

January 16th, 2024

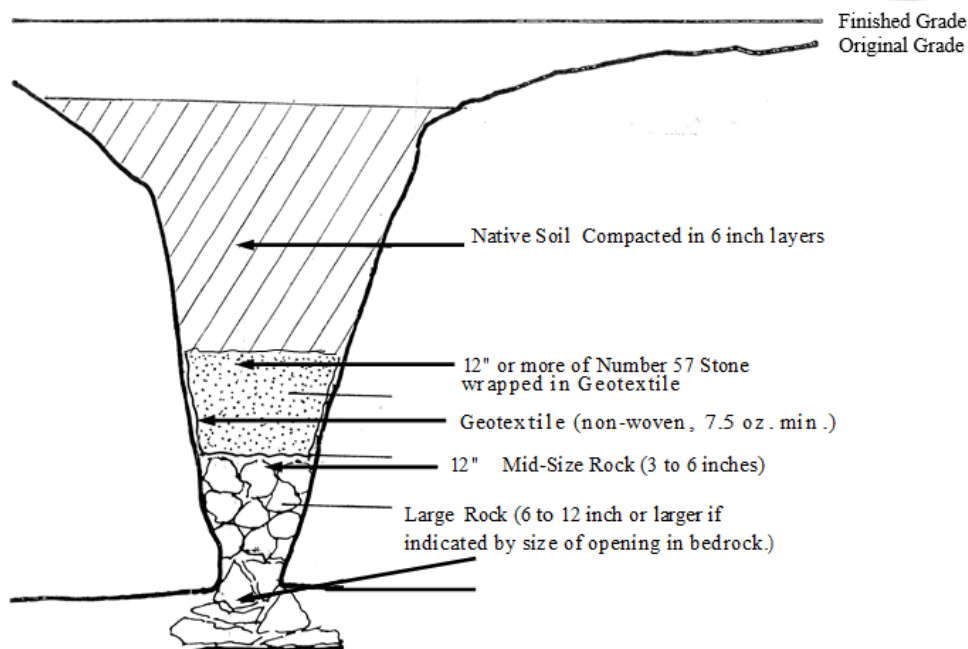
Mr. Brian Evans
Hogan Property Development Co.
9300 Shelbyville Road Suite 1300
Louisville, KY 40222

SUBJECT: Karst Survey
Fern Creek Commons
Louisville, Kentucky
Cornerstone Project 23-270G

Dear Mr. Evans:

Cornerstone Geotech Services observed the above-referenced property from accessible areas including from trails cleared through the woods that were freshly cut to allow access by the drill rig. Most of this site is heavily wooded and karst features may be present in areas obscured by the woods; however, none were observed. Karst development is common in this area. The geology of this site is described in detail in the geotechnical report dated December 3rd, 2023.

If karst features are discovered during the construction phase, the features must be treated in such a manner that they will not redevelop. To this end, it would be necessary to expose the bedrock and expose the opening in the bedrock. If no opening in the bedrock is present, the depression is due to another cause. If an opening in the bedrock is found, good engineering practice dictates a filter be installed in any crevices or openings in the bedrock. A diagram of a typical treatment of a karst feature using a filter is provided below. Treatment should be on a case-by-case basis under the guidance of a geotechnical engineer. We are available to assist you with the design of the filter at each of these locations. Such a filter will allow water to pass into the opening in the bedrock, but prevent erosion of soil, thus preventing subsidence at the location and make construction possible.





Where water is emerging from the bedrock in the case of a spring, a drain must be installed. This can take the form of spring box to capture the water and direct it into a pipe that carried the water away to a point that it can flow by gravity along an established drainage channel. Sometimes a perforated pipe surrounded by open-graded crushed stone and geotextile can be used instead of a spring box.

Treatment of karst as discussed above is common and most of the larger sitework contractors are familiar with this operation, though it should be performed under the direction of a geotechnical engineer.

If you have any questions regarding this letter, please call.

Sincerely,

Cornerstone Geotech Services LLC

A handwritten signature in black ink that reads 'Luke Van Nevel'.

Luke Van Nevel, E.I.T.
Geotechnical Engineer

A handwritten signature in black ink that reads 'Sandor Greenbaum'.

Sandor R. Greenbaum, P. E.
Principal Engineer