(Elevations ±258 feet to ±253 feet) at End Bent-2. In addition, weathered rock occurs frequently as zones within the crystalline rock at borings B1-A (Revised), B1-B (Revised), B1-A, B1-B, and B2-A. See the individual boring and coring logs contained herein for the specific depths and elevations for the zones of weathered rock. End Bent-1 boring EB1-A was terminated within weathered rock.

Crystalline rock was encountered in all borings with the exception of EB1-A, which terminated in weathered rock. The crystalline rock was encountered at the following depths and elevations: ±18 feet (Elevation ±262 feet) at End Bent-1, ±8 feet to ±13 feet (Elevations ±261 feet to ±256 feet) at the Revised Bent-1 borings, ±4 feet (Elevation ±261 feet) at the original Bent-1 borings, ±11 feet (Elevations ±254 feet to ±252 feet) at the Bent-2 borings, and ±24 feet to ±38 feet (Elevations ±256 feet to ±242 feet) at the End Bent 2 borings. As noted in the previous paragraph, zones of weathered rock were encountered within the crystalline rock at borings B1-A (Revised), B1-B (Revised), B1-A, B1-B, and B2-A. See the individual boring and coring logs contained herein for the specific depths and elevations for the zones of weathered rock. All end bent borings were terminated on crystalline rock with the exception of EB1-A, which was terminated in weathered rock.

Between ±19 and ±32 feet of weathered rock/crystalline rock was cored at each of the interior bent borings. The cored weathered rock, encountered in borings B1-A (Revised), B1-B (Revised), B1-A, B1-B, and B2-A is severely to moderately severely weathered, medium hard to soft, biotite schist with very close to close fracture spacing. The strata REC values for the weathered rock zones that were cored ranged from 0 to 64 percent. In general, the cored crystalline rock is moderately to slightly weathered, moderately hard to hard biotite schist with very close to wide fracture spacing. Strata recovery (REC) values within the crystalline rock ranged from 74 to 100 percent and strata Rock Quality Designation (RQD) values ranged from 25 to 100 percent. The crystalline rock cored was generally consistent in quality, with the majority of the rock being good to excellent in quality. The quality of the rock cored generally increased with increasing depth.

3.5 GROUNDWATER

Groundwater was present in all of the borings drilled for this project except boring EB1-A and EB2-B. The groundwater elevation ranged from ±265 to ±260 feet. The water surface elevation of Lower Barton's Creek measured during the survey portion of our exploration on June 19, 2003 was ±259 feet. Fluctuation of groundwater and river water surface levels can occur with seasonal and climatic variations. According to the Bridge Survey and Hydraulic Report, the normal river water surface elevation is approximately 259.5 feet, the 25-year flood water surface elevation is approximately 269.3 feet, the 50-year flood water surface elevation is

4.0 CONSTRUCTION CONSIDERATIONS

Large cobbles and boulders are evident within the channel bed at the subject site, especially downstream from the existing bridge. Although cobbles and boulders were not encountered within the boreholes drilled as part of this exploration, it is possible that boulders may be encountered during construction operations at the site.

5.0 CLOSURE

The cross-sections and profile, included as part of this report, 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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