

GREENBAUM ASSOCIATES, INC.
GEOTECHNICAL & MATERIALS ENGINEERS

994 Longfield Avenue
Louisville, Kentucky 40215
502/361-8447
FAX 502/361-4793

November 19, 2020

Mr. Chase Durrett
LDG Development, LLC
1469 S. 4th Street
Louisville, KY 40208

**Re: Slope Stability Survey
8300 Cooper Chapel Road
Louisville, Kentucky
Project Number 20-174G**

Dear Mr. Durrett:

On November 19th, 2020, I, Luke Van Nevel, walked the above referenced property and viewed a number of slopes with a greater than 20-degree inclination. Included is a drawing showing the approximate locations of the slopes (indicated by yellow shading) as well as a drawing showing the geologic mapping taken from the Kentucky Geological Survey. Also included are photos of several of the slopes taken during a walkover of the site.

During the walkover, no evidence was found of slope movement, i.e. no visual indication of landslide.

The formations shown on the section taken from the geologic map are described by the Kentucky Geological Survey are described below. These limestone formations are not prone to landslide activity as some shale formations are.

JEFFERSONVILLE LIMESTONE

Limestone, olive, brownish, and medium to light gray; weathers pale yellowish brown to very light gray and light yellowish gray; fossil fragments abound in matrix of sparry calcite or calcareous mudstone; pyritic; dolomitic in part; prominent stylolites in quarry exposures; scattered banded chert in thin irregular stringers. Abundant whole fossils include large colonial corals in lower part and the brachiopods *Brevispirifer gregarius* and *Paraspirifer acuminatus* in upper part. Weathered outcrops are characteristically thin slabs of crossbedded limestone on which fossils are etched in relief. Residuum typically contains silicified brachiopods and solitary corals. Unit disconformable with underlying Louisville Limestone; otherwise obscure contact commonly marked by abrupt transition from coarse grained limestone of Jeffersonville to fine grained dolomitic limestone of underlying unit.

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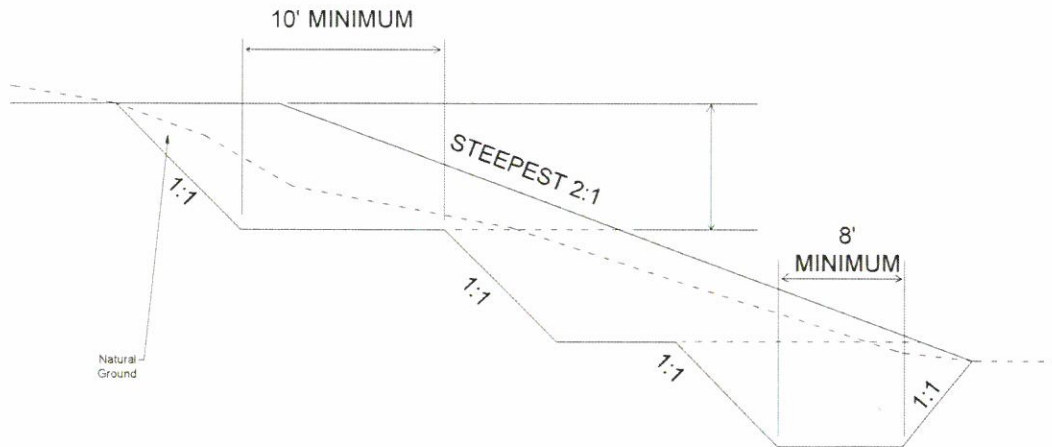
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LOUISVILLE LIMESTONE

Dolomitic limestone, light gray, yellowish gray, and light brownish gray, mottled medium dark gray; weathers yellowish gray and grayish orange to very pale orange; micro-grained to fine grained; very thin to thick bedded; stylolitic. Bedding locally nodular or thinly laminated. Six to 10 feet above base is persistent shaly zone 1 to 2 feet thick. Fossils, commonly as casts, include the distinctive chain coral Halysites, the brachiopod Conchidium, stromatoporoids, and colonial corals such as Arachvophyllum and Favosites. Calcite filled joints half an inch wide trend N. 10° E., extend into overlying Jeffersonville Limestone; rare calcite filled vugs as much as 0.5 foot across; chert locally common in discontinuous 0.2 foot thick layers in upper part. Unit forms distinctive northwest inclined plain in southeastern part of quadrangle. Basal contact distinct; exposed at only three localities in quadrangle: in underground mine at quarry northeast of Poplar Level Road interchange of Watterson Expressway, in tributary to Fern Creek in southeastern part of quadrangle, and along Middle Fork Beargrass Creek in Cherokee Park.

The topography of this property is rolling, resulting in substantial cuts and fills. When fill is to be placed on an existing slope it is imperative that the existing slope be benched as shown in the diagram below to prevent the formation of a plane of weakness along which a slope failure can develop. Benching will have to be adjusted as necessary, in consultation with this office, where limestone bedrock is encountered that prevents benching as shown from being achieved



To prevent shallow slips of these slopes downward in elevation, preventative measures must be taken prior to construction. These are: 1) trimming; 2) embedment of geotextile; or 3) emplacement of deep rooting woody vegetation.

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Trimming requires that the fill be placed 18 inches beyond the final fill point. Once fill is complete the top 18 inches of soil must be bladed-off the slope to be removed for use as fill elsewhere.

Embedment of geotextiles requires that a woven-geotextile of uniaxial geogrid be placed vertically every two feet along the outer edge of the fill. This slope reinforcement must extend at least five feet in from the outer edge of the slope.

Soil fill must be no steeper than 2 horizontal to 1 vertical in order that it remain stable. Where there is a sharp angle in the slope, such as near the corner of a building or pavement corner, the slope must be no steeper than 2.5 to 1. If the slope is to be mowed with normal lawncare equipment, it should be no steeper than 3 to 1.

This survey is intended to address existing slopes at this site. This is not a geotechnical investigation and does not include any boring, laboratory testing nor modeling of slope stability to determine factor of safety against sliding.

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

Sincerely,

GREENBAUM ASSOCIATES, INC.

Sandor R. Greenbaum

Sandor R. Greenbaum, P.E.
Principal Engineer

Luke Van Nevel

Luke Van Nevel
Geological Engineering Trainee

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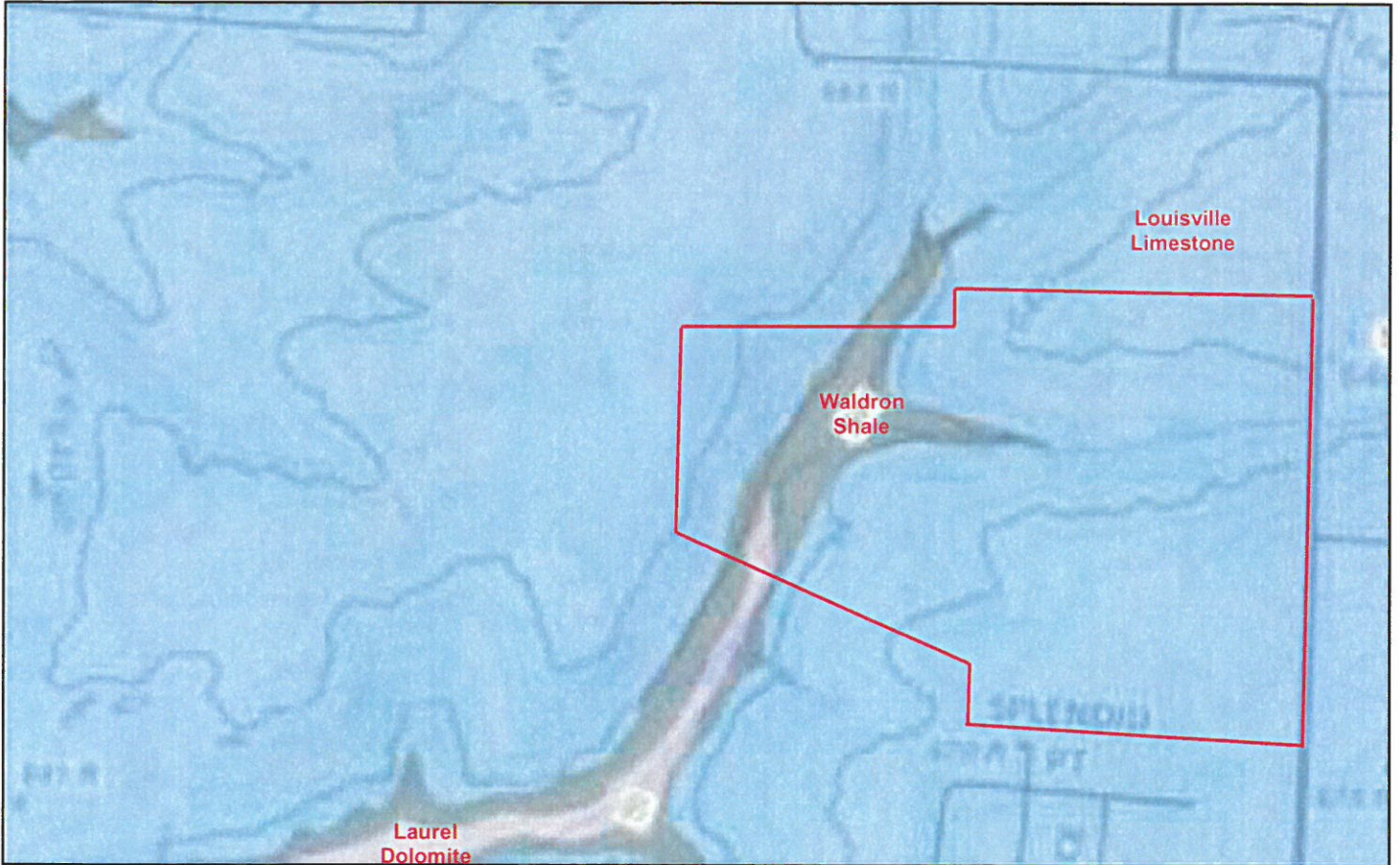


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Site Location Plan
8300 Cooper Chapel Road
Louisville, Kentucky
Greenbaum Project Number: 20-174G

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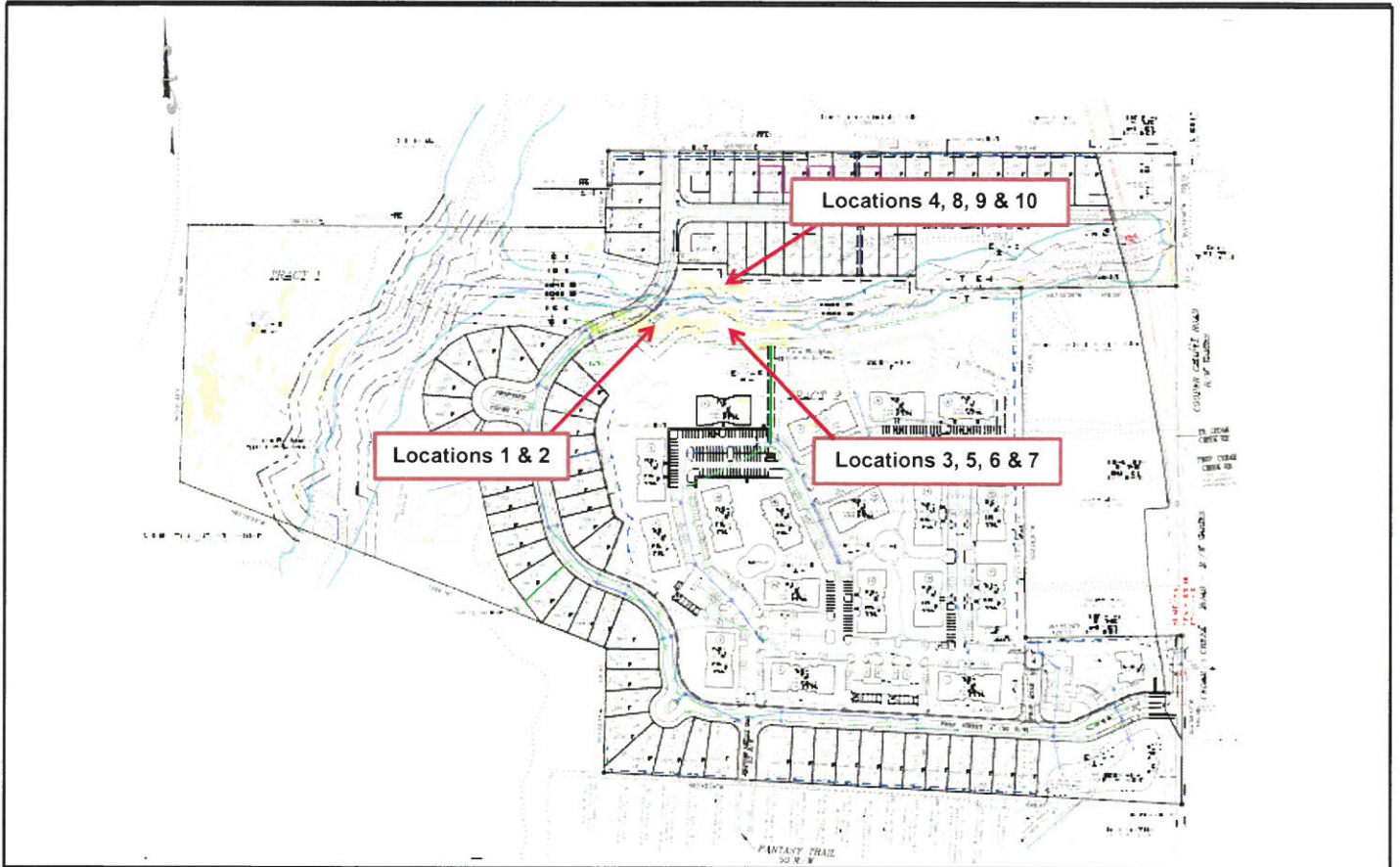


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Site Geology
Cooper Chapel Road Property
8300 Cooper Chapel Rd., Louisville, Kentucky
Greenbaum Project Number: 20-174G

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Photo Locations
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Louisville, Kentucky
Greenbaum Project Number: 20-174G

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