



ECS SOUTHEAST, LLC

Geotechnical • Construction Materials • Environmental • Facilities

January 24, 2025

Attention: Brent Hackworth
Highgates Development
7610 Chelsea Gardens Drive
Louisville, KY 40291
Brent@highgates.com

C/O: David Mindel
Mindel Scott
5151 Jefferson Boulevard
Louisville, Kentucky 40219

Reference: **Preliminary Slope Evaluation – The Reserves at Parklands Phase 2**
8000 Broad Run Road
Louisville, Jefferson County, Kentucky 40291
ECS Project No. 61-3295

Dear Mr. Hackworth:

ECS Southeast, LLC (ECS) conducted a visual reconnaissance of the areas of interest for the referenced site in accordance with ECS Proposal No. 61-P3715R1, dated December 9, 2024. A visual reconnaissance of these areas was conducted on January 3, 2025. Photos of the conditions observed are shown below. The area of interest identified included four (4) areas of basin outlets as outlined in red on the attached provided site plan. These areas were located around and along a large hillside that runs predominantly north/south to the east of the proposed development and slopes east toward Broad Run Road.

Visual Reconnaissance of Selected Slope Areas

The slopes primarily were covered by woods with many small to large diameter trees. Brush, vines, and other low vegetation also was present throughout the area. Several rock outcrops, some large, were observed along the hillsides. Some minor indications of erosion were observed including occasional patches of bare soil and sparse bent trees. No indications of large, wide-scale erosion were noted. No visual indications of slope instability were observed. In particular, none of the following were noted: unusual tilting or fallen trees, tension cracks, scarps, displaced soil, or mounds of soil in lower areas.

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Planning & Design

Received Jan 27th. 2025

24-ZONE-0112



Typical slope at Area 1 east of Lot 270



Rock outcrop at Area 1 east of Lot 270



View of slope near Broad Run Road at Area 1 east of Lot 270



View of bent and leaning trees at Area 2 near Lots 247 and 248



Rock outcrop along slope at Area 2 near Lots 247 and 248



Rock outcrop along slope at Area 2 near Lots 247 and 248



View of bent tree and rock outcropping at Area 3 near Lot 221



Typical slope along hillside at Area 3 near Lots 221



Typical slope at Area 3 near Lot 221



View of bent tree at Area 3 near Lot 221

Conclusions

The observed conditions indicated past slope instability along the hillside, including the sparsely observed bent trees which appeared to be the result of slope movement that occurred several years prior to this site visit based on the tilt and bow of trees observed. The lack of any obvious tension cracks or scarps along the slope surface does not suggest rapid, recent slope movement. Due to the time of year of our visual reconnaissance, the presence of bedding of fallen leaves across much of the hillside prevented a thorough observation of the slopes in portions of the area of interest. While additional evidence of slope instability was not observed, it is possible that the dense ground cover obscured the presence of slope instability. Once areas where site disturbance for grading and/or utility installation have been cleared of dense vegetation, ECS should be retained to further evaluate those slopes. Significant disturbance of the steeper slopes along the hillside should be avoided if possible. If large excavations or significant re-grading in those areas are to occur, ECS should be contacted for guidance.

Based on our review of the available reference information and on our past experience with construction under similar conditions in Jefferson County, our opinion is that the on-site slopes in the observed areas were stable at the time of our reconnaissance.

The current, on-site slope stability likely is related to the following factors:

- Relatively thin depths of soil in slope areas
- Cohesive (clayey) soil matrix

- Rocky soil texture
- Limestone bedrock in many areas
- Numerous trees and other vegetation

Based on the conditions observed, our opinion is that additional geotechnical exploration/analyses including soil/rock test borings/coring, shear strength tests of soils, etc. are not required for the evaluated on-site slopes, provided that the planned subdivision configuration does not involve disturbance significantly greater than what was indicated on the provided site plan.

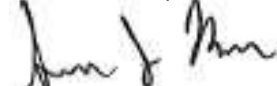
Several measures may be considered to help maintain the stability of the existing and planned slopes during construction of the new subdivision and over the life of the new homes. These measures include:

- Plan grading operations to minimize changes to existing topography along slopes.
- Minimize disturbance to slopes and vegetation outside new construction areas.
- Avoid significant transverse cuts along or at the toe of existing slopes.
- Avoid significant embankments along or at the crest of existing slopes.
- Maintain the following limits for new embankments without additional geotechnical exploration and analysis:
 - 3:1 (horizontal: vertical) or flatter slopes.
 - Properly strip all vegetation, topsoil, etc. where fill will be placed.
 - Construct embankments with controlled fill compacted to at least 98 percent standard Proctor maximum dry density and within 2 percent of the optimum moisture content.
 - Maximum fill embankment height – 5 feet.
 - Horizontally bench new fill into existing slopes.
- Maintain the following limits for new cuts in soil without additional geotechnical exploration and analysis:
 - 3:1 (horizontal: vertical) or flatter slopes.
 - Maximum cut height – 5 feet.
- Provide adequate erosion and surface water drainage control during construction and over the life of the subdivision.
- Establish permanent vegetative cover as soon as practical.

We appreciate the opportunity to serve as your geotechnical consultants for this project. We look forward to future association with you on this and other projects.

Respectfully submitted,

ECS Southeast, LLC



Seth J. Barnett

Project Geologist

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Liz Blandford, P.E.

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Attachments: Preliminary Subdivision Plan

