



237-2019 ADDENDUM 3

REHABILITATION OF THE ST. JAMES INTERCEPTOR FORCE MAIN SIPHON BY CIPP

URGENT

**PLEASE FORWARD THIS DOCUMENT TO
WHOEVER IS IN POSSESSION OF THE
TENDER**

ISSUED: July 22, 2019
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**THIS ADDENDUM SHALL BE INCORPORATED
INTO THE TENDER AND SHALL FORM A PART
OF THE CONTRACT DOCUMENTS**

Template Version: A20190115

Please note the following and attached changes, corrections, additions, deletions, information and/or instructions in connection with the Tender, and be governed accordingly. Failure to acknowledge receipt of this Addendum in Paragraph 10 of Form A: Bid may render your Bid non-responsive.

PART A – BID SUBMISSION

Replace: 237-2019 Bid Submission with 237-2019 Addendum 3 -Bid Submission. The following is a summary of changes incorporated in the replacement Bid Submission:

Form B(R1): Modified Item No. 8.

PART D – SUPPLEMENTAL CONDITIONS

Revise: D16.3 to read: The City intends to award this Contract by September 6, 2019

Delete: D18

Revise: D19.1 to read: The Contractor shall achieve Substantial Performance within forty (40) consecutive Working Days of the commencement of the Work as specified in D16 or by June 26, 2020, whichever comes first.

Revise: D20.1 to read: The Contractor shall achieve Total Performance within fifty (50) consecutive Working Days of the commencement of the Work as specified in D16 or August 28, 2020, whichever comes first.

Revise: D21.1 to read: If the Contractor fails to achieve Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:

- (a) Substantial Performance - two thousand dollars (\$2,000.00);
- (b) Total Performance - five hundred dollars (\$500.00).

Revise: D21.2 to read: The amounts specified for liquidated damages in D21.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Substantial Performance or Total Performance by the days fixed herein for same.

PART E – SPECIFICATIONS

Add: E7.4.4(a)(iii) Existing 41 deg bends if removed to facilitate construction (optional).

- Add: E7.4.4(a)(iv) Adjacent to the discharge manhole (optional).
- Revise: E10.1(f) to read: The Contractor may choose to remove the existing 41 deg bends to facilitate installation of the CIPP liner. If the bends are not removed to facilitate installation of the CIPP liner, the Contractor may need to excavate and repair defects within the liner at the existing 41 deg bend location, should significant defects be found during the post-lining inspection. Defects within the liner will be evaluated jointly with the Contract Administrator, City, and Contractor to determine the severity of the defects and the need to repair post installation of the CIPP.
- Add: E10.3.15 Fabricated PVC Bends
- (a) Fabricated fittings shall be thermally butt welded segments, with overwrapped reinforcement, conforming to AWWA C900 and CSA B137.3. Where non-standard fittings and bend angles are required, fittings shall be constructed in every way to conform to the nearest CSA certified standard fitting.
 - (b) Fittings shall be constructed from pipe with a minimum DR 18 wall thickness.
 - (c) Connection to the existing force main shall utilize sleeve couplings.
- Add: E10.3.16 Fabricated HDPE Bends
- (a) 500 mm IPS, DR17
 - (b) PE 4710 with minimum cell classification 775474C in accordance with ASTM D3350
 - (c) Minimum Hydrostatic Design Stress (HDS) of 6.9 MPa
 - (d) Conforming to AWWA C906 and ASTM F714
 - (e) Connection to the existing force main shall utilize weld on steel flanges and HDPE flanges conforming to AWWA C905 and AWWA M55. HDPE flanges shall utilize steel backing rings in accordance with AWWA C905 and AWWA M55. Flange adaptors shall be utilized where connecting to AC pipe.
 - (f) Accepted Products:
 - a. Sclairpipe by Uponor
 - b. DriscoPlex by Performance Pipe
 - c. JM Eagle HDPE Water Pipe
 - d. or Approved Equal in accordance to B7
- Revise: E10.4.5 to read: Repair of CIPP Liner or Replacement of Existing 41 Deg Bend(s)
- Revise: E10.4.5(a) to read: The Contractor may remove the existing bends to facilitate installation of the CIPP liners. Should the Contractor choose to remove the existing bends prior to lining they shall install new bends upon reassembly. Should the Contractor choose to line through the existing bends and repairs are deemed to be necessary, they shall not undertake the repair of defects on the CIPP liner at the existing bends without authorization to proceed from the Contract Administrator.
- Add: E10.4.5(e) Removal and replacement of existing bends shall include the following:
- (i) Excavation, shoring, and accommodation of the existing natural gas utilities.
 - (ii) Existing bends shall be exposed, braced and removed sequentially to facilitate cleaning and installation of the CIPP liner. Temporary thrust bracing for the pipe in

service. Thrust forces are anticipated to be 17.5 kN (3950 lb) based on an internal operating pressure of 15 psi.

- (iii) Bends may be removed back to the existing AC to steel pipe transition to facilitate the work.
- (iv) New bends shall be fabricated steel, fabricated PVC, or fabricated HDPE as specified herein.
- (v) Prep and coat the interior surface of the force main prior to installation of end seals.
- (vi) Sealing of the CIPP liner to the existing steel force main at the cut locations utilizing end seals in accordance with E11.6.4(c) to ensure a hydrostatically integral joint.
- (vii) Install new bends complete with sleeve couplings or flange connections and corrosion protection measures. Corrosion protection measures shall include:
 - ◆ Coating of the exposed force main up to a suitable termination point a minimum of 300 mm past the termination of the liner.
 - ◆ Installation of petrolatum corrosion protection system on the sleeve couplings.
 - ◆ Installation of anodes on the bend and both exposed ends of the force main.
- (viii) The Contractor shall excavate and confirm pipe diameters where sleeve couplings are to be installed prior to ordering materials. The Contractor will be responsible for any delays caused by failure to confirm existing conditions or improper measurements.

Revise: E10.5.2 to read:

Cash Allowance for Removal and Replacement of Existing 41 Deg Bends

- (a) The cash allowance for removal and replacement of the existing 41 deg bends is intended to be used for the removal of the existing 41 deg bends to facilitate lining or CIPP liner repairs and subsequent replacement or reinstallation of the bends.
- (b) The City reserves the right to delete any or all of the cash allowance from the Contract if the Work intended to be covered by the cash allowance is not required, or if the Works intended are found to be more extensive than the provisional cash allowance.
- (c) Cost of the bend removal and replacement shall be evaluated by the methods outlined in C7.4, and a Change Order prepared by the Contract Administrator. Cost of the Change Order will be paid on the Progress Estimate and deducted from the cash allowance for Provisional Manhole Construction. If the valuation of the authorized Work exceeds the value of the cash allowance for the bend removal and replacement, the Contract value will be adjusted by the shortfall.

Revise: E11.5.8(a) to read:

Design CIPP for a fully or partially deteriorated pipe condition as specified in accordance with Appendix X1 of ASTM F1216 and the following minimum design checks:

Revise: E11.5.8(a)(iii) to read:

Except where otherwise specified, assume the liner is subject to full vacuum pressure. Liner thickness for internal vacuum shall be checked utilizing Eq. X1.1 of Appendix X1 of ASTM F1216 and does not need to include other external loads (hydrostatic, soil, live load).

Add: E11.5.8(a)(iv)

Liners shall be designed to support all applied external loads as identified in Section X1.2 of Appendix X1 of ASTM F1216 independent of internal pipe forces.

Revise: E11.5.10(b)(ii)
to read:

Host Pipe Design Condition:

- ◆ Operating and external loading conditions – ASTM F1216, Appendix X1 Fully deteriorated host pipe (AWWA M28 Class IV Liner)
- ◆ Transient internal pressure conditions – ASTM F1216, Appendix X1 Partially deteriorated host pipe (AWWA M28 Class III Liner) SPEC NOTE: Insert revised clause in its entirety.
- ◆ Host pipe deflection for design purposes: 2% (all design conditions)

Revise: E11.5.10(b)(iii)
to read:

Pipeline Defects:

- ◆ 150 mm hole (existing offtake ports) - The Contractor must design the CIPP liner to span the existing offtake port unless the port can be suitably grouted with a cementitious product, an internal repair effected, or similar means of eliminating the need for the liner to span the 150 mm diameter opening. The liner design does not require derating due to wrinkling for this design condition (see E10.5.10(b)(ix)) if wrinkling is not anticipated to be present at the 150 mm port location.
- ◆ 50 mm (assumed long term corrosion defect)

Revise: E11.5.10 (b)(vii)
to read:

Internal vacuum (transient condition): -98 kPa (-14.3 psi)

Replace: E11.5.10 (b)(viii)

The Contractor shall consider the following minimum design conditions:

Design Scenario	Station (m)	Invert Depth (m)	Ground Elevation (m)	Live Load	Internal Pressure (kPa)	Internal Vacuum (kPa)	Groundwater Elevation (m)	Design Condition
Max Soil Cover	1-181	229.74	233.65	HS-20	0	0	231.86	FD
Min Soil Cover	1+108	228.76	230.1	HS-20	0	0	228.00	FD
Max Internal Operating Pressure	N/A	N/A	N/A	N/A	140	0	N/A	FD
Max External Hydrostatic Head	1+130	226.56	227.50	N/A	0	0	231.86	FD
Internal Transient Pressure	N/A	N/A	N/A	N/A	1035	0	N/A	PD
Max Internal Vacuum	N/A	N/A	N/A	N/A	0	98	N/A	PD

Add: E11.5.10(b)(ix)

The internal pressure rating shall be derated by a minimum 30% where circumferential finning is produced by installing the liner around bends. For example, a 1 MPa rated liner would be assessed for adequacy at 1 MPa – (30% of 1 MPa) = 0.7 MPa.

Revise: E11.6.3(a) to read:

CIPP liners shall utilize a vinyl ester or epoxy resin.

Add: E11.6.4(d)(v)

Internal mechanical compression seals shall be sized to accommodate potential axial movement (expansion and contraction) caused by both thermal and Poisson's effects.

Revise: E11.7.7(a)(ii) to read:

Downstream termination point (Station 1+000) – Internal mechanical compression seals pursuant to E11.6.4(c) or sleeve couplings with fibreglass pipe stub pursuant to E11.6.4(d).

Add: E11.7.13(f)

Excessive finning in installations through bends shall be cause for rejection, irrespective of the derating process. Acceptable finning should meet the following visual criteria:

- Smooth liner on the outside face of the bend
- Distributed fins along the inside face (ideally more than one) that in total magnitude are comparable the reduced length traversed between the inside and outside of the bends.