



**WATER RESOURCES INTEGRATION PROGRAM
OLD PEARSALL ROAD PUMP STATION PHASE I
SAWS JOB NO. 13-8610-220
SOLICITATION NO. B-14-012-DD**

**ADDENDUM NO. 4
September 10, 2014**

To Respondent of Record:

This addendum, applicable to work references above, is an amendment to the bidding documents and such will be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the addendum number and issue date in the space provided in submitted copies of the proposal.

A. QUESTIONS SUBMITTED TO SAWS

1. Based on review of the project plans and specifications, Preload has the following two questions concerning (1) excavation depth, and (2) Allowable soil bearing pressure.

Excavation depth. According to page 6 of the geotechnical report, the recommended depth of excavation and replacement ranges between 4 and 8 feet depending on the minimum sustained contact pressure imposed by the tank and the stored product.

Page 14 (3rd bullet) of the report recommends an excavation and replacement of 4 to 5 feet *below existing grade* (to elevation 677 to 679), while Sheet POP-04 specifies 5 feet *below the 6" tank foundation* (to elevation 677.0).

Both of these cases imply that the tank will contain 8 feet of water at all times.

Question #1: (a) Can we assume that the 5-foot excavation and replacement depth shown on Sheets POP-04 and POP-06 governs? (b) If the answer to (a) is yes, can we assume that the water level in the tank will never fall below 8 feet? **RESPONSE:** Yes. The low water level in the tank is 705.95, as shown on Sheet POP-03. However, the tank would be empty during periods when it is taken out of service for cleaning/maintenance.

Allowable soil bearing pressure. According to the third bullet on page 14 of the geotechnical report, in order to secure an allowable pressure of 4,000 psf, the wall footing must be placed at a depth at least 5' below final grade and must rest on natural soils.

This condition is in conflict with three other conditions: (a) Due to the excavation/replacement detail shown on Sheet POP-06, natural soil surface is now 7' below the footing – that is the footing must be 8.5' thick (deep) in order to reach the lowered natural soil; (b) Since the footing is only 1.5' thick, it will rest on the compacted replacement structural fill (crushed limestone), not the natural soil, and (c) The footing is founded only 3' – not 5' below final grade.

Question #2: *In view of the fact that the natural subgrade, in conjunction with the 5-foot deep controlled crushed limestone backfill, appears to possess a high bearing capacity (blow count, N, from a minimum of 21 bpf to >50bpf), can we assume an allowable soil bearing pressure of 4,000 psf – even though the wall footing will bear on the controlled backfill rather than on natural soil itself?* **RESPONSE:** Yes. By removing 5 feet of native material, the intent of the Geotechnical Report is met.

2. A) Specification Section 02571 1.01 C1 states that Pump Suction piping and above ground piping are to be epoxy lined and that below grade piping (excluding pump suction) can either be epoxy lined or cement mortar lined. Question – What exactly is the limit of pump suction piping, we see on drawing COP-13, the 16" pump suction piping & the 16" surge piping along with the 48" Pump Suction Header in the vicinity of BFV 211 are called out as "Suction Piping" and therefore we believe should have Epoxy lining, however, the 48" Tank Outlet line #1 and 48" Tank Outlet line #2 are not distinctly called out as "Suction Piping" should they be epoxy also or is CML an option? **RESPONSE:** Pump suction piping includes the 10", 14", and 16" pump suction piping and the 48" pump suction header as shown on Sheet POP-01. The 48" Tank Outlet line #1 and 48" Tank Outlet line #2 can be either epoxy or cement mortar lined.

Question - In past SAWS projects, when we see epoxy, we have learned that it means Fusion Bonded Epoxy per AWWA C213; however, we do not see provisions for Fusion Bonded Epoxy in this project. Are we to use Fusion Bonded Epoxy per C213 or Liquid Epoxy per C210? Please Clarify.

RESPONSE: Use liquid epoxy per AWWA C210 as specified in Section 02571.

B) Is this project a “Buy American Project”? **RESPONSE:** See response to Question 6 in Addendum No. 3.

C) Specification 02571 2.03 C, Design (Working) Pressure, states that the working pressure and field hyd. test pressures shall be indicated in section 02704 Testing Pipeline and Leakage Testing. However, when looking in 02704 - S02, we only see the Test Pressures listed. Question - Is the Test Pressure listed also the Working Pressures? If so want that make the Transient pressures higher and therefore make the Pipe Flange classifications higher? Please Clarify. **RESPONSE:** The Design (Working) Pressure was added to Schedule 02704-S02 in Addendum No. 3.

D) Does SAWS require Ductile Iron Body Valves to be insulated from Welded Steel Pipe water piping with Flange Insulation kits? **RESPONSE:** Insulating flanges are required only at the locations shown on the drawings (see Cathodic Protection and Mechanical Process drawings).

E) Drawing POP-04 shows 48” Overflow SS piping inside the Concrete Storage Tank, but calls out the wall pipe and exterior pipe as Steel, is this a mis-print or do we transition from SS to WSP when going through the tank wall? **RESPONSE:** All overflow piping shall be stainless steel. See revisions to Sheet POP-04 included in this addendum.

F) Drawing POP-05 shows the 48” inlet and outlet piping is Stainless Steel pipe, the SS pipe seems to transition at a Coupling to buried WSP, should this Coupling be an insulation Coupling with insulated restraint rods? **RESPONSE:** Sheet POP-05 is revised in this addendum to change the inlet and outlet piping from stainless steel to carbon steel. The coupling is also changed to a harnessed mechanical coupling in revisions to Sheet POP-05 included in this addendum. No insulation couplings should be used.

3. Drawing POP-05 calls for the 48” piping to be 316L stainless steel. Drawing COP-14, details A, B, & C show a flexible coupling before a valve followed by an insulation flange on the far side (farthest from the coupling) of the valve. With this arrangement, we are assuming the stainless steel pipe stops with the flanged connection on one side of the valve and then carbon steel starts on the other side of the valve where the insulating kit is shown. Is that correct? **RESPONSE:** See response to Question 2F above.

If so, does that mean the flexible coupling with harness restraint & tie-rods would also have to be 316L stainless steel? **RESPONSE:** No. Harnessed mechanical couplings are carbon steel.

Could we put the flexible coupling on the opposite side of the valve, allowing us to use a carbon steel flexible coupling? **RESPONSE:** All flexible couplings shall be carbon steel.

4. On Sheet POP-06, regarding the GST subgrade preparation, with that detail not being to scale, can you tell us how far out we are to extend the limestone fill from the tank? Makes a big difference when pricing. **RESPONSE:** The fill shall extend 5 feet from the perimeter footing. See revision to Sheet POP-06 included in this addendum.

Sheet 67, Note 1 regarding excavation of the electrical building states to refer to 02200 for excavation requirements. 02200, 3.5.01 says to undercut basement slab roughly 5 feet. This is contradictory to the geotechnical report. Page 6 in the Geotech in bold letters states, “**It should be noted that undercut and replacement recommendations do not apply to the area beneath the basement planned below the proposed electrical building**”. Please advise. **RESPONSE:** The plans and specifications shall govern.

5. Reference 7.5 Million Gallon Ground Storage Tank

Specifications:

1. Please provide the warranty/guarantee period for the prestressed concrete tank? **RESPONSE:** See General Conditions, Article 9.3.
2. Section 13207, Page 6, Paragraph 2.1 indicates that the overflow weir level shall be at EL. 729.25. On Sheet POP-04, 48” Overflow Section indicates an Overflow Elevation of 729.40. Please confirm the overflow elevation for the tank. **RESPONSE:** The weir elevation should be 729.40. See revisions to Section 13207 (Article 2.1) included in this addendum.
3. Section 13207, Page 6, Paragraph 2.1 states that the overflow diameter shall be 48-inches. Please confirm if tank manufacturer may be responsible for design and sizing the overflow pipe based on the overflow rate indicated in the specifications of 52,145 gpm. **RESPONSE:** The tank manufacturer may design and size the overflow pipe, based on the specified overflow rate and maximum water surface elevation. If the manufacturer chooses to do this, there shall be only one overflow pipe (not two smaller pipes) and manufacturer shall submit sizing calculations, which will be subject to review and approval of the Owner and Engineer.
4. Section 13207, Page 6, Paragraph 2.1 states that the rise to diameter ratio of the dome shall be 1 to 12. Please confirm if the tank

manufacturer may be responsible for design of the dome including the rise to span ratio, and that a rise to span ratio of 1:8 to 1:14 will be acceptable for this project. **RESPONSE:** The ratio may vary within the range of 1:10 to 1:14. See revisions to Article 2.1 included in this addendum.

5. Section 13207, Page 7, Paragraph 2.2D states that the project is a Site Class B and that provides the short period acceleration and 1-second acceleration. Please note that the Site Class as well as the spectral accelerations do not match the values indicated in the Geotechnical Report performed by PSI, Inc. dated August 30, 2013. Please confirm the site class and spectral accelerations. **RESPONSE:** Seismic design criteria should be in accordance with the recommended parameters shown in the Geotechnical Report for 2009 IBC. See revisions to Article 2.2D included in this addendum.
6. Section 13207, Page 15, Paragraph 2.4D and Page 21, Paragraph 3.1.F state that the seismic base restraint cables shall be installed between the base of the wall and the floor. Please confirm if base restraint cables shall only be installed between the base of the wall and the floor when required by design. **RESPONSE:** The base restraint cables are required, as specified.

Plans:

1. Sheet POP-04, Perimeter Drain with Mow Strip, indicates that the tank floor shall be 6" min. Please confirm that the minimum floor thickness required for the tank shall be 4" per AWWA D110-04. **RESPONSE:** Tank manufacturer is responsible for the floor thickness design in accordance with the applicable standards. Sheet POP-04 is revised in this addendum to delete the floor thickness.
2. Sheet POP-04, 48" Overflow Section. Please confirm that the tank manufacturer may be responsible for design of the overflow and if a stainless steel overflow pipe with a stainless steel weir that is supported to the tank wall with pipe straps or a partial concrete encasement with a stainless steel weir may be utilized in lieu of the full concrete encasement shown. **RESPONSE:** Contractor may propose alternate methods to support the overflow box and overflow pipe from the tank wall. Alternate methods shall be subject to review and approval of the Owner and Engineer during the shop drawing process.
3. Sheet POP-04, 48" Overflow Section. Please confirm that the tank manufacturer may adjust the centerline elevation of the overflow and manway to be at the same general centerline elevation to limit the amount of displaced prestressing wires. **RESPONSE:** This is acceptable and will be reviewed during the shop drawing process. Any

revision must make sure that the flap valve can function properly and its motion is not interfered with.

4. Sheet POP-04, 48" Overflow Section indicates that the flow line elevation of the 4" perimeter drain is at El. 680.18. Please confirm that the tank contractor may revise the elevation of the perimeter drain to be at the base of the excavation so that the perimeter drain may collect and sources of water that may collect in the crushed limestone fill beneath the tank. **RESPONSE:** This is acceptable and will be reviewed during the shop drawing process.

Geotechnical Report:

1. Please confirm if DN Tanks will be allowed to hire Professional Services Industries, Inc. to provide further geotechnical information and as well as to inspect the subgrade. **RESPONSE:** SAWS does not engage in prime/subcontractor relationships, it is up to the prime contractor to determine who they intend to use.
2. Page 4, Groundwater Information, indicates some minor seepage was encountered at a depth of approximately eight (8) feet and that variations in groundwater may occur. Please confirm that the 100-year flood elevation and design groundwater elevation are below the finished floor elevation and that tank does not need to be designed for hydrostatic uplift. **RESPONSE:** According to FEMA Flood Insurance Map #48029C0535F, the nearest flood plain limits are about 1,500 feet from the tank location, with an elevation of about 619 feet.
3. Page 14, Mat Foundation or Spread Footings and Ring-Wall Foundations provides foundation preparation recommendations for the tank. Please note that the plans Sheet POP-06 Ground Storage Tank Subgrade Excavation seem to be consistent with the Geotechnical Report. Please confirm that the tank contractor may be allowed to revise the foundation preparation if required during the foundation design. **RESPONSE:** The intent of this question is unclear. No revision is permitted to the minimum structure foundation preparation requirements shown on Sheet POP-06 and Section 02200.
4. Page 6, Potential Vertical Rise, states that for tank foundations where at least eight (8) feet of product with the tank or four (4) psi contact pressure, five (5) feet of undercutting below existing grade and replacement with select fill should be performed to limit the PVR to 1 inch or less. The plans, Sheet POP-03 Typical Tank Section and Elevation indicates that the Low Water Elevation is at EL. 705.95. Please confirm that the foundation design and preparation may be based on the low water level elevation indicated in the plans and that the pressure exerted by lower water elevation may be relied upon when

determining the extent of removal and replacement soils. **RESPONSE:** Structure foundation preparation shall be in accordance with Sheet POP-06 and Section 02200. The Low Water Elevation on sheet POP-03 is for “normal” operation. The tank would be empty during times when it is removed from service for maintenance.

5. Please note during our review we were unable to locate the subgrade modulus for this project which is required by tank contractors for foundation analysis. Please provide the subgrade modulus. **RESPONSE:** No other information is available at this time. If additional information is needed, bidders may make additional tests and investigations, at their expense, as Bidder may deem necessary.

B. DRAWINGS.

1. Sheet POP-04 (52 of 150). On Section 1, change all references from 48” steel to 48” stainless steel for the overflow pipe.

On Section 3, delete the 6” Min. dimension for the tank floor.

2. Sheet POP-05 (53 of 150). On Sections 1 and 2, change the words “Flexible Coupling” to “Harnessed Mechanical Coupling, See Detail D, Sheet PDOP-01”. The drawing should be revised to reflect a harness mechanical coupling at these two locations.

On Sections 1 and 2, change the inlet and outlet pipes from 48” stainless steel pipe to 48” steel pipe.

3. Sheet POP-06 (54 of 150). On the Ground Storage Tank Subgrade Elevation, add a 5 foot dimension from the outside edge of the perimeter footing to the top edge of the limestone fill.

C. TECHNICAL SPECIFICATIONS.

1. Section 13207 – WIRE WOUND, PRESTRESSED CONCRETE TANK WITH STEEL DIAPHRAGM.
 - a. Page 6, Article 2.1. Change the overflow weir level from “729.25” to “729.40”.
 - b. Page 6, Article 2.1. Change the Rise to diameter ratio of the dome from “1 to 12” to “within the range of 1:10 to 1:14”.

- c. Page 8, Article 2.2.D. Delete the second bullet for seismic loads and replace with the following:

“Seismic loads shall be based on the Recommended Design Seismic Parameters (Site Class C) shown in the Geotechnical Report for 2009 IBC.”

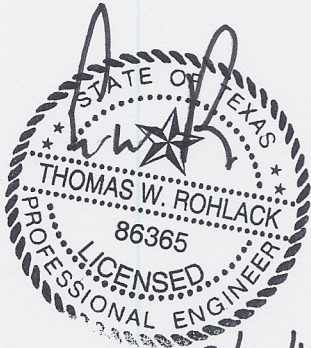
Each Respondent is requested to acknowledge receipt of this Addendum No. 4 by his/her signature affixed hereto and to file same as an attachment to his/her proposal.

The undersigned acknowledges receipt of this Addendum No. 4 and the proposal submitted herewith in accordance with the information and stipulation set forth.

Date

Signature of Respondent

END OF ADDENDUM



9/10/14



9-10-14