

GREENBAUM ASSOCIATES, INC.
GEOTECHNICAL & MATERIALS ENGINEERS

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

April 25, 2021

Mr. David Garrett
Sunshine Builders, LLC
2703 Sparrows Point Place
Louisville, KY 40245

Re: Slope Survey
Garrett Bridwell Subdivision
Old Heady Road
Louisville, Kentucky
Project Number 21-089E

Dear Mr. Garrett:

On April 22, 2021, Mr. Luke Van Nevel, EIT, walked the above referenced property and viewed several 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. Most of the slopes located along the small tributary running northwest to southeast, just northeast of Saddle Bend Way. 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 such as bulges or tension cracks indicative of a scarp.

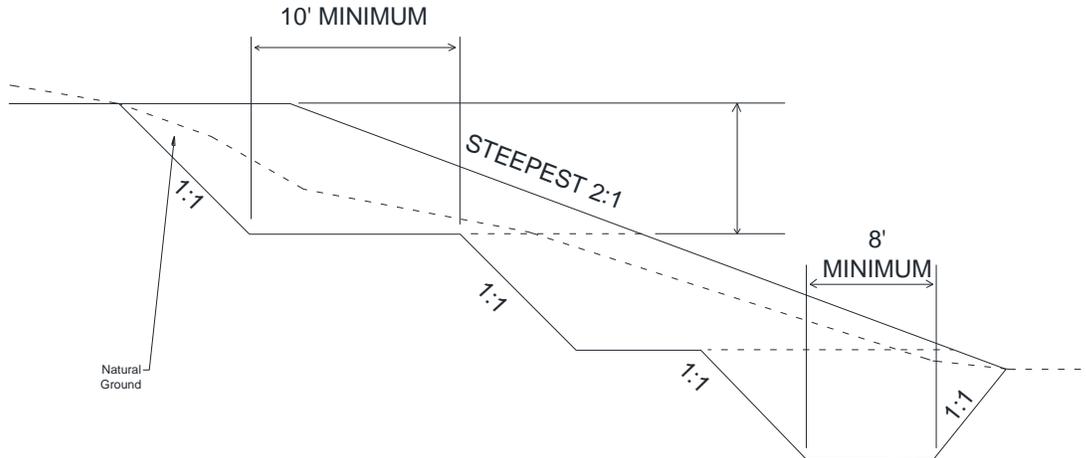
This site is shown by the Kentucky Geological Survey to be underlain by the Drake's Formation. The Geological Survey describes the Drakes Formation as:

Grayish green dolomite or limy silty mudstone and lesser amounts of argillaceous, fine-grained dolomite or dolomitic limestone. Megafossils absent or sparse in mudstone, some dolomite beds contain abundant poorly preserved bryozoans or brachiopods. Mudstone contains ripplemarks and mudcracks. 135 ft thick at type section. Divided into Rowland and overlying Preachersville Members. Conformably overlies Ashlock Formation; disconformably overlain by Brassfield Dolomite. Assigned to Late Ordovician. Approximately same rocks called the Waynesville limestone and overlying Liberty and Whitewater formations.

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

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with this office, where limestone bedrock is encountered that prevents benching as shown from being achieved



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,

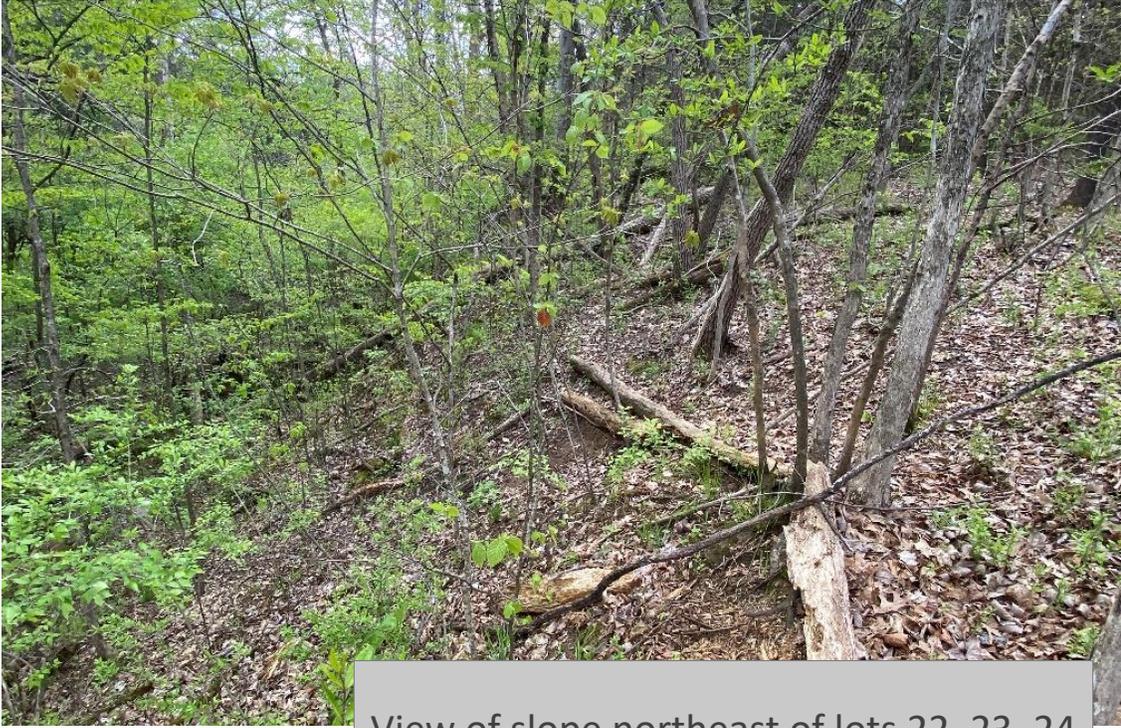
GREENBAUM ASSOCIATES, INC.

Luke Van Nevel

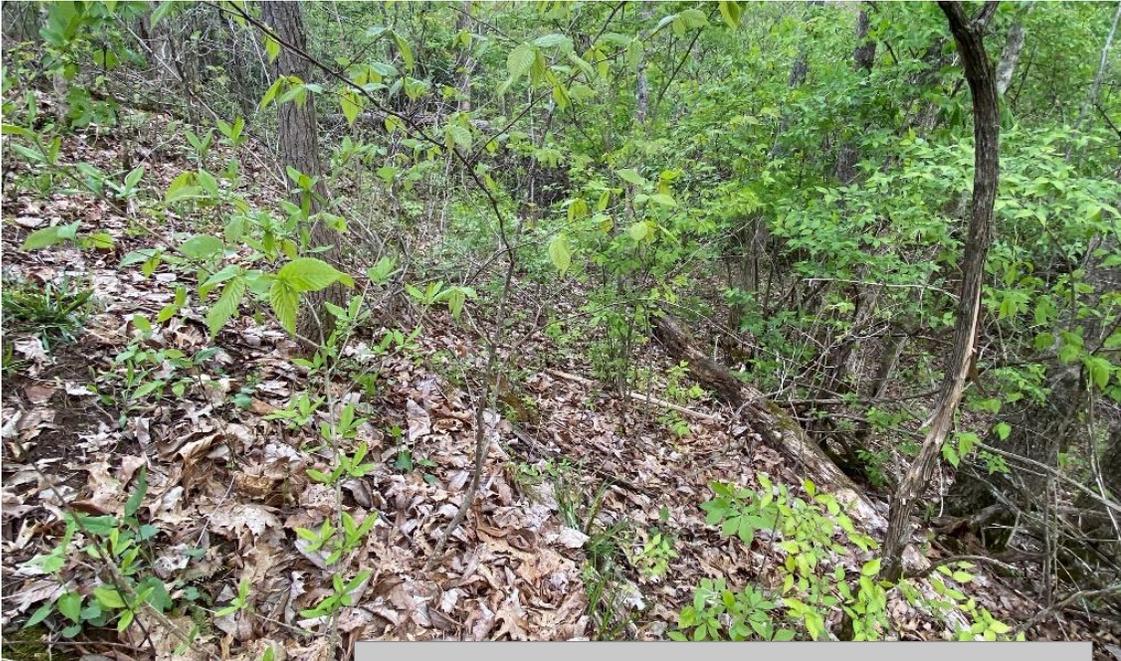
Luke Van Nevel, E.I.T.
Engineer-in-Training

Sandor R. Greenbaum

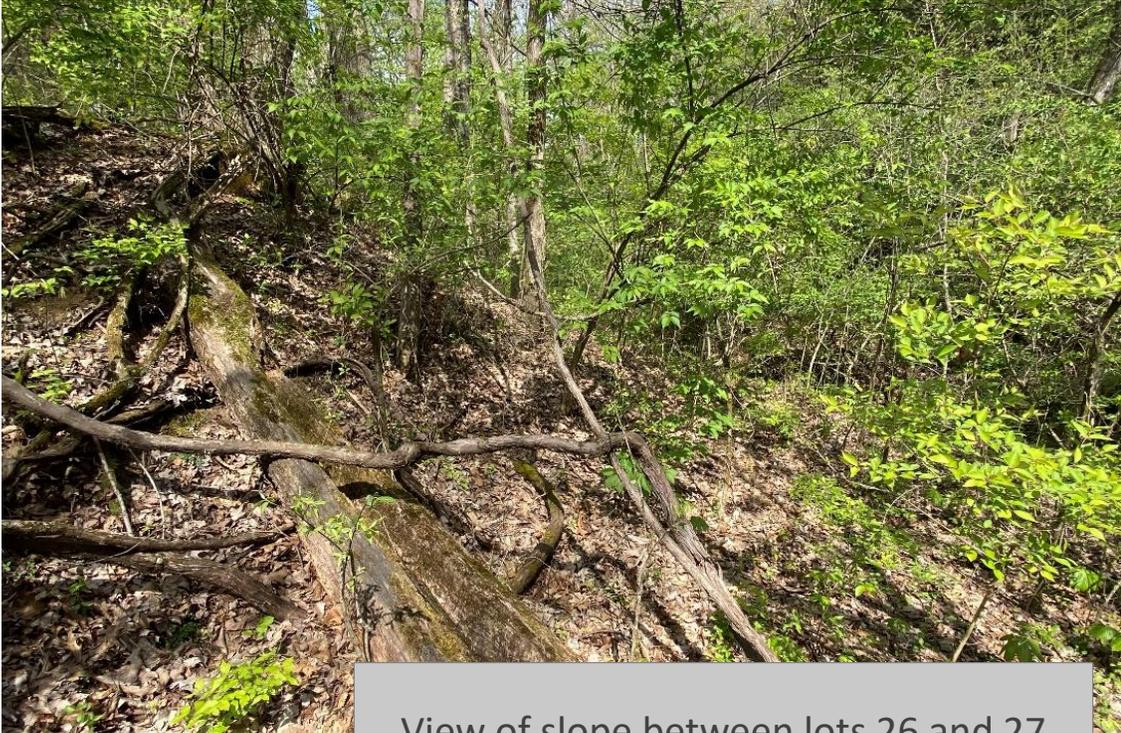
Sandor R. Greenbaum, P. E.
Principal Engineer



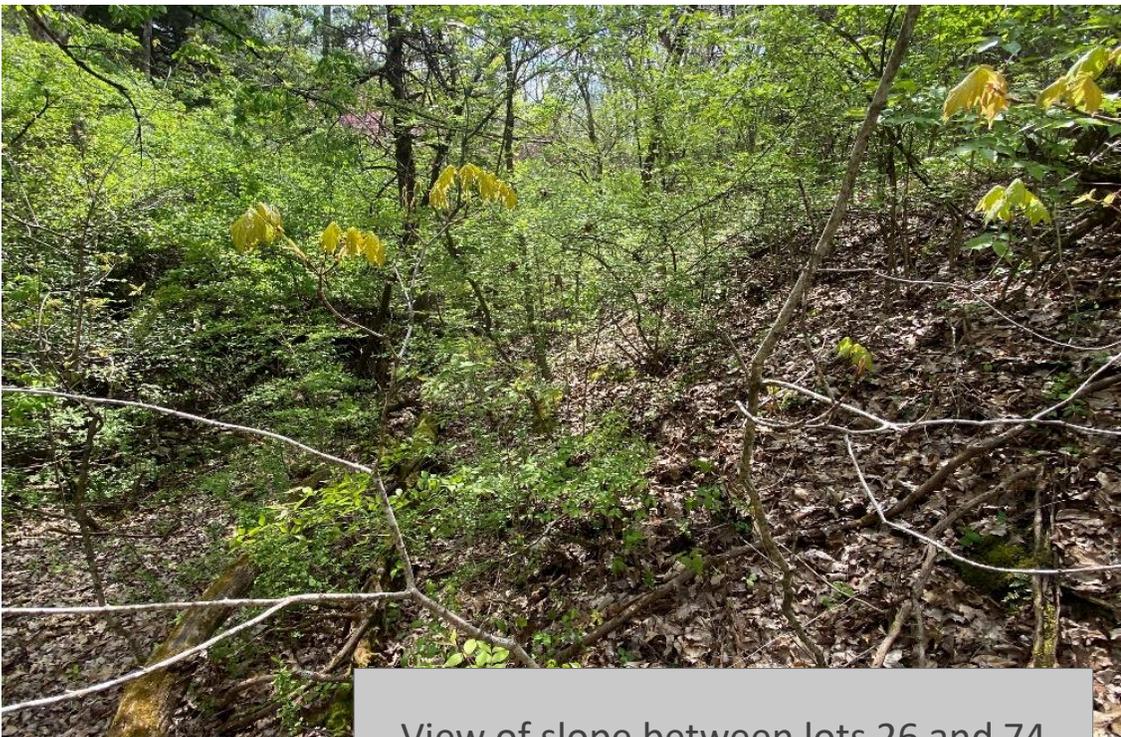
View of slope northeast of lots 22, 23, 24



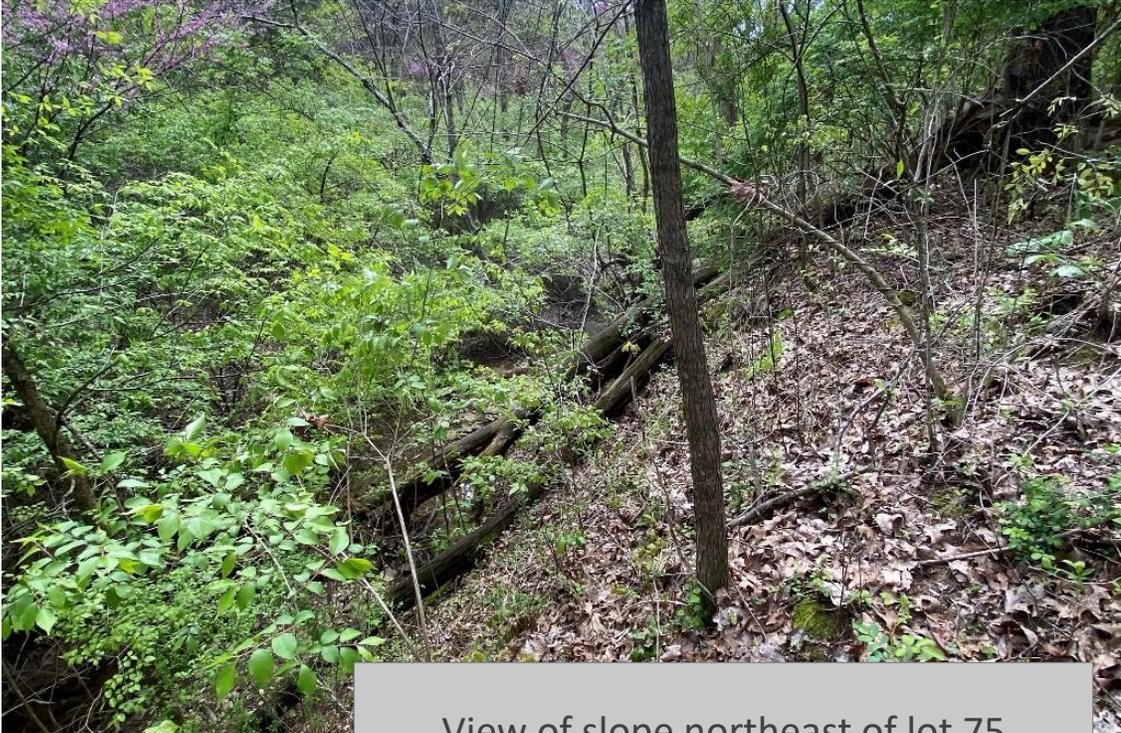
View of slope northeast of lot 24



View of slope between lots 26 and 27



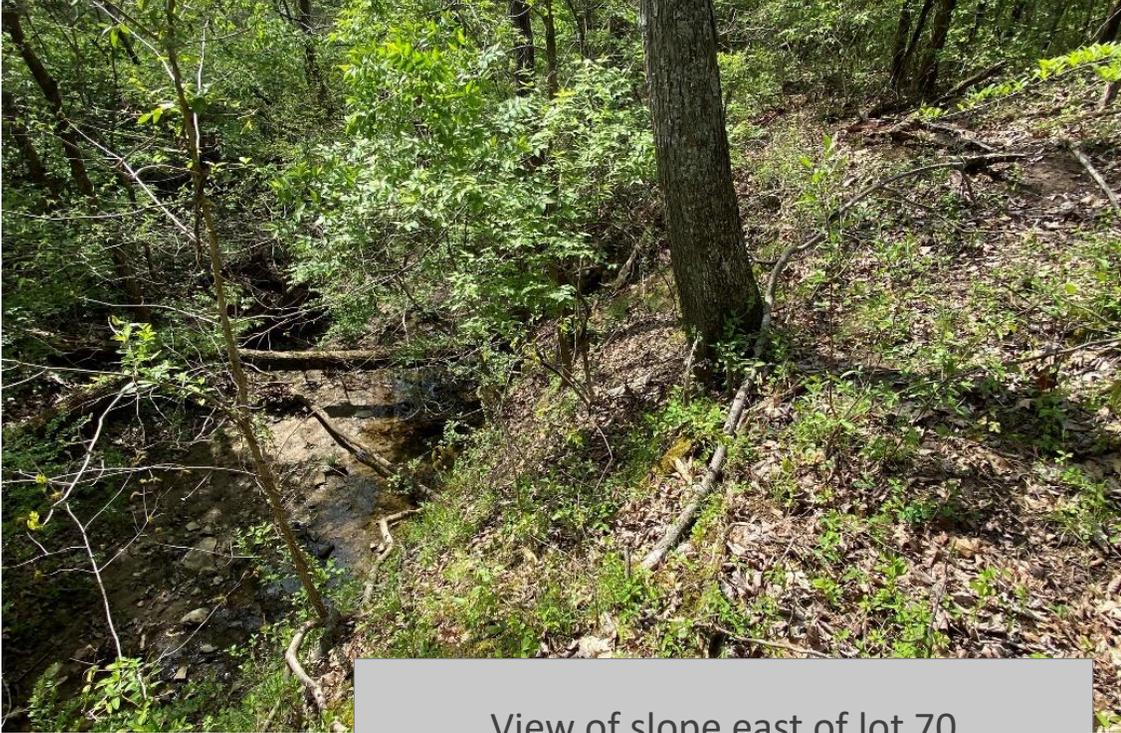
View of slope between lots 26 and 74



View of slope northeast of lot 75



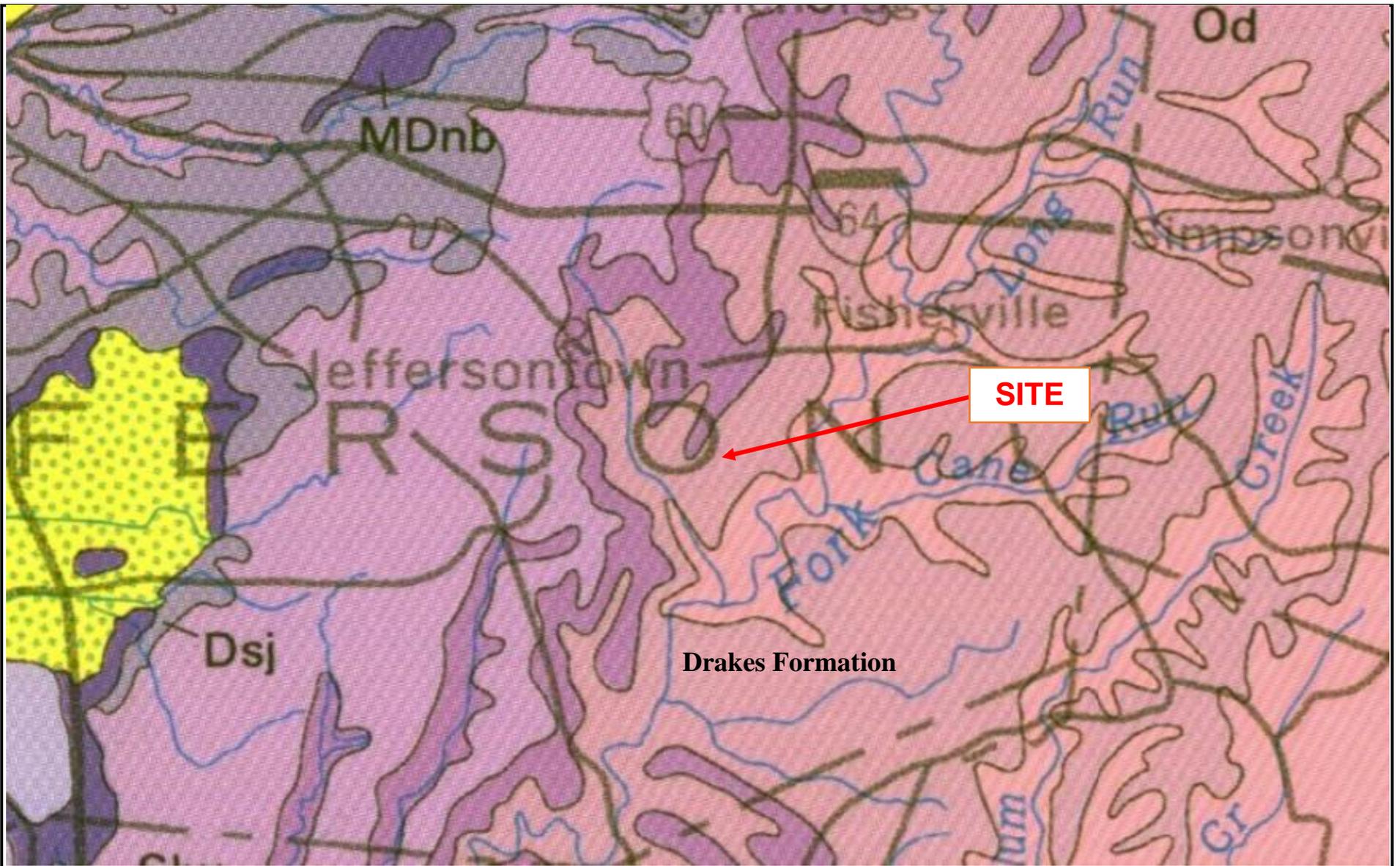
View of slope between lot 83 and 71



View of slope east of lot 70



View of slope in clearing under power lines



Sunshine Builders, LLC



**Greenbaum
Associates, Inc.**

Site Geology

Garrett Bridwell Subdivision
Old Heady Road, Louisville, Kentucky
Greenbaum Project Number: 20-089E

- R-4 REQUIREMENTS**
- MINIMUM LOT AREA = 9,000 SF
 - MINIMUM SIDE YARD = 5'
 - MIN. FRONT YARD & STREET SIDE YARD = 30'
 - MINIMUM LOT WIDTH = 20'
 - MINIMUM REAR YARD = 25'
 - MAX. BUILDING HEIGHT = 35'
- R-5A REQUIREMENTS**
- MINIMUM LOT AREA = 6,000 SF
 - MINIMUM SIDE YARD = 5'
 - MIN. FRONT YARD & STREET SIDE YARD = 20'
 - MINIMUM LOT WIDTH = 50'
 - MINIMUM REAR YARD = 25'
 - MAX. BUILDING HEIGHT = 35'

BENCHMARK DESCRIPTIONS

TRIMPS-RAILROAD SPIKE IN UTILITY POLE. UTILITY POLE IS LOCATED ON THE NORTH SIDE OF OLD HEADY ROAD 100%+ EAST OF THE CENTERLINE OF THE DRIVEWAY AT 5020 OLD HEADY ROAD. ELEVATION=85.97' (NAVD 88)

SOURCE - ELEVATIONS ARE BASED ON LOGIC MONUMENT ELEVATION=(NAVD 88)

PROJECT DATA

- # OF LOTS > 9,000 SF = 36 LOTS (30%)
- # OF LOTS < 6,000 SF = 0 LOTS (0%)

MAXIMUM BALANCE TRANSFER LOT CALCULATIONS (TRACT 1)

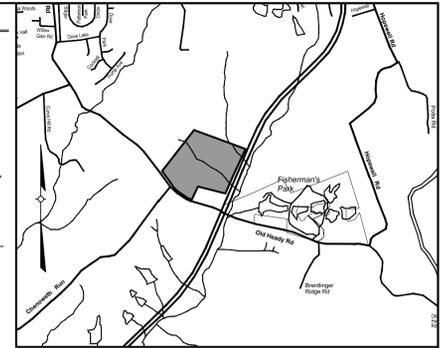
- MLP - MAXIMUM LOTS PERMITTED = 49.7± Ac.
- TA - TOTAL LAND AREA = 49.7± Ac.
- SS - STEEP SLOPES = 3.6± Ac.
- IA - INFRASTRUCTURE = 5.7± Ac.

MLP - [(TA - SS - IA) 4.84] + SS X 4.84/2 = 185 LOTS

NOTE: Only the areas of steep slopes within open space lots are being used for the balance transfer area calculations.

PROJECT DATA

- TOTAL SITE AREA = 56.3± Ac. (2,452,707 SF)
- EXISTING ZONING = R-4
- FORM DISTRICT = NEIGHBORHOOD
- EXISTING USE = SINGLE FAMILY RESIDENTIAL
- PROPOSED USE = SINGLE FAMILY/MULTI-FAMILY RESIDENTIAL



TRACT 1

- TRACT 1 AREA = 49.7± Ac. (2,166,324 SF)
- EXISTING ZONING = R-4
- AREA OF RIGHT OF WAY = 9.5± Ac. (413,059 SF)
- NET SITE AREA = 40.2± Ac. (1,753,265 SF)
- EXISTING ZONING = R-4
- FORM DISTRICT = NEIGHBORHOOD
- EXISTING USE = SINGLE FAMILY RESIDENTIAL TO REMAIN
- TOTAL # RESIDENTIAL LOTS = 119 LOTS
- TOTAL # UNITS = 22.0± Ac. (958,301 SF)
- DENSITY = 2.39 DU/AC. (7.26 DU/AC. MAX. ALLOWED)
- NET DENSITY = 2.96 DU/AC. (7.26 DU/AC. MAX. ALLOWED)
- OPEN SPACE PROVIDED = 18.1± Ac. (789,492 SF)

TRACT 2

- TRACT 2 AREA = 6.6± Ac. (286,383 SF)
- EXISTING ZONING = R-4
- PROPOSED ZONING = R-5A
- FORM DISTRICT = NEIGHBORHOOD
- EXISTING USE = SINGLE FAMILY RESIDENTIAL
- PROPOSED USE = MULTI FAMILY RESIDENTIAL
- TOTAL # UNITS = 30 UNITS
- BUILDING HEIGHT = (35' MAX. ALLOWED)
- BUILDING AREA = 60,466 SF
- F.A.R. = 0.2 (0.5 MAX. ALLOWED)
- GROSS DENSITY = 4.55 DU/AC. (12.01 DU/AC. MAX. ALLOWED)

PARKING REQUIRED

	MIN.	MAX.
1 SP/UNIT MIN.	= 30 SP	60 SP
2 SP/UNIT MAX.	=	

TOTAL PARKING PROVIDED = 60 GARAGE SPACES

TOTAL VEHICULAR USE AREA = 35,716 SF

INTERIOR LANDSCAPE AREA REQUIRED = 2,679 SF

INTERIOR LANDSCAPE AREA PROVIDED = 14,434 SF

OPEN SPACE REQUIRED = 0% REQUIRED PER TABLE 5.4.1

OPEN SPACE PROVIDED = 3.0± Ac. (128,539 SF)

EXISTING IMPERVIOUS = 0 SF

PROPOSED IMPERVIOUS = 96,182 SF

NOTES

- GENERAL**
- No lots shown herein may be subdivided or resubdivided resulting in the creation of a greater number of lots than originally approved by the planning commission.
 - Construction fencing shall be erected at the edge of the limits of disturbance areas prior to any grading or construction activities. The fencing is to remain in place until all construction is completed. No parking, material storage, or construction activities shall be permitted within the fenced area.
 - A soil erosion and sedimentation control plan shall be developed and implemented in accordance with the Metropolitan Sewer District and USDA Soil Conservation Service recommendations.
 - All open space lots are non-buildable and will be recorded as open space and utility easements.
 - Benchmark and topographical information shown herein were derived from LGSJ data. Boundary information was taken from deeds.
 - Compatible on-site utilities (electric, phone, cable) shall be placed in a common trench unless otherwise required by appropriate agencies.
 - Mitigation measures for dust control shall be in place during construction to prevent fugitive particulate emissions from reaching existing roads and neighboring properties.
 - Street trees shall be planted in a manner that does not affect public safety or hamper sight distance. Final location will be determined during construction approval process.
 - TRACT 2 shall have rollout garages.
 - There was no evidence of KARST features observed during a site visit on 7/31/2020 by Derek Triplett R.L.A.
 - A geotechnical report shall be provided prior to construction plan approval.
 - Street trees shall be provided to meet Chapter 10 requirements.

SEWER & DRAINAGE

- Onsite detention will be provided. Post-developed peak flows will be limited to pre-developed peak flows for the 2.10, 25 and 100 year storms or to the capacity of the downstream system, whichever is more restrictive. Capacity of the downstream system shall be determined by the downstream driveway crossing.
- No portion of the site is located in a floodplain per FIRN map 21111 C 0082 E dated December 5, 2005.
- Sanitary sewer service provided by Lateral Extension, subject to fees and any applicable charges. Gravity service to Fancy Gap Pump Station, sewer shall be served to eliminate Saratoga Springs Pump Station, developer shall eliminate the Saratoga Springs Pump Station, evaluate Fancy Gap Pump Station capacity and shall the station as necessary. Refer to the Downstream Facilities Capacity for Garrett Bridwell property dated 11-19-20 for additional information.
- A "Request for Sanitary Sewer Capacity" has been filed with MSD.
- All proposed sewer and drain easements shall be 15' unless otherwise indicated.
- The Louisville Water Company will determine the width of their easement prior to construction plan approval.
- LG&E approval required prior to the proposed sewer alignment prior to MSD construction plan approval.
- The applicant shall provide an evaluation of the sewerhead upstream of this property. Sewer alignment and easement locations may be modified from locations depicted on this conceptual plan and shall be placed and sized to adequately serve the watershed. MSD and the applicant shall execute an agreement consistent with MSD's excess cost policy prior to construction approval.
- Any proposed lots encroaching into the required 25' buffer areas shall be shown and noted on the record plat.

STREETS & SIDEWALKS

- All roads within the development shall have curb and gutters, Cul-de-sacs shall have a pavement width of 20 feet with a radius of 35 feet at Cul-de-sac. All other roads shall be 22 feet in width with a 35 foot radius at intersections.
- Sidewalks within the subdivision shall be provided in accordance with Table 6.2.1 of the Land Development Code.
- Street grades shall not be less than 1% (Min.) or 10% (max.).
- A Bond & Encroachment Permit is required by Metro Public Works for all work within the Old Heady Road Right-Of-Way, and for roadway approaches on all surrounding access roads to the subdivision site due to damages caused by construction traffic.
- Verges shall be provided as required by Metro Public Works.
- All streets, intersections, loop roads, cul-de-sacs, bulbs, traffic circles and rights-of-way shall be in accordance with the Development Code and Metro Public Works' standards and approved at the time of construction.
- All street name signs shall conform with the MUTCD requirements and shall be installed prior to the recording of the applicable subdivision plat or prior to obtaining the first certificate of occupancy and shall be in place at time of bond release.
- The location and type of plantings within the street right-of-way will be evaluated for roadway safety and sight distance requirements by Metro Public Works which reserves the right to remove them without the property owner's approval.
- Should any existing drainage structures and/or utilities located within offsite rights-of-way become necessary to be altered, extended or relocated, such shall be at the owner's/developer's expense.
- A Bond and Encroachment Permit will be required by Metro Works for roadway repairs within the site due to damage caused by construction traffic activities.
- All roadway intersections shall meet the requirements for loading areas as set by Metro Public Works.
- Sidewalks shall be provided within the Old Heady Right of Way.

DETENTION BASIN #1 CALCULATIONS

$X = \Delta C \cdot R / 12$
 $\Delta C = 0.55 - 0.25 = 0.30$
 $A = 18.4 \text{ ACRES}$
 $R = 2.8 \text{ INCHES}$
 $X = (0.30)(18.4)(2.8) / 12 = 1.27 \text{ AC.-FT.}$
 REQUIRED X = 56,200 CU.FT.
 PROVIDED BASIN = 31,000 SQ.FT.

DETENTION BASIN #2 CALCULATIONS

$X = \Delta C \cdot R / 12$
 $\Delta C = 0.50 - 0.25 = 0.25$
 $A = 4.02 \text{ ACRES}$
 $R = 2.8 \text{ INCHES}$
 $X = (0.25)(4.02)(2.8) / 12 = 0.23 \text{ AC.-FT.}$
 REQUIRED X = 10,200 CU.FT.
 PROVIDED BASIN = 3,236 SQ.FT.

DETENTION BASIN #3 CALCULATIONS

$X = \Delta C \cdot R / 12$
 $\Delta C = 0.50 - 0.25 = 0.25$
 $A = 10.3 \text{ ACRES}$
 $R = 2.8 \text{ INCHES}$
 $X = (0.25)(10.3)(2.8) / 12 = 0.60 \text{ AC.-FT.}$
 REQUIRED X = 26,100 CU.FT.
 PROVIDED BASIN = 9,690 SQ.FT.

TOTAL = 31,000 SQ.FT. @ APPROX. 2 FT. DEPTH = 62,000 CU.FT. > 56,200 CU.FT.

TOTAL = 3,236 SQ.FT. @ APPROX. 3.5 FT. DEPTH = 11,326 CU.FT. > 10,200 CU.FT.

TOTAL = 9,690 SQ.FT. @ APPROX. 3 FT. DEPTH = 29,070 CU.FT. > 26,100 CU.FT.

TREE CANOPY CALCULATIONS

TOTAL SITE AREA = 2,450,604 S.F.

EXISTING TREE CANOPY COVERAGE = 60% (1,486,348 S.F.)

EXISTING TREE CANOPY TO BE PRESERVED = 20% (297,270 S.F.)

TOTAL TREE CANOPY AREA REQUIRED = 40% (980,242 S.F.)

TOTAL TREE CANOPY TO BE PROVIDED = 40% (980,242 S.F.)

GARRETT BRIDWELL

PRELIMINARY SUBDIVISION PLAN

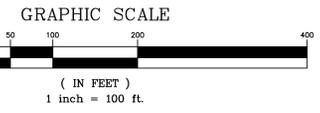
PREPARED BY:
LAND DESIGN & DEVELOPMENT, INC.
 503 WASHBURN AVENUE, SUITE 101
 LOUISVILLE, KENTUCKY 40222
 PHONE: (502) 426-9374
 FAX: (502) 426-9375
 JOB: 20130
 WM #12239
 DATE: 2/22/21
 CASE #21ZONE0016

SITE ADDRESS:
 OLD HEADY ROAD
 LOUISVILLE, KY 40299
 TAX BLOCK: 0047, LOT 0292,0293&0294
 D.B. 10297, PG. 0408

OWNERS:
DANIEL T & TODD A BRIDWELL
 560 CHATMAN LN
 TAYLORSVILLE, KY 40071

PRELIMINARY
 NOT FOR CONSTRUCTION

ENGINEER STAMP



REVISIONS			
NO.	DATE	DESCRIPTION	BY
1.	03/15/21	REVISED PER AGENCY COMMENTS	DT

SLOPES TABLE

MINIMUM SLOPE	MAXIMUM SLOPE	COLOR
20.00%	30.00%	
30.01%	>	

- LEGEND**
- PROPOSED STORM SEWER, CATCH BASIN AND CREEKSTONE HEADWALL
 - PROPOSED SEWER AND MANHOLE
 - PROPOSED DRAINAGE SWALE
 - UTILITY POLE
 - FIRE HYDRANT
 - CATCH BASIN
 - WATER VALVE
 - UNDERGROUND WATER LINE
 - UNDERGROUND GAS LINE
 - OVERHEAD ELECTRIC LINE

