



Memorandum

To: Jason Loree, Board Member - ABC Water and Stormwater District
From: Katherine C. Hennicken, P.E. – CT Consultants, Inc.
Subject: Proposed Forest Lawn Stormwater Park - Building Pad Fill Settlement
Date: January 26, 2024

We understand that grades in the area of the proposed pavilion may be raised for earthwork balance at the proposed Forest Lawn Stormwater Park. Grades are anticipated to be raised up to 8± feet. This memo has been prepared to address the potential for settlement due to new fill.

For each of the encountered soil strata, soil compressibility parameters were evaluated for use in building fill settlement calculations. The compressibility parameters were evaluated using correlations with moisture contents and Atterberg limits test results.

Settlement was evaluated based on a maximum building fill height of 8 feet. Total building fill settlement calculations include consolidation of the foundation soils as well as settlement of the building fill under its own weight. Based on a maximum fill height of 8 feet, total settlement due to the placement of new fill was estimated to be approximately 1¼ to 1½ inches, which is not anticipated to be problematic for the proposed project. It should be noted that settlement of the fill soils under their own weight was on the order of ½ inch, which represents approximately 33 to 40 percent of the calculated total settlement. Some of this building fill settlement will occur during placement of the fill. Additionally, field observations of actual settlement generally tend to be less in magnitude than the theoretical calculated settlement.

Based on correlations with soil index properties, as well as the indicated fill heights and range of compressible cohesive soil layer thicknesses, the time required to achieve 90 percent consolidation was generally calculated to be on the order of two months. It may be prudent to install and monitor settlement plates during fill placement to evaluate when the 90 percent consolidation occurs and foundation construction may commence in the fill areas. It should be noted for the building fill heights and

settlement magnitudes indicated above, after 90 percent consolidation, the remaining settlement from the placement of new fill in the building area would be less than ¼ inch.