



August 14, 2020

CTI Engineers, Inc.
1122 Riverfront Parkway
Chattanooga, TN 37402

ATTENTION: Mr. Allen D. Stephens, P.E.
astephens@ctiengr.com

Subject: **ADDENDUM TO REPORT OF GEOTECHNICAL EXPLORATION**
Proposed Water Storage Tank
Spring Branch Industrial Park
Bradley County, Tennessee
GEOS Project Number 41-18345

Dear Mr. Stephens:

GEOServices, LLC (GEOS) previously performed a geotechnical exploration for the project site, and prepared a *Report of Geotechnical Exploration*, dated June 5, 2018. The site for the proposed water storage tank is located at the Spring Branch Industrial Park in Bradley County, Tennessee. Since the time that this report was prepared, we understand that the dimensions of the proposed storage tank have changed. Previously, we had estimated that the tank would have a diameter of approximately 50 feet and a height of approximately 30 feet. However, based on the new plans, we understand that the tank will still have a diameter of 50 feet, but the new height will be 42 feet. Based on these dimensions, we anticipate that the water tank will produce a load of approximately 2,700 pounds per square foot (psf) to the subgrade. We have been asked to provide revised foundation recommendations based on these new design changes.

FOUNDATION RECOMMENDATIONS

As previously stated in the geotechnical report, foundations for the proposed water storage tank are anticipated to consist of a mat type foundation bearing in the very stiff to hard residual soils. However, based on the new anticipated loads, we have increased the maximum recommended allowable bearing capacity for design of the foundations to 3,000 pounds per square foot (psf). GEOServices has also performed an additional settlement analysis based on this new loading and the new recommended

bearing capacity. Based on the conditions encountered in our soil borings and this new loading, we anticipate that maximum total settlements will still be on the order of 1 inch or less and maximum differential settlements will still be on the order of ¾-inch or less between the middle of the tank and the outside walls.

As previously stated in the geotechnical report, we recommended that all exterior footings should be designed to bear at least 18 inches below finished exterior grade to protect against frost heave. Typically, this is recommended for conventional shallow foundations. Based on the type of foundation construction anticipated for the tank (mat type foundation), the fact that a portion of the foundation will be below grade, and the fact that the foundation will be underlain by a minimum of 6 inches of stone, we anticipate that this design will provide enough cover to protect against frost heave in this area.

The remainder of section “4.3 Foundation Recommendations” should be followed as stated in the geotechnical report. GEOServices will be glad to further assist the design team with any additional questions, concerns, or changes during the design/construction process.

LIMITATIONS

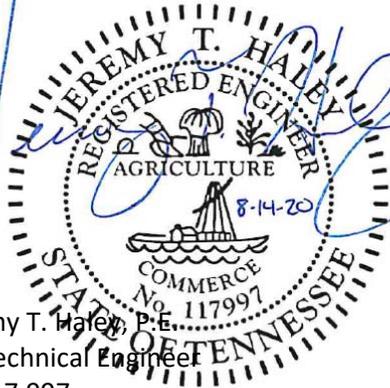
This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. This report is for our geotechnical work only, and no environmental assessment efforts have been performed. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other warranty, express or implied, is made.

We appreciate the opportunity to have been of service to you on this project. Please contact us with any questions you may have regarding this letter.

Sincerely,
GEOServices, LLC



Derek K. Kilday, P.E.
V.P. – Chattanooga Area Manager



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