

Asher Engineering, Inc.

Environmental & Engineering Consulting

January 15, 2022

Mr. Brent Hackworth
brent@highgates.com

Re: Proposed Old Preston Highway Apartments
10410 and 10414 Old Preston Hwy

On January 15, 2022 Asher Engineering visited the referenced site to interview the residents and inspect the backyards of seven neighboring properties for possible karst activity and sinkholes.

The properties visited were: 4600, 4602, 4604, and 4606 Walden Dr., and 10310, 10400, 10412 Old Preston Highway. We spoke with residents at 4600, 4604, and 4606 Walden Drive. No one was available for interview at the other properties at the time of our site visit.

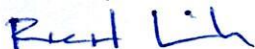
Inspection of the depressed areas at the neighboring properties confirmed these areas are indeed sinkholes. We noted that the sinkholes at the backyards at 4602, 4604, and 4606 Walden Drive, and the sinkholes at 10310 and 10400 Old Preston Highway extend into the subject site. We also noted a sinkhole on the subject site just south of 4602 Walden Drive.

Sinkholes are formed by the dissolution of the underlying limestone bedrock. Depressions in the ground surface can develop when bedrock surfaces dissolve over years of water migrating thru the area. The dissolved rock may leave a void space, or the void may be replaced by soft redeposited soil. Over time, the weight of the soil subsides over the void or soft soil, leaving a visible depression in the ground surface. A review of geographic maps revealed that the site is underlain by the Louisville Limestone formation. This formation is susceptible to karst activity and sinkhole formation.

The subject property is suitable for development with the apartment buildings and pavement areas, provided the site is inspected by a geotechnical engineer during the sitework, bldg, and road construction. This inspection would include a visual observation of the soil subgrade after the site has been stripped of grass and topsoil. A proofroll with a loaded dump truck would be conducted to identify any soft areas in the soil subgrade. Test pits with a backhoe or excavator may also be conducted to inspect any soft subgrade areas identified by the visual inspection and proofroll. If depressed areas and/or sinkholes are identified at the time of the construction inspection, recommendations for stabilizing the sinkholes would be provided on site. While there is some variation in the methods to stabilize sinkholes, the repair would generally be as follows: The sinkhole area would be cleaned of all soft soil down to bedrock. The excavation would be draped with a nonwoven geotextile fabric in the bottom and sides, and the area backfilled with crushed limestone. The geotextile fabric would then be placed over the crushed limestone, and the area backfilled with compacted soil up to finish grade. Any sinkholes that extend over property lines must be repaired on both properties to insure complete stabilization of the sinkhole area.

The Highgates Group has retained Asher Engineering to provide Construction Testing and Inspection during the sitework and building construction for the project. In addition to our normal inspections, we will include monitoring of the adjacent properties to confirm that the construction activities are not impacting the neighboring sites.

Sincerely,



Richard A. Linker, P.E.





The Highgates Group

**Old Preston Highway Apartments
10410 and 10414 Old Preston Hwy
Louisville, KY**

**Asher Engineering, Inc.
Project No.: 21-147
Photo Date February 2018**