



899-2015 ADDENDUM 1

SOUTH END SEWAGE TREATMENT PLANT (SEWPCC) UPGRADING/EXPANSION PROJECT - CONTRACT 3 - BIOREACTOR, BLOWER BUILDING, AND SECONDARY CLARIFIERS STRUCTURAL CONCRETE & MISCELLANEOUS WORK

ISSUED: February 19, 2016
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URGENT

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

**THIS ADDENDUM SHALL BE INCORPORATED
INTO THE BID OPPORTUNITY AND SHALL
FORM A PART OF THE CONTRACT
DOCUMENTS**

Template Version: A20150806

Please note the following and attached changes, corrections, additions, deletions, information and/or instructions in connection with the Bid Opportunity, 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: 899-2015 Bid Submission with 899-2015 Addendum 1 - Bid Submission. The following is a summary of changes incorporated in the replacement Bid Submission:

- Form B(R1): Revised Items A.9, A.10, A.11
- Form B(R1) Add Item A.12
- Form B(R1) Revised Items B.4, B.5, B.6
- Form B(R1) Add Item B.7
- Form B(R1) Revised Item C.1
- Form B(R1) Add Items C.2, C.3, C.4, C.5, C.6, C.7

Page numbering on some forms may be changed as a result.

PART E – SPECIFICATIONS

Revise: NMS Division 01
Section 01 11 00
Clause 1.2.C Revise Description of Work in the table for the drawings noted below:

Drawing Reference	Description of Work
1-0102-PGAD-R002	Supply and Install: <ul style="list-style-type: none"> • 900-ML-SS01 from east of gridline 3r to tank TK-R103 • Embeds in WAS Sump TK-R300 • Embedded pipe for WAS Sump Mixing Pump • 900 dia access hatch between tanks TK-R101 and TK-R102 located on gridline Cr • 900 dia access hatch between tanks TK-R102 and TK-R103 located on gridline Dr • 900 dia access manway between tank TK-R103 and Pipe gallery on gridline 7r

- Embeds along gridline 7r
- Concrete encased 250-PD-SS01 Pipe in Pipe gallery 8 and north of Ar
- Concrete encased 250-PD-SS01 north of gridline Fr
- **Concrete encased 150-PD-SS01, 200-PD-SS01, mud valve, and flexible connection located north of Fr between 2r and 8r**

All mixers, manual slide gates, pumps, aeration piping, and IFAS cylindrical sieves is by others.

1-0102-PGAD-R003

Supply and Install:

- 900-ML-SS01 from east of gridline 3r to tank TK-R113
- 900 dia access hatch between tanks TK-R111 and TK-R112 located on gridline Hr
- 900 dia access hatch between tanks TK-R112 and TK-R113 located on gridline Jr
- 900 dia access manway between tank TK-R113 and Pipe gallery on gridline 7r
- Embeds along gridline 7r
- Concrete encased 250-PD-SS01 Pipe in Pipe gallery 8A between gridlines 7r and 9r
- Concrete encased 250-PD-SS01 north of gridline Lr
- **Concrete encased 200-PD-SS01, mud valve, and flexible connection located north of Lr between 2r and 8r**

All mixers, manual slide gates, pumps, and aeration piping is by others.

1-0102-PGAD-R004

Supply and Install:

- 900-ML-SS01 from east of gridline 3r to tank TK-R123
- 900 dia access hatch between tanks TK-R121 and TK-R122 located on gridline Mr
- 900 dia access hatch between tanks TK-R122 and TK-R123 located on gridline Nr
- 900 dia access manway between tank TK-R123 and Pipe gallery on gridline 7r
- Embeds along gridline 7r
- Concrete Encased 250-PD-SS01 Pipe in Pipe gallery 8 between gridlines 7r and 9r
- Concrete encased 250-PD-SS01 north of gridline Qr
- **Concrete encased 200-PD-SS01, mud valve, and flexible connection located north of Qr between 2r and 8r**

All mixers, manual slide gates, pumps, and aeration piping is by others.

1-0102-PGAD-R017

section G

Supply and Install:

- All ALP embeds to air intake plenum

section H **section H1 Supply and Install:**

- **ALP and IAS floor embeds at elevation 232.650**

All pipe and blowers is by others.

1-0102-PGAD-R018

section J (Part A and B)

Supply and Install

- Concrete encased 250-PD SS01 between gridline Rr and Ar
- All 250-WAS-SS01, 350-PE-SS01, 600-RAS-SS01, 200-PD-SS01, **750-RAS-SS01** embeds at EL. 232.105

All piping, valves, instrumentation is by others.

- Add: NMS Division 01
Section 01 32 00
Clause 1.6.A.3 Provide narrative progress report weekly to the Contract Administrator.
- Add: NMS Division 07
Section 07 16 17
Clause 2.1.A.1.d Vandex Super
- Delete: NMS Division 40
Section 40 27 00
Supplement 2
9. Remarks Bullet (9) – Provide a price deduct alternate for Cement Lined Ductile Iron (CLDI) as specified in Section 40 27 00.01.
- Add: NMS Division 40
Section 40 27 02
Clause 2.4.B
Mud Valve:
1. Type V915 Mud Valve
a. Cast iron body tapered seat, bronze disc and seat ring, frame flanged, non rising type stem, bronze extension stem, 50 mm square operating nut for floor box operation, and stem guides for maximum unsupported stem length of 1.6 meters.
b. Manufacturers and Products:
1) Troy; A-25612 RB
2) Clow; Fig. F-3085-T

Revise: E1.3 to read: Add the following appendix and drawings which are applicable to the Work:

Appendix F Instrumentation List

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
Automation	
1-0102-AGAD-R004	Instrument Location Plan Bioreactors/Blower Building Sump Pump room and Gallery 5B Layout
1-0102-AGAD-R007	Instrumentation Location Plan Bioreactors/Blower Building Bioreactor 1 Layout
1-0102-AGAD-R008	Instrumentation Location Plan Bioreactors/Blower Building Bioreactor 2 Layout
1-0102-AGAD-R009	Instrumentation Location Plan Bioreactors/Blower Building Bioreactor 3 Layout

Civil

1-0102-CDRN-Y001-003	Site Drainage Outlet Plan and Details
1-0102-CUTY-Y001-001	Sewer By-pass Pipe STA 1+57.46 to STA 3+16
1-0102-CUTY-Y001-002	Sewer By-pass Pipe STA 1+57.46 to STA 3+16
1-0102-CUTY-Y001-003	Sewer By-pass Pipe STA 3+16 to STA 3+43
1-0102-CUTY-Y003-001	Sewer By-pass Pipe Chamber #2 Extension
1-0102-CUTY-Y003-002	Sewer By-pass Pipe Chamber #2 Extension
4-0102-CGAD-A001-004	Site Removals Location 4 – For Information Only

Mechanical

1-0102-MDTL-A007	HVAC Standard Details (3)
1-0102-MGAD-R606	Bioreactor/Blower Building HVAC – Lower Level Plan – Part E
1-0102-MGAD-R611	Bioreactor/Blower Building HVAC – Overall Roof Plan

- Add: E15 **E15. BY-PASS SEWER PIPE**
E.15.1 By-pass sewer piping shall be 2100mm diameter Class III pre-cast concrete piping installed in accordance with CW 2130.

- E15.2 Due to alignment of piping within footprint of excavation for secondary clarifiers, Contractor shall ensure that installation of by-pass piping and all associated bends and manholes are coordinated to be installed following proper backfilling of excavation segments underneath the by-pass piping alignment.
- E15.3 Backfill shall be placed above by-pass sewer pipe to the design finished grades indicated on the drawings using suitable on-site excavated material.
- E15.4 Contractor shall submit shop drawings of the piping for approval by the Contract Administrator prior to construction.
- E15.5 Contractor shall supply and install a removable plug at the upstream end of the piping at STA 3+39.95 to facilitate connection of additional piping in a future contract.
- E.15.6 Measurement and Payment
 - E15.6.1 Measurement and payment for by-pass sewer piping shall be in accordance with the CW 2130 under the pay item "By-pass Sewer Pipe" on the bid form. The pay item on the bid form for sewer by-pass piping shall include all labour, equipment, and materials required to install the pipe regardless of depth below finished grade.
 - E15.6.2 Connection of by-pass pipe to Chamber #2 extension shall be incidental to the installation of by-pass pipe and no separate payment shall be made for the connection.
 - E15.6.3 Supply and installation of a removable 2100mm diameter plug at STA 3+39.95 shall be incidental to the installation of by-pass pipe and no separate payment shall be made for the plug.
 - E15.6.4 Backfilling above by-pass pipe to design finished grades shall be incidental to the work.

Add: E16

E16. BY-PASS SEWER BENDS

- E.16.1 By-pass sewer bends shall be 2100mm diameter Class III pre-cast concrete bends installed in accordance with CW 2130.
 - E16.2 Contractor shall submit shop drawings for each of the bends for approval by the Contract Administrator prior to construction.
 - E.16.3 Measurement and Payment
 - E16.3.1 Measurement and payment for by-pass sewer bends shall be on a unit basis for the following:
 - i) "45 degrees, 2100mm diameter Class III Precast Concrete Bend - Open trench installation, Class B sand bedding, Class 4 backfill"
 - ii) "31.16 degrees, 2100mm diameter Class III Precast Concrete Bend - Open trench installation, Class B sand bedding, Class 4 backfill"
- The above pay items shall include all labour, equipment, and materials required to install the bends regardless of depth below finished grade.

Add: E17

E17. BY-PASS SEWER TYPE C MANHOLES

- E.17.1 By-pass sewer Type C manholes shall be installed in accordance CW 2130 and SD-011.
- E.17.2 Contractor shall submit shop drawings for each of the bends for approval by the Contract Administrator prior to construction.
- E.17.3 Measurement and Payment

E17.3.1 Measurement and payment for "By-pass Sewer Type C Manholes on 2100mm diameter Class III Pre-cast Concrete Pipe" shall be on a vertical metre basis measured in accordance with clause 4.3 of CW 2130.

E17.3.2 Backfill for 4:1 slope around Type C manholes, as indicated on the drawings, shall be incidental to the work.

E17.3.3 Supply and installation of TF-101 round manhole frames and solid covers shall be incidental to the work.

Add: E18

E18. SLIDE GATE INSTALLATION

E.18.2 Construction Methods

E.18.2.1 Installation of New Anchor Bolts

- (a) Install stainless steel threaded rod as per manufacturer's installation procedures and recommendations. Anchors shall be installed only upon confirmation of correct anchor bolt hole layout and completion of drilling all anchor holes.
- (b) Provide heating as specified in E13 during epoxy adhesive curing time.

E.18.2.2 Installation of Cast Iron Slide Gate

- (a) Install cast iron slide gates, wall thimbles, stems, wall brackets and accessories as shown on the drawings and in accordance with the manufacturer's recommendations.
- (b) Make arrangements to have a qualified field representative of the slide gate supplier/manufacturer inspect the installation during and after completion and provide a Certificate of Satisfactory Installation (Form 102) to the Contract Administrator.

E.18.2.3 Field Testing

- (a) Perform leakage tests in the Contract Administrator's presence once slide gates have been installed to ensure compliance with the allowable leakage rate indicated in AWWA C560-07.
- (b) Arrange for a qualified field representative of the slide gate supplier/manufacturer to be present during field testing.
- (c) The leakage test for unseating head will be performed by closing the existing flap gate, filling LDS between Chamber 4 and Manhole 1 with water to the specified design unseating head and measuring the leakage rate through the slide gate.
- (d) The leakage test for seating head cannot be performed in the gate chamber.
- (e) Water used for testing purposes must be chlorine free. Potable drinking water shall be de-chlorinated if used for testing purposes.
- (f) The Contractor will be responsible to pump river water, arrange delivery by tanker truck, or supply water from a hydrant into the chamber for testing purposes.
- (g) If a gate fails the field leakage test, the Contractor shall undertake adjustments, replacements or other modifications recommended by the slide gate supplier/manufacturer's field representative and repeat the test. The sequence shall be repeated until the gate passes the allowable leakage rate.

E.18.3 Measurement and Payment

E18.3.1 Installation and testing of a cast iron slide gate, wall thimble, stem, wall bracket(s), accessories, and installation of new anchor bolts will be measured and paid for at the Contract Lump Sum Price for the following:

- ii) "Square Cast Iron Slide Gate for 600mm dia (24") Opening – Inside Manhole" for installation and testing of a slide gate installed in new manhole MH2;

iii) "Square Cast Iron Slide Gate for 750mm dia (30") Opening – Inside Manhole" for installation and testing of slide gates installed in new manhole MH1 or MH3;

all executed in accordance with this specification and accepted by the Contract Administrator.

Add: E19 **E19. FLAP GATE INSTALLATION**

E.19.1 Contractor shall install and test flap gates supplied to site in a previous contract into existing manholes on site.

E19.2 Installation

- (a) The flap gate shall be installed in accordance with the Manufacturer's specifications.
- (b) Contractor shall make arrangements to have a qualified field representative of the flap gate supplier/manufacturer inspect the installation during and after completion and provide a Certificate of Satisfactory Installation (Form 102) to the Contract Administrator.

E19.3 Field Testing

- (a) Arrange for a qualified field representative of the flap gate supplier/manufacturer to be present during field testing.

E.19.4 Measurement and Payment

E19.4.1 Installation of a cast iron flap gate and thimble will be measured and paid for at the Contract Lump Sum Price for the following:

- i) "600mm dia. Flap Gate"
- ii) "750mm dia. Flap Gate"

all executed in accordance with this specification and accepted by the Contract Administrator.

DRAWINGS

- Add: 899-2015_Addendum_1-DRAWING_1-0102-AGAD-R004_R00
899-2015_Addendum_1-DRAWING_1-0102-AGAD-R007_R00
899-2015_Addendum_1-DRAWING_1-0102-AGAD-R008_R00
899-2015_Addendum_1-DRAWING_1-0102-AGAD-R009_R00
899-2015_Addendum_1-DRAWING_4-0102-CGAD-A001-004
899-2015_Addendum_1-DRAWING_1-0102-CDRN-Y001-Sht003_R00
899-2015_Addendum_1-DRAWING_1-0102-CUTY-Y001-Sht001_R00
899-2015_Addendum_1-DRAWING_1-0102-CUTY-Y001-Sht002_R00
899-2015_Addendum_1-DRAWING_1-0102-CUTY-Y001-Sht003_R00
899-2015_Addendum_1-DRAWING_1-0102-CUTY-Y003-Sht001_R00
899-2015_Addendum_1-DRAWING_1-0102-CUTY-Y003-Sht002_R00
899-2015_Addendum_1-DRAWING_1-0102-MDTL-A007_R00
899-2015_Addendum_1-DRAWING_1-0102-MGAD-R606_R00

899-2015_Addendum_1-DRAWING_1-0102-MGAD-R611_R00

QUESTIONS AND ANSWERS

- Q1. Fire damper installation detail. There is no Installation Detail 2331-808 included in the package (for FD-R610-3 & FD-R611-1).
- A1. See attached Drawing 1-0102-MDTL-A007-R00, Detail 2333-808 for installation detail.
- Q2. Fire damper installation detail. There is no Installation Detail 2333-808 included in the package (for FD-R610-2).
- A2. See attached Drawing 1-0102-MDTL-A007-R00, Detail 2333-808 for installation detail.
- Q3. Are all 100 (CI) & 150 (PVC) drain line embeds (for sump pits between 2s & 3s + 3s & 4s) part of this supply & install package?
- A3. All embeds in the concrete floors and walls to be included as part of Bid Op 899-2015. Refer to Section 01 11 00.
- Q4. Fire damper installation detail. There is no Installation Detail 2333-809 included in the package (for FD-S640-1 & 2, S650-3 & S630-1).
- A4. See attached Drawing 1-0102-MDTL-A007-R00, Detail 2333-808 for installation detail.
- Q5. Process Drawings PGAD-S003 & PGAD-S011 show a 750mm manway for Scum Tank V-S315. Please provide embed and access hatch detail for this manway.
- A5. See drawing 1-0102-PDTL-A004-R02, Detail 4027-605 "Wall or Slab Pipe Penetration".
- Q6. On Drawings MGAD – R504, S502, S503 & S505. There are FD-1P floor drains shown. There is no spec for these type floor drains. Are they the same as FD-1 floor drains? Please clarify.
- A6. FD-1P and FD-1 are the same. However FD-1P includes a P-trap that needs to be primed.
- Q7. Please provide a spec +/- or standard detail for the roof top vent terminations.
- A7. All roof top vents should be terminated 600 mm above roof line and capped for vent installation completion as part of a future separate contract.
- Q8. On Drawing MGAD – R506, are the 100-D-PV01 PVC drop pieces from the thirty-six (36) Floor Drains (FD-1) part of this contract? How are these drop pieces (approx 1.55 meters long) to be anchored to the ceiling of the bioreactor chambers? Please clarify
- A8. Yes. Attach the pipe to the floor drain outlet, both the floor drain and the attachment will be cast within the 300mm thick slab. No other anchors are required for the pipe.
- Q9. See Summary of Work – Section 01-11-00 - Page 16 – As noted for drawing PGAD-S014 for Sections F & G – It states to align the concentric reducer on top of riser lines 900-ML-SS01 with precision tooling. Are the FV-S1401, FE-1401, FV-S1501 & FE-S1501 on these risers supplied by the city? Or contractor supplied as part of the contract? Please provide valve and flowmeter specs if required for this contract.
- A9. The valves and flow meters are not part of this contract. Contractor to align the reducer with the pipe below.
- Q10. Item E7.1 indicates that the contractor is to exercise caution when crossing the existing outfall pipes that are running west underneath the site perimeter roadway. There has not been a site plan provided that indicates the location of these pipes. Can you provide a site plan and indicate the location?
- A10. Please see drawing 4-0102-CGAD-A001-004 for the locations of the 2400mm diameter and 1800mm diameter sewer outfall pipes.
- Q11. Specification section 01 50 00 3.3 A.3 indicates that the contractor is to provide a dust preventative treatment to unpaved roads. For the existing roads on the project site is this to be paid for by the extra work allowance? Is

this intended to describe roads that are installed for the contractors own use only? Same for the work described in item 3.4 of the same specification section, is this to describe roads installed for the contractors own use and not the permanent access roads for the site?

A11. Dust prevention is to be applied to all unpaved roads within the project limits and used by the Contractor. Payment for dust prevention is incidental to the Work.

Q12. Specification section 03 10 00 2.1 F.6 indicates that through bolts are not permitted for waterholding structures, below grade structures, pipe galleries and accessible spaces below grade. However, if the elastic vinyl plug specified in 2.1 F.7 is used can the through bolts be used in these areas?

A12. No.

Q13. Specification section 03 10 00 3.2 B indicates that concrete edges are to be chamfered 20mm unless shown otherwise. Is this for exposed concrete only or all concrete edges? In addition under concrete and reinforcing on drawing SCTL-A001 note 2 indicates that we are to chamfer exposed corners only.

A13. This is for exposed concrete only.

Q14. For the portions of the walls that are to be backfilled with earth (i.e. the exterior side of below grade walls), is a W-1 surface acceptable, or do we need to provide the W3 finish with a formliner for the walls that are to be covered with backfill?

A14. Provide W3 with form liner as per schedule in Specification 03 39 00.

Q15. For the WAS sump wall shown on section Q of drawing SGAD-R037 between gridlines 4r and 5r, there is no upstand or waterstop shown below the wall. Is one required?

A15. Yes, refer to Specification Section 03 15 00, 3.3.A.1. Also, further clarification on the drawings will be provided via addendum.

Q16. Drawing SGAD-R037 shows wall openings on the wall between the WAS Sump room and the WAS Pump room, but I cannot find a drawing that indicates the sizes. Are these openings for the process pipes that penetrate the wall as shown on PGAD-R002?

A16. Yes

Q17. For standard detail 0330-016 and 0330-017 on SCTL-A005, they both indicate that where shown, tie slab and encasement together as per standard detail 0330-018. However, on the drawings it does not appear to indicate where this is required, are we to assume that if the section view shows concrete right to the underside of the slab at the pipe encasement that the pipe encasement is to be tied to the slab?

A17. Yes, refer to sections. Unless clearly otherwise noted, consider all pipe encasements tied to slab above.

Q18. Drawing SGAD-R013 has a note at GL Hr, that indicates foot grill, see Arch drawings. However, there are no architectural drawings with this package, and there is no specification for the grill. Can you provide?

A18. Provide depression as shown. Foot grille is not in scope and will be installed in a future contract.

Q19. Drawing SGAD-R013 has a note at GL Pr that indicates a horizontal shutter, see Arch drawings. However, there are no architectural drawings with this package, and there is no specification for this shutter. Can you provide?

A19. Not in scope, shutter will be installed in a future contract.

Q20. Drawing SGAD-R014 indicates "masonry parapet wall typ all around, see arch drawings". However there are no architectural drawings with this package, and the summary of work in 01 10 00 indicates that all work on this drawing is by this bid opportunity. Can you provide details for this masonry parapet, or delete it from the scope?

A20. Masonry parapet is not in scope and will be installed in a future contract.

Q21. For stair 1 drawn on E/SGAD-S026 it references detail 0315-143 at the stair landing / wall joint. This detail has an injection hose waterstop indicated, but is this really necessary for the stair landing / wall joint? The stair shaft will not be retaining liquid.

A21. Injection hose waterstop is not required for stairs.

Q22. On drawing SGAD-S005 there is a column adjacent to GL 8s that is labeled as a C5 column but on the corresponding section Q/SGAD-S031, it is shown as a C3 column. Which is correct?

A22. C5 is correct. This will be corrected via addendum.

Q23. For the monorail beam that is indicated on drawing SGAD-R013, there is no standard detail with the bioreactor drawings for this beam. Are we to use the standard detail shown on the clarifier drawings (1/SDTL-S010)?

A23. No. Monorail beam shown on SGAD-R013 is not in scope.

Q24. There does not appear to be a product specified for the type 1 and type 2 davit bases. Can you provide?

A24. Type 2 davit bases are not part of this contract. The drawings will be updated via addendum. Type 1 davit is for confined space man entry, use EME flush mount anchors compliant with OSHA 1910 and ANSI Z359.1-1992 standards for confined space entry.

Q25. On drawing SGAD-S004 the note for pipe encasement on this drawing near GL Bs & 1s refers to detail 0330-820 for all pipes below this slab. Can you indicate for which pipes we are to use detail 0330-820 vs. 0330-016? One shows concrete going to the underside of the slab and the other does not.

A25. Use detail 0330-016 to 0330-018, similar to bioreactors. Unless clearly noted otherwise, consider all pipe encasements tied to slab above.

Q26. Can the reinforcement coupler construction joint detail at intersection of secondary clarifier launder channel suspended slab and main tank wall be utilised at Contractor's option for the suspended slab to wall intersection construction joint detail for the Anaerobic and Anoxic zone inlet channels to the Bioreactors?

A26. Yes

Q27. Can detail 0315-143 on drawing 1-0102-SDTL-A002 be utilised at Contractor's option for the suspended slab to wall construction joints to the Bioreactor Bypass Channel 2, Primary Effluent Channel and RAS Channel?

A27. No

Q28. Can the minimum 2000mm dimension in 03 15 00 E 1.a. be waived for non water retaining bioreactor tank walls?

A28. This may be requested and determined on a case by case basis during construction.

Q29. Can the injection hose waterstop in detail 01315-143 be replaced with waterstop –RX hydrophilic strip waterstop?

A29. No

Q30. As per Process Drawings PGAD – R002, R003 & R004. Please provide a "Standard Detail" for the three (3) 900mm DIA. Internal Hinged Manways (Dry to Wet) as shown in Bioreactors #1, #2 & #3. Please provide fabrication detail.

A.30. The required details for the 900 mm manways are found in the specifications, Sections 01 11 00 and 05 50 03.