (613) 546-5591 [www.kfhc.ca](http://www.kfhc.ca)

# PROJECT MANUAL

## COOP PT 21-01A

LOCATION: 1338 Princess Street  
Kingston, ON

WORK: 1338 Princess Street  
Water Service Upgrade

PRE-BID MEETING: Wednesday, September 1, 2021  
10:00 a.m. Local Time  
1338 Princess Street  
Kingston, ON

CLOSING DATE: Thursday, September 9, 2021  
11:00:00 a.m. Local Time  
e-Bidding via Biddingo.com

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**NOTE**

Bidders must ensure that they receive all the contents listed above. Any omissions must be drawn to the attention of the Housing Office at least five (5) days prior to bid closing.

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## **1.0 GENERAL**

### **1.1 Supplementary Definitions**

- .1 Whenever any of the following words or phrases are used in the Project Manual or Contract, they shall have the meanings attributed to them, as follows:
  - .1 "Owner" means Kingston Co-operative Homes.
  - .2 The Owner's Representative is Kingston & Frontenac Housing Corporation (KFHC).
  - .3 The "Owner" shall mean the Owner or the Owner's Representative.

## **2.0 SPECIAL CONSIDERATION**

### **2.1 Public Tendering Protocol due to COVID 19 (Coronavirus)**

- .1 To ensure social distancing guidelines are followed, protocols include:
    - .1 The Non-Mandatory Pre-Bid Site Review Meeting will be scheduled for Contractors at 10:00 a.m. on Wednesday, September 1, 2021 at 1338 Princess Street, Kingston, ON.
    - .2 KFHC Staff and representatives will be masked. Contractors are asked to provide their own masks.
    - .3 Questions and additional information will be shared within an Addendum via email.
    - .4 Questions via email are welcome until 4:00 p.m. Monday, September 6, 2021. Responses will also be shared within an Addendum via email by 4:00 p.m. Tuesday, September 7, 2021.
    - .5 KFHC will not have a public opening of tender bids. Electronic bids will be opened at the stated time by KFHC staff. Recorded meeting minutes will be shared via email to all bidders shortly after the tender closing.
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- .2 Only electronic bids may be submitted via Biddingo.com.
  - .1 Submitted Bid Documents must include:
    - Bid Form,
    - Appendix A, and
    - Proof of Bid Security in hand  
(i.e. Certified Cheque, Bank Note, Bid Bond)

**END OF SECTION**

Scott VanderSchoor, acting on behalf of Kingston Co-operative Homes  
Kingston & Frontenac Housing Corporation  
119 Van Order Drive  
Kingston, Ontario K7M 1B9

Re: **COOP PT 21-01A**  
**1338 Princess Street Water Service Upgrade**  
**Kingston, Ontario**

**1.0 CONTRACT PRICE**

.1 I/We \_\_\_\_\_  
(Company Name)

having carefully examined the Bid Documents and visited the Project Site, and having examined and complied with Section 00 10 00 Instruction to Bidders, hereby offer to enter into a Contract to perform the work required in the Bid Documents for the **STIPULATED PRICE** of

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_) including payment of **all** applicable federal, provincial and municipal taxes.

This Bid is firm, irrevocable and open to acceptance by the Owner for sixty (60) days from the date of Bid closing.

.2 The following amount of HST **has been included** in the above STIPULATED PRICE

\$ \_\_\_\_\_ HST REGISTRATION NO. \_\_\_\_\_.

.3 I/We agree to comply in all respects with the requirements set out in the Bid Documents including **ADDENDA No. \_\_\_\_\_ to No. \_\_\_\_\_** inclusive as issued as supplements thereto. (If no addenda have been received, indicate 'NIL' in the spaces provided).

.4 I/We agree to commence this work immediately upon being notified in writing to do so by the Housing Corporation and that work will be done on a continuous basis.

.5 I/We expressly warrant that the prices contained in my/our bid, whether as unit prices or lump sums are quoted in utmost good faith on my/our part without any collusive arrangement or agreement with any other person or partnership or corporation and that I/we are not party or privy to any deceit tending to mislead the Owner into accepting my/our bid as a truly competitive offer.

.6 I/We agree to complete all work required, acceptable to the Owner.

.7 I/We enclose a bid bond, certified cheque, bank draft or irrevocable letter of credit in the amount of \$16,000.00 payable to the Owner and valid for sixty (60) days from the date of bid closing.

.8 **Tax Compliance Declaration**

I hereby certify that \_\_\_\_\_  
(name of company)

at the time of submitting this bid, is in compliance with all tax statutes administered by the Ministry of Finance for Ontario and that in particular, all returns required to be filed under all provincial tax statutes have been filed and all taxes due and payable under those statutes have been paid or satisfactory arrangements for their payments have been made and maintained.

**2.0 SUBCONTRACTORS**

.1 We submit a complete list of subcontractors we propose to use on this Contract and the Sections of the Work to be done by them.

.2 We reserve the right to substitute another subcontractor for the same work in the event that a subcontractor should withdraw his bid, or become bankrupt. All subcontractor substitutions are subject to the Owner's approval.

.3 Any such substitution, in order to be considered for approval by the Owners and/or Consultant, is contingent on the submission of conclusive evidence of withdrawal, bankruptcy or unsatisfactory performance.

.4 The Contractor is responsible for all costs incurred as a result of substituting one subcontractor for another.

.5 **Tenders may not be considered unless the names of all subcontractors are listed in space provided.**

SECTION	TITLE	NAME OF SUBCONTRACTOR



- 2.1.1 The following is a list of the sections of The Work which we propose to execute with our own forces:

## SEE ATTACHED BID FORM BREAKDOWN.

### 3.0 AGREEMENT TO BOND

- 3.1 Attached is our agreement to provide performance bonds as requested in Bid Documents.
- 3.2 We agree to furnish Bonds in accordance with Section 00 10 00 Instructions to Bidders and the General Conditions of this contract within fourteen (14) days of Contract execution.

### 4.0 ACCEPTANCE

- 4.1 This Bid is irrevocably open to acceptance for a period of **sixty (60) days** from the date of bid closing and is promised in consideration of the amount of **10% of the bid submission or the Bid Security** (we attach a Bid Security). Failure to enter into a contract after Owner's acceptance of this bid shall result in forfeiture of the Bid Security.
- 4.2 We agree to enter into a contract with the Owners within five (5) days of written notification of acceptance of this Bid.
- 4.3 We understand and agree that this bid may be adjusted in accordance with any or all of the separate or additional prices submitted herewith.
- 4.4 We understand that the submission of this bid implies acceptance of the existing conditions at the site.
- 4.5 We understand that the lowest or any tender will not be necessarily be accepted and that selected items may be deleted from the Project as represented in the Bid Form.
- 4.6 We understand that the Owner reserves the right to waive minor defects or irregularities in the bid submission.
- 4.7 We understand that the Owner may withhold total and partial payment to cover third party liability claims as outlined in Tender Documents.
- 4.8 We agree to staff on-site activity **upon seven (7) days after award**. We agree to complete The Underground Works and Road Reinstatement Works by **November 30, 2021** as outlined in these specifications. Topsoil and Sod Works can be completed

Spring 2022.

- 4.9 We understand that Contract time is of the essence and that any improvements to the schedule submitted with our bid will be considered prior to the award of the Contract. We therefore submit the following improvement to the completion date indicated in the tender package for consideration in evaluating our Bid [COOP PT 21-01A](#).

**5.0 BIDDER'S SIGNATURE AND COMPANY SEAL**

SIGNED AND SEALED \* this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

**Print full name**

Contractor: \_\_\_\_\_

Signing Officer: \_\_\_\_\_

Address: \_\_\_\_\_

WSIB Account Number: \_\_\_\_\_

City: \_\_\_\_\_

Postal Code: \_\_\_\_\_

Telephone No: \_\_\_\_\_

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

Signature: \_\_\_\_\_

Printed Signature: \_\_\_\_\_

**NOTE: BIDDERS ARE ADVISED THAT FAILURE TO COMPLETE THIS FORM WILL CAUSE DISQUALIFICATION.**

\* Affix Corporate Seal (if applicable).

**END OF SECTION**

CONTRACT BID FORM

The following bid breakdown forms the basis for the STIPULATED PRICE. The quantities below are estimates only. The Contractor is responsible for their own quantity takeoff.

ITEM	SPEC No.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE (\$)	AMOUNT (\$)
A1	SP.1	General Site Work	L.S.	1		
A2	201 SP.2 SP.3	Removals, Clearing and Grubbing, Stump Removal, and Dispose of Excess Materials Offsite	L.S.	1		
A3	706 SP.5	Princess Street Traffic Control & Traffic, Cycling and Pedestrian Management Plan	L.S.	1		
A4	401 441 442 701 SP.9	Supply and Install Watermain Including Excavation, Bedding & Backfill, Fittings, Connections, Cathodic Protection, Tracer Wire, Required Backflow Prevention, Testing, Flushing and Disinfection.				
		a) 150mm Water Service	m	20		
		b) 300mm Water Service	m	130		
A5	SP.9	Connect to Existing Watermain				
		a) Connect to Existing 400mm at Princess Street	each	1		
		b) Connect to Existing 200mm at 1338 Princess Street	each	1		
		c) Connect to Existing 150mm at 1338 Princess Street	each	2		
A6	441 442 SP.9	Supply and Install Valves				
		a) 300mm Gate valve	each	1		
A7	510 SP.9	Remove and Dispose Offsite				
		a) Remove Ex. 200mm Water Service	m	130		
		b) Disconnect and Abandon Ex. 200mm Water Service at the Main on Princess Street	each	2		
		b) Disconnect and Abandon Ex. 200mm Water Service at 1338 Princess Street	each	1		
<b>Trench Surface Reinstatement</b>						
A8	802 803 804 SP.10	Reinstate Topsoil and Sod	m <sup>2</sup>	700		
A9	310 314 SP.7 SP.8	Reinstate Asphalt Pathway on Princess Street (incl. 50mm HL3, 150mm Granular 'A', 250mm Granular B)	m <sup>2</sup>	8		
A10	353 SP.12	Reinstate 600.010 Concrete Barrier Curb and Gutter	m	7		
A11	310 314 SP.7 SP.8	Reinstate Princess Street Road Cut (Incl. 50mm HL1, 45mm HDB, 45mm HDB, 275mm Granular A, 300mm Granular B and 500mm step joints as per TRD-1)	m <sup>2</sup>	260		
A12	710 SP.13	Reinstate Pavement Markings on Princess Street	L.S.	1		
A13	310 314 SP.7 SP.8	Reinstate 1338 Asphalt Laneway Trench Cut (Incl. 40mm HL3, 50mm HL8, 150mm Granular A, 300mm Granular B)	m <sup>2</sup>	70		

We certify that the following is an accurate and balanced breakdown of our tender price(s). Work required, but not specifically mentioned is included in the item which is most closely associated.

CONTRACTOR'S STIPULATED (LUMP SUM) PRICE

Subtotal \$ \_\_\_\_\_  
HST (13%) \$ \_\_\_\_\_  
Total \$ \_\_\_\_\_

SUBMITTED BY

Date \_\_\_\_\_  
Company \_\_\_\_\_  
Name \_\_\_\_\_  
Signature \_\_\_\_\_

EXCLUSIONS:

The following items are provisional and are to be excluded from the stipulated (lump sum) price and are to be UNIT PRICE and utilized if required by site conditions.

ITEM	SPEC No.	ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE (\$)	AMOUNT (\$)
<b>Provisional Items</b>						
	403 SP.4	Rock Trenching and Excavation for Watermains ( <b>Provisional</b> )	m <sup>3</sup>	250		
	351 SP.11	Reinstate Concrete Sidewalk (125mm Concrete, 100mm Granular 'A') ( <b>Provisional</b> )	m <sup>2</sup>	75		
	353 SP.12	Reinstate 600.010 Concrete Barrier Curb and Gutter ( <b>Provisional</b> )	m	50		
	310 314 SP.7 SP.8	Reinstate 1338 Asphalt Laneway Trench Cut (Incl. 40mm HL3, 50mm HL8, 150mm Granular A, 300mm Granular B) ( <b>Provisional</b> )	m <sup>2</sup>	60		
	1359	Supply and Install Non-Shrink Backfill as Directed by the Contract Administrator ( <b>Provisional</b> )	m <sup>3</sup>	5		
	SP.14	Load, haul and dispose of Soils Offsite Meeting Table 3 Residential Standards (O.Reg 347) ( <b>Provisional</b> )	m <sup>3</sup>	170		
	SP.14	Load, haul and dispose of Solid Non-Hazardous Waste (O.Reg 347) including all tipping fees to a licensed landfill facility. ( <b>Provisional</b> )	tonne	190		
		Soil Sample Test Pits ( <b>Provisional</b> )	each	3		
		Reinstate Ex. Planter ( <b>Provisional</b> )	L.S.	1		

**END OF SECTION**

Bond No. \_\_\_\_\_ Project No. \_\_\_\_\_

Amount \$ \_\_\_\_\_

**Know All Men By These Presents**, that \_\_\_\_\_

As Principal, hereinafter called the Principal, and \_\_\_\_\_

as Surety, hereinafter called the Surety, are held and firmly bound unto **Kingston Co-operative Homes** as Obligee, in the amount of \_\_\_\_\_

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)  
lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Whereas, the Principal has submitted a written proposal, (or tender) to the Obligee dated the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, for \_\_\_\_\_

Now Therefore The Condition Of This Obligation in such that if the aforesaid Principal shall have the tender accepted within sixty (60) days from the closing date of the Call for Tenders and the said Principal will, within such reasonable time as may be allowed after notice of such acceptance, enter into a formal contract and give a good and sufficient bond to secure the performance of the terms and conditions of the contract, then this obligation shall be null and void; otherwise the Principal and Surety will pay unto the Obligee the difference in money between the amount of the bid of the said Principal and amount for which the Obligee legally contracts with another party to perform the work if the latter amount be in excess of the former.

The Surety shall not be liable for a greater sum than the specified penalty of this Bond. Any suit under this Bond must be instituted before the expiration of six months from the date of this Bond.

The Testimony Whereof, the Principal has hereunto set its had and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signatures of its duly authorized officers, this \_\_\_\_\_ day of \_\_\_\_\_, A.D. \_\_\_\_\_.

**Signed, Sealed and Delivered**

in the Presence of:

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Surety

**END OF SECTION**

No. ....(the “**Bond**”) Bond Amount \$ .....

.....  
(name of the contractor\*)

as a principal, hereinafter [collectively] called the “**Contractor**”, and

.....  
(name of the surety company\*\*)

.....  
a corporation created and existing under the laws of .....  
(place of incorporation)

as a surety, and duly authorized to transact the business of Suretyship in the Province of Ontario and hereinafter called the “**Surety**”, are held and firmly bound unto Kingston Co-operative Homes as obligee, hereinafter called the “**Owner**”, in the amount of

\$ .....  
(Bond Amount in figures)

hereinafter called the “**Bond Amount**”, for the payment of which sum the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally in accordance with the provisions of this Bond (the “**Obligation**”).

WHEREAS the Contractor has entered into a written contract with the Owner dated the ..... day of ..... in the year ..... for .....  
(name of month) (title or description of the contract)

(the “**Original Contract**”) and, for the purpose of specifying the conditions of the Obligation, this contract together with amendments made in accordance with its terms are by reference made part hereof and are hereinafter referred to collectively as the “**Contract**”;

NOW THEREFORE the condition of this Obligation is such that if the Contractor shall promptly and faithfully perform the Contract then this Obligation shall be null and void; otherwise it shall remain in full force and effect, subject to the following terms and conditions:

**1. WRITTEN NOTICE**

- .1 The Owner may make a written demand on the Surety in accordance with this Bond, by giving notice to the Surety substantially in the form Schedule A (the “**Notice**”), shared when necessary. Except for a Pre-Notice Meeting in accordance with Section 2.1, the Surety shall have no obligation under this Bond until it receives a Notice.

- .2 Where the Surety includes two or more companies, the Notice may be delivered to the first listed Surety on behalf of all Sureties. The first listed Surety is hereby authorized to respond to the Notice on behalf of the Sureties, and the Owner is not required to give separate Notice to each Surety and is entitled to correspond with the first listed Surety on behalf of all Sureties.

## 2. PRE-NOTICE MEETING

- .1 The Owner may, at its sole discretion and acting reasonably, request a pre-Notice conference by notifying the Surety and the Contractor in writing that it is considering declaring the Contractor to be in default under the Contract (the "Pre-Notice Meeting"). This notice and request for a Pre-Notice Meeting by the Owner does not constitute a Notice under this Bond, nor under the Contract, nor is it a precondition to the giving of a Notice. Upon receipt of such request the Surety shall propose a face-to-face meeting, a telephone conference call or a meeting by any other form of electronic media between the Contractor, the Owner and the Surety to take place at a time and place mutually convenient for all parties within seven (7) business days (or such longer time as agreed by all parties) after the Surety's receipt of the Owner's request for a Pre-Notice Meeting in accordance with this Section. The Owner, the Contractor and the Surety shall make reasonable efforts to arrange and attend the Pre-Notice Meeting. In the event that the Owner delivers a Notice prior to the Pre-Notice Meeting, then the Pre-Notice is deemed to be retracted.
- .2 The purpose of a Pre-Notice Meeting is to allow the Owner, prior to exercising its other rights under this Bond, to express any concerns about the Contractor's performance pursuant to the Contract and to allow the Contractor to respond to such concerns. The participation of the parties in one or more Pre-Notice Meetings shall be without prejudice to their respective rights and obligations under the Contract, this Bond or applicable law, and neither the participation by any party in any Pre-Notice Meeting, nor any statement or position taken or information provided by any party during any Pre-Notice Meeting, may be relied on by any other party as a waiver or compromise of the rights or obligations of the Owner, the Surety or the Contractor under the Contract, this Bond or applicable law; including, but not limited to the Owner's right to declare the Contractor in default under the Contract and give Notice under this Bond.

### 3. SURETY'S INVESTIGATION AND RESPONSE

- .1 Upon receipt of a Notice from the Owner, the Surety shall promptly initiate an investigation of the Notice (the "**Investigation**"), using its best efforts, to determine if the Conditions Precedent have been satisfied and to determine its liability, if any, under the Bond.
  - .2 Within the four (4) business days following receipt of the Notice, the Surety shall provide the Owner with an acknowledgement, substantially in the form set out as Schedule B (the "**Acknowledgement**"), identifying the date on which the Notice was received and requesting from the Owner the information and documentation (the "**Information**") the Surety requires to continue the Investigation and, if necessary, request access to personnel who are knowledgeable about the circumstances of the Notice and to the Contract work site(s) where the work is being performed. Upon receipt of the Surety's Acknowledgement, the Owner shall promptly, and in accordance with terms of the Contract, provide the Surety with the requested Information and access to personnel and the work site(s) within its possession or control.
  - .3 The Surety shall within a reasonable time conduct the Investigation, but in any event no later than twenty (20) business days after receipt by the Surety of a Notice (or such longer period as may be agreed between the Surety and Owner), the Surety shall provide the Owner with its written response to the Notice, substantially in the form set out at Schedule C (the "**Surety's Position**"), advising either that:
    - a) The Surety accepts liability under the Bond and proposes to satisfy its Obligation by performing one of the options set out in Section 6.1; or
    - b) The Surety does not accept liability, providing its specific reasons; or
    - c) The Surety is unable to determine whether or not one or more of the Conditions Precedent has been satisfied and, in the Surety's sole discretion, the Surety may propose a process for collaborating with the Owner in the advancement of the completion of the work so as to attempt to mitigate the Owner's cost to complete the Contract.
  - .4 The Surety shall also, if requested by the Owner to do so, meet with the Owner to discuss the status of the Investigation within five days following receipt of the request. This meeting may take place via a face-to-face meeting, a telephone conference call or a meeting by any other form of electronic media as may be mutually agreed to by the Owner and Surety.
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#### 4. NECESSARY INTERIM WORK

- .1 Prior to and during the Investigation, if the Owner must take action which is necessary to:
  - a) ensure public or worker safety,
  - b) preserve or protect the work under the Contract from deterioration or damage, or
  - c) comply with applicable law,

The Owner may, acting with due diligence and provided written notice is subsequently provided to the Surety within three (3) Business Days of the commencement of such Necessary Interim Work provided that:

- i. Owner shall allow the Surety and/or its consultant(s) reasonable access to the Contract work site(s) during the course of the Necessary Interim Work for the purpose of monitoring the progress of the Necessary Interim Work;
  - ii. Any such Necessary Interim Work shall be undertaken without prejudice to the rights of the Owner, the Contractor or the Surety under the Contract, this Bond or applicable law; and
  - iii. The reasonable costs incurred by the Owner in undertaking such Necessary Interim Work (to the extent they are not deducted in the calculation of the Balance of Contract Price in Section 9.1) shall be reimbursed by the Surety, subject to the Surety's liability being subsequently established and subject to such expenses being covered by this Bond. Any payments made by the Surety in respect of the Necessary Interim Work shall reduce the Bond Amount by the amount of any such payments.
- .2 Nothing in this section is intended to limit the ability of an Owner to take whatever steps are reasonably necessary in the public interest.
- .3 Subject to the foregoing provisions in Section 4.1, the Surety shall not raise the mere fact that the Necessary Interim Work proceeded as a defense to any claim by the Owner hereunder.

#### 5. POST-NOTICE CONFERENCE

- .1 Upon receipt of a Notice, the Surety shall propose a face-to-face meeting, telephone conference call or a meeting by any other form of electronic media (a "**Post-Notice Conference**") with the Owner at a mutually convenient time and place within five (5) business days (or such longer period as may be agreed between the Surety and Owner). The Contractor may participate in a Post-Notice Conference at the invitation of the Surety.
-

- .2 The purpose of the Post-Notice Conference shall be to determine what actions or work, if any, the Owner believes must be done while the Surety is conducting the Investigation in order to effectively mitigate the costs for which the Owner is seeking recovery under this Bond (the **"Mitigation Work"**). Mitigation Work may be performed after Necessary Interim Work and throughout the period of investigation by the Surety.
  - .3 Provided the Owner provides reasonable evidence to the Surety that Mitigation Work is necessary during the Investigation and that the anticipated costs are reasonable, the Owner may proceed with the Mitigation Work subject to the following conditions:
    - a) Owner shall pay the reasonable costs of the Mitigation Work;
    - b) Owner shall keep separate records of all amounts related to the Mitigation Work for which it intends to seek recovery under this Bond, including amounts to be set off against the Balance of Contract Price;
    - c) Owner shall allow the Surety and/or its consultant(s) reasonable access to the Contract work site(s) during the course of the Mitigation Work for the purpose of monitoring the progress of the Mitigation Work; and
    - d) The Mitigation Work shall be without prejudice to the rights or obligations of the Owner, the Contractor or the Surety under the Contract, this Bond or applicable law.
  - .4 If the Surety objects to any part of the Mitigation Work, including without limitation the Owner's proposed Mitigation Work contractor(s), scope of work, cost or method of work, it shall immediately advise the Owner in writing of its objections and the reasons therefor. The Owner may still proceed with the Mitigation Work and the Surety's objections will be addressed through negotiation with the Owner or at the trial of any action brought pursuant to this Bond.
  - .5 The reasonable costs incurred by the Owner in undertaking the Mitigation Work shall be reimbursed by the Surety, subject to the Surety's liability being subsequently established. Any payments made by the Surety in respect of the Mitigation Work shall form part of its Obligation under this Bond and shall reduce the Bond Amount by the amount of any such payments.
  - .6 For greater clarity, any Necessary Interim Work being performed by the Owner pursuant to Section 4 may continue to be performed pending an agreement, if any, as to the Mitigation Work.
  - .7 Subject to the foregoing provisions in this Section 5, the Surety shall not raise the mere fact that the Mitigation Work proceeded as a defense to any claim by the Owner hereunder.
-

## 6. SURETY'S OPTIONS

- .1 If the Surety has accepted liability pursuant to this Bond, the Surety shall promptly select and commence one of the following options:
  - a) remedy the default; or
  - b) complete the Contract in accordance with its terms and conditions; or
  - c) obtain a bid or bids for submission to the Owner for completing the Contract in accordance with its terms and conditions and, upon determination by the Owner and the Surety of the lowest responsible bidder:
    - i. arrange for a contract between such bidder and the Owner; and
    - ii. make available as work progresses (even if there should be a default, or a succession of defaults, under the contract or contracts of completion, arranged under this paragraph) sufficient funds to complete the Contractor's obligations in accordance with the terms and condition of the Contract including any applicable value-added taxes for which the Surety may be liable, less the Balance of Contract Price; or
  - d) pay the Owner the lesser of: (1) the Bond Amount, or (2) without duplication, the Owner's Direct Expenses plus the Owner's proposed cost of completion of the Contract and any applicable value-added taxes for which the Surety may be liable, less the Balance of Contract Price.
- .2 The option selected by the Surety is referred to in this Bond and the Schedules as the "**Surety Option**".

## 7. OWNER'S DIRECT EXPENSES

- .1 Where the Surety is liable under this Bond, then the Surety shall be liable for the following fees and expenses, without duplication (the "**Owner's Direct Expenses**"):
    - a) reasonable professional fees incurred by the Owner to complete the Contract which are a direct result of the Contractor's default and which would not have been incurred but for the default of the Contractor;
    - b) reasonable external legal fees incurred by the Owner to complete the Contract, which are a direct result of the Contractor's default and which would not have been incurred but for the default of the Contractor, with the exception of legal fees incurred by the Owner in defending a claim or action by the Contractor, or incurred by the Owner in pursuing an action against the Contractor;
-

- c) reasonable, miscellaneous and out-of-pocket expenses incurred by the Owner to complete the Contract which are a direct result of the default of the Contractor and which would not have been incurred but for the default of the Contractor;
  - d) direct costs incurred as a result of an extension of the duration of the supply of services or materials used or reasonably required for use in the performance of the Contract, which are a direct result of the default of the Contractor and which would not have been incurred but for the default of the Contractor;
  - e) reasonable costs of the Necessary Interim Work;
  - f) reasonable costs of the Mitigation Work; and
  - g) any additional fees and expenses agreed to by the Oblige, the Principal and the Surety.
- .2 For the purpose of Section 7.1(d), the “direct costs” incurred are the reasonable costs of performing the Contract during the extended period of time, including costs related to the additional supply of services or materials (including equipment rentals), insurance and surety bond premiums, and costs resulting from seasonal conditions, that, but for the extension, would not have been incurred.
- .3 Subject to any agreement to the contrary, between the Oblige, the Principal and the Surety, the Surety shall not be liable under this Bond for:
- a) Any liquidated damages under the Contract;
  - b) If no liquidated damages are specified in the Contract, any damages caused by delayed performance or non-performance of the Contractor, except as provided in Section 7.1(d); or
  - c) Any indirect or consequential damages, including but not limited to costs of financing, extended financing, hedging arrangements, loss of or deferral of profit, productivity or opportunity, or head office overhead costs.
- .4 If the Surety is liable under this Bond then, at the Owner’s option, Owner’s Direct Expenses may be deducted by the Owner from the Balance of the Contract Price as defined hereinafter or will be promptly reimbursed by the Surety subject to the other terms, conditions and limitations of this Bond and will reduce the Bond Amount.

## 8. CONDITIONS PRECEDENT

- .1 The Surety shall have no liability or Obligations under this Bond unless all of the following conditions precedent (the “**Conditions Precedent**”) have been satisfied:
-

- a) The Contractor is, and is declared by the Owner to be, in default under the Contract;
- b) The Owner has given such notice to the Contractor of a default of the Contractor, as may be required under the terms of the Contract;
- c) The Owner has performed the Owner's obligations under the Contract; and
- d) The Owner has agreed to pay the Balance of Contract Price to the Surety or as directed by the Surety.

## 9. BALANCE OF CONTRACT PRICE

- .1 The term "**Balance of Contract Price**" means the total amount payable by the Owner to the Contractor under the Contract, including any adjustments to the price in accordance with the terms and conditions of the Contract, or other amounts to which the Contractor is entitled, reduced by any amounts deducted by the Owner for the Owner's Direct Expenses under Section 7.4 and all valid and proper payments made to or on behalf of the Contractor under the Contract.
- .2 The Balance of Contract Price shall be used by the Owner to first mitigate against any potential loss to the Surety under this Bond and then under the Labour & Material Payment Bond, when necessary, and the Owner shall assert all rights and remedies available to the Owner to the Balance of Contract Price and make payment of the Balance of Contract Price as directed by the Surety.

## 10. LIMITATIONS ON THE SURETY'S LIABILITY

- .1 Notwithstanding anything to the contrary contained in this Bond or in the Contract, the Surety shall not be liable for a greater sum than the Bond Amount under any circumstances.
- .2 The Surety's responsibility to the Owner under this Bond in respect of any Surety Option or Owner's Direct Expenses shall not be greater than that of the Contractor under the Contract.

## 11. RIGHT OF ACTION

- .1 No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Owner named herein, or the heirs, executors, administrators or successors of the Owner.
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## 12. COMMENCEMENT OF ACTION

- .1 It is a condition of this Bond that any suit or action must be commenced before the expiration of two (2) years from the earlier of: (a) the date of substantial performance of the Contract as defined under the *Construction Act* (the “**Act**”); or (b) the date on which a Notice in respect of the default that is the subject of such suit or action is received by the Surety under this Bond.
- .2 The Owner, the Contractor and the Surety agree that any suit or action is to be made to a court of competent jurisdiction in Ontario and agree to submit to the jurisdiction of such court notwithstanding any terms to the contrary in the Contract.

## 13. COMMON LAW RIGHTS

- .1 The rights and obligations of the Owner, the Contractor, and the Surety under this Bond are in addition to their respective rights and obligations at common law and in equity.

## 14. APPLICABLE LAW

- .1 This Bond is governed by the laws of the Province of Ontario.

## 15. NOTICES

- .1 All notices under this Bond shall be delivered by registered mail, facsimile, or electronic mail at the addresses set out below, subject to any change of address in accordance with this Section. Any notice given by facsimile or electronic mail shall be deemed to have been received on the next business day or, if later, on the date actually received if the person to whom the notice was given establishes that he or she did not, acting in good faith, receive the notice until that later date. Any notice given by registered mail shall be deemed to have been received five (5) days after the date on which it was mailed, exclusive of Saturdays and holidays or, if later, on the date actually received if the person to whom the notice was mailed establishes that he or she did not, acting in good faith, receive the notice until that later date. A change of address for the Surety is publicly available on the Financial Services Commission of Ontario website ([https://www5.fSCO.gov.on.ca/Licensing/LicClass/eng/lic\\_companies\\_class.aspx](https://www5.fSCO.gov.on.ca/Licensing/LicClass/eng/lic_companies_class.aspx)). The address for the Owner or the Contractor may be changed by giving notice to the other parties setting out the new address in accordance with this Section.
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**16. HEADINGS FOR REFERENCE ONLY**

- .1 The headings and references to them in this Bond are for convenience only, shall not constitute a part of this Bond, and shall not be taken into consideration in the interpretation of this Bond.

IN WITNESS WHEREOF, the Contractor and the Surety have Signed and Sealed this Bond, this..... day of ..... in the year.....

**[Contractor proper name]**

\_\_\_\_\_ Witnessed by: \_\_\_\_\_

By: \_\_\_\_\_ Name of Witness: \_\_\_\_\_

Name: \_\_\_\_\_ Address of Witness: \_\_\_\_\_

Title: \_\_\_\_\_

I have authority to bind the corporation.

**[Surety corporate name]**

\_\_\_\_\_

By: \_\_\_\_\_ By: \_\_\_\_\_

Name: \_\_\_\_\_ Name: \_\_\_\_\_

Attorney-in-fact: \_\_\_\_\_ Attorney-in-fact: \_\_\_\_\_

\* IF THERE ARE TWO OR MORE COMPANIES IN PARTNERSHIP OR JOINT VENTURE, JOINTLY AND SEVERALLY BOUND, INSERT THE NAME OF EACH PARTNER OR JOINT VENTURE PARTY, AND INSERT THE WORD "COLLECTIVELY" AFTER THE WORD "HEREINAFTER" IN THE FIRST LINE.

\*\* IF THERE ARE TWO OR MORE SURETY COMPANIES, JOINTLY AND SEVERALLY BOUND, INSERT THE "[Name of the surety company], a corporation created and existing under the laws of [Place of incorporation]," FOR EACH SURETY, FOLLOWED BY "each as a surety and each duly authorized to transact the business of Suretyship in the Province of Ontario and hereinafter collectively called the "Surety".

\*\*\* INSERT THE CROWN, A MUNICIPALITY OR A BROADER PUBLIC SECTOR ORGANIZATION, AS APPLICABLE, OR SUCH OTHER PARTY DEEMED TO BE THE OWNER UNDER THE ACT, AND ENTERING INTO THE PUBLIC CONTRACT WITH THE CONTRACTOR.

This document is *FORM 32 PERFORMANCE BOND UNDER SECTION 85.1 OF THE ACT*, The "Construction Act of Ontario" as created by the Province of Ontario and provided to Kingston & Frontenac Housing Corporation by Surety Association of Canada May 11, 2018.

**END OF SECTION**

## 1.0 GENERAL

### 1.1 Definitions

- .1 "Owner" means **Kingston Co-operative Homes**.

### 1.2 Instructions

- .1 Before submitting a bid, Bidders shall:
    - .1 Examine and read the Bid Documents thoroughly.
    - .2 Examine the site and ascertain the extent and nature of all conditions, limitations, or building regulations affecting the performance of the Work. The site is open and available for review by the Bidders during normal business hours. Coordinate site access through the Manager of Technical Services. All dimensions are to be confirmed by on-site measurement by the Bidder.
    - .3 Confirm all utility services in the vicinity of the Work that will require protection and maintenance during the course of the Work.
    - .4 Consider the effect of regulatory requirements applicable to the Work.
    - .5 Study and correlate Bidder's observations with the Bid Documents.
    - .6 Immediately notify the Owner of all perceived omissions and discovered conflicts, errors and discrepancies in the Bid Documents.
    - .7 Be satisfied that Bidder understands the Bid Documents and is competent to undertake and complete the Work.
  - .2 Bid shall include cost of all permits required (excluding the building permit), royalties, freight, government duties and taxes where applicable.
  - .3 The Owner will obtain and pay for the Municipal Building Permit when required by the Ontario Building Code.
  - .4 In the event of any change in any applicable tax made public after the date of tender closing, the Contract Price shall be adjusted by an amount equal to the increase or decrease in the cost of the Work to the Contractor brought about by the change in such tax.
-



- .5 The Owner reserves the right to add or delete items to be performed under this Contract before and after the Contract is awarded without any penalty. Any revisions to the submitted Contract Price as a result of these deletions are to be solely based on the unit prices (or lump sum prices) quoted by the Bidder for those items.
- .6 The Bidder shall not engage in collusion of any sort and, in particular, shall ensure that no person or other legal entity other than the Bidder has an interest in the Bidder's bid. The bidder shall prepare the bid without any knowledge of, comparison of figures with, or arrangement with any other person or firm preparing a bid for the same work.
- .7 It is the Bidder's responsibility to provide all labour, material, equipment and supervision to complete the repairs outlined in these Bid Documents taking into account all site conditions, schedule and noise restrictions, work area restrictions, protection requirements, accessibility restrictions, etc. No extras will be entertained for inconveniences after award of the Contract.
- .8 Bidder shall read the Bid Documents in their entirety prior to bidding in order to be aware of all project requirements.
- .9 If the Bidder is a joint venture, each party to the venture must execute the bid under seal in the manner appropriate to such party.

### **1.3 Form of Contract**

- .1 The Owner will issue an Award Letter which shall be the basis for acceptance of the Bid by the Owner and Award of the Contract to the Contractor. The Award Letter will describe information required by the Owner; namely, Performance Security and Insurance Certificate requirements.
- .2 Upon receipt of the documents outlined in the Award Letter, a Contract, as amended by the General Conditions, will be raised by the Owner and issued to the Contractor.

### **1.4 Employment Equity**

- .1 In accordance with the employment equity goals, Kingston & Frontenac Housing Corporation encourages bidders to take an active role in supporting and facilitating opportunities for employment equity designated groups.
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## 1.5 Owner and Owner's Representative

- .1 The Owner is: Kingston Co-operative Homes  
1338 Princess Street, Kingston, ON K7M 3E2
- .2 The Owner's Representative is: Scott VanderSchoor,  
Director of Assets & Development  
Kingston & Frontenac Housing Corporation  
119 Van Order Drive Kingston, ON  
(613) 546-5591 ext. 1560  
svanderschoor@kfhc.ca
- .3 The Project Consultant is: Kyle Nielissen, Civil Engineer  
Forefront Engineering  
1329 Gardiners Road, Suite 210  
Kingston, ON K7P 0L8  
(613) 634-9009 ext. 101  
kyle.nielissen@forefronteng.ca
- .4 Any questions during the Bid Period shall be directed to the office of the Representative.
- .5 Addenda will be issued in all cases where questions result in changes or clarification to BID DOCUMENTS.

## 1.6 Pre-Bid Closing Site Meeting

- .1 A **NON-MANDATORY** pre-bid closing site inspection will be held on site at **10:00 a.m.** on **Wednesday, September 1, 2021.**

## 1.7 Examination of Site

- .1 The onus shall be on the Bidder to investigate the Project Site and inform themselves before bidding of all physical and labour conditions and administrative practices prevailing at the project site.
  - .2 The Bidder shall not claim at any time after the submission of their bid any misunderstanding of the terms and conditions of the Contract relating to the site conditions.
-

- .3 The Bidder shall make allowances as required for the installation of temporary services (heating and ventilators, etc.) into and out of the work area. No extra for this item will be entertained after bids have closed.

## 1.9 Bid Submission

- .1 Completed Bid Forms together with proof of the required bid security, consents of surety and all supplementary bid submission material, including **Appendix A** shall be delivered to the office of the Owner's Representative in a sealed envelope no later than **11:00:00 a.m. on Thursday, September 9, 2021** and addressed as follows:

**Confidential:**           **Bid Submission**  
**Kingston & Frontenac Housing Corporation**  
**119 Van Order Drive**  
**Kingston, ON K7M 1B9**

**Attention:**           **Scott VanderSchoor**  
**Director of Assets & Development**

**Tender Number:**       **COOP PT 21-01A**  
**Tender Description:**   **1338 Princess Street**  
**Water Service Upgrade**

- .2 Bids will be opened publicly at the office of the Owner's Representative.
- .3 Using the Bid Form provided, the bid shall be filled out in ink or typed, signed in longhand by a duly authorized company official, and stamped with the Bidder's corporate seal.
- .4 The Bid Form shall not be altered and all spaces for information will be completed.
- .5 The Owner's Representative may, after bid closing time and before Contract award, require any Bidder to submit, in a form prescribed by or acceptable to the Owner's Representative, supplementary information about any aspect of the Bidder's bid that, in the Owner's Representative's opinion, is necessary for bid evaluation purposes.
- .6 Failure to fulfil the requirements of the Bid Documents will result in disqualification at the sole discretion of the Owner's Representative.
- .7 Offers submitted after the specified time will be returned to the bidder unopened.
-

- .8 Verbal information will not be accepted as part of the bid documents.
- .9 Bidders must not submit the entire tender specification documents with their bid submission forms.

### **1.9 Bonding Requirements**

- .1 A bid deposit in the form of a certified cheque or bid bond made payable to the Owner in the amount of **\$16,000.00** shall accompany all bids.
- .2 The Bidder shall provide the Owner with performance security as outlined in Section 00 72 13 – General Conditions, a consent of surety to provide these bonds shall accompany the Bid, if applicable.
- .3 All bonds shall name the Owner as Obligee.
- .4 The amount must be as stipulated and valid for a period of sixty (60) days from the date of Bid Closing.
- .5 The cost of bonds is to be included in the bid lump sum prices.

### **1.10 Sufficiency of Bid**

- .1 The submission of a bid shall constitute an incontrovertible representation by the Bidder that:
  - .1 The Bidder has complied with all bid requirements.
  - .2 The Bidder is qualified and experienced to perform the Work in accordance with the Bid Documents.
  - .3 The bid is based upon performing the Work in accordance with the Bid Documents, without exception.
  - .4 The price or prices stated in the bid cover all the Bidder's obligations under the Contract and all matters and things necessary for the performance of the Work in accordance with the Bid Documents.

### **1.11 Bid Irregularities**

- .1 At the discretion of the Owner, bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations or irregularities of any kind may be accepted or declared informal.
-

- .2 At the discretion of the Owner, bids that fail to include or to comply with bid security, bonding or insurance requirements may be accepted or declared informal.
- .3 Informal bids may or may not be considered at the sole discretion of the Owner.
- .4 The Owner may accept or waive a minor and inconsequential irregularity, or where practicable to do so, the Owner may, as a condition of bid acceptance, request a Bidder to correct a minor and inconsequential irregularity with no change in bid price.
- .5 The determination of what is, or is not, a minor and inconsequential irregularity, the determination of whether to accept, waive, or require correction of an irregularity, and the final determination of the validity of a bid, shall be at the Owner's sole discretion.
- .6 Discrepancies between words and figures will be resolved in favour of words.

#### **1.12 Bid Withdrawal and Acceptance**

- .1 The Owner reserves the right to reject any or all bids as the interests of the Owner may require, without stating reasons therefore, and the lowest or any bid will not necessarily be accepted.
  - .2 A Bidder who has already submitted a bid may submit a further bid at any time up to the official closing time. The last bid that is received shall supersede and invalidate all previously submitted bids by that Bidder for this Contract.
  - .3 A bid may be withdrawn at any time before the bid closing time, provided the request is in the form of a letter received at the office of the Owner's Representative before the bid closing time.
  - .4 Withdrawn bids may be resubmitted in accordance with these bidding requirements providing the resubmitted bid is received at the office of the Owner's Representative before the bid closing time.
  - .5 A bid may not be withdrawn at or after bid closing time and shall be open to acceptance by the Owner until whichever of the following occurs first:
    - .1 Another Bidder has entered into a Contract with the Owner for performance of the Work.
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- .2 Sixty (60) days after the bid closing time.
- .6 The sixty (60) day acceptance period shall commence at midnight at the date of bid closing and shall terminate at midnight of the sixtieth (60th) day thereafter. If the sixtieth (60th) day falls on a statutory holiday, such day(s) shall be omitted from the computation.
- .7 The sixty (60) day acceptance period may be extended at the Owner's request and subject to the Bidder's written agreement to the extension.
- .8 If a Bidder withdraws his Bid after the Bid closing or if the Bidder does not provide Performance Security, Certificate of Liability Insurance or any other document required; the Owner may retain the Bid Security for its use.
- .9 In the case of an error in addition, the correct sum of the amounts shown for each bid item shall be deemed to be the total bid price regardless of the total amount submitted by the Bidder.
- .10 Evaluation of Bid

In evaluating the bids, the Owner may consider any criteria, with such consideration to be exercised by the Owner in its sole discretion, including the following:

- .1 The Contract Price as determined from the base bid or from the alternate bid.
- .2 The Owner's authorized budget for the Work.
- .3 The Contract Time.
- .4 The Bidder's ability to effectively manage and perform the Work and work with other subcontractors.
- .5 The Bidder's understanding of the Work.
- .6 The Bidder's Unit Prices, Allowances, and Separate Prices, if applicable.
- .7 The Bidder's ability to present cost saving opportunities that may be appropriate and acceptable to the Consultant and the Owner.
- .8 The Bidder's experience, competence and past performance in undertaking work similar to the Work, as well as that of its subcontractors.
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- .9 The Bidder's financial strength and capability.
  - .10 The experience, qualifications and abilities of the Bidder's supervisory personnel.
  - .11 Aesthetic changes resulting from the Bidder's proposed approach to the Work.
  - .12 Other criteria which the Owner, in its sole discretion, may consider appropriate to its evaluation.
- .11 Acceptance of Bid
- .1 The lowest or any bid need not be accepted by the Owner. The Owner reserves the right to accept or reject any or all bids at their sole discretion on any basis at any time without further explanation or to accept any bids considered advantageous to the Owner.
  - .2 The Bidder acknowledges and agrees that the Owner will not be responsible for any costs, expenses, losses, damages or liabilities incurred by the Bidder as a result of or arising out of submitting a bid for the proposed Contract, or due to the Owner's acceptance or non-acceptance of their bid.
  - .3 The Owner may also elect not to proceed with the Project.
  - .4 Where all other factors are equal, lowest price shall govern. Where all factors are equal, including price, the Buyer shall select the successful Vendor based on a coin toss, which shall be conducted in the presence of the tied Prospective Vendors should they wish to attend. Award shall then be made to the winner of the coin toss.
  - .5 In the event that three or more tied or identical Bids remain following evaluation, the Buyer shall select the successful Vendor based on a lottery draw, which shall be conducted in the presence of the tied Prospective Vendors should they wish to attend. The Award shall then be made to the winner of the lottery.

### **1.15 Canadian Content**

- .1 The Owner reserves the right to give preference to materials, products and equipment of Canadian origin and manufacture.

### **1.16 Addenda**

- .1 Direct all questions in writing to the Owner's Representative.
- .2 Answers to queries are only binding when confirmed by written Addenda.
- .3 Clarifications requested by Bidders must be submitted in writing to the Owner's Representative no less than four (4) days before the date set for receipt of the bids. Any reply will be in the form of an Addendum, a copy of which will be forwarded to known Bidders no less than two (2) days before the date set for receipt of the bids.
- .4 Addenda may be issued by the Owner's Representative during the bid period. Any Addenda will be delivered by the Owner's Representative via email or courier to all parties recorded by the Owner's Representative as having received the Bid Documents.
- .5 All Addenda become part of the Bid and Contract Documents and the costs arising from any Addenda are to be included in the bid price.
- .6 Each Bidder shall ascertain before bid submission that all Addenda issued by the Owner's Representative have been received and the Bidder shall indicate in the Bid Form the addendum number(s) of all Addendum received.

### **1.17 Construction Schedule**

- .1 Refer to schedule requirements outlined in Section 01 10 01 – General Requirements.
- .2 The Contractor will complete the work within the time specified in the Purchase Order or Contract.
- .3 TIME IS OF THE ESSENCE OF THE CONTRACT.

### **1.18 Qualifications**

- .1 Persons of Bidders submitting bids for this Project shall be actively engaged and experienced in the type of work required by these Bid Documents and the Bidder shall provide, on request, a statement of similar work performed by those persons.

**END OF SECTION**

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## 1.0 GENERAL

### 1.1 Definitions

- .1 Whenever any of the following words or phrases are used in the contract, they shall have the meanings attributed to them, as follows:
  - .1 "Bid" means any bid, tender or offer submitted by a bidder pursuant to the Instructions to Bidders.
  - .2 "Owner" means **Kingston Co-operative Homes**.
  - .3 "Owner's Representative" means **Kingston & Frontenac Housing Corporation**.
  - .4 "Contractor" means the person, firm or corporation identified on the Purchase Order responsible for the work of this contract.
  - .5 "Contract Price" means the total price including tax the Owner has agreed to pay the Contractor for the work stipulated in the Contract, and in any event shall not exceed the amount specified in the Contract.
  - .6 "Business Day" means any day except a Saturday, Sunday or statutory holiday.
  - .7 "Building Code" means the Ontario Building Code (latest edition).
  - .8 "As detailed" means as shown on the drawings.
  - .9 "As specified" means as specified herein.
  - .10 "Provide" means supply and install.
  - .11 "Controlled" has the same meaning as in subsection 1 (5) of the Business Corporation Act.

### 1.2 Precedence of Documents and Interpretation

- .1 Whenever the words "shall" or "will" are used in the Contract, they have the meanings attributed to them in the Interpretation Act of Ontario.
  - .2 Whenever words which have well known technical or trade meanings are used in the Contract, they are used in accordance with such recognized meanings.
  - .3 The documents forming the Contract are complementary, and what is
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required by any one shall be as binding as if required by all.

The following documents all form part of the Contract:

- Instructions to Bidders
- Supplementary Conditions
- General Conditions
- Bid Form
- Specifications with Appendices and Addenda
- Schedules
- Drawings
- Award Letter
- Purchase Order

- .4 In the event of conflict between documents, the following priorities shall apply:
- Documents of later date shall govern;
  - Supplementary Conditions shall govern over General Conditions;
  - General Conditions shall govern over Specifications;
  - Specifications shall govern over Drawings;
  - Figured dimensions shown on the Drawings shall govern even though they may differ from scaled dimensions.
  - Drawings of larger scale shall govern over those of smaller scale of the same date.

### 1.3 Performance Security

- .1 The Contractor shall provide performance security in favour of the Owner in order to secure the due and faithful performance of the contract. Such performance security will be as follows:
- .1 A Performance Bond issued by a Surety Company acceptable to the Owner in an amount equal to 50% of the Contract Price including tax.
  - .2 If the Contract Price including tax is less than \$1,000,000, the bond alternative forms of security must be equivalent to **20%** of the Contract Price. In each case, the following alternate forms of security are acceptable:
    - .1 an irrevocable letter of credit, bank draft, or certified cheque; or
    - .2 bearer or negotiable bonds of Dominion of Canada, Province of Ontario, or the Ontario Hydro Electric Power Commission (bonds to be assessed at market not face value); or
    - .3 such other collateral, excluding a letter of guarantee, as may be acceptable to the Owner.
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- .3 For contracts under \$100,000 in value, the alternate forms of security are reduced to 10% of the contract amount.
- .4 If the Contractor fails to meet these requirements within the time stipulated by the award letter, the Owner retains the right to terminate the contract and use the bid security towards damages.
- .5 Where security is in the form of a Performance Bond, the document will be retained by the Owner for a period of two (2) years from the date of substantial completion, after which it will be returned to the Contractor.
- .6 Where alternate security is provided, it will be returned to the Contractor ninety (90) days after completion of the work and correction of all deficiencies.
- .7 Where deficiencies involve seasonal work which must be postponed, sufficient funds will be retained from the contract amount to cover the cost of completing such deficiencies and the Performance Security returned to the Contractor. Where contract funds are not available, the Performance Security may be reduced to the amount required to cover the correction of the deficiencies and the balance of the security returned to the Contractor.

#### **1.4 Insurance**

- .1 Contractor must keep in force for the duration of the contract Public Liability and Property Damage Insurance in an amount not less than \$2,000,000. Without limiting the foregoing, such Insurance Coverage shall include Comprehensive General Liability; Contractual Liability; Personal Injury; and Contingent Liability with respect to Sub-Contractors. Submit proof of same in the form of an Insurance Certificate which lists **Kingston Co-operative Homes** as an additional insured but only with respect to the operations of the named insured. Such Insurance Certificate must contain a firm undertaking to give the Owner thirty (30) days notice prior to any cancellation.
- .2 If the Contractor fails to meet the requirements of this item within the time stipulated by the award letter, the Owner retains the right to terminate the contract and use the Bid Security toward damages.

#### **1.5 Workplace Safety & Insurance Board (WSIB)**

- .1 Contractor will submit, evidence of compliance with all of the requirements of the Workplace Safety & Insurance Board (WSIB) of Ontario, including payments due thereunder. Such evidence must be furnished to the Owner before final payment is made.
-

## 1.6 Assignment of Contract or Proceeds of Contract

- .1 The Contractor acknowledges that neither the Contract nor the proceeds thereof may be assigned without the written consent of the Owner.
- .2 Any contract entered into is binding upon the parties, their heirs and successors, and permitted assigns.
3. The contract cannot be assigned by the Contractor to any third party without the prior written consent of the Owner, which consent may be unilaterally withheld.

## 1.7 Taking The Work Out of the Contractors Hands

- .1 The Owner or Owner's Representative may, without any authorization, take all or part of the work out of the Contractor's hands and may employ such means as it may see fit to complete the work, including the use of Performance Security when applicable, in any of the following cases, namely:
    - .1 where the Contractor has made default or has delayed in commencing or in diligently executing the work or any portion thereof to the satisfaction of the person designated on the Purchase Order, and the Owner has given notice thereof to the Contractor, and has by such notice required the Contractor to put an end to such default or delay, and such default or delay continues for seven (7) days after such notice was communicated.
    - .2 where the Contractor has made default in the completion of the work, or any portion thereof, within the time limit for such completion by the Contract.
    - .3 where the Contractor has become insolvent.
    - .4 where the Contractor has committed an act of bankruptcy.
    - .5 where the Contractor has abandoned the work.
    - .6 where the Contractor has made an assignment of the Contract without the required consent of the Owner; or
    - .7 where the Contractor has otherwise failed to observe or perform any of the provisions of the Contract.
  - .2 Where the work or any portion thereof has been taken out of the Contractor's hands, the Contractor will not be entitled to any further payment, including payments then due and payable but not paid, and the obligation of the Owner to make payments shall be at an end, and the
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Contractor shall be liable upon demand therefore to pay the Owner an amount equal to all loss and damage suffered by reason of the non-completion of the work by the Contractor.

- .3 Where the work or any portion thereof has been taken out of the Contractor's hands and that portion is subsequently completed by the Surety, or by the Owner or Owner's Representative, the Owner will determine the amount, if any, of the holdback and progress claims of the Contractor unpaid at the time of taking the work out of his hands that in the Owners opinion is not required for the purposes of the Contract and the Owner may, if it is of the opinion that no financial prejudice will result, pay that amount to the Contractor.
- .4 The taking of the work, or any portion thereof, out of the Contractor's hands does not operate so as to relieve or discharge the Contractor from any obligations under the Contract or imposed upon him by law, except the obligation to complete the physical execution of that portion of work so taken out of his hands.
- .5 The Owner may take the work out of the Contractor's hands if a construction lien has been filed against the project and the Contractor does not take immediate steps to have the lien removed.

## **1.8 Indemnification Claims**

- .1 Contractor will indemnify and save harmless the Owner and Owner's Representative from all claims relating to labour and materials furnished or supplied in executing the Contract and from and against all claims, demands, losses, costs, damages, actions, suits or proceedings by whomsoever made, brought or prosecuted in any manner based upon, arising out of, related to, occasioned by or attributable to the activities of the Contractor in performing the Contract, or to an infringement or an alleged infringement by the Contractor of a patent of invention.

## **1.9 Subcontractors**

- .1 On request, the Contractor will provide a complete and firm list of names and addresses of the subcontractors whom he will use for the work.
  - .2 Contractor agrees to:
    - .1 require his subcontractors to perform their work in accordance with and subject to the terms and conditions of the Contract Documents, and;
    - .2 be fully responsible to the Owner for acts and omissions of his subcontractors and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by him.
-

The Contractor therefore agrees that he will incorporate all the terms and conditions of the Contract Documents into all subcontract agreements.

- .3 nothing contained in the Contract Documents shall create any contractual relationship between any subcontractor and the Owner.

#### 1.10 The Residential Tenancy Act

- .1 In accordance with the Residential Tenancy Act, access to premises of residents may only be gained by permission of the resident, or as necessary, upon the landlord giving notice to the resident specifying the time of entry not less than twenty-four (24) hours prior to the time of entry.
- .2 Contractor must schedule his work accordingly and shall advise **Kingston Co-operative Homes** not less than seventy-two (72) hours in advance of requested access to any residents' premises.

#### 1.11 Laws, Notices, Permits and Fees

- .1 The laws of the municipality where the project is situated shall apply to the work.
- .2 Contractor will obtain all permits, licences and certificates and pay all fees required for the performance of the work.
- .3 The Owner will obtain and pay for **BUILDING PERMITS** when required.
- .4 Contractor will not be responsible for verifying that the Contract Documents are in compliance with the applicable laws, ordinances, rules, regulations and codes relating to the work. If the Contract Documents are at variance therewith, or changes which require modification to the Contract Documents are made to any of the laws, ordinances, rules, regulations and codes by the authorities having jurisdiction subsequent to the date of tender submission, any resulting change in the cost shall constitute a corresponding change in the Contract Price. Contractor must notify the Owner in writing requesting direction immediately on any such variance or change.
- .5 If the Contractor fails to notify the Owner in writing and obtain its direction as required above and performs any work knowing it to be contrary to any laws, by-laws, ordinances, rules, regulations, codes and orders of any authority having jurisdiction, he shall be responsible for and shall correct any violations thereof and shall bear all costs, expense and damages attributable to his failure to comply with the provisions of such laws, by-laws, ordinances, rules, regulations, codes and orders.

### 1.12 Ontario Labour Conditions and Regulations

- .1 Persons employed on the work must be fully qualified to perform the work required. The Contractor will comply with the provisions of the Government Contracts Hours and Wages Act, the Construction Lien Act, R.S.O. 1990, c. C.30 including all subsequent updates, and the Ontario Health and Safety Act & Regulations for Construction Project.
- .2 The Contractor shall comply with Ontario Regulation 644/88 including all subsequent updates - Workplace Hazardous Materials Information System (WHMIS) wherever and whenever controlled products are used within the scope and duration of this Contract.
- .3 The Contractor will be responsible to ensure that the Ontario Human Rights Code is adhered to by the Contractor and all of their employees and subcontractors.

### 1.13 Toxic and Hazardous Substances

- .1 Prior to the Contractor commencing the Work, the Owner shall
  - .1 take all reasonable steps to establish whether or not any toxic or hazardous substances are present at the Place of the Work, and
  - .2 provide the Contractor with written report indicating all toxic or hazardous substances of such findings.
- .2 If the Contractor
  - .1 encounters toxic or hazardous substances at the Place of the Work, or
  - .2 has reasonable grounds to believe that toxic or hazardous substances are present at the place of the Work, the Contractor shall
  - .3 takes all reasonable steps, including stopping the Work to ensure that no person suffers injury, sickness or death and that no property is injured or destroyed as a result of exposure to the presence of the substances, and
  - .4 immediately reports the circumstance to the Owner in writing.

### 1.14 Award Letter and Contract

- .1 The Owner will issue an Award Letter which shall be acceptance of the Bid and award of the Contract to the Contractor. Award Letter will describe information required by the Owner namely Performance Security and Insurance Certificate.
-

- .2 Upon receipt of the above, a Contract will be raised.

**1.15 Completion Date**

- .1 The Contractor will complete the work within the time specified in the Purchase Order.
- .2 TIME IS OF THE ESSENCE OF THE CONTRACT.

**END OF SECTION**



**1.0 GENERAL**

**1.1 SUMMARY**

- .1 Thorough investigation of existing conditions through examination of the Project Site, areas which are affected by the Work, examination of documentation made available by the Owner for inspection, and requirements of authorities having jurisdiction for the Project Site and Work is the sole responsibility of the contractor.

**1.2 SUBSURFACE CONDITIONS**

- .1 All information relating to subsurface conditions to the project site with respect to the Work must be obtained by the Contractor and all Sub-Contractors directly from personal inspection of the Site and or the Site Investigation Data if available.
- .2 The Contractor and all Sub-Contractors are responsible for a thorough inspection of the subsurface conditions as Work proceeds, and notification of the Consultant when such conditions may vary from conditions anticipated.
- .3 Buried services:
  - .1 Before commencing work verify location of buried services on and adjacent to site.
  - .2 The Contractor will be responsible for hiring and arranging for the location of any underground services and utilities in the areas of work.
  - .3 The Contractor will be responsible for any costs as a result of damage caused by the Contractor to any underground services or utilities.
  - .4 Before commencing work, conduct, with the Consultant, a condition survey of existing structures, trees and other plants, lawns, fencing, service poles, wires, paving, survey benchmarks, and monuments which may be affected by the proposed works.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

### **1.02 WORK COVERED BY CONTRACT DOCUMENTS**

- .1 In general terms, the purpose of this procurement is to select a qualified contractor which provides the best value for the money to provide all construction and related services required for completion of the proposed 1338 Water Service Upgrade project, including but not limited to the following;
  - .1 All Watermain works within the property limits and all watermain works in the municipal right-of-way included on the engineering drawings.
  - .2 Obtain appropriate permits.
  - .3 Coordinate with utility companies as required.
  - .4 Traffic Control and Traffic Control Plan
  - .5 Cleaning the site as required
  - .6 Supply and install Construction Fencing and barriers as required.
  - .7 Tree removal and tree protection.
  - .8 Supply and Install trench shoring as required
  - .9 Any required topsoil removal, clearing and grubbing.
  - .10 Excavate, supply and install watermain and appurtenances and backfill as required.
  - .11 Asphalt and concrete removals including curb and sidewalk within the municipal right-of-way as required.
  - .12 Reinstate Princess Street and 1338 laneway road cuts.
  - .13 Reinstate asphalt walkway as required.
  - .14 Reinstate curb and gutter as required.
  - .15 Reinstate topsoil and sod.
  - .16 Rock excavation will be provisional at the unit priced bid based on the cubic meters of rock excavated and will be excluded from the lump sum price.
  - .17 Excess soils removed offsite will be provisional at the unit priced bid and will be excluded from the lump sum price.

### **1.03 CONTRACT METHOD**

- .1 The specification of all trades shall be carefully read by the Contractor so that he may make himself acquainted with the extent and nature of the work of other trades.
- .2 Relations and responsibilities between Contractor and subcontractors assigned by Owner are as defined in Conditions of Contract. Assigned Subcontractors must, in addition:
  - .1 Furnish to Contractor, bonds covering faithful performance of subcontracted work and payment of obligations thereunder when Contractor is required to furnish such bonds to Consultant.
  - .2 Purchase and maintain liability insurance to protect Contractor from claims for not less than limits of liability which Contractor is required to provide to Consultant.

### **1.04 WORK BY OTHERS**

- .1 Co-operate with other Contractors in carrying out their respective works and carry out

instructions from Consultant.

- .2 Co-ordinate work with that of other Contractors. If any part of work under this Contract depends for its proper execution or result upon work of another Contractor, report promptly to Consultant, in writing, any defects which may interfere with proper execution of Work.

#### **1.05 FUTURE WORK**

- .1 Not Used.

#### **1.06 WORK SEQUENCE**

- .1 Co-ordinate Progress Schedule and co-ordinate with Owner Occupancy during construction.

#### **1.07 CONTRACTOR USE OF PREMISES**

- .1 Site use and staging shall be coordinated with the Construction Manager until Substantial Performance.
- .2 Limit use of premises for Work to allow:
  - .1 Deleted.
- .3 Co-ordinate use of premises under direction of Consultant.
- .4 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
- .5 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
- .6 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Consultant.
- .7 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

#### **1.08 OWNER OCCUPANCY**

- .1 Deleted.
- .2 Deleted.

#### **1.09 PARTIAL OWNER OCCUPANCY**

- .1 Schedule and substantially complete designated portions of Work for Owner's occupancy prior to Substantial Performance of entire Work.

#### **1.10 PRE-PURCHASED EQUIPMENT**

- .1 Not used.

#### **1.11 OWNER FURNISHED ITEMS**

- .1 Not Used

#### **1.12 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING**

- .1 Execute work with least possible interference or disturbance to building operations and normal use of premises. Arrange with Consultant to facilitate execution of work.

#### **1.13 EXISTING SERVICES**

- .1 Notify, Consultant and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give Consultant 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to tenant operations.
- .3 Provide alternative routes for personnel, pedestrian and vehicular traffic.
- .4 Establish location and extent of service lines in area of work before starting Work. Notify Consultant of findings.
- .5 Submit schedule to and obtain approval from Consultant for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
- .6 Provide temporary services when directed by Consultant to maintain critical building and tenant systems.
- .7 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
- .8 Where unknown services are encountered, immediately advise Consultant and confirm findings in writing.
- .9 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .10 Record locations of maintained, re-routed and abandoned service lines.
- .11 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

#### **1.14 DOCUMENTS REQUIRED**

- .1 Maintain at job site, one copy each document as follows:
  - .1 Contract Drawings.

.2	Specifications.
.3	Addenda.
.4	Reviewed Shop Drawings.
.5	List of Outstanding Shop Drawings.
.6	Change Orders.
.7	Other Modifications to Contract.
.8	Field Test Reports.
.9	Copy of Approved Work Schedule.
.10	Health and Safety Plan and Other Safety Related Documents.
.11	Other documents as specified.

**END OF SECTION**

## 1.0 GENERAL

Except as otherwise specifically stated, all obligations set out herein shall be on account of the Contractor and at the Contractor's sole expense.

### 1.1 Description Of Work

It is the Contractors responsibility to provide all labour, material, equipment and supervision to complete the work outlined in this specification, taking into account all site conditions, noise restriction, work area restrictions, protection requirements, accessibility restrictions, etc. No extras will be entertained for inconveniences after the award of this Contract.

### 1.2 Contractor's Use Of Site

- .1 The use of all equipment is to be restricted in accordance with noise by-laws as modified herein. Contractor has access to the work areas with quiet work proceeding around the clock if desired.
  - .2 Work will be carried out between the hours of 7:00 A.M. and 5:00 P.M. Monday through Friday. Work outside of these hours must be approved by the Owner.
  - .3 The Contractor has twenty-four (24) hour access to site; however, the use of the premises will be restricted due to user occupancy.
  - .4 The Contractor shall schedule their operation to minimize the interruption of the normal use of the site and building and to comply with laws, ordinances, rules and regulations relating to Work.
  - .5 Do not unreasonably encumber the Place of Work with materials or equipment. Construction related debris shall not be permitted to accumulate on site where visible to building users. Remove daily if necessary.
  - .6 Do not close or obstruct or store materials in roadways, sidewalks or passageways without prior approval from the Owner. Do not interfere with safe passage to and from the building and adjacent public sidewalks and roads. Move stored products or equipment that interferes with building operations.
  - .7 Take all precautions and provide all required protection to ensure the safety of the general public.
  - .8 No storage of materials or equipment is allowed outside the designated work areas without the Owner's approval.
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- .9 During transportation of materials or equipment through occupied areas, ensure the public, property, and finishes are protected from damage. All damage caused by the Contractor is to be repaired or rectified at the Contractor's expense.
- .10 Arrange all construction access into occupied areas with the Owner to allow the Owner to provide proper notice, where required.
- .11 Maintain work areas and the vicinity clean and tidy to the satisfaction of the Owner and Consultant.
- .12 The Contractor is to obtain and pay for all permits required for completion of the Work. Do not start construction until the Building Permit has been issued. Provide copies of all other permits to the Owner and Consultant and post on site where required.

### **1.3 Walkthrough Inspection of Site**

- .1 Prior to start of Work, the Contractor and Owner will perform walk-through inspection of the site to determine existing conditions.
  - .2 The Contractor is to perform a thorough inspection of the site prior to the start of work and provide a written notice to the Owner that details all damaged property as well as all items that appear to be of poor working order or appearance (i.e. signs, fixtures, dirt, etc.).
  - .3 Upon receiving this notice, the Owner will review the validity of the items listed.
  - .4 If written notice is not given within five (5) days of commencement of Work, it will be assumed that the Contractor has reviewed the site and has accepted the condition of the property as being free of damage.
  - .5 Any damages not listed as part of the written notice of clause 1.5.2 above found after the completion of the work will be the sole responsibility of the Contractor to rectify. These rectifications shall be completed in a timely and satisfactory manner.
  - .6 The project will not be considered substantially performed if the cost to correct these outstanding deficiencies is greater than the limits outlined in the Construction Lien Act.
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#### **1.4 Protection of Work and Property**

- .1 Provide all required signage necessary to protect the public from the construction and work area, control pedestrian and/or vehicular traffic flow, and to inform users that construction activity is in progress. Signage is to be of a professional quality and design to the Owner's satisfaction.
- .2 The Contractor shall take all reasonable precautions necessary to protect the Work and property from damage during performance of the Contract, and shall make good any damage to the Work or property caused by the Contractor or any of its Subcontractors.
- .3 Ensure all property is protected from dust and damage.
- .4 Dust, dirt, construction debris, water and fumes from the Work must be contained so as not to affect areas that are to remain in operation outside of the designated work areas. Resulting damage caused by contamination is the responsibility of the Contractor.
- .5 The Contractor is responsible for any damage to all property, mechanical equipment, motors, elevator equipment, fixtures, air intakes, etc., resulting from dust contamination from the Work.

#### **1.5 Protection of Existing Exposed Facilities/Services**

- .1 In general, no essential services such as electric power and domestic hot water supply are to be interrupted for more than one continuous hour, and no longer than three consecutive hours for the heating system during the heating season. In all cases, previous arrangements are to be made and approval obtained from the Owner.
- .2 The Contractor shall make allowance in the price to cover all costs of temporary removal and replacement and/or relocation of existing electrical wiring and hardware required for completion of the Work.
- .3 All exposed underground infrastructure is to be protected or Contractor to correct damages at their own expense. Contractor to promptly report any damage to the Owner.
- .4 The Contractor shall restore landscaping beds in the area of work to their original plantable state after the work is complete. The Owner will arrange to remove and store for replanting, all landscaping including plants, shrubs, trees, etc. impacted by the work.

#### **1.6 The Work, Work in Progress, Property and Persons**

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- .1 Protect the Work during construction from damage by weather.
- .2 Protect existing buildings, walls, equipment, plant materials, lawns, etc. from any damages resulting from performing work on this Contract. Any damages to be repaired without cost to the Owner.
- .3 Take reasonable and required measures, including those required by authorities having jurisdiction, to protect the public and those employed on the Work from bodily harm.
- .4 Comply with requirements of the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.
- .5 The Contractor shall be prepared to provide respirators, dust protection, ear protection, hard hats, etc. for those employed by the Owner at the Site.
- .6 Direct all Subcontractors to protect their own work, existing property, adjacent public and private property and work of other Sections from damage while working.

#### **1.7 Location of Existing Utilities**

- .1 The contractor shall be responsible for arranging for the location of all existing utilities prior to construction and protection of it during construction.
- .2 Use the electrical service and water service at the site only as directed by the Owner.
- .3 Supply and pay for hoses, extension cords, special wiring or boxes as required.

#### **1.8 Fire Protection**

Contractor will:

- .1 Take necessary precautions to eliminate fire hazards and to prevent damage to the Work, building materials, equipment and other property both public and private having to do with the Work. Inspect the Work at least once a week for this purpose.
  - .2 Store and locate products and equipment packed in cardboard cartons, wood crates and other combustible containers in orderly and accessible manner. Place approved types of firefighting equipment in vicinity of
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products packed in this type of crate or carton until permanent fire protection and equipment are available.

- .3 Store no flammable products such as paint or fuel in the parking garage without the Owner's permission in writing.
- .4 Ensure tarpaulins to be fire-resistant.
- .5 Ensure open fires or burning of rubbish or debris are not permitted on Site.

### **1.9 Work Site Safety – Contractor is “Prime Contractor”**

- .1 The Contractor shall, for the purposes of the Ontario Occupational Health and Safety Act, and for the duration of the Work and Contract:
  - .1 Be designated as “Prime Contractor” pertaining to safety at the “Work site”.
  - .2 Do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with the Act and its regulations, as required to ensure the health and safety of all persons at the “Work site”.
- .2 The Contractor shall direct all subcontractors, workers and any other persons at the “Work site” on safety related matters, to the extent required to fulfill its “Prime Contractor” responsibilities pursuant to the Act.

### **1.10 Material and Equipment**

- .1 Unless otherwise specified, Contractor shall provide, maintain and pay for all materials, tools, machinery, equipment, temporary facilities, controls and conveniences necessary for execution of the Work. All materials shall be new, of merchantable quality, and suitable for the intended purpose.
- .2 Unless otherwise specified, comply with Manufacturer's latest printed instructions for materials and installation methods. Notify the Consultant in writing of any conflict between the Contract Documents and Manufacturer's instructions. Deliver, store and maintain packaged materials with Manufacturer's seals and labels intact.

### **1.11 Coordination**

- .1 Co-operate with Kingston & Frontenac Housing Corporation and arrange for all work to be expedited with the minimum of inconvenience to all parties, and report in writing any difficulties encountered in expediting the work.
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- .2 The Contractor is responsible for coordination of trades. Lines of demarcation between Contractor's work and trades' work are solely the responsibility of the Contractor. The Owner assumes no responsibility for division of the Work or for any jurisdiction regarding such division.
- .3 Contractor is responsible for coordination with the Owner of all on-site activity as it affects the operation of the building.
- .4 The Contractor is to notify the Building Inspector at least 72 hours in advance for site review where a Building Permit is required to perform the work. No work shall be covered or concealed until the Building Inspector has reviewed it, unless they have informed the Contractor that a site review will not be performed. Such review does not absolve the Contractor from their responsibility to perform the Work in accordance with the Contract Documents.

#### **1.12 Waste Removal and Cleaning**

- .1 The Contractor shall maintain the Place of the Work free from unsightly or hazardous accumulations of waste materials and rubbish, and shall perform all required cleaning during the Work. Area of work to be cleaned and swept daily.
- .2 All wastes, which create hazardous conditions, must be removed from the premises daily.
- .3 Disposal of all waste products to be performed in strict accordance with the product Manufacturer's Material Safety Data Sheet, and in accordance with the provincial Waste Control Regulations. Drainage systems shall not be used to dispose of Project wastes and materials.
- .4 Ensure all moisture sensitive equipment (i.e. exposed electrical and mechanical systems, etc.) are removed or protected against moisture infiltration during washing and dust-generating activities.
- .5 Remove all construction-related grease, dust, dirt, stains, labels, fingerprints, over-spray and other foreign materials immediately prior to the Consultant's final review. Return all adjacent areas, equipment, duct work, etc. to the Owner in a dust-free condition. Leave site in a neat and tidy condition at completion of the Work.

#### **1.13 Superintendence and Workmanship**

- .1 The Contractor shall provide a full time on-site Superintendent that is responsible for the quality, control, organization, and coordination of all
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phases of the Work. The Superintendent shall be in attendance at all site meetings.

- .2 Superintendence shall be satisfactory to the Owner.
- .3 Superintendence shall be deemed unsatisfactory and changes or additions to superintendence can be demanded by the Owner when control, organization, or coordination of the Work is not adequate, the quality of the Work does not meet the Contract Document requirements, directions given in accordance with the Contract Documents are not followed, or progress is behind schedule.
- .4 Ensure that only experienced, skilled, and certified tradesmen are employed.
- .5 Repair, replace or otherwise make good all unacceptable or defective work.

## 2.0 PRODUCTS

Not applicable

## 3.0 EXECUTION

Not applicable

**END OF SECTION**

## **1 GENERAL**

### **1.01 ADMINISTRATIVE**

- .1 Submit to Consultant submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are co-ordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.
- .10 Keep one reviewed copy of each submission on site.

### **1.02 SHOP DRAWINGS AND PRODUCT DATA**

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit drawings stamped and signed by professional engineer registered or licensed in the Province of Ontario, Canada.
- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

- .4 Allow 5 days for Consultant's review of each submission.
- .5 Adjustments made on shop drawings by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.
- .6 Make changes in shop drawings as Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Identification and quantity of each shop drawing, product data and sample.
  - .5 Other pertinent data.
- .8 Submissions include:
  - .1 Date and revision dates.
  - .2 Project title and number.
  - .3 Name and address of:
    - .1 Subcontractor.
    - .2 Supplier.
    - .3 Manufacturer.
  - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - .5 Details of appropriate portions of Work as applicable:
    - .1 Fabrication.
    - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
    - .3 Setting or erection details.
    - .4 Capacities.
    - .5 Performance characteristics.
    - .6 Standards.
    - .7 Operating weight.
    - .8 Wiring diagrams.
    - .9 Single line and schematic diagrams.
    - .10 Relationship to adjacent work.
- .9 After Consultant's review, distribute copies.
- .10 Submit 6 prints and one electronic copy of shop drawings for each requirement requested in specification Sections and as Consultant may reasonably request.
- .11 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Consultant where shop drawings will not be prepared due to standardized manufacture of product.
- .12 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Consultant.
  - .1 Report signed by authorized official of testing laboratory that material, product or

- system identical to material, product or system to be provided has been tested in accord with specified requirements.
- .2 Testing must have been within 3 years of date of contract award for project.
- .13 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Consultant.
  - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
  - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit electronic copies of manufacturer's instructions for requirements requested in specification Sections and as requested by Consultant.
  - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit electronic copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Consultant.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .17 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Consultant.
- .18 Delete information not applicable to project.
- .19 Supplement standard information to provide details applicable to project.
- .20 If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

### 1.03 SAMPLES

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Consultant's business address.
- .3 Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.

- .6 Make changes in samples which Consultant may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

#### **1.04 MOCK-UPS**

- .1 Removed

#### **1.05 PHOTOGRAPHIC DOCUMENTATION**

- .1 Submit electronic and hard copy of colour digital photography in jpg format, standard resolution monthly with progress statement and as directed by Consultant.
- .2 Project identification: name and number of project and date of exposure indicated.
- .3 Number of viewpoints: 4 locations.
- .4 Frequency of photographic documentation: as directed by Consultant.
  - .1 Upon completion of: excavation and as directed by Consultant.

#### **1.06 CERTIFICATES AND TRANSCRIPTS**

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

### **1.02 REFERENCES**

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of Ontario
  - .1 Occupational Health and Safety Act and Regulations for Construction Projects, R.S.O. 1990, c.0.1, as amended and O. Reg. 213/91 as amended - Updated 2005.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
  - .1 Results of site specific safety hazard assessment.
  - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .3 Submit 2 copies of Contractor's authorized representative's work site health and safety inspection reports to Consultant weekly.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit WHMIS MSDS - Material Safety Data Sheets
- .7 Consultant will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 5 days after receipt of plan. Revise plan as appropriate and resubmit plan to Consultant within 5 days after receipt of comments from Consultant.
- .8 Consultant's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Consultant.
- .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

#### **1.04 FILING OF NOTICE**

- .1 The Construction Manager and Contractor shall coordinate filing a Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

#### **1.05 SAFETY ASSESSMENT**

- .1 Perform site specific safety hazard assessment related to project.

#### **1.06 MEETINGS**

- .1 Schedule and administer Health and Safety meeting with Consultant prior to commencement of Work.

#### **1.07 PROJECT/SITE CONDITIONS**

- .1 Work at site will involve contact with:
  - .1 Hot asphalt.
  - .2 Granular Materials and soil.
  - .3 Concrete
  - .4 Paint
  - .5 Pipe

#### **1.08 GENERAL REQUIREMENTS**

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Consultant may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

#### **1.09 RESPONSIBILITY**

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Contractor will be responsible and assume the role Constructor as described in the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.

#### **1.10 COMPLIANCE REQUIREMENTS**

- .1 Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990, c. 0.1 and Ontario Regulations for Construction Projects, O. Reg. 213/91.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

### **1.11 UNFORSEEN HAZARDS**

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Consultant verbally and in writing.
- .2 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, advise Health and Safety co-ordinator or Safety Officer and follow procedures in accordance with Acts and Regulations of Province having jurisdiction and advise Consultant verbally and in writing.

### **1.12 HEALTH AND SAFETY CO-ORDINATOR**

- .1 Deleted.

### **1.13 POSTING OF DOCUMENTS**

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province Territory having jurisdiction, and in consultation with Consultant.

### **1.14 CORRECTION OF NON-COMPLIANCE**

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Consultant.
- .2 Provide Consultant with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Consultant may stop Work if non-compliance of health and safety regulations is not corrected.

### **1.15 BLASTING**

- .1 Blasting or other use of explosives is not permitted.

### **1.16 POWDER ACTUATED DEVICES**

- .1 Use powder actuated devices only after receipt of written permission from Consultant.

### **1.17 WORK STOPPAGE**

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

**END OF SECTION**

## **1.0 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 32 15 60 - Roadway Dust Control
- .2 Section 31 23 33.01 - Excavating, Trenching and Backfilling

### **1.02 REFERENCES**

- .1 Definitions:
  - .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
  - .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.
  - .3 Canadian Construction Documents Committee (CCDC)
    - .1 CCDC 2-2008 Stipulated Price Contract.
  - .4 Ministry of Transportation – Environmental Guide for Erosion and Sediment Control During Construction of Highway Projects.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

### **1.04 FIRES**

- .1 Fires and burning of rubbish on site is not permitted.

### **1.05 DRAINAGE**

- .1 Provide temporary drainage and pumping required to keep excavations and site free from water.
- .2 Ensure pumped water into waterways, sewer or drainage systems is free of suspended materials.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

### **1.06 SITE CLEARING AND PLANT PROTECTION**

- .1 Protect trees and plants on site and adjacent properties as indicated.
- .2 Protect trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m minimum.
- .3 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage.

- .1 Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .4 Minimize stripping of topsoil and vegetation.
- .5 Restrict tree removal to areas indicated.

#### **1.07 WORK ADJACENT TO WATERWAYS**

- .1 Construction equipment to be operated on land only.
- .2 Waterways to be kept free of excavated fill, waste material and debris.
- .3 Design and construct temporary crossings to minimize erosion to waterways.
- .4 Do not skid logs or construction materials across waterways.
- .5 Avoid indicated spawning beds when constructing temporary crossings of waterways.

#### **1.08 POLLUTION CONTROL**

- .1 Maintain temporary erosion and pollution control features installed under this Contract and as indicated.
- .2 Control emissions from equipment and plant in accordance with local authorities' emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- .5 Supply and distribute water and lime for dust control at Consultant's request
- .6 Erosion and Sediment Control shall be installed to the consultant's satisfaction and as indicated.

#### **1.09 NOTIFICATION**

- .1 Consultant will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 Contractor: after receipt of such notice, inform Consultant of proposed corrective action and take such action for approval by Consultant.
  - .1 Take action only after receipt of written approval by Consultant.
- .3 Consultant will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted, or equitable adjustments allowed to Contractor for such suspensions.

## **2.0 PRODUCTS**

### **2.01 NOT USED**

- .1 Not Used.

## **3.0 EXECUTION**

### **3.01 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Do not bury rubbish and waste materials on site.
- .3 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.
- .4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.

**END OF SECTION**

## **1.0 GENERAL**

### **1.01 RELATED REQUIREMENTS**

### **1.02 REFERENCES**

- .1 Canadian General Standards Board (CGSB)
  - .1 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
  - .2 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.
- .2 Canadian Standards Association (CSA International)
  - .1 CSA-O121-M1978(R2003), Douglas Fir Plywood.

### **1.03 INSTALLATION AND REMOVAL**

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

### **1.04 HOARDING**

- .1 Erect temporary site enclosures to contain designated construction areas using 1.8-metre-high temporary portable fencing. Panels to have 42 mm welded galvanized frames with non-climbable mesh.
- .2 Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.

### **1.05 GUARD RAILS AND BARRICADES**

- .1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs.
- .2 Provide as required by governing authorities.

### **1.06 WEATHER ENCLOSURES**

- .1 Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.
- .2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.
- .3 Design enclosures to withstand wind pressure and snow loading.

### **1.07 DUST TIGHT SCREENS**

- .1 Provide dust tight screens or insulated partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.
- .2 Maintain and relocate protection until such work is complete.

**1.08 ACCESS TO SITE**

- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

**1.09 PUBLIC TRAFFIC FLOW**

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.

**1.10 FIRE ROUTES**

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

**1.11 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY**

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

**1.12 PROTECTION OF BUILDING FINISHES**

- .1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.
- .3 Confirm with Consultant locations and installation schedule 3 days prior to installation.
- .4 Be responsible for damage incurred due to lack of or improper protection.

**1.13 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling.

**END OF SECTION**



## **1.0 GENERAL**

### **1.1 Contract Close-Out Procedure**

#### **.1 Contractor's Review**

- .1 The Contractor and their Subcontractors shall conduct a review of the work and correct all noted deficiencies.
- .2 The Contractor shall notify the Owner, in writing, of satisfactory completion of the "Contractor's Review" after the correction of all noted deficiencies and shall request an "Owner's Review".

#### **.2 Owner's Review**

- .1 The review team shall consist of the Owner and the Contractor. The Owner or their representative shall attend at their option.
- .2 The Owner will prepare a list of deficiencies noted during the "Owner's Review" and will issue the list to the Contractor.
- .3 The Owner will determine the value of work associated with any outstanding deficiencies noted during the Owner's Review. Payment of these retained funds will be withheld until the deficiencies have been rectified to the satisfaction of the Owner.
- .4 The Contractor shall correct all deficiencies indicated on the list in a timely and satisfactory manner.

#### **.3 Final Review**

- .1 The Contractor shall request a "Final Review" when the Contractor is satisfied that all deficiencies have been corrected. The request shall be made in writing.
- .2 The "Final Review" shall be conducted by the Owner and the Contractor.

#### **.4 Certificate of Substantial Performance**

- .1 The Contractor must submit a request in writing to the Owner for a Certificate of Substantial Performance.
-

.2 The Contractor shall comply with the following during Contract close-out:

- .1 The requirements of the Construction Lien Act.
- .2 The requirements of the Workers Compensation Act.
- .3 All other contractual requirements

**.5 Total Performance**

- .1 Immediately following the issuance of the Certificate of Substantial Performance, the Owner, in consultation with the Contractor, will establish a reasonable date for the "Total Performance of the Work".
- .2 The Contractor shall supply all guaranties and review certificates in accordance with the requirements of the Contract Documents prior to the date established for "Total Performance of the Work".

**.6 Release of Holdback**

- .1 The lien holdback amounts will be released pursuant to the Construction Lien Act.

**2.0 PRODUCTS**

Not applicable

**3.0 EXECUTION**

Not applicable

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

### **1.02 REFERENCES**

- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-, Stipulated Price Contract.

### **1.03 PROJECT CLEANLINESS**

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site.
- .3 Clear snow and ice from access to building, bank/pile snow in designated areas only.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site containers for collection of waste materials and debris.
- .6 Provide and use marked separate bins for recycling.
- .7 Dispose of waste materials and debris off site.
- .8 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

### **1.04 FINAL CLEANING**

- .1 Refer to CCDC 2, GC 3.14.
- .2 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .3 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

- .4 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .5 Remove waste products and debris including that caused by Owner or other Contractors.
- .6 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site.
- .7 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .8 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .9 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors.
- .10 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .11 Remove dirt and other disfiguration from exterior surfaces.
- .12 Sweep and wash clean paved areas.
- .13 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.
- .14 Remove snow and ice from access to building.

#### **1.05 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling.

**END OF SECTION**

## 1.0 GENERAL

### 1.1 Payment and Holdback

- .1 For the purpose of the Construction Lien Act, R.S.O. 1990, c. C.30, the Payment Certifier shall be the Owner, or any person the Owner may designate from time to time as required by the Construction Lien Act, R.S.O. 1990, c. C.30, who shall:
  - .1 Determine and certify substantial performance; and
  - .2 Determine completion.

### 1.2 Applications for Payment

- .1 The Contractor shall submit a detailed schedule of values for the various components of the work in a form to the satisfaction of the Owner for review within ten (10) days of Award of Contract. This schedule of values shall form the basis by which progress draws are evaluated for completeness of the work performed.
- .2 Applications for payment on account may be made MONTHLY as the work progresses and submitted to **Kingston & Frontenac Housing Corporation**.
- .3 Before tax totals, all applicable taxes and totals must be shown separately on all invoices.

### 1.3 Evidence of Publication

- .1 Upon completion of the work, the Payment Certifier will issue a Certificate of Substantial Performance. Contractor must then provide the Owner with evidence acceptable to it of publication. Holdback will be released on the sixtieth (60<sup>th</sup>) day from date of publication.

### 1.4 No Additional Payment for Increased Costs

- .1 The amount payable to the Contractor under the Contract will not be increased or decreased by reason of any increase or decrease in the cost of the work brought about by any increase or decrease in the cost of plant equipment, labour, materials or wage rates.

### **1.5 Deductions for Uncorrected Work**

- .1 If in the opinion of the Payment Certifier, it is not expedient to correct defective work, or for work not done in accordance with the Contract Documents, the Owner may deduct from the Contract Price the difference in value between the work as done and that called for by the Contract.

### **1.6 Warranty/Guaranty Period**

- .1 The Contractor shall provide a one (1) year minimum warranty for all Work of the Contract.

### **1.7 Bonds**

- .1 Bonding costs, including the expense of getting bonds executed, shall be borne by the Contractor.
  - .2 Provide the Owner with the following surety bonds within fourteen (14) days after Contract award:
    - .1 A Performance Bond to secure the due and proper performance by the Contractor of their obligations under the Contract in an amount equal to 50% of the Contract Price.
      - .1 The performance bonding period shall commence on the date of contract execution and end two (2) years from date of Substantial Performance.
  - .3 If a lien claim is filed against the title of the lands on which the work or any part thereof is performed in relation to the Contract by an entity other than the Contractor, the Contractor is to provide a Lien Bond to remove the registered lien claims and/ or certificates of action.
  - .4 Bonds are to be in favour of the Owner.
  - .5 Bonds are to name the Owner as Obligee. The Obligors are the Contractor and a Guarantee Surety Company unobjectionable to the Owner and not insolvent, bankrupt, in receivership or winding-up proceedings.
  - .6 Guarantee Surety Company is to be a properly licensed surety company registered and duly authorized to transact the business of suretyship in the Province Ontario.
-

## 2.0 PRODUCTS

Not applicable.

## 3.0 EXECUTION

### 3.1 Remedial Work Under Guaranty/Warranty

- .1 The Contractor shall perform any required warranty repair work for the duration of the warranty period at no extra cost.
- .2 Notice will be provided to the Contractor during the warranty period within thirty (30) days of the discovery of any defect in the Work. The Contractor shall take necessary steps to protect the area against further damage immediately upon receipt of notice and shall take corrective action to make good any damage incurred. The Contractor shall schedule repair work with the Owner and shall make every attempt to make good the defects within three (3) weeks of notice.
- .3 Remedy is to be at no cost to the Owner and is to include all labour, material, equipment, and supervision necessary to make good defective areas of the Work and any damages incurred to obtain access to defective areas.
- .4 The Contractor must reimburse the Owner for any resulting assessment costs incurred to define the extent of the defect and for costs incurred to test the repaired defect to confirm acceptability of repairs.
- .5 The Contractor must reimburse the Owner for all associated costs incurred due to closure of the areas requiring repair under warranty.
- .6 Warranty periods for areas requiring repair are to be extended by the amount of time lapsed between issuance of notice and completion of remedial work. The warranty/guaranty period will then re-commence upon completion of the remedial work.
- .7 Warranties are not to be deemed to restrict any liability of the Contractor arising out of any applicable law.

**END OF SECTION**

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**KINGSTON & FRONTENAC HOUSING CORPORATION**

**1338 PRINCESS STREET WATER SERVICE UPGRADE**

**SPECIAL PROVISIONS – CONTRACT ITEMS**



**SP.1 General Site Work**

All cost for items required in the General Conditions, General Requirements, Close-Out Procedure and Special Provisions of this contract which are not covered under other items of work are to be included in General Site Work.

The work should also include the following:

- 01) All permits and or approvals required by the Contractor for the performance of the work, aside from those applied for directly by the Owner.
- 02) Utility Locates
- 03) Site and Road Cleanup. **The 1338 Laneway is to be cleaned daily.**
- 04) Insurance
- 05) Bonds
- 06) Safety equipment
- 07) Field Office and amenities as required
- 08) Layout and surveying of all works
- 09) Construction Signage
- 010) Construction Fencing, Temporary Barriers & Tree Protection
- 011) Coordination of Utility Companies
- 012) Mobilization and Demobilization
- 013) Maintaining excavations until all the infrastructure is installed and backfilled
- 014) As-Built Drawings
- 015) Locate Test Pits

**SP.2 Grading and Excavating including Earth Excavation, Grading and Compaction**

Grading and excavation for removals, earth excavation to the depths indicated on the drawings for all works are included under this item.

Any excavated or material onsite that is deemed acceptable by the Engineer shall be placed as fill or removed and disposed of offsite at no additional cost to the Owner. Material placement, grading, borrow and compaction shall adhere to the requirements of OPSS 206, 212 and 501.

Excess material will become the property of the Contractor. Disposal of such material shall be at a location provided by the Contractor at no cost to, but approved by, the Owner.

Material shall be excavated to original ground or proposed finished ground at a minimum and at the contract administrator's approval.

**SP.3 Removals, Clearing and Grubbing including tree and stump removal**

Limit of clearing and grubbing is to include all area's where watermain excavation is proposed - and as directed by the Contract Administrator. All material is to be disposed of offsite including stumps and wood chips.

Removals shall include asphalt, concrete, curb, sidewalk, fencing, and waste within the property lines shall be removed at the contractor's expense. Excess material will become the property of the Contractor. Disposal of such material shall be at a location provided by the Contractor at no cost to, but approved by, the Owner.

The Contractor shall review the site to determine any removals required prior to submitting a quote that are not explicitly detailed on the construction drawings or in the bid form.

**SP.4 Rock Excavation Trenching and Excavation**

The work shall be conducted in accordance with OPSS 403 and revisions as follows:

- Add to Clause 403.07 the following:

For trenches the basis of payment and measurement for payment shall read “Measurement for payment will be made in cubic meters for the volume of rock excavated within the payment lines specified as follows – payment trench width shall equate to the nominal pipe diameter plus 300 mm on each side, but in no case less than 1000 mm. Trench bottom elevation shall be pipe invert less 150 mm. Top of rock elevation is to be as measured and recorded in the field.

Where rock excavation is required to ensure the placement of the compacted thickness of granular material indicated on the contract drawings to produce the design grades, the minimum depth of rock shatter shall be 300mm. Rock Excavation will be paid at the tendered unit price for all areas measured and recorded.

Measurement for payment will be in cubic meters measured by using three rectilinear measurements made, and recorded by the Contract Administrator with the assistance of the Contractor. The record shall be signed by the Contractor immediately after the measurements are made.

The Unit Price shall apply without adjustment for any quantity of rock excavated under this item. This item includes rock excavation by use of a hydraulic breaker for watermain. This item is to be provisional and is to be excluded from the Lump Sum price.

**SP. 5 Traffic Control & Traffic Control Plan**

- 01) The Contractor is to take into consideration that road closures are not permitted and all streets included in this Contract shall be open to traffic to at least one lane of traffic under the control of traffic control personnel.
- 02) The Contractor shall prepare a detailed traffic control plan in conformance with Ontario Traffic Manual Book 7 for approval by the Contract Administrator and City of Kingston staff.
- 03) Advanced construction signs shall be supplied and erected by the Contractor and maintained by the Contractor as directed by the Contract Administrator. This item is to include all costs associated with Traffic Control and flagging Operation.
- 04) The Contractor shall ensure that access is available for emergency vehicles at all times on Princess Street and the 1338 laneway.
- 05) Pedestrian traffic must be maintained at all times.

**SP.6 Trench Surface Reinstatement**

- 06) Upon completion of Work, remove waste materials and debris, trim slopes, and correct defects as directed by Contract Administrator.
- 07) Reinstatement pavements, topsoil and sod, curbs and sidewalks disturbed by excavation to thickness, structure and elevation which existed before excavation. The site is to be restored to a pre-construction state or better.
- 08) Topsoil and sod restoration shall be as per SP.10
- 09) Pavement restoration shall be as per SP.7.

- 010) Sidewalk restoration shall be as per SP.11
- 011) Curb and Gutter restoration shall be as per SP.12
- 012) Pavement markings restoration shall be as per SP.13
- 013) Clean and reinstate areas affected by Work as directed by Contractor Administrator.
- 014) Protect newly graded areas from traffic and erosion and maintain free of trash or debris.

#### **SP. 7 Hot Mixed Asphalt including Asphalt Cement**

Whenever the Contractor uses quarry screenings for his source of fine aggregates (obtained by drilling and blasting), he shall be responsible for the supplying, hauling, mixing, and blending of materials when required to produce an acceptable Marshall mix design. All labour equipment and material shall be included in the unit prices bid.

Asphalt cement shall be performance graded 58-28 and 5.4% minimum mass of the mix.

The depth of compacted asphalt shall be as indicated on the Bid Form and contract drawings.

All costs associated with the provision of approved mix designs shall be borne by the Contractor.

All milling and tack coating of transverse and longitudinal joints required to integrate paving services and structures shall be included in the price. Pavement restoration on Princess Street shall be as per City of Kingston detail TRD-1.

No automatic screed controls will be required.

All labour and materials to complete asphalt saw cutting, including cutting of the base course asphalt prior to milling the top course asphalt at road cuts and at the limits of asphalt construction shall be included in the unit price.

#### **SP. 8 Granulars**

No granular material shall be placed until the sub-grade of the road or asphalt pathway has been checked and approved by the Contract Administrator.

All granular materials must be obtained from pits or quarries approved by the Ministry of Transportation of Ontario.

The Contractor shall notify the Contract Administrator when he is satisfied the granular grade conforms to both compaction and grades requirements, so grades and compaction can be checked prior to the placement of asphalt surface.

These items will be paid by the square metre; the measurement will not include any associated rounding required and will be based on the limits specified in the contract drawings. In general Measurements will be based on the specified road width. The depth of granular materials will be as stated in the tender form and on the contract drawings.

The unit price bid shall include all water required to achieve compaction.

All Granular material shall be crushed limestone.

**SP. 9 Watermains**SPW. 1      Watermains

- 01) For all watermain sections with a nominal diameter larger than 300mm, a minimum of fifteen (15) days before commencing the installation of watermains, the Contractor shall supply, from the selected pipe manufacturer, a Construction Report prepared and sealed by a professional engineer. This report shall include but is not limited to;
- (a) A letter of product compliance
  - (b) Pipe design calculations
  - (c) A summary of required fittings and methods of restraint
  - (d) An installation guide
  - (e) Shop drawings, including restraint lengths, etc.
- 02) Watermains shall conform to the following:
- (a) Ductile Iron Pipe and Fittings
    - (i) Ductile Iron Pipe shall be centrifugally cast, AWWA C151-A21.51- 81 in 5.5 m lengths, Pressure Class 350 for pipe up to 300mm, Pressure Class 250 from 400mm to 500mm and Pressure Class 200 for larger pipes.
    - (ii) All ductile iron pipe shall be cement lined and shall be polyethylene encased as per AWWA Standard C-105.
    - (iii) All ductile iron fittings shall be cement lined with mechanical joints.
    - (iv) Every ductile iron pipe and special casting shall be coated outside with coal tar pitch varnish using a hot dip method.
    - (v) Wedges shall be installed at ductile iron pipe joints to ensure electrical continuity.
  - (b) Plastic Pipe and Fittings (CIOD)
    - (i) Plastic pipe shall conform to either;
      - (a) AWWA C900-Poly (Vinyl Chloride) (PVC) Specification, SDR 18, Pressure Class (PC) of 235 or
      - (b) AWWA C909-Molecularly Oriented Polyvinyl Chloride (PVCO) Specification, Pressure Class (PC) of 235
    - (ii) The pipe shall be homogeneous throughout, free from voids, cracks, inclusions, discolouration, and other defects.
    - (iii) All pipe and fittings shall be certified by CSA to meet CSA B137.3
    - (iv) Fittings shall be:
      - (a) Ductile iron according to AWWA C153/A21.53 or
      - (b) Injection moulded PVC plastic according to CSA B137.2 or
      - (c) Prefabricated PVC plastic for pipe diameters 300mm and larger according to CSA B137.3
    - (v) The colour for all PVC pipe and PVC fittings shall be blue
  - (c) Concrete Pressure Pipe and Fittings
    - (i) Concrete Pressure Pipe shall only be allowed if so stated in the Bid form or on the contract drawings.
    - (ii) Concrete pressure pipe shall be laid according to the specifications outlined in the A.W.W.A. M9 Concrete Pipe Installation Manual. The internal joint gap shall be checked to ensure the proper seating of the gasket. The interior joint gap shall then be pointed with cement mortar using a hand trowel. The joint exterior shall be protected with a diaper filled with grout installed to the manufacturer's instructions.
  - (d) Mechanical joints required for valves 400-mm and over, shall be a mechanical joint conforming to AWWA C111/A21.11-85.
  - (e) Insulation required for watermains and services which are not buried 1700mm shall be 50mm rigid insulation approved by the Engineer, as per Utilities Kingston drawing W03-03-114.

Payment for insulation shall be made under the appropriate item, and will be per linear metre length of pipe insulated.

- 03) The interior of all pipe, fittings and other accessories shall be kept clean and free from foreign matter at all times.
- (a) All watermain material shall comply with OPSS 441.07.07. Cut pipes of length 1.5m or less, fittings and valves do not require end caps, but shall be field cleaned prior to installation. Pipes delivered on-site with damaged or missing caps shall be field cleaned by swabbing with a 1% chlorine solution to remove all undesirable material along the entire length of the interior of the pipe prior to installation.
- (b) The Contract Administrator reserves the right to reject any pipe that is not deemed to be clean.
- 04) Payment for watermain shall be by the linear metre of pipe installed and shall include all labour and materials to perform the installation including, tees, crosses, elbows, reducers, restraints, temporary backflow prevention, etc. and any required cathodic protection.

SPW. 2      Valves

- 01) Valve boxes shall be of cast iron as manufactured by Bibby Ste Croix or Star Pipe Products, 112mm and shall be of sliding type, complete with grommeted hole for tracer wire, which cannot carry any surface load down to the pipe. The covers shall be of a design which prevents unauthorised entry and marked "Water", length to be 140mm to 240mm as manufactured by Bibby Ste Croix and Star Pipe Products. Special attention shall be paid to compaction adjacent to valve boxes.
- 02) Gate Valves for pipe shall be Clow or equal, cast iron body, resilient seated mechanical joint pattern conforming to ANSI/AWWA C509, designed for a working pressure of not less than 150 PSI. Valves shall open when turned in a clockwise direction, shall be fitted with a compound operating nut conforming to drawing no. W03-03-122. All valves shall be manufacturer approved for direct bury applications.
- 03) Valves shall be placed with the stem vertical at the points indicated by the Engineer. As per ANSI/AWWA C509, subsection 4.4.8, gearing shall not be accepted. Valve boxes shall be set vertical, well centered over the valve with the top at grade.
- 04) The price agreed upon in the tender shall include all costs for the supply and installation of valves and associated valve boxes and necessary road levellers at the location required and to the satisfaction of the Engineer as well as any required cathodic protection.

SPW. 3      Supply and Prepare for Tapping Sleeve and Valve

- 01) Tapping sleeves sized 150mm x 100mm to 600mm x 300mm shall be bolted steel style 622 Smith Blair MJ Connection Type Epoxy Coated with Dresser Alloy Bolts for appropriate pipe material. Installation of tapping sleeves and valves will be performed by the Corporation at no cost to the Contractor.
- 02) Gate valves for use with MJ type tapping sleeves shall be as per SPW.2.
- 03) The price agreed upon in the tender shall include all costs for:
- (a) *The supply of the tapping sleeve and valve*
- (b) *Excavate and expose watermains to be connected within the work area*
- (c) *Coordinate the installation of the tapping sleeve and valve with Utilities Kingston*
- (d) *Backfill, supply and installation of valve boxes and necessary road levelers at the location required and to the satisfaction of the Engineer as well as any required cathodic protection (See SPW.10)*

SPW. 4      Water Services

- 01) Materials
- (a) *Service Pipe shall be;*
- (i) *Soft copper tube – Type K, meeting NSF 61*
- (ii) *Cross Linked High Density Polyethylene (PEX) complete with stainless steel inserts meeting NSF 14 & 61, AWWA C904, and CSA B137.5. Sizing must conform to standard copper tube size (CTS) O.D. and be compatible with standard copper tube compression fittings, with a minimum working pressure rating of 1100 kPa (160 psi) at 23°C. PEX*

*material may only be utilized on services where a minimum of 3.0m of the existing (undisturbed) service piping material will remain (from the curb stop to the building entry point). If 3.0m of the existing service piping cannot be maintained, copper must be utilized.*

- (b) *Service connections shall utilize AWWA thread and shall be;*
- (i) *On PVC main either with;*
    - a) *A manufactured molded fitting conforming to AWWA C907 and CSA B137.2, tapped coupling or*
    - b) *A single band, double stud, type 304 stainless steel service saddle complete with stainless steel nuts and neoprene gasket.*
  - (ii) *On Ductile Iron main with;*
    - c) *A Ductile Iron body, plated steel straps and nuts, services saddle complete with neoprene gasket, a single strap for services 25mm and smaller, a double strap for 38 and 50mm services.*
    - d) *A single band, double stud, type 304 stainless steel service saddle complete with stainless steel nuts and neoprene gasket.*
- Acceptable saddle manufacturers are Mueller Canada, Ford Meter, Smith/Blair or Robar.
- (c) All brass fittings shall be manufactured from **Low Lead Alloy** C89520 or C89833.
- (i) *Corporation main stops shall be copper compression joint type with AWWA thread, as manufactured by Mueller Canada, Ford Meter and Cambridge Brass.*
  - (ii) *Couplings and adapters shall be compression fittings or compression X Male or Female iron pipe as manufactured by Mueller, Ford Meter and Cambridge Brass.*
  - (iii) *Curb valves (stops) shall be copper compression joints type with AWWA thread and shall be stop only (not stop and drain) as manufactured by Mueller Canada, Ford Meter and Cambridge Brass. For 38mm and 50mm services the curb valve shall be a Mueller Mark II Oriseal or approved equal.*
- (d) *Water service boxes shall be;*
- (i) *For < 38mm diameter service - Mueller Cat. No. A-726 or equal complete with cast iron lid (including centre brass nut), 900mm stainless steel rod and stainless steel cotter pins.*
  - (ii) *For 38mm & 50mm diameter services– Mueller Cat. No. A-753 or equal complete with cast iron lid (including centre brass nut), 1200mm stainless steel rod, and cotter pins.*
- 02) All new water services shall be extended to the property line, according to the unit prices shown on the Bid Form.
- 03) If a PEX type water service is installed;
- (a) *A tracer wire meeting the requirements specified in SPW.14 shall be extended over the full length of the non metallic service material and shall at a minimum be connected to the tracer wire on the water main and by ground clamp to the existing remaining copper water service material. See Drawing W03-03-124.*
  - (b) *When PEX material is extend from the Curb Valve into the customers building at the customer's request/cost the contractor shall insure, at no cost to Utilities Kingston, that the electrical service grounding remains intact. The tracer wire should be extended up the exterior of the foundation wall immediately above the water service entry point or a close as practically possible and shall be terminated with a Locate Station.*
- 04) One (1), five and a half (5.5) kilogram Zinc anode shall be installed with each service. If the service is copper this anode should be connected directly to the service material with a grounding clamp. With PEX type service material the anode should be connected to the tracer wire, at the grounding clamp location (if transitioning to copper at property line), or at the Locate Station (if PEX is extending to the building). See Drawing W03-03-124.
- 05) If a new service is to be connected to an existing main, the existing service must be shut off at the main, cut and capped at the corporation stop outlet.
- 06) The connection from the new to the existing service pipe at the property line shall be performed by the Contractor. No connection is to be backfilled until inspection by Utilities Kingston personnel and until all testing, flushing and disinfection per section SPW.11 have been completed. All costs for this connection shall be included in the respective water service appurtenance item.



- 07) Any work performed at the request/cost of the property owner on private property shall be completed after completion of the work in this contract, unless it can be done within the working days allowed. No extension of working days will be considered due to delays caused by works undertaken outside of this contract. The Contractor shall ensure that all appropriate permits have been issued before beginning work on private property and that all inspections are completed by the appropriate authorities.
- 08) Service installations by boring or torpedo may be necessary to save tree roots or existing sidewalk, where there is sufficient separation between water services and sewer lateral. In such cases the edge of the entrance and exit pits shall be at least 0.6 metres from the sidewalk.
- 09) Payment for service sets will include as required corporation main stops, curb stops, boxes & rods, anodes, and connections to existing water services including all fittings.
- 10) Payment for curb stops only will include curb stops, boxes and rods and connections to existing water services including fittings.
- 11) Payment for service piping shall be by the linear metre under the appropriate unit price items, including tracer wire, locate station if required and the additional details below;
  - (a) Traditional Open Cut Method – payment in accordance with OPSS 441.
  - (b) Trenchless Installation – Drilling equipment must be capable of monitoring the process and location of the drill head and advancing drill string, and must provide adequate directional control to ensure accurate placement of services (0.3m horizontally, 0.15m vertically).
    - (i) Earth – payment shall also include entrance pit, exit pit, required utility spotting excavations and directional drilling.
    - (ii) Rock – payment at the rock price shall be for the entire length of an individual service where rock drilling was required for a minimum of 1.0m and a maximum of the entire service length. Rock excavation for entrance and exit pits and utility spotting pits shall be paid by the cubic metre under the appropriate unit price item.
  - (c) When, at the direction of the Contract Administrator, a single bore (either rock or earth) is utilized to install two (2) independent water services, payment shall be calculated as the linear length of the bore in metres at the appropriate “Trenchless” installation rate (see (b) above) plus 0.75 X the linear length of the bore in metres at the “Traditional” installation rate (see (a) above).

SPW. 5 Pipe and Joint Restraint

- 01) General
  - (a) Pipe and joint restraint shall comply with OPSD 1103.010/1103.020 or as set out herein. Assume a soil bearing strength of 100 – 199 kPa unless otherwise instructed in writing by the Engineer.
  - (b) Mechanical joint restraint may be used subject to the prior approval of the Engineer.
  - (c) The number of joints requiring mechanical thrust restraint shall be set by the Engineer or as set out in the Construction Report as set out in SPW.1- 01) above.

- 02) Eye Bolts and Rods
  - (a) Eye bolts shall be ANSI/ASME B1.1 19mm (¾ inch). Rods shall be ANSI/ASME B1.1 19mm (¾ inch) Grade 316 stainless steel. The number of rods required will be as set out below:

(b) Number of 19mm Rods for Eye Bolt Restraint

(c) <u>Pipe Size</u>	<u>Fitting</u>			
	Dead End, Tee, &	90° Elbow	45° Elbow	22.5° Elbow
(e) Dead End Valve				
(f) 150mm	2	2	2	2
(g) 200mm	2	2	2	2
(h) 250mm	3	3	2	2
(i) 300mm	4	4	2	2
(j) 400mm Not Permitted		Not Permitted	3	2

- 03) Ductile Iron Pipe Restraint
- (a) Mechanical restraint for standardised mechanical joints shall be incorporated in the design of the follower gland and shall impart wedging action against the pipe, increasing its resistance as the pressure increases. The assembled joint shall maintain its flexibility after burial and shall maintain its integrity by controlled and limited expansion of each joint during the wedging action. Restraining glands shall be manufactured of ductile-iron conforming to the requirements of ASTM A 536, Grade 65-45-12. Wedging mechanisms shall be manufactured of Ductile-iron to hardness of 370 BHN minimum. Dimensions of the gland shall be such that it can be used with the standardised mechanical joint bell and tee head bolts conforming to the requirements of ANSI/AWWA C111/A21.11 and ANSI/AWWA C153/A21.53 of latest version. Twist off nuts shall be incorporated in the design of the wedge activation screws to insure proper torque during installation.
  - (b) The mechanical joint restraining device shall have a working pressure of 1750 kPa with a safety factor of 2.1 against separation when tested in the dead-end situation.
  - (c) The Mechanical joint restraining device shall be Uni-Flange series 1400 or approved equal.
- 04) PVC Pipe Restraint
- (a) Mechanical joint restraint devices for PVC Pipe shall incorporate a series of machined serrations (cast serrations are not permitted) on the inside diameter to provide restraint, exact fit, and 360 degree contact and support of pipe wall. Restraint devices shall be manufactured of high strength ductile iron, ASTM A 536, Grade 65-45-12. Bolts and connecting hardware shall be of high strength low alloy material in accordance with ANSI/AWWA C111/A21.11.
  - (b) All joint restraint devices for PVC shall carry a water working pressure rating equivalent to the full rated pressure of the PVC pipe on which they will be installed, with a minimum factor of safety of 2:1 in any nominal pipe size. In addition, they shall meet or exceed the requirements of Uni-B-13-94 or ASTM F1674.
  - (c) Restraint Devices shall be;
    - (i) External Type - Uni-Flange Series 1500, 1300, 1350, 1360, 1390 or approved equal as appropriate to the application.
    - (ii) Pipe with Internal or Self-Restrained Joint (restraint located within the pipe bell) – approved to CSA B137 as detailed in CSA B137.3-05 Clause 7.5. Joints so restrained must have a clear and permanent visual indication on the outside of the Bell indicating that the joint is restrained.

SPW. 6 Backflow Prevention

- 01) Utilities Kingston will not supply backflow prevention for this project.
- 02) The Contractor shall make arrangements or provide a water supply for disinfection and testing purposes onsite.
- 03) There shall be no payment made for installation, relocation, or removal of the backflow prevention device. All compensation shall be deemed to be included in the price of the appropriate item (i.e. Watermain).

SPW. 7 Cathodic Protection Of Watermains

- 01) Sacrificial anodes shall be supplied and installed by the Contractor on all ductile iron or cast iron fittings that are not otherwise protected by polyethylene encasement per AWWA Standard C105 and at all other locations as directed by the Engineer.
- 02) Anodes shall be zinc casting alloy conforming to ASTM B-418 10.9 kg or magnesium extrusion conforming to ASTM B-843-93 14.5 kg.
- 03) Anodes shall be set and thermite welded to the satisfaction of the Engineer.
- 04) See comment regarding anodes on services – SPW.7 04).
- 05) No separate payment will be made for cathodic protection. Payment for the supply and installation of anodes will be deemed to be included in the price of the appropriate item (watermain, valve, or hydrant).

SPW. 8 Testing & Disinfection



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- 01) Hydrostatic testing, disinfection, and microbiological sampling shall be conducted under the supervision of the Contract Administrator. Results shall be submitted to Utilities Kingston Engineering for review and confirmation prior to final permanent connection and commissioning of the new works. Results must be submitted using the Utilities Kingston form Testing Results for New Water Mains and Large Diameter Services.
- (a) The Contractor shall submit a Testing and Disinfection Plan to the Contract Administrator for review and comment by Utilities Kingston, prior to any field activities.
  - (b) The Testing and Disinfection Plan shall include all procedures required to complete the Plan, including but not limited to, proposed water connection locations, backflow prevention, flushing procedures, chlorination procedures, and sampling locations.
  - (c) Review of the Testing and Disinfection Plan by Utilities Kingston does not constitute approval of the plan.
- 02) Hydrostatic Testing
- (a) Hydrostatic testing of pipes shall conform to OPSS 441.
  - (b) Hydrostatic testing shall be scheduled to be completed between the hours of 8:00 a.m. and 4:00 p.m. local time.
  - (c) No water shall be introduced into the pipe section to be tested except through a backflow protected connection. Backflow preventers must be certified as installed by qualified personnel before any water may be introduced into the new pipe.
  - (d) No hydrostatic testing shall commence until the Contract Administrator or Inspector is on site, has given permission to proceed, and all the connections to the existing distribution system have been severed.
  - (e) Hydrostatic testing shall be conducted under the supervision of the Contract Administrator upon completion of the watermain including services and backfilling.
  - (f) A test section shall be either a section between valves or the completed watermain.
- 03) Flushing/Swabbing of Watermains
- (a) Flushing/Swabbing operations shall be conducted under the supervision of the Contract Administrator. The Contract Administrator shall be notified at least two business days in advance of the proposed date on which flushing/swabbing and disinfecting operations are to commence.
  - (b) All Watermains shall be wet swabbed as follows:
    - (i) A minimum of 3 (Three) new foam swabs with a density of approximately 25 kg/m<sup>3</sup> and a minimum diameter of 50mm larger than the watermain shall be used.
    - (ii) Swabs shall have a minimum length of 1.5 times the diameter.
    - (iii) Swabs shall be propelled through the watermain using potable water, and shall be spaced a minimum of 1.5m meter between swabs.
    - (iv) During the swabbing procedure the contractor is to install spool pieces in place of all butterfly valves. These shall be supplied, installed and removed by the contractor, with the removed spool pieces delivered to the Utilities Kingston yard for future use.
    - (v) Gate valves must be left in the open position
    - (vi) Swabbing shall continue until the discharge water runs clear within 10 seconds of the last swab exiting the discharge point.
    - (vii) All fitting, taps, valves etc. required for the introduction, propelling and recovery of the swabs, as well as the swabs are to be supplied by the contractor. The removal of all of the above at the completion of the swabbing works is the responsibility of the contractor.
    - (viii) Temporary swab launching as well as retrieval facilities shall be constructed in accordance with drawings W03-03-120 & W03-03-121.
  - (c) Watermains 500mm and larger, only third party qualified firms, specializing in watermain commissioning, with documented experience and expertise in the swabbing, disinfecting and cleaning of watermains shall be permitted to conduct watermain swabbing. The firm conducting the swabbing must show proof that at least one on-site staff member is a qualified operator under

O.Reg. 128/04 (min. Class 1) and be approved by the Contract Administrator in writing before work may begin.

- (d) All water discharged by the flushing/swabbing operations shall be at an approved outlet location. The contractor shall be responsible for collecting and/or disposing of all such water, ensuring that all erosion and sediment control and de-chlorination requirements of the MOE, CRCA and various other authorities having jurisdiction are met.
- 04) Disinfection and Microbiological Sampling
- (a) Disinfection and microbiological sampling shall be completed per Watermain Disinfection Procedure, Ministry of Environment and Climate Change Safe Drinking Water Branch, as amended, and AWWA C651-14 Disinfecting Water Mains
- (b) After flushing/swabbing is completed, water from the existing distribution system shall be allowed to flow at a controlled rate into the new pipeline. Liquid chlorine solution shall be introduced at a controlled rate so that the chlorine dosage is consistent and is distributed throughout the section being disinfected. The chlorine shall be applied so that the free chlorine ( $Cl_2$ ) concentration is 25 mg/L minimum and 200 mg/L maximum throughout the section. The system shall be left charged with the chlorine solution for 24 hours.
- (c) The chlorine concentration will be tested in the section after 24 hours, by the Contract Administrator. If tests indicate a chlorine residual in accordance with Table 1 of the MOECC Watermain Disinfection Procedure, as amended, the section shall be flushed completely and recharged with water normal to the operation of the system. If the test does not meet the requirements, the disinfection procedure shall be repeated until satisfactory results are obtained.
- (d) Immediately after the system has been recharged samples for microbiological testing shall be collected by the Contract Administrator. At each sampling location, a sample shall be taken and tested for free  $Cl_2$  residual prior to collecting the sample for microbiological testing. The free  $Cl_2$  residual must be at least 0.20 mg/L. If it is less than this the chlorination procedure shall be repeated until satisfactory results are obtained before proceeding with sampling for bacteriological testing.
- (e) Immediately after confirming the presence of an acceptable  $Cl_2$  residual the contract administrator shall collect a sample for microbiological testing.
- (f) Two consecutive acceptable samples taken a minimum of 16 hours apart must be obtained.
- (g) If this testing is required by the Contractor to occur outside of the normal working hours (i.e. weekends or holidays) the Contractor will be subject to a flat rate charge of \$250.00 plus applicable taxes and will be responsible for any additional laboratory charges incurred. The Corporation may deduct any amount due under this paragraph from any monies that may be due or payable to the Contractor on any account whatsoever.
- (h) If there is indication of contamination, the disinfection procedure shall be repeated in its entirety.
- (i) The system shall not be put into operation until clearance has been given by the Contract Administrator.
- 05) Testing, swabbing/flushing, and disinfecting of watermains shall be considered a normal subsidiary operation necessary to complete the described works and shall not be paid for directly unless otherwise noted on the bid form.

SPW. 9 Cut and Cap Watermain

- 01) Existing depressurized water mains shall be excavated and a section of the main shall be cut and removed using appropriate tools. When possible the removed section shall take advantage of nearby joints in the watermain to reduce the number of mechanical or repair joints required.
- 02) A fully restrained end cap and/or end cap and short stub section of pipe shall be installed so as to create a water and pressure tight termination.
- 03) The end cap and/or the stub section of pipe shall be tapped and trenched with a 50mm main stop installed, complete with adequate 50mm service piping to reach a minimum of 300mm above grade. This service

pipings shall be of a material specified in SPW.7 and shall terminate with an appropriate temporary valve to allow flushing.

- 04) The end cap and blow-off shall be protected from damage by vehicular traffic and vandalism by backfilling or plating the excavation.
- 05) The blow-off must be made accessible for use by Utilities Kingston as needed.
- 06) Payment shall be by each cut and cap performed and shall include all labour, equipment and material to perform the work, including but not limited to, excavation, cap, blow-off installation, backfill and necessary restoration.

SPW. 10      Connection to Existing Watermains

- 01) The timing and construction procedures for the required connections to existing water mains shall be planned by the Engineer and the Contractor. Before any connections are commenced, the Contractor shall notify all water customers affected by the shutdown, as to the time and duration of the shutdown using the supplied form or approved equivalent.
- 02) The Contractor shall prove to the Engineer that he has the proper materials on the site to make the connection in question, and that he has the manpower, and equipment, on the job to complete the connection in the time allotted. Once the work has been started on the connection, it shall be continued until the work has been completed. The Contractor shall be prepared to work overtime hours to complete the connection, if the work cannot be done during normal working hours. The Contractor shall not receive any additional compensation for working overtime to complete these connections.
- 03) Main valves may only be operated by persons certified in water distribution under O. Reg. 435/93 and who are employees of Utilities Kingston.
- 04) The Contractor is responsible for all materials and work to connect to existing watermains, the exception being setting tapping sleeves and valves and the associated tapping. Payments will be made as follows:
  - (a) *Tapping Sleeve and Valve: The preparation of the site and provision of the valves as a lump sum based upon sizes. Setting and tapping by others.*
  - (b) *Connecting to Existing Mains – (other than tapping sleeve and valve): A lump sum price for the supply and installation of all fittings necessary on a per each basis regardless of sizes.*

SPW. 11      Marking of Mains and Services

- 01) All non-metallic mains and services shall have **#12 solid tracer wire**. Tracer wire shall be laid flat and affixed to the main at intervals not to exceed three (3) metres.
- 02) The main line tracer wire shall not be cut at connections to services or other points, and must be kept as continuous as possible. Connections to the main line shall be made by baring the insulation without severing the conductor. Any buried splices or connections on tracer wire shall be limited to the minimum possible. If buried splices or connections are required then they shall utilize a manufactured waterproof splicing device specifically designed for direct bury, and sized appropriately for the number of conductors. Approved splicing devices shall be;
  - (a) *3M Splice Kit DBR or DBY or*
  - (b) *DryConn Waterproof Direct Bury Lug by King Innovation or*
  - (c) *Other approved equal.*
- 03) The tracer wire shall be looped on the outside of each main line valve box. The loop shall have one lead thermo welded to the valve box and the top of the loop shall be extended to inside the valve box through a smooth edged hole complete with grommet in the valve box approximately 50mm below the bottom of the bell.
- 04) The tracer wire loop shall extend up the barrel of a fire hydrant terminating in a locate station immediately above the flange.
- 05) All mains and services shall be marked with a 50mm wide detectable metallic tape blue in colour with the wording "Buried Water Line Below". The tape shall be SETON PRODUCT #48302 or equivalent. The tape shall be laid 300 to 450 mm above the main or service.
- 06) The costs of tracer wire, waterproof splices and marking tape shall be included in the cost of pipe.

SPW. 12      Service Interruption

- 01) The Contractor is responsible for notifying customers of any interruptions to their water supply a minimum of two (2) business days/forty-eight (48) hours in advance of commencement of the interruptions.
- 02) A notice period greater than what is specified in SPW.17 item 01) may be required as directed by the Contract Administrator.
- 03) Where the watermain is to be shut down, affected customers shall be informed of the shutdown by means of notification cards or other written methods, delivered as per the requirements items above.
- 04) In the event of a shutdown, normal water services shall be resumed no later than 1700 hours of the same day.

SPW. 13 Crossing

- 01) Watermains shall cross above sewers with sufficient clearance to allow for proper bedding and structural support of the watermain and sewer main. Where it is not possible for the watermain to cross above the sewer, the watermain shall pass under the sewer providing a minimum of 500mm vertical separation between the invert of the sewer and the crown of the watermain. The length of water pipe shall be centered on at the point of crossing so that the joints will be equal distance from the sewer.
- 02) There shall be no additional payment for lowering the watermain. All compensation shall be deemed to be included in the price of the appropriate item (i.e. Watermain).

SPW. 14 Shoring and Bracing

- 01) Shoring and bracing shall be provided, placed and maintained at the locations and elevation that are necessary or required to: support and protect the sides and bottom of the excavation; prevent undue disturbance or weakening of the supporting material below or beside the works; prevent movement of ground which may disturb or damage the works, adjacent pavements, property, structures or other works.
- 02) Shoring and bracing shall conform to the requirements of the Occupational Health and Safety Act.
- 03) Shoring and bracing shall be driven and placed so that it can be removed as backfilling takes place without damage to the pipeline or its appurtenances and without settlement of or damage to adjacent pavements and structures.
- 04) The Contractor shall remove all shoring and bracing as the excavation is backfilled, unless specified to be left in place.

**SP. 10 Topsoil (Imported) and Seeding - (O.P.S.S. 802, 803 and 804)**

01) **Topsoil (O.P.S.S. 802)**

- (a) The depth of topsoil will be 100 mm. The cost of water is to be included in this item. The Contractor shall use sufficient water to guarantee the life of the sod through the warranty period.
- (b) Top soil shall not contain less than 5% or more than 20% organic matter, by weight as determined by loss-on- ignition of oven dried samples in accordance with ATMT6. Organic material shall be decomposed and free of wood. Acidity range shall be from 6.0pH to 7.5pH and shall be capable of sustaining vigorous plant growth. It shall be free of any admixture of subsoil, clay lumps, stones and roots over 25mm diameter and any other extraneous matter.
- (c) The top soil and sodded areas shall be free of all weeds. The Contractor shall be responsible for removing any/all weeds as required and/or as directed by the Contract Administrator until end of warranty period.
- (d) **Topsoil Spreading and Finishing**

- (i) Sub-grade shall be approved by Contract Administrator prior to commencing topsoil placement.
  - (ii) Scarify sub-grade surface a minimum depth of 75mm to facilitate bedding.
  - (iii) Do not spread topsoil when it is frozen or wet.
  - (iv) Spread topsoil to a depth of 100mm over the approved subgrade.
  - (v) Maintain topsoil 15mm below top of curb, finished grades of pavement, etc., to allow for sodding. Maintain flush to allow for seeding or suitable depth to allow methods of seeding.
  - (vi) Manual spread topsoil around existing trees and shrubs.
  - (vii) Fine grade topsoil to eliminate rough and low areas to ensure positive surface drainage, blend smoothly with adjacent finished grade elevations and conform to specified levels and profiles.
  - (viii) Roll topsoil surface of all areas to be sodded to produce a smooth uniform surface that is firm against deep foot prints and with fine loose texture.
  - (ix) Finished surfaces are to be inspected by the Contract Administrator before placing any sod or seed. Approval of finished grade shall not relieve the Contractor of any remedial grading works which may be required.
  - (x) Topsoil shall be removed from all paved surfaces at the end of each day.
- (e) **Testing and Inspection of Topsoil**
- (i) Make topsoil available for inspection at source by the Contract Administrator. All topsoil shall be subject to Contract Administrators approval before use on job site, but subject to receipt and analysis of soil testing report.
- (f) **Maintenance of Seed and Watering**
- (i) Contractor shall supply water as required.
  - (ii) Water shall be Potable and free of materials which may be detrimental to growth. There is no payment for this item.
  - (iii) Maintain mowing of sodded areas until Contract Completion, if two cuts have not been completed it shall be maintained until two successful cuts are completed.
  - (iv) Water sodded areas in sufficient quantities and at frequency required to maintain soil under sod continuously moist to depth of 75 to 100 mm.
  - (v) Cut grass to 40 mm when it reaches height of 50 mm. Remove clippings which will smother grassed areas.
  - (vi) Maintain sodded areas weed free, utilizing weed control methods conforming to all federal, provincial and municipal legislation. Be responsible for any damages caused by weed control methodology.

- (vii) Fertilize sodded areas one month after sodding with 2:1:1 ratio fertilizer. Spread evenly at rate of 0.75 kg of nitrogen/100 square meters and water in well.
- (viii) **Preliminary Acceptance of Seed**
  - a) Preliminary Acceptance for the sodding will be granted in conjunction with Preliminary Acceptance for the Work as a whole provided that:
    - b) All sod/seed is well established and in vigorous growing condition.
    - c) Sod is free of bare, and dead spots and is without weeds.
    - d) No surface soil is visible from height of 1500 mm when grass has been cut to 40 mm height.
    - e) Sodded/seeded area has been cut at least two (2) times.
- (ix) **Final Acceptance of Seed**
  - a) Final acceptance will be provided at Contract Completion.
- (g) **Seed, Hydraulic Mulch (O.P.S.S. 804)**
  - (i) Seed mix, cover type as per the Contract drawings in accordance with OPSS.MUNI.804. Application rates as per OPSS.MUNI 804 Table 2.
  - (ii) All test results shall be supplied to the Contract Administrator a minimum of two (2) weeks before application of seed is to occur.

**SP. 11 Concrete Sidewalks (O.P.S.S. 351)**

**01) Concrete Sidewalks**

- (a) Concrete Sidewalks shall be placed on a foundation of a minimum of 125 mm of compacted Granular "A" unless otherwise noted that will be included in the unit price for sidewalks. This item will be paid by the square metre.
- (b) All tool margins from finishing tools are to be broomed out so that none exist. This requirement will be strictly enforced.
- (c) Dummy joints shall be constructed as per OPSS 351 at a spacing of 1.5 m. All dummy joint tool margins are to be broomed out so only the 5 mm joint remains.
- (d) Contraction joints shall be constructed as per OPSS 351 at every third dummy joint. Contraction joints shall be constructed at all driveway entrances. All dummy joint tool margins are to be broomed out so that only the 5 mm joint remains.
- (e) The contraction joint must be saw cut to a depth that is 0.25 (25%) of the sidewalk thickness. For example a sidewalk which is 125 mm thick shall be saw cut to a depth of 38 mm.
- (f) Expansion joints shall be constructed as per OPSS 351 and shall be constructed where the sidewalk abuts a rigid object or changes direction or where thickness of sidewalk changes. See OPSD 310.010.
- (g) This item includes the cost for all ramps and components. Sidewalk ramps are to be as per OPSD 310.033.

- 02) **Excess sidewalk panels broken from construction activities will be replaced at the Contractors expense.**

**SP. 12 Concrete Curb and Gutter (O.P.S.S. 353)**

The contractor is to supply all labour and materials to grade and compact and provide layout for all curb as detailed in the contract documents. This includes cutting any existing curb as required.

This item includes any required cold weather protection.

Where applicable the additional width (i.e.: concrete key) is required where sidewalk is adjacent to the curb.

All saw cutting of existing curbs is included.

**SP. 13 Pavement Markings (O.P.S.S. 710)**

- 01) This item will include the premarking and the application of permanent pavement markings, edge lines and yield lines shall be marked using water borne traffic paint conforming to O.P.S.S. 1716 with glass beads conforming to O.P.S.S. 1750. Stop bar lines, crosswalk lines and turning arrows shall be marked using durable pavement markings conforming to O.P.S.S. 1713 or 1714 with glass beads conforming to O.P.S.S. 1750.
- 02) All pavement markings and arrow symbols shall conform to the Ontario Traffic Manual Book 11 Pavement, Hazard and Delineation Markings.

**SP. 14 Subsurface Materials Management**

- 01) The following soils may be found onsite
- (a) Asphalt
  - (b) Inert fill (granulars, clean concrete, clean limestone rock).
  - (c) Excess soils.
    - (i) Topsoil - means those horizons in a soil profile, commonly known as the "O" and the "A" horizons, containing organic material and includes deposits of partially decomposed organic matter such as peat.
    - (ii) Beneficial Reuse Soils - Soils that have a beneficial reuse onsite (source site) or at a 3<sup>rd</sup> party site.
  - (d) Waste soils.
    - (i) Solid Non-hazardous Waste – Soils not re-used directly onsite (source site), having chemical or other characteristics that exceed site criteria standards, or contain "waste" as described in Ontario Regulation 347. Waste soils must be transported and disposed of at a licensed landfill facility or transfer station.
- 02) All waste materials transported off-site for disposal must be appropriately manifested as per applicable law.
- 03) Solid Non-Hazardous Materials that cannot be re-used on site must be transported via a licensed hauler to a licensed waste disposal facility. Transportation and disposal of Solid Non-Hazardous Materials shall be paid as a provisional unit price by the metric tonne.

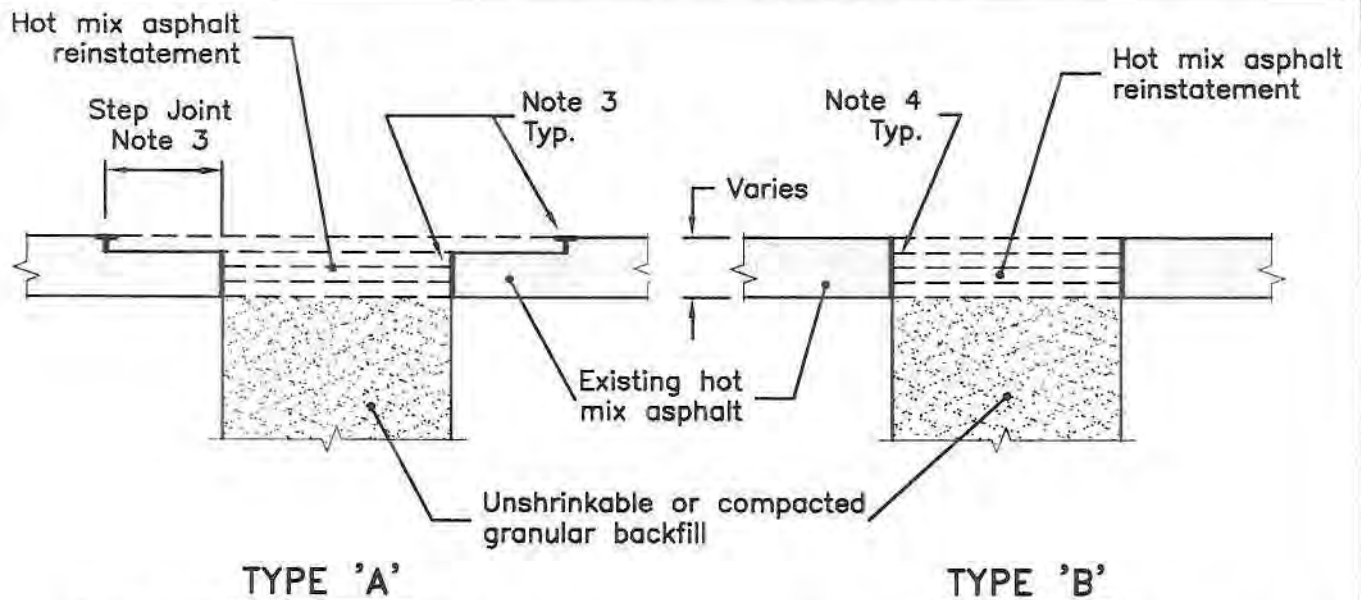
**END OF SPECIAL PROVISIONS**

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- TYPE 'A'**
1. All collectors and arterials, unless otherwise advised by the City's Engineering Department.
  2. Local streets that have been reconstructed or overlaid within the last 5 years.

**TYPE 'B'**

All other roadways (not meeting Type 'A' conditions) or roadways that will be reconstructed within the next year.

### REINSTATEMENT DETAILS

#### NOTES:

- 1 Hot mix asphalt type as specified. The surface course to be placed in a 40mm lift. Asphalt shall be installed with attention paid to grade and ride. Inappropriate installation will be rejected and reinstatement required.
- 2 All granular material, whether used as backfill in the trench excavation or as road base, shall be compacted to 100% Standard Proctor Density.
- 3 (Type 'A')  
The step joint shall be 500mm min. wide and 40mm deep. A step joint is not required for pavement depths less than 80mm.  
  
Apply Beram 3060 LM sealant to the vertical surfaces of the cuts and provide 50mm overbanding at the surface (i.e. crack seal)  
  
An inspector from the City's Engineering Department must be on site prior to installation of any asphalt, and should be contacted 48 hours prior to the work.
- 4 (Type 'B')  
An application of Tack Coat shall be applied to all vertical asphalt surfaces.

All dimensions are in millimetres or metres unless otherwise shown.

**CITY OF KINGSTON**  
Engineering Department  
*Infrastructure Management*

### **TRENCH REINSTATEMENT FOR UTILITY CUTS**

Date: 13 Feb 09

Drawing TRD-1

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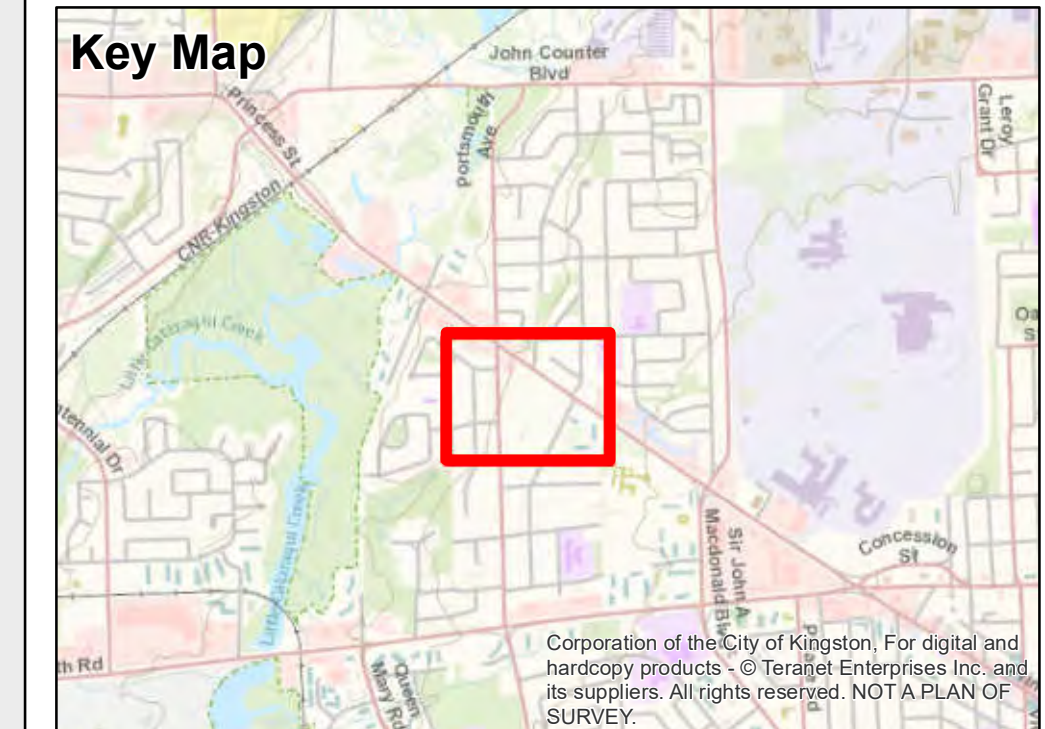
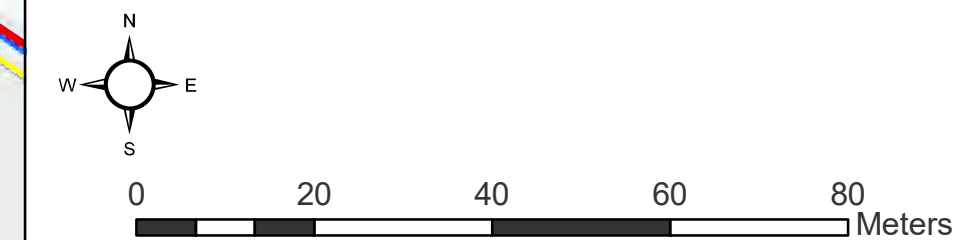
FOR INFORMATION ONLY\*  
1316-1318-1338 Princess St

27/Oct/2020

Legend

- |                   |                               |                              |
|-------------------|-------------------------------|------------------------------|
| <b>Gas</b>        | Transition                    | Trunk Main                   |
| Meter             | Pressurized Lateral Line      | Lateral Line                 |
| Valve             | Casing                        | <all other values>           |
| Main              | Sanitary Structure            | WWTP                         |
| Services          | Proposed Manhole              | Proposed Pipe                |
|                   | Proposed Sewer Force Main     | Proposed Pressurized Lateral |
|                   | Proposed Lateral              | Storm Manhole                |
|                   | Approved for Construction     |                              |
| <b>Electric</b>   | Transformer Bank              | Hydrant Valve                |
| Distribution Pole | Secondary OH Conductor        | System Valve                 |
| Secondary Meter   | Transmission OH Conductor     | Water Main                   |
|                   | Sub-Transmission OH Conductor | Hydrant Lead                 |
|                   | Distribution OH Conductor     | Water Service                |
| Transformer Bank  | Secondary UG Conductor        | Water Structures             |
|                   | Transmission UG Conductor     | AA+ > 189 LPS                |
|                   | Sub-Transmission UG Conductor |                              |
|                   | Distribution UG Conductor     |                              |
| Switch Bus Bar    | Duct Bank                     |                              |
| Trench            |                               |                              |
| <b>Wastewater</b> | Discharge Structure           |                              |
| Lift Station      | Pump Station                  |                              |
| Storage Basin     | Treatment Plant               |                              |
| Control Valve     | System Valve                  |                              |
| MISA Manhole      | Manhole                       |                              |
| Fitting           |                               |                              |
| Trunk Force Main  |                               |                              |
| Sewer Force Main  |                               |                              |
| Gravity Sewer     |                               |                              |
| Service Sewer     |                               |                              |
| Syphon Sewer      |                               |                              |

Note: Abandoned and Out of Service features appear in Grey



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