ADDENDUM NO. 4

TOWN OF JONESBOROUGH
WATER TREATMENT PLANT ADDITIONS

BID OPENING DATE: AUGUST 21, 2025

AT JONESBOROUGH TOWN HALL - 2:00 PM

DATE OF ADDENDUM: August 7, 2025

SPECIFICATIONS:

Specifications, Appendix A – Geotechnical Report:

Add the attached **"GEOTECHNICAL EXPLORATION ADDENDUM LETTER NO.1"** in reference to the clearwell tank foundation design criteria. Discussions with the Geotech Engineer indicated that the tank foundation design based on a pile supported system may eliminate the need for the extensive undercutting and crushed stone backfill previously indicated as being required. If the final tank foundation design as bid and approved during shop drawing review does eliminate this need, the unit prices in Schedule B: Adjustment Items will be used for the price adjustment for the amount of undercutting and crushed stone backfill actually used. The Bid shall be based on the proposed foundation by the tank company and the undercutting and backfill indicated on the Drawings and as specified.

DRAWINGS:

Sheet S-05-301 – Chemical Building Sections:

The Chemical Building slab on grade shall be 12" in thickness.

Louis E. Robbins, P.E.
Tennessee P.E. No. 14525
GRW Engineers, Inc.

Foundation Systems Engineering, P.C.
Geotechnical Engineering and Consulting

August 7, 2025

Mr. Louis Robbins, PE
404 BNA Drive, Suite 201
Nashville, Tennessee 37217

RE: GEOTECHNICAL EXPLORATION ADDENDUM LETTER NO.1
JONESBOROUGH WATER TREATMENT
301 ARNOLD ROAD
JONESBOROUGH, TENNESSEE
FSE FILE NO.: 723074

Dear Mr. Robbins:

The following letter provides an addendum detailing recommendations for deep foundations/rock anchors for support of the tank foundation. The following recommendations are provided:

Micropiles/Rock Anchors – Micropiles/rock anchors can consist of either a single element (such as a grouted casing) or they can be a composite (such as a bar installed and grouted inside of a casing). Micropiles/rock anchors provide support in a primarily axial direction, with the applied loads being distributed through a bond zone between the micropile/rock anchors and the load-supporting soil or bedrock.

We recommend that a composite micropile system consisting of an internal bar and steel casing be used for this project. The following criteria should be used for micropile/rock anchor design:

Micropile/Rock Anchor Design Parameters

Description	Recommended Value
Bond Zone Material	Limestone Bedrock
Allowable Bond Load	75 psi
Minimum Hole Diameter	5 ½ inches
Casing	5 ½ inches, N-80 casing; minimum wall 0.364 inch
Minimum Casing Length	Casing should penetrate into the rock for the full bond zone
Minimum Bond Length	7 feet
Minimum Center-to-Center spacing	3 pile diameters
Water/Cement Ratio for Grout	0.40 maximum
28-day compressive strength of grout	4000 psi

1. A bond strength test should be performed prior to installation of the micropiles/rock anchors. The design bond length should be adjusted if necessary.
2. Steel bars should be fitted with centralizers at the bottom and center.
3. Full-time monitoring of the micropile/rock anchor installation should be performed by the geotechnical engineer or their designated representative.
4. One bond strength test should be performed prior to installation to verify the bond strength. The design bond length may be adjusted based on the results of this test.

We have appreciated the opportunity to provide our geotechnical engineering and testing services.

Sincerely,
Foundation Systems Engineering, P.C

GREGORY ALLEN BROWNING
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 117463
STATE OF TENNESSEE
8/7/2025

Allen Browning, MS, PE, LEED
President/CEO
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