

weathered, very soft to soft, metamorphosed granitic rock with very close to close fracture spacing. Strata recovery (REC) values within the weathered rock ranged from 0 to 89 percent. In general, the cored crystalline rock is moderately weathered to fresh, moderately hard to very hard, metamorphosed granitic rock with very close to wide fracture spacing. Strata (REC) values within the crystalline rock ranged from 17 to 100 percent, and strata Rock Quality Designation (RQD) values ranged from 0 to 100 percent. However, the majority of the crystalline rock cored exhibited good to very good rock quality, and the rock quality generally increased with increasing depth.

3.5 GROUNDWATER

Groundwater was encountered at all four of the end bent soil test borings drilled for this project. The interior bent borings were drilled within the lake and therefore had a collar elevation below the groundwater elevation. The groundwater elevation at the end bent borings ranged from ± 763 feet to ± 764 feet. The water surface elevation of Lake Higgins measured during the survey portion of our investigation on May 30 was ± 764 feet. Fluctuation of groundwater and lake water surface levels can occur with seasonal and climatic variations. According to the Bridge Survey and Hydraulic Report, the normal water surface elevation is 763.4 feet, the 10-year floodwater surface elevation is approximately 766.9 feet, the 25-year floodwater surface elevation is 767.6 feet, the 100-year flood elevation is 769.5 feet, and the 500-year flood elevation is 772.8 feet.

4.0 NOTES TO THE DESIGNER

Gravel was encountered in varying amounts within the roadway embankment fill and alluvium, and rock fragments were encountered within some of the residual soil at the site. Boulders and riprap are present along the existing embankment slopes.

5.0 CLOSURE


The geotechnical investigation, analysis, and general construction considerations included in this report are based on the Bridge Survey & Hydraulic Design Report, the Preliminary General Drawing, and the data obtained from our field and laboratory-testing program. If the proposed location and geometry, or finished grades are changed or are different from those outlined above, or if subsurface conditions are encountered during construction which differ from those indicated by our borings, we will require the opportunity to review these changed conditions and make any necessary modifications to the general conditions presented in this report.

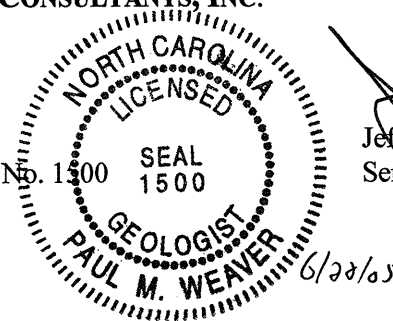
Cross-sections and profiles are a generalized interpretation of soil conditions between borings and should not be considered accurate other than at the boring locations. Subsurface conditions between boring locations or elsewhere on the site may vary, and subsurface anomalies may exist which were not detected.

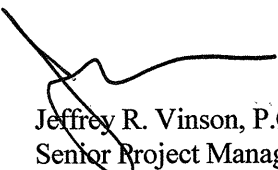
Trigon Engineering Consultants, Inc. appreciates the opportunity to be of service to the NCDOT on this project. Should you have any questions concerning this report, please feel free to contact the undersigned.

Respectfully submitted,

TRIGON ENGINEERING CONSULTANTS, INC.


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Attachments

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