Permit #: 23
Permit Date: 01/27/23
Permit Type: Planning Commission
Case Number: PC 23-02
PC Meeting Date: d. 1st Tuesday of May
BZA Meeting Date:
Assigned Meeting Date: 05/07/2024
Special Meeting Date:
Applicant Is: Owner
Applicant Name: Todd Sorensen
Applicant Address: 100 Woodward Hills Pl
Applicant City, State, ZIP: Brentwood, TN 37027
Applicant Phone Number: 6155047301
Applicant Email: tsorensen1228@gmail.com
Description: Work in the steep slope that is now in place that was constructed without PC approval. This work includes: construction related to new pool/pool deck/pool fence, retaining walls, stream buffer encroachment, tree work, and stormwater redirection.
Project Cost: 1250
Square Feet: 0
Lot Area: 0
Lot Coverage: 0
Heat/cooled area: 0
Proposed Height(ft.): 0
#of stories: 0
Lot Depth/Width Ratio:
Avg. front setback of adjacent homes:
Zoning District: Zone D
Radnor Lake Impact Zone: No
Steep Slope: Yes
Plat/Subdivison: No
Status: Open
Assigned To: Stephen Snow

Property

Parcel #	Address	Legal Description	Owner Name	Owner Phone	Zoning
15916000100	100 WOODWARD HILLS PL	P/O LOT 1 WOODWARD HILLS	SORENSEN, TODD J. & RACHELLE A. REVOCABLE LIVING TR		

Fees

Fee	Description	Notes	Amount
Variance/Administrative Appeal			$250.00
Residential Steep Slope Review Fee		(2 reviews)	$1,000.00
		Total	**$1,250.00**

Payments

Date	Paid By	Description	Payment Type	Accepted By	Amount
01/27/2023	Todd Sorensen	Presentation Fee Steep Slope Review Fee	1436	Desiree Lohr	$1,250.00
				Outstanding Balance	**$0.00**

FULMER LUCAS

April 16, 2024

Mr. Zachary Dufour
CITY OF OAK HILL
5548 Franklin Pike, Suite 101
Nashville, Tennessee 37220

Re: 100 Woodward Hills Pl

Dear Zac,

Fulmer Lucas has been retained by the homeowner of 100 Woodward Hills Place to assess drainage concerns from the previously constructed improvements. TTL was also retained to assess the retaining wall that was built in the backyard. Enclosed are:

- Drainage Exhibit
- Geotechnical report

Three site visits have been made to assess the drainage patterns in the rear yard. The third visit was made during a storm event on April 2, 2024. Ponding water was observed in various areas on the property including grassed and paved areas, so the amount of rainfall was sufficient to observe drainage patterns. Photos have been sent separately that were taken during the visit. No ponding water was observed along the eastern boundary east of the landscape berm. The drainage exhibit, however, indicates two areas where the berm will be removed in order to provide an opportunity for gravity drainage from the east to the west towards the primary drainage conveyance.

If you have any questions or require additional information, please contact me via email (jay@fulmereng.com) or phone (615-516-8477).

Sincerely,

Jay Fulmer, PE

Cc: Mr. Todd Sorensen

Enclosure

March 20, 2024

TTL
624 Grassmere Park, Ste. 14
Nashville, TN 37211
615.331.7770
www.TTLUSA.com

Mr. Todd Sorensen
100 Woodward Hills Place
Brentwood, Tennessee 37027

P: 615.504.7301
E: tsorenssen1228@gmail.com

RE: Report of Geotechnical Exploration Services
Retaining Wall at 100 Woodward Hills Place
Oak Hill, Davidson County, Tennessee
TTL Project No. 000240800493.00

Dear Mr. Sorenson:

We have completed the requested geotechnical exploration for the retaining wall at 100 Woodward Hills Place in Oak Hill Tennessee. This report summarizes background information about the project, our site observations, field and laboratory testing data, and an opinion about the stability of the existing retaining wall. Our services were provided in accordance with our Proposal No. 000240800493.00, dated February 15, 2024. Our services were authorized by Mr. Sorenson on February 18, 2024.

BACKGROUND INFORMATION

Background information was provided to us by Mr. Todd Sorenson and Mr. Jay Fulmer, PE of Fulmer Lucas Engineering through several telephone conversations. We were also provided with the following resources:

- File titled, "Sorensen – SC Retain Wall Descr Compl.pdf"
- File titled, "Sorensen_Engineering Plan Review Letter_5.11.22.pdf"
- File titled, "OakHill.For Steep Slope Requests.pdf"

Information about the project is summarized in the table below:

Item	**Description**
Project Location	The residence is located at 100 Woodward Hills Place in Oak Hill, Tennessee.
Project Focus	A U-shaped Allen Block mechanically stabilized earth retaining wall was constructed for a sports courtyard behind the residence. The footings and leveling pad for the retaining wall were reportedly constructed on or near limestone bedrock. The wall is about 115 feet long and up to 6-½ feet tall. The geogrids are reportedly 6 feet long and spaced every 32 inches vertically.

Reason for Concern	A geotechnical exploration was not performed before the retaining wall was constructed. The City of Oak Hill is requiring a geotechnical exploration to evaluate the stability of the retaining wall.

Please contact us if the above information is not correct so we can modify our recommendations, if needed.

SITE OBSERVATIONS

The retaining wall is located on the southeast side of the residence. The backslope above the retaining wall is nearly flat and covered in grass. The retaining wall appeared to be in good condition during our field activities. No cracks, rotation, or noticeable wear was observed in the wall. No tension cracks or irregularities were observed in the backslope. A drainage ditch lined with rock passes by the front of the retaining wall and had a small amount of water present in it during our site visit.

GEOLOGY

The Geologic Map of the Oak Hill Quadrangle, Tennessee, found on the United States Geological Survey website (https://ngmdb.usgs.gov/mapview), dated 1972 indicates this particular site is underlain by the Leipers-Catheys Formation. This formation is typically comprised of a knotty, fine to coarse grained, thin to medium bedded, gray argillaceous limestone with calcareous and phosphate zones. Interbedded layers of shale are common. The limestone in this formation weathers in place to produce a residual soil layer which is typically a brown silty clay. The soil layer is normally 5 to 7 feet thick but can exceed 15 feet in some parts of southwest Davidson County.

The U.S. Department of Agriculture web soil survey (https://websoilsurvey.sc.egov.usda.gov) indicates that the soils underlying the retaining wall are Mimosa silt loam (Mmc), 5 to 12 percent slopes. These soils are a clayey residuum derived from weathering of the limestone.

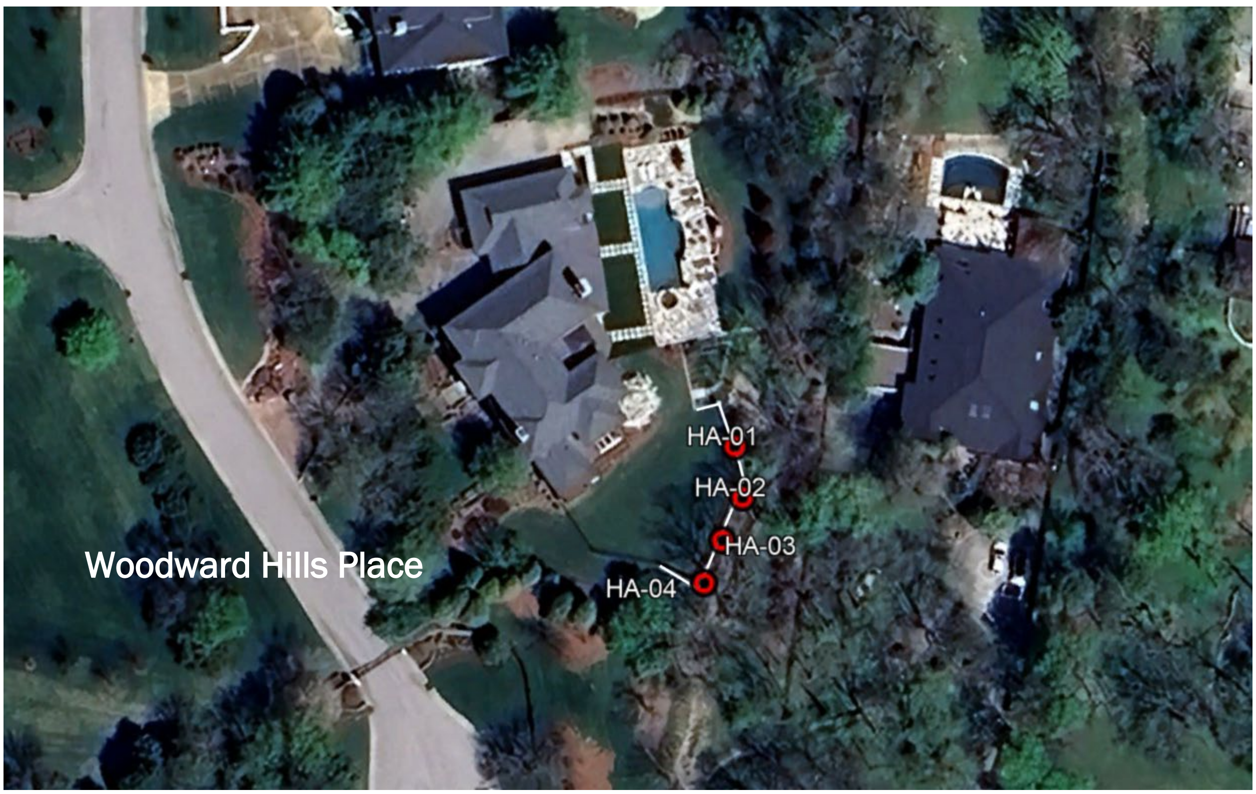
Oak Hill and other parts of southwest Davidson County contain ridges that rise 200 to 300 feet above the adjacent valleys. At the base of some of these ridges are colluvial soils, which are materials that originated from higher elevations but have moved down slope because of erosion, landslides, and creep. Colluvial soils have about half of the shear strength of typical residual soils and are therefore prone to landslides when they are disturbed by construction activity (cuts/fills) or increases in soil moisture or groundwater. No colluvial soils are mapped at the site and none were observed in the borings.

EXPLORATION PROCEDURES

Subsurface conditions in front of (below) the retaining wall were explored at four locations (not including offsets) by using a hand auger. Each of the borings were extended to refusal. The approximate boring locations are shown below. The borings proceeded in small depth increments, typically ¼-foot. A TTL geoprofessional documented the conditions encountered during the excavations and classified the soils using the Unified Soil Classification System (USCS) as defined by ASTM D2487 and D2488.

Each boring was checked for the presence of groundwater upon reaching refusal, and then backfilled to the ground surface with the excavated soils and tamped with a spud bar. Locations were documented by using a measuring tape and estimating right angles from the retaining wall. Borings were performed about 1 and 2 feet from the front of the wall.

Our interpretation of the subsurface stratigraphy encountered in the borings is provided on the logs appended to this report. These logs are based on observations made during excavation and classification of the soils by a geoprofessional. Subsurface conditions between borings may vary.



SUBSURFACE CONDITIONS

Each of the borings encountered fill material consisting of red brown, brown, or black lean clay (USCS – CL) extending to refusal. The clay contained some gravel, was wet, and was generally firm to stiff in consistency. Auger refusal was encountered at depths between 1.2 and 5.6 feet below ground level. Groundwater was observed at depths between 0.6 and 5.0 feet. Colluvial soils were not encountered in any of the borings.

ANALYSIS AND CONCLUSIONS

Our analyses indicate that the wall has adequate factors of safety for bearing capacity, sliding, and overturning with factors of safety greater than 1.5 for each. We assumed an undrained shear strength of 1,500 pounds per square foot based on our exploration and a sliding coefficient of 0.35. Because of the shallow depth to refusal, we did not perform a global stability analysis. No indications of wall instability were observed based on our field observations.

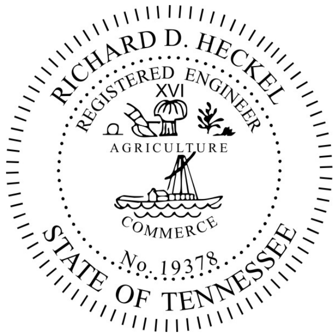
LIMITATIONS

The subsurface data are based on observations of the soil from a limited number of hand auger borings at discrete locations along the retaining wall. It is possible that different conditions may exist away from the explored locations. Assessment of site environmental conditions is beyond the scope of this geotechnical exploration. A review of the internal stability of the wall was beyond our scope of services.

CLOSURE

We appreciate the opportunity to be of service to you. Please contact our office if you have questions about this letter or if we may be of additional assistance.

Sincerely,
TTL, Inc.



Clay J. Fullmer, EIT
Project Professional

Richard D. Heckel, P.E., D.GE
Chief Geotechnical Engineer

Attachments: Legend Sheet – Soil Exploration Logs

SOIL LEGEND

FINE- AND COARSE-GRAINED SOIL INFORMATION

FINE-GRAINED SOILS (SILTS AND CLAYS)

SPT N-Value	Consistency	Estimated Q_u (TSF)
0 - 1	Very Soft	0 - 0.25
2 - 4	Soft	0.25 - 0.5
5 - 8	Firm	0.5 - 1.0
9 - 15	Stiff	1.0 - 2.0
16 - 30	Very Stiff	2.0 - 4.0
31+	Hard	4.0+

Q_u = Unconfined Compression Strength

COARSE-GRAINED SOILS (SANDS AND GRAVELS)

SPT N-Value	Relative Density
0 - 4	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
51+	Very Dense

PARTICLE SIZE

Name	Size (US Std. Sieve)
Boulders	>300 mm (>12 in.)
Cobbles	75 mm to 300 mm (3 - 12 in.)
Coarse Gravel	19 mm to 75 mm (3/4 - 3 in.)
Fine Gravel	4.75 mm to 19 mm (#4 - 3/4 in.)
Coarse Sand	2 mm to 4.75 mm (#10 - #4)
Medium Sand	0.425 mm to 2 mm (#40 - #10)
Fine Sand	0.075 mm to 0.425 mm (#200 - #40)
Silts and Clays	< 0.075 mm (< #200)

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Terms	Percent of Dry Weight
"Trace"	< 15
"With"	15 - 30
Modifier	> 30

RELATIVE PROPORTIONS OF CLAYS AND SILTS

Descriptive Terms	Percent of Dry Weight
"Trace"	< 5
"With"	5 - 12
Modifier	> 12

CRITERIA FOR DESCRIBING MOISTURE CONDITION

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp, but no visible water
Wet	Visible free water, usually soil is below water table

CRITERIA FOR DESCRIBING CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

CRITERIA FOR DESCRIBING STRUCTURE

Description	Criteria
Stratified	Alternating layers of varying material or color with layers at least 6 mm thick; note the thickness
Laminated	Alternating layers of varying material or color with the layers less than 6 mm thick; note thickness
Fissured	Breaks along definite planes of fracture with little resistance to fracturing
Slickensided	Fracture planes appear polished or glossy, sometimes striated
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lensed	Inclusion of small pockets of different soils such as small lenses of sand scattered through a mass of clay; note thickness
Homogeneous	Same color and appearance throughout

SAMPLERS AND DRILLING METHODS

- AUGER CUTTINGS
- BAG/BULK SAMPLE
- GRAB SAMPLE
- CONTINUOUS SAMPLES
- SHELBY TUBE SAMPLE
- PITCHER SAMPLE
- STANDARD PENETRATION SPLIT-SPOON SAMPLE
- SPLIT-SPOON SAMPLE WITH NO RECOVERY
- DYNAMIC CONE PENETROMETER
- ROCK CORE

WATER LEVEL SYMBOLS

- WATER LEVEL AT TIME OF DRILLING
- PERCHED WATER OBSERVED AT DRILLING
- DELAYED WATER LEVEL OBSERVATION
- CAVE-IN DEPTH
- OBSERVED SEEPAGE

ABBREVIATIONS AND ACRONYMS

WOH	Weight of Hammer
WOR	Weight of Rod
Ref.	Refusal
ATD	At Time of Drilling
DCP	Dynamic Cone Penetrometer
Elev.	Elevation
ft.	feet
HSA	Hollow Stem Auger
ID	Inside Diameter
in.	inches
lbs	pounds
N-Value	Sum of the blows for last two 6-in increments of SPT
NA	Not Applicable or Not Available
OD	Outside Diameter
PPV	Pocket Penetrometer Value
SFA	Solid Flight Auger
SH	Shelby Tube Sampler
SS	Split-Spoon Sampler
SPT	Standard Penetration Test
USCS	Unified Soil Classification System

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UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

COARSE GRAINED SOILS (>50% of the material is larger than the #200 sieve)	GRAVELS (>50% of coarse fraction is larger than the #4 sieve)	CLEAN GRAVEL WITH <5% FINES	Cu > 4 Cc = 1-3	GW	Well-graded gravels, gravel-sand mixtures with trace or no fines
			Cu ≤ 4 and/or Cc < 1 Cc > 3	GP	Poorly-graded gravels, gravel-sand mixtures with trace or no fines
		GRAVEL WITH 5% TO 12% FINES	Cu > 4 Cc = 1-3	GW-GM	Well-graded gravels, gravel-sand mixtures with silt fines
				GW-GC	Well-graded gravels, gravel-sand mixtures with clay fines
			Cu ≤ 4 and/or Cc < 1 Cc > 3	GP-GM	Poorly-graded gravels, gravel-sand mixtures with silt fines
				GP-GC	Poorly-graded gravels, gravel-sand mixtures with clay fines
		GRAVEL WITH MORE THAN 12% FINES		GM	Silty gravels, gravel-silt-sand mixtures
				GC	Clayey gravels, gravel-sand-clay mixtures
				GC-GM	Clayey gravels, gravel-sand-clay-silt mixtures
	SANDS (>50% of coarse fraction is smaller than the #4 sieve)	CLEAN SAND WITH <5% FINES	Cu > 6 Cc = 1-3	SW	Well-graded sands, sand-gravel mixtures with trace or no fines
			Cu ≤ 6 and/or Cc < 1 Cc > 3	SP	Poorly-graded sands, sand-gravel mixtures with trace or no fines
		SAND WITH 5% TO 12% FINES	Cu > 6 Cc = 1-3	SW-SM	Well-graded sands, sand-gravel mixtures with silt fines
				SW-SC	Well-graded sands, sand-gravel mixtures with clay fines
			Cu ≤ 6 and/or Cc < 1 Cc > 3	SP-SM	Poorly-graded sands, sand-gravel mixtures with silt fines
				SP-SC	Poorly-graded sands, sand-gravel mixtures with clay fines
		SAND WITH MORE THAN 12% FINES		SM	Silty sands, sand-gravel-silt mixtures
				SC	Clayey sands, sand-gravel-clay mixtures
				SC-SM	Clayey sands, sand-gravel-clay-silt mixtures
FINE GRAINED SOILS (>50% of material is smaller than the #200 sieve)		SILTS & CLAYS (Liquid Limit less than 50)		ML	Inorganic silts with low plasticity
				CL	Inorganic clays of low plasticity, gravelly or sandy clays, silty clays, lean clays
				CL-ML	Inorganic clay-silts of low plasticity, gravelly clays, sandy clays, silty clays, lean clays
				OL	Organic silts and organic silty clays of low plasticity
		SILTS & CLAYS (Liquid Limit more than 50)		MH	Inorganic silts of high plasticity, elastic silts
				CH	Inorganic clays of high plasticity, fat clays
				OH	Organic clays and organic silts of high plasticity

USCS - HIGHLY ORGANIC SOILS

Primarily organic matter, dark in color, organic odor	
PT	Peat, humus, swamp soils with high organic contents

OTHER MATERIALS

BITUMINOUS CONCRETE (ASPHALT)
CONCRETE
CRUSHED STONE/AGGREGATE BASE
TOPSOIL
FILL
UNDIFFERENTIATED ALLUVIUM
UNDIFFERENTIATED OVERBURDEN
BOULDERS AND COBBLES

UNIFORMITY COEFFICIENT

$$C_u = D_{60}/D_{10}$$

COEFFICIENT OF CURVATURE

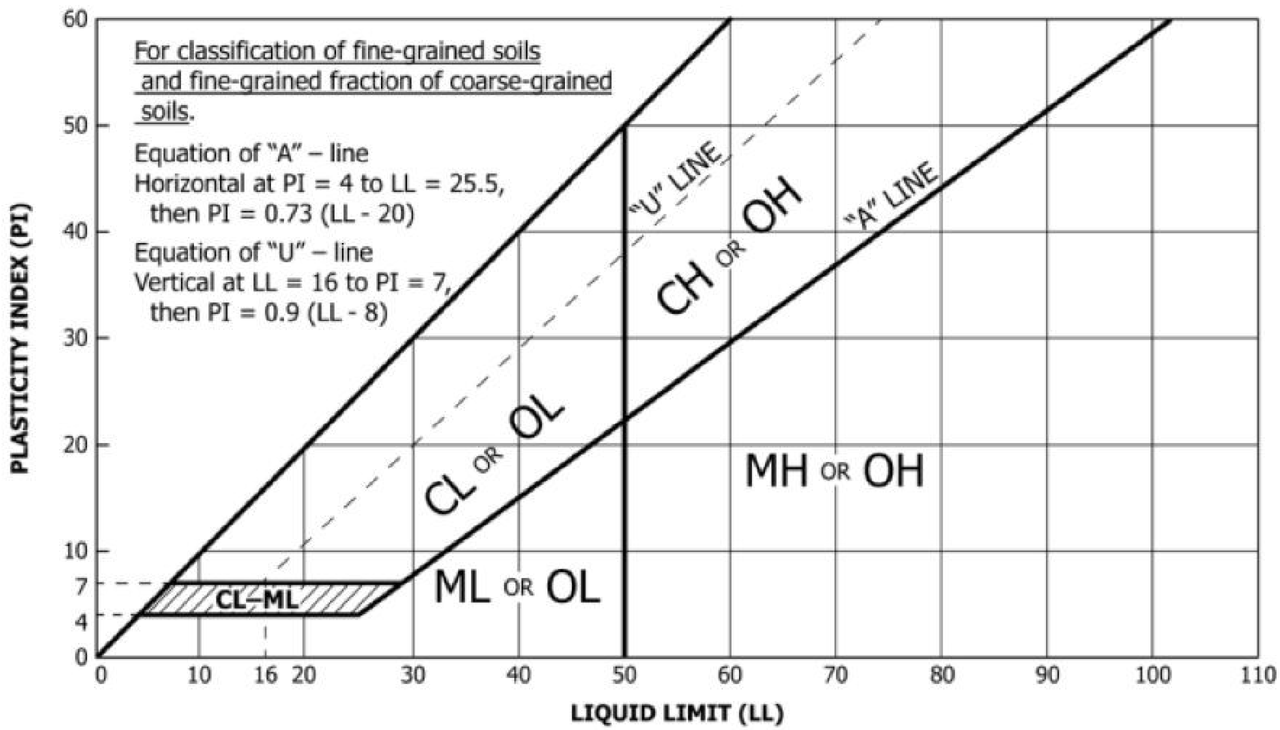
$$C_C = (D_{30})^2/(D_{60}xD_{10})$$

Where:

D_{60} = grain diameter at 60% passing
D_{30} = grain diameter at 30% passing
D_{10} = grain diameter at 10% passing

TTL

PLASTICITY CHART FOR USCS CLASSIFICATION OF FINE-GRAINED SOILS



IMPORTANT NOTES ON TEST BORING RECORDS

1) The report and graphics key are an integral part of these logs. All data and interpretations in this log are subject to the explanations and limitations stated in the report.

2) Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual or differ from those shown. Solid lines are used to indicate a change in the material type, particularly a change in the USCS classification. Dashed lines are used to separate two materials that have the same material type, but that differ with respect to two or more other characteristics (e.g. color, consistency).

3) No warranty is provided as to the continuity of soil or rock conditions between individual sample locations.

4) Logs represent general soil and rock conditions observed at the point of exploration on the date indicated.

5) In general, Unified Soil Classification System (USCS) designations presented on the logs were based on visual classification in the field and were modified where appropriate based on gradation and index property testing.

6) Fine-grained soils that plot within the hatched area on the Plasticity Chart, and coarse-grained soils with between 5% and 12% passing the #200 sieve require dual USCS symbols as presented on the previous page.

7) If the sampler is not able to be driven at least 6 inches, then 50/X" indicates that the sampler advanced X inches when struck 50 times with a 140-pound hammer falling 30 inches.

8) If the sampler is driven at least 6 inches, but cannot be driven either of the subsequent two 6-inch increments, then either 50/X" or the sum of the second 6-inch increment plus 50/X" for the third 6-inch increment will be indicated.
Example 1: Recorded SPT blow counts are 16 - 50/4", the SPT N-value will be shown as N = 50/4"
Example 2: Recorded SPT blow counts are 18 - 25 - 50/2", the SPT N-value will be shown as N = 75/8"

TTL

Retaining Wall at 100 Woodward Hills Place

Oak Hill, Davidson County, Tennessee

HA-01

Drilling Co.:	TTL, Inc.	Project Number:	000240800493.00	Comments: Backfilled with auger cuttings upon completion.	
Driller:	C. Fullmer	Date Drilled:	02/22/24		
Logged By:	C. Fullmer	Boring Depth:	4.9 feet		
Equipment:	-	Boring Elevation:	N/A		
Hammer Type:	-	Coordinates:	-, -		
Drilling Method:	Hand Auger	Water Level At Time Of Drilling:	3.9 feet	Delayed Water Level:	N/A
		Cave-in At Time Of Drilling:	N/A	Delayed Water Observation Date:	N/A

Elevation (ft)	Depth (ft)	Graphic Log	Materials Description	% Fines	Pocket Penetrometer (tsf)	Sample Graphic	Recovery (%)	RQD (%)	Blow Counts (N-Value)	Uncorrected N-Value (0–25–50); Moisture Content (0–50–100); Plastic Limit (0–50–100); Liquid Limit (0–50–100)
	0–4.9		**FILL**: LEAN CLAY, red-brown to brown, with trace to some chert gravel (fine) and fine roots, moist to wet (CL) 4.9							
	4.9		Auger refusal at 4.9 feet							

Samples

Depth scale: 5, 10, 15, 20, 25, 30, 35

Retaining Wall at 100 Woodward Hills Place

Oak Hill, Davidson County, Tennessee

Drilling Co.:	TTL, Inc.	Project Number:	000240800493.00	Comments: Backfilled with auger cuttings upon completion. Two borings were initially attempted within 2 feet of HA-02 that encountered water at 1.0 feet and 1.2 feet and refusal at 1.3 and 1.4 feet, respectively.
Driller:	C. Fullmer	Date Drilled:	02/22/24	
Logged By:	C. Fullmer	Boring Depth:	5.6 feet	
Equipment:	-	Boring Elevation:	N/A	
Hammer Type:	-	Coordinates:	-, -	
Drilling Method:	Hand Auger	Water Level At Time Of Drilling: 5 feet Cave-in At Time Of Drilling: N/A		Delayed Water Level: N/A Delayed Water Observation Date: N/A

Elevation (ft)	Depth (ft)	Graphic Log	Materials Description	% Fines	Pocket Penetrometer (tsf)	Sample Graphic	Recovery (%)	RQD (%)	Blow Counts (N-Value)	Uncorrected N-Value (0–25–50); Moisture Content (0–50–100); Plastic Limit (0–50–100); Liquid Limit (0–50–100)
	0–5.6		**FILL**: LEAN CLAY, red-brown to brown, with trace to some chert gravel (fine), moist to wet (CL)							
	5.6		Auger refusal at 5.6 feet							

Depth scale: 5, 10, 15, 20, 25, 30, 35

This record shall not be separated from the corresponding Instrument of Service; no third party may rely upon this boring log or the corresponding Instrument of Service absent a written TTL Secondary Client Agreement.

Retaining Wall at 100 Woodward Hills Place

Oak Hill, Davidson County, Tennessee

HA-03

Drilling Co.:	TTL, Inc.	Project Number:	000240800493.00	Comments: Backfilled with auger cuttings upon completion.	
Driller:	C. Fullmer	Date Drilled:	02/22/24		
Logged By:	C. Fullmer	Boring Depth:	4.1 feet		
Equipment:	-	Boring Elevation:	N/A		
Hammer Type:	-	Coordinates:	-, -		
Drilling Method:	Hand Auger	Water Level At Time Of Drilling:	3.8 feet	Delayed Water Level:	N/A
		Cave-in At Time Of Drilling:	N/A	Delayed Water Observation Date:	N/A

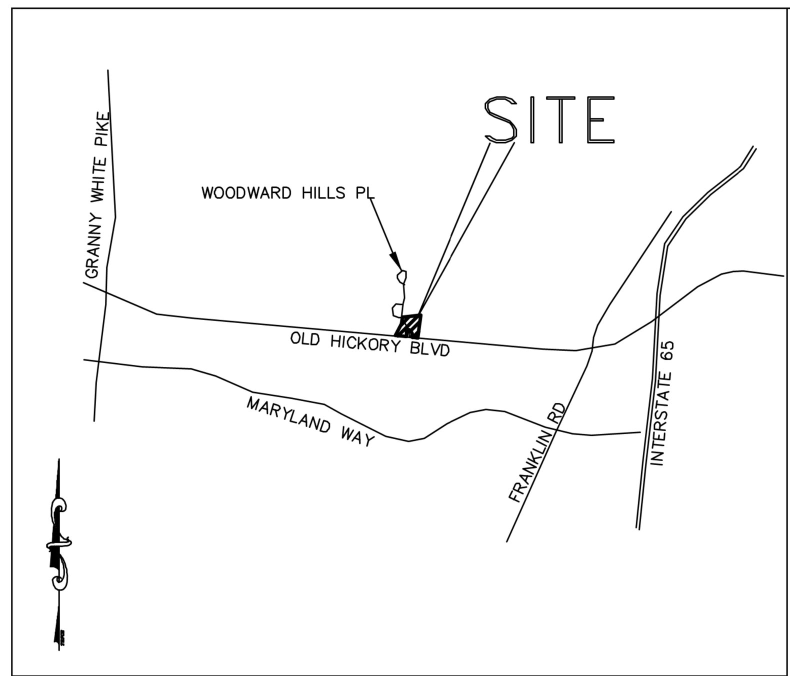
Elevation (ft)	Depth (ft)	Graphic Log	Materials Description	Samples: % Fines	Pocket Penetrometer (tsf)	Sample Graphic	Recovery (%)	RQD (%)	Blow Counts (N-Value)	Uncorrected N-Value (0–25–50); Moisture Content (0–50–100); Plastic Limit (0–50–100); Liquid Limit (0–50–100)
	0–4.1		**FILL**: LEAN CLAY, red-brown to brown, with trace to some chert gravel (fine), moist to wet (CL)							
	4.1		Auger refusal at 4.1 feet							

This record shall not be separated from the corresponding Instrument of Service; no third party may rely upon this boring log or the corresponding Instrument of Service absent a written TTL Secondary Client Agreement.

TTL	Retaining Wall at 100 Woodward Hills Place Oak Hill, Davidson County, Tennessee	HA-04 Page 1 of 1

Drilling Co.:	TTL, Inc.	Project Number:	000240800493.00	Comments: Backfilled with auger cuttings upon completion. Two borings were initially attempted within 2 feet of HA-04 that encountered water at 0.6 feet and 0.9 feet and refusal at 1.2 and 1.2 feet, respectively.
Driller:	Clay Fullmer	Date Drilled:	02/22/24	
Logged By:	Clay Fullmer	Boring Depth:	1.2 feet	
Equipment:	-	Boring Elevation:	N/A	
Hammer Type:	-	Coordinates:	-, -	
Drilling Method:	Hand Auger	Water Level At Time Of Drilling: N/A Cave-in At Time Of Drilling: N/A		Delayed Water Level: N/A Delayed Water Observation Date: N/A

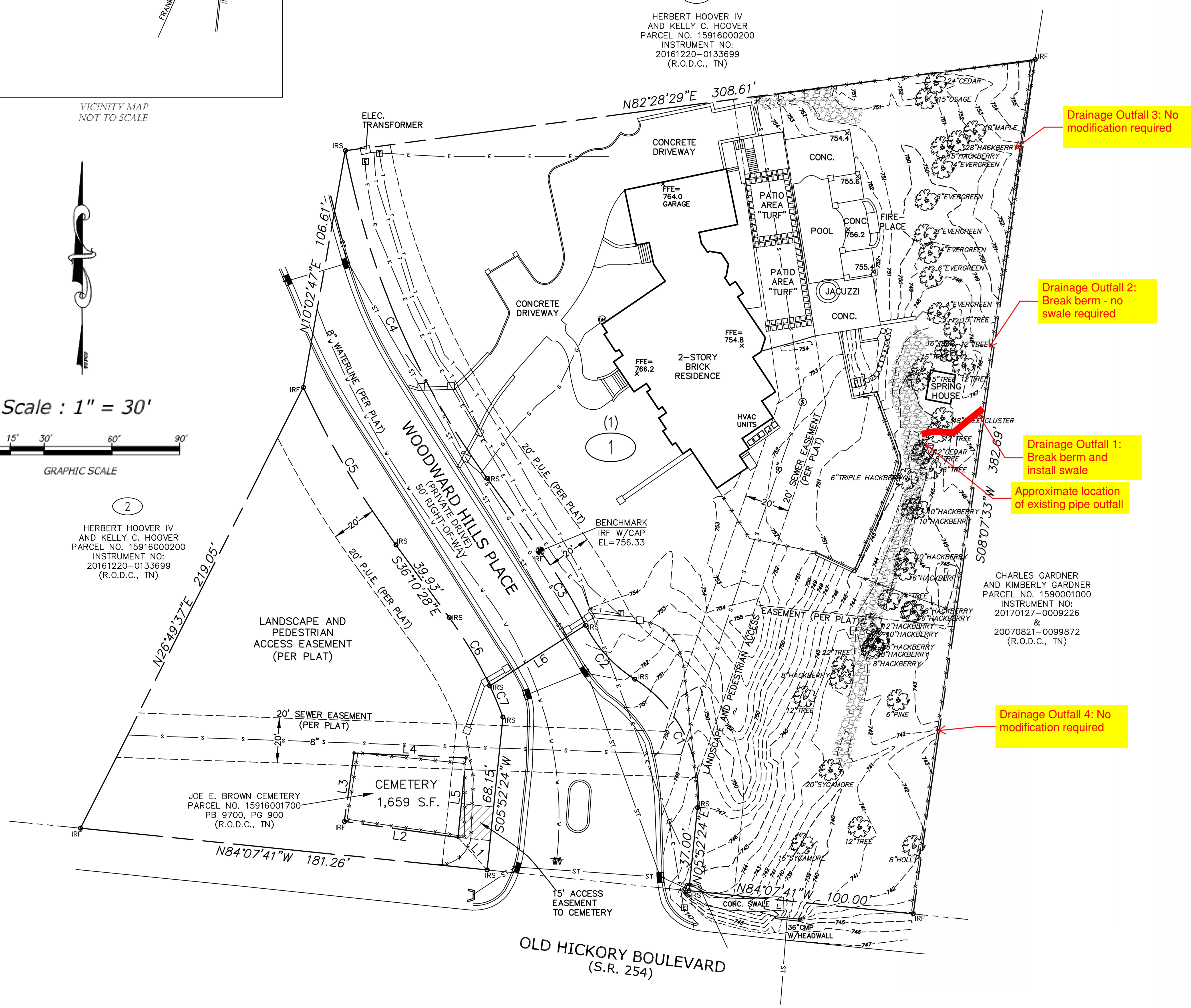
Elevation (ft)	Depth (ft)	Graphic Log	Materials Description	Samples: % Fines	Pocket Penetrometer (tsf)	Sample Graphic	Recovery (%)	RQD (%)	Blow Counts (N-Value)	Uncorrected N-Value (0 – 25 – 50); Moisture Content (0 – 50 – 100); Plastic Limit (0 – 50 – 100); Liquid Limit (0 – 50 – 100)
			FILL: LEAN CLAY, brown to black, with limestone gravel (fine to coarse), moist to wet (CL) — 1.2							
			Auger refusal at 1.2 feet							
	5									
	10									
	15									
	20									
	25									
	30									
	35									



VICINITY MAP
NOT TO SCALE

Scale : 1" = 30'

GRAPHIC SCALE



Drainage Outfall 1

Drainage Outfall 2

Existing Pipe Outfall

PLAT AND DEED REFERENCES
LOT 1 – REVISED FINAL PLAT – WOODWARD HILLS, BOOK 9700, PAGE 900, (R.O.D.C., TN)
AMENDMENT – BOOK 11766, PAGE 32, (R.O.D.C., TN)

Survey Provided By:

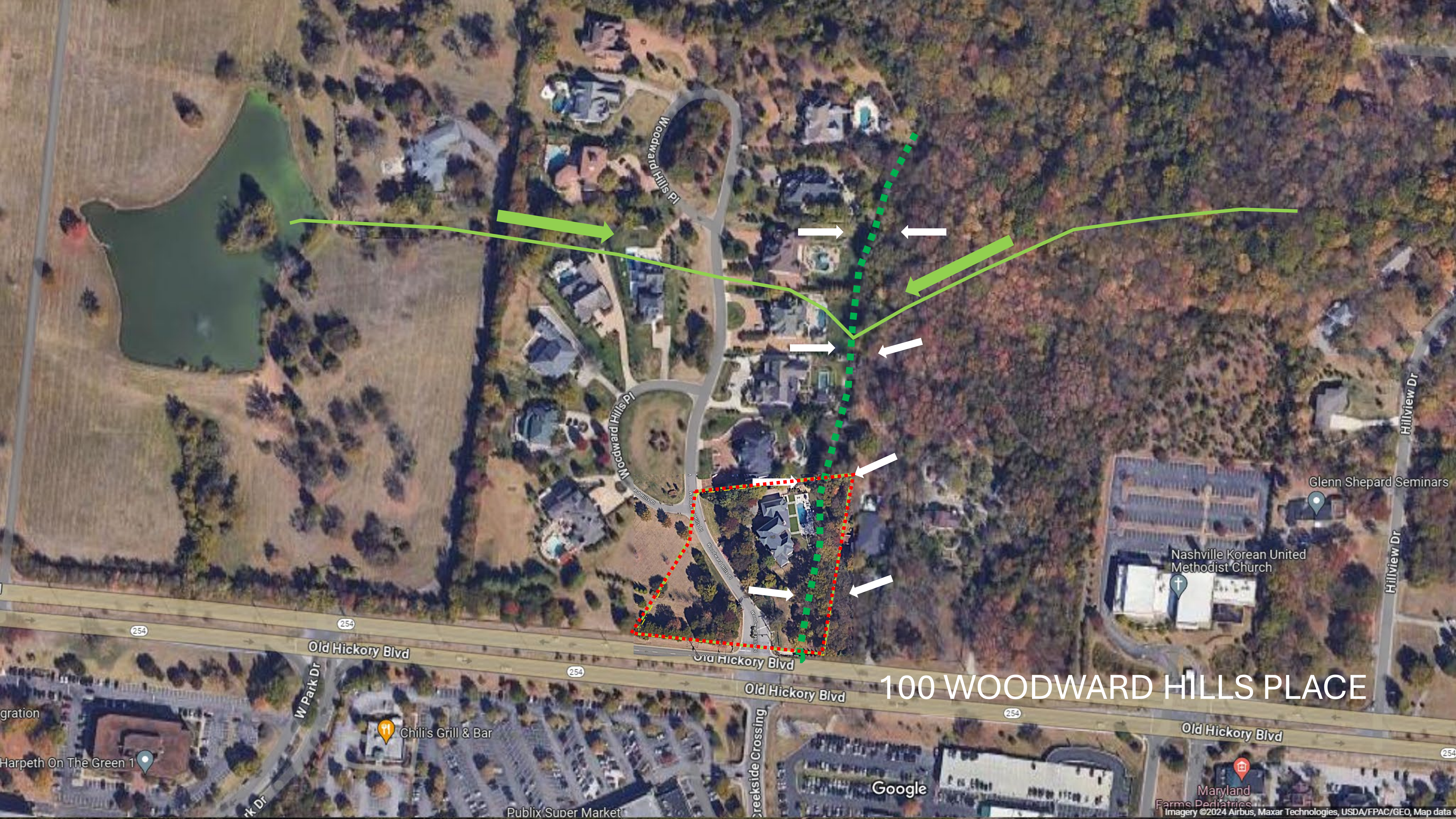
H & H LAND SURVEYING, INC.

612A FITZHUGH BOULEVARD
SMYRNA, TENNESSEE 37167
(615) 831–0756 (FAX) 355–6928
H & H Project No. 2023–0271

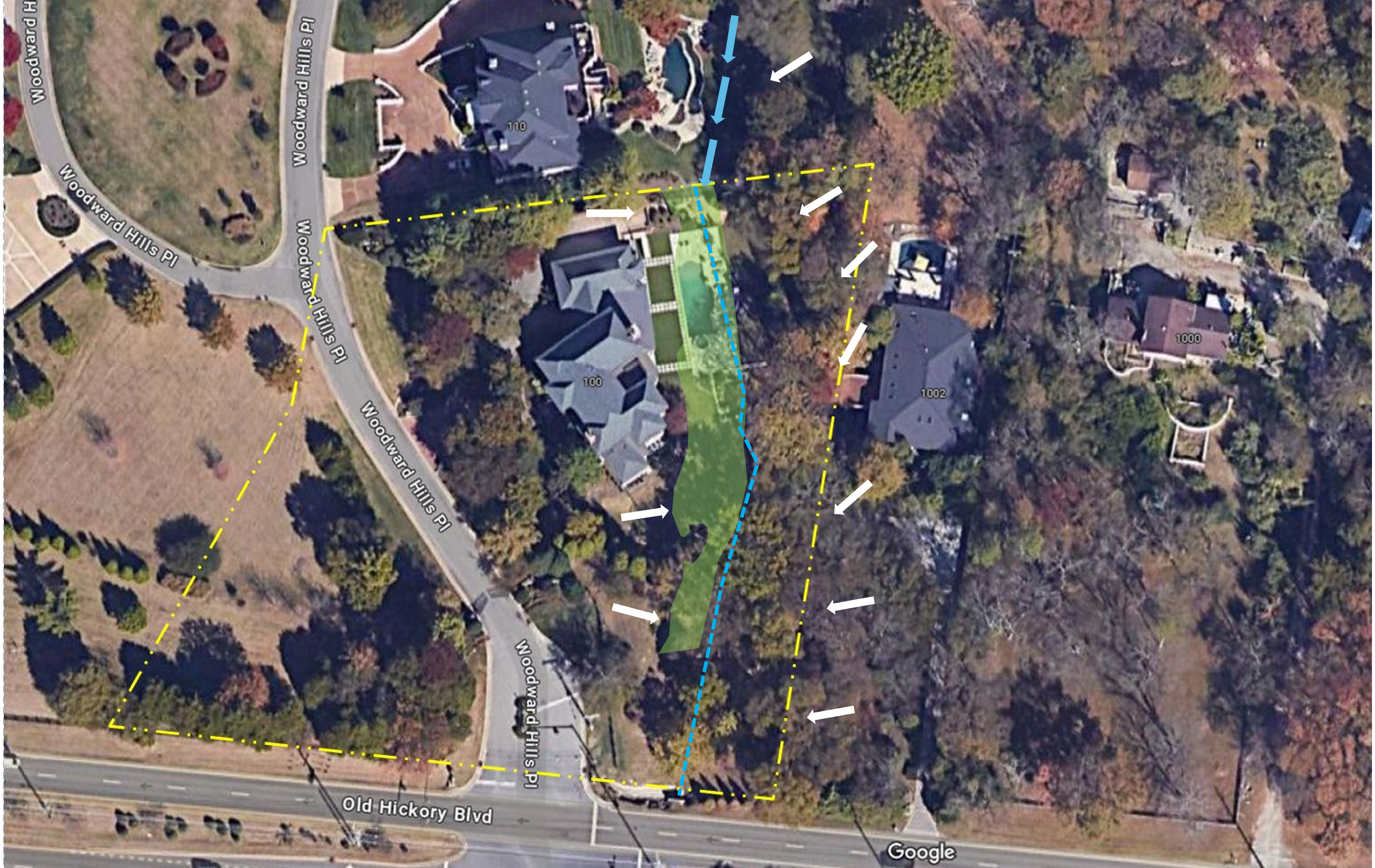
Drainage Improvement Exhibit
Prepared By:

FULMER LUCAS

Fulmer Lucas Engineering, LLC
Date: 4/15/2024



100 WOODWARD HILLS PLACE
Woodward Hills Pl
Old Hickory Blvd
Glenn Shepard Seminars
Nashville Korean United Methodist Church
Hillview Dr
W Park Dr
Chili's Grill & Bar
Harpeth On The Green 1
Creekside Crossing
Publix Super Market
Maryland Farms Pediatrics
Google
Imagery ©2024 Airbus, Maxar Technologies, USDA/FPAC/GEO, Map data


Woodward Hills Pl
Woodward Hills Pl
Woodward Hills Pl
Woodward Hills Pl
Woodward Hills Pl
Woodward Hills Pl
110
100
1002
1000
Old Hickory Blvd
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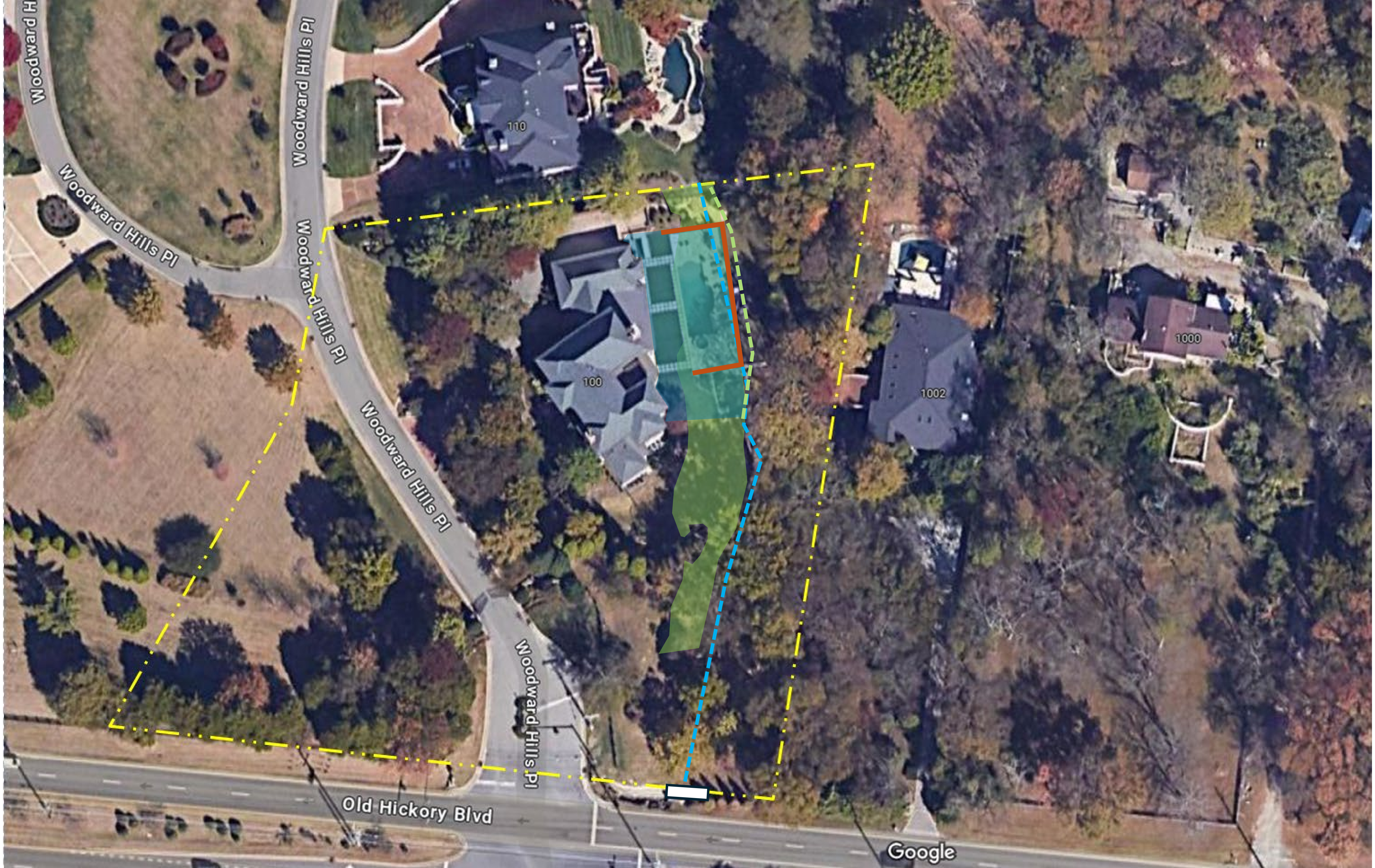
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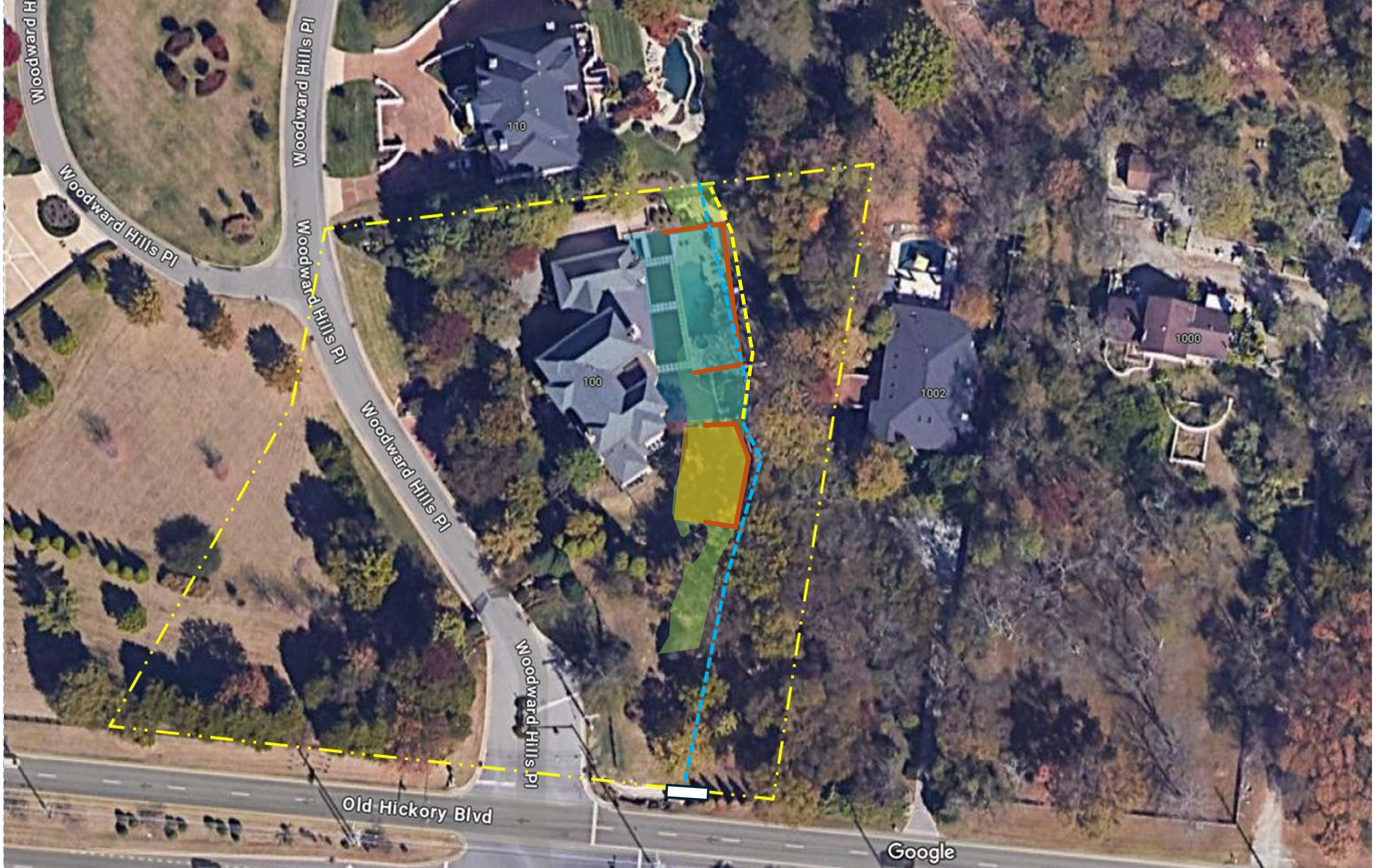
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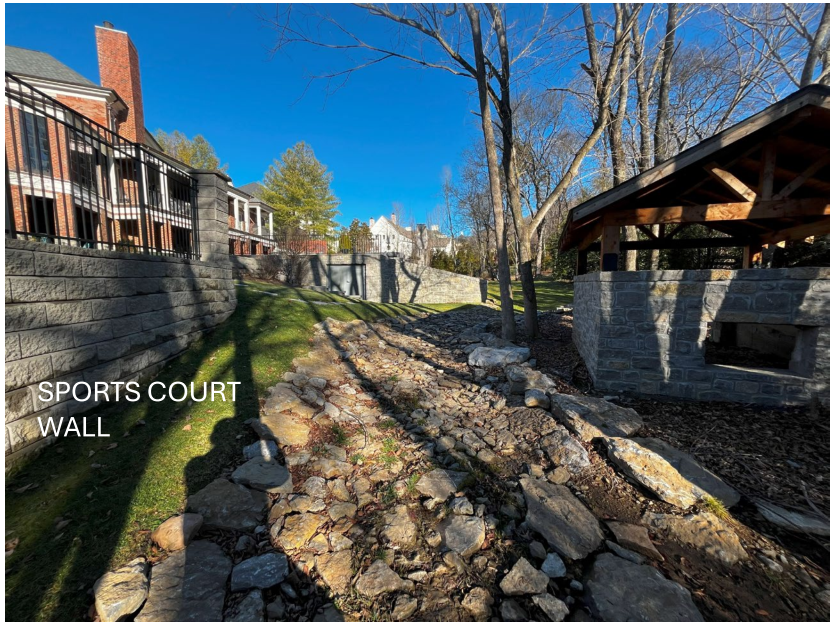
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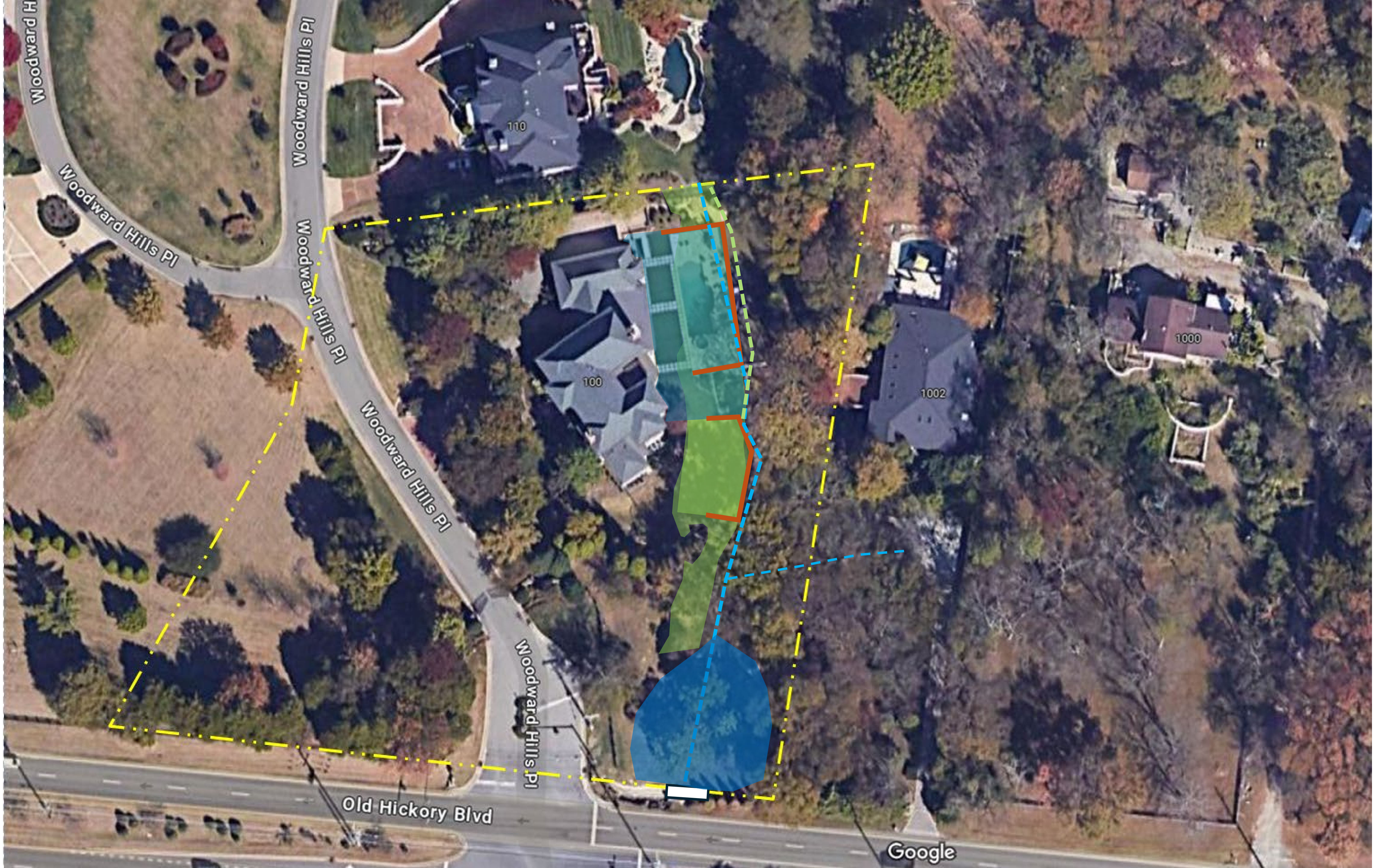

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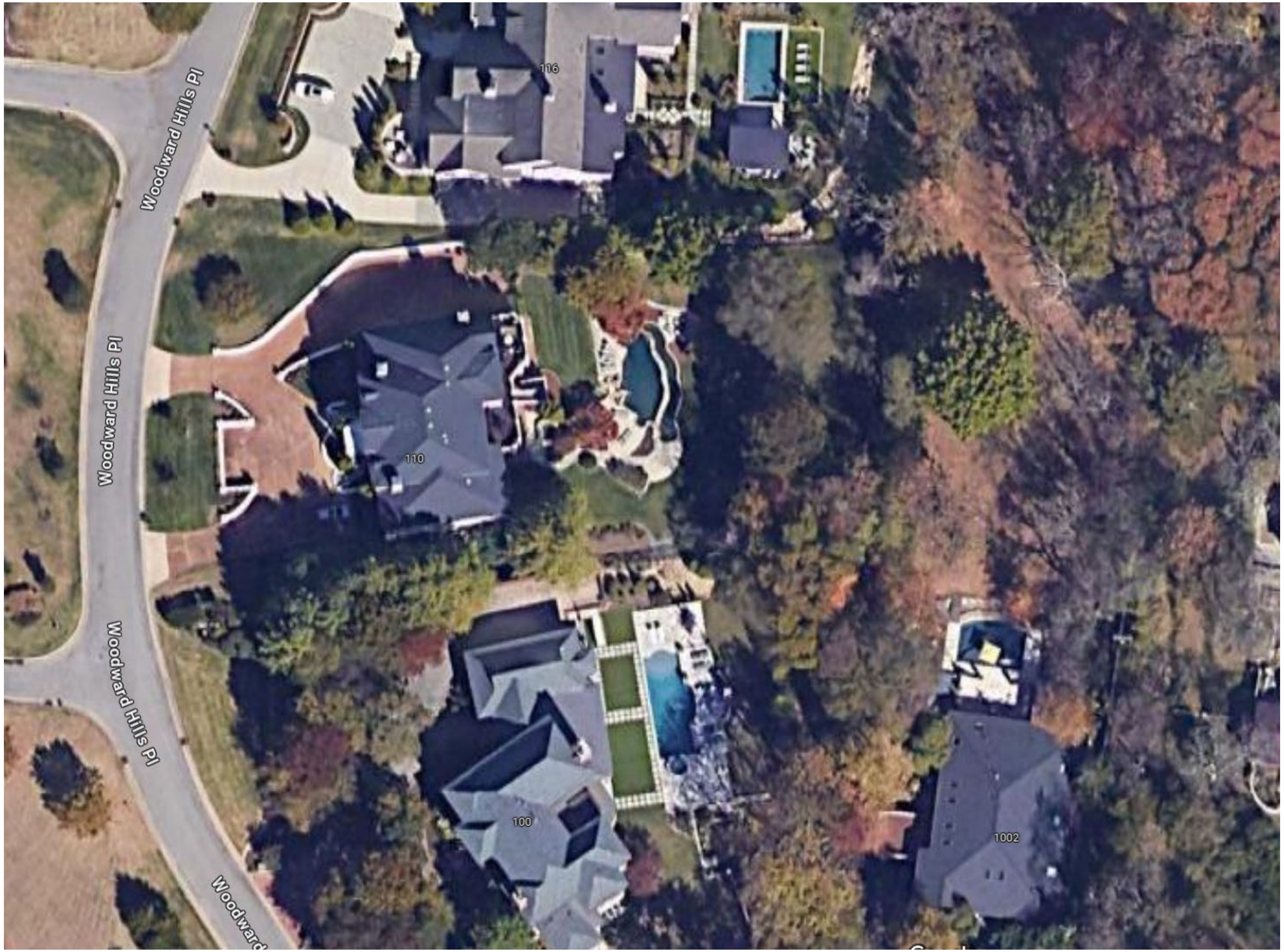
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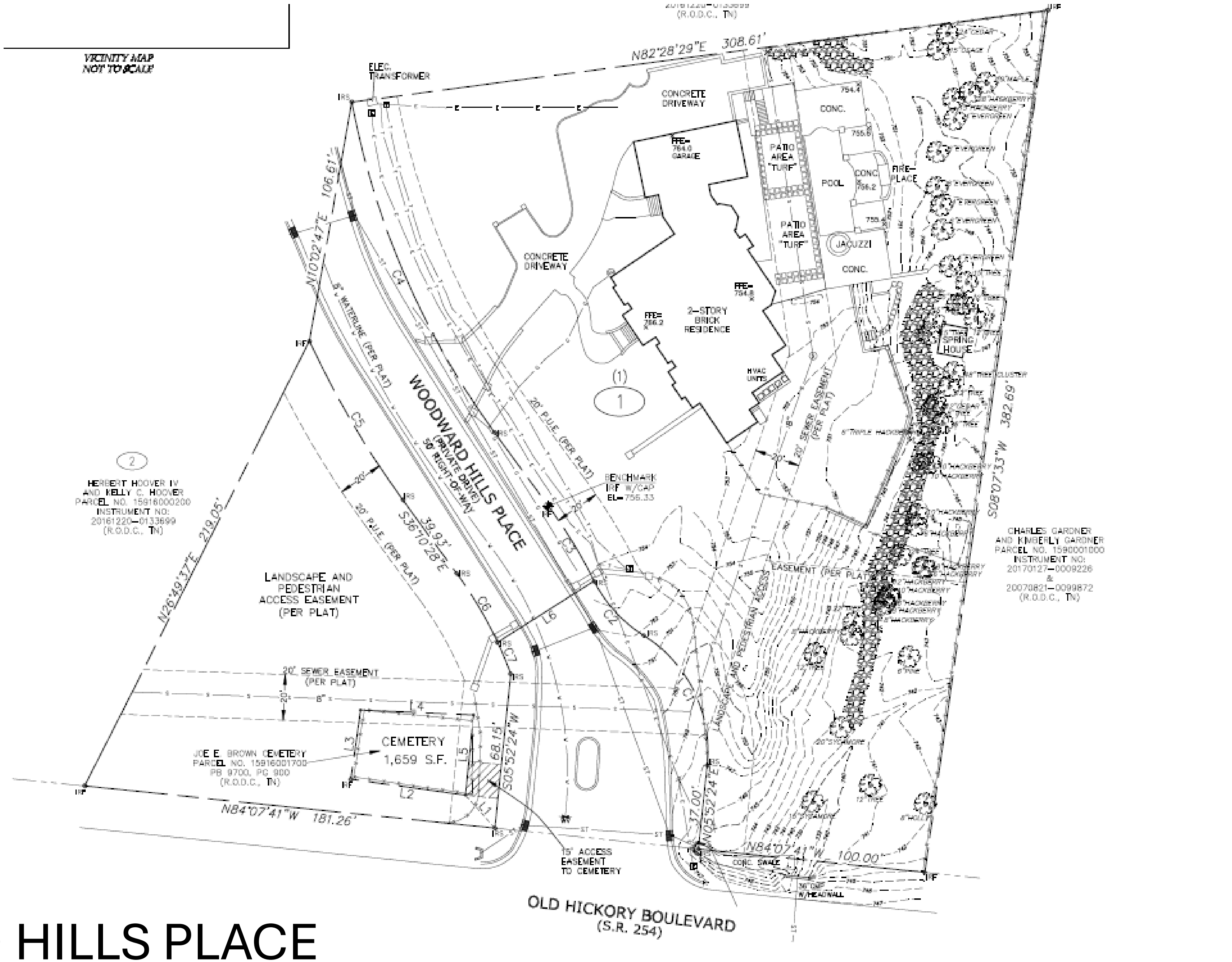

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