

June 17, 2022

TDEC Nashville EFO  
711 R.S. Gass Blvd  
Nashville, TN 37216

RE: Hydrologic Determination Request Package for the  
Nazemi Properties  
Nashville, Davidson County, Tennessee

To whom it may concern,

Barge Design Solutions, Inc. (Barge) has been retained to identify potential natural resources on two adjacent properties totaling 2.62-acres (subject properties) totaling 2.62-acres, located in Nashville, Davidson County, Tennessee. The subject property is located on Kinhawk Drive, directly west of Nolensville Pike, and includes parcel Nos. 17208002400 and 17208004300 owned by Mohammad and Shawyon Nazemi. Barge is submitting the attached Hydrologic Determination (HD) Package for concurrence with observed features within the subject properties.

Attached to this letter is the HD request package of all wetland and non-wetland waters that have been documented within the project study area. ***I, Frank Amatucci (TN-QHP #1203-TN21), am seeking to qualify for the treatment provided in n §69-3-108(r), and attest that the information being submitted in this HD package is true, accurate, and complete to the best of my ability.***

If you have any questions or require additional information, please contact me by phone at 615-252-4406 or email at [frank.amatucci@bargedesign.com](mailto:frank.amatucci@bargedesign.com). Thank you!

Sincerely,



Frank Amatucci, TN-QHP  
Biologist  
Barge Design Solutions, Inc.

c: Shawyon Nazemi  
Nick Carmean, PWS, TN-QHP, Barge Design Solutions, Inc

Barge project # 3790100



# NAZEMI PROPERTIES NASHVILLE, TENNESSEE

## HYDROLOGIC DETERMINATION REQUEST PACKAGE

Prepared For: Mohammad and Shawyon Nazemi

Sent To: TDEC Division of Water Resources  
Nashville Environmental Field Office  
711 R.S. Gass Boulevard  
Nashville, TN 37216

3790100  
June 2022

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## **EXECUTIVE SUMMARY**

Barge Design Solutions, Inc. (Barge) has been retained to identify potential natural resources on two adjacent properties (subject properties) totaling 2.62 acres, located in Nashville, Davidson County, Tennessee. The subject property is located on Kinhawk Drive, directly west of Nolensville Pike, and includes Parcel Nos. 17208002400 and 17208004300 owned by Mohammad and Shawyon Nazemi.

Barge is submitting the attached Hydrologic Determination (HD) Package for concurrence with observed features within the subject property. The hydrologic determinations performed for the project were conducted by Frank Amatucci (TN-QHP #1203-TN21) and Daniel Conner (QHP-IT), and four potentially non-jurisdictional features were identified within the subject properties, all of which were considered as erosional swales and man-made drainage ditches. These potentially non-jurisdictional semi-natural resource features were identified during the field investigation of the subject properties. The delineated semi-natural resource features are described in this HD Package, as well as the methodologies utilized to determine each feature's jurisdictional status and the figures and tables that represent the length, acreage, and location within the subject property.

### **Current Property Owner and Requester**

Mohammad and Shawyon Nazemi  
5019 Mountview Place  
Brentwood, Tennessee 37027  
Email: shawyonn@gmail.com

## **1.0 INTRODUCTION**

The purpose of the environmental assessment was to determine the extent of potential onsite jurisdictional wetlands and non-wetland waters pursuant to the state and federal rules and regulations. The information provided in the attached HD Package characterizes the existing wetlands, streams, and other non-wetland waters that may be used in an effort to avoid or minimize impacts to identified resources.

### **1.1 Study Area**

The subject properties are primarily used for residential purposes. The property that directly abuts Kinhawk Drive contains a single-family household, and the second property adjacent to the south, west of Nolensville Pike, is a vacant wooded lot. A Project Location Map depicting the area can be found in Appendix A, Figure 1. Other surrounding properties are primarily residential and commercial.

The subject property is located at the intersection of Kinhawk Drive and Nolensville Pike, approximately one mile south of the Nolensville Pike and Old Hickory Boulevard intersection, in Nashville, Davidson County, Tennessee (Appendix A, Figure 1). This area falls within the Interior Plateau (71) Tennessee ecoregion and is further categorized into the Outer Nashville Basin (71h) sub-ecoregion of Tennessee. The subject properties are within the Antioch, Tennessee, topographic quadrangle (Appendix A, Figure 2), and the properties are located within the Upper Mill Creek (051302020101) lower HUC-12 watershed, within the Lower Cumberland-Sycamore HUC-8 watershed (05130202), which is ultimately within the Cumberland River Basin (Appendix A, Figure 3).

## **2.0 ENVIRONMENTAL REVIEW**

Prior to visiting the subject properties, a resource review of available background site information was conducted using the U.S. Fish and Wildlife Service's (USFWS's) National Wetland Inventory (NWI) database to determine if wetlands could be found within the area. Topographic maps and the United States Geological Survey (USGS) National Hydrography Dataset (NHD) were evaluated for potential jurisdictional waters, and the United States Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS's) Web Soil Survey was reviewed for the potential of hydric soils. Additionally, major landscapes and vegetation units were identified using aerial imagery prior to surveying the study area and again in the field before beginning field work.

## **2.1 Field Investigation Methodology**

### **2.1.1 Waterbody Identification**

For the purpose of this report, any ephemeral or more persistent drainages were characterized by the presence of two or more ordinary high water mark (OHWM) indicators using the 2005 U.S. Army Corps of Engineers (USACE) *Regulatory Guidance Letter 05-05* and proximity to other adjoining jurisdictional features (i.e., wetlands and/or intermittent or perennial streams). Streams located within the subject property were verified, and coordinates of the centerline were obtained with a GPS unit.

Additionally, waterbodies were analyzed with the Tennessee Department of Environment and Conservation's (TDEC's) "Guidance for Making Hydrologic Determinations" to accurately determine the jurisdictional status of Waters of the State. Hydrologic determinations (HDs) were conducted by Frank Amatucci (TN-QHP #1203-TN21). The TDEC HD Field Data Sheets for all observed streams and wet weather conveyances are provided in Appendix D.

### **2.1.2 Wetland Boundary Identification**

Wetland determinations were conducted by Barge biologists through observing hydrophytic vegetation, hydric soils, and wetland hydrology according to the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, Version 2.0*. Sample points were chosen based upon representative portions of the study area to confirm visual estimates of field indicators. The Eastern Mountains and Piedmont Regional Wetland Determination Data Forms were completed at wetland and upland sample points (Appendix C). The boundaries of the wetlands were then marked in the field with pink flagging, and coordinates were obtained with a GPS unit.

## **3.0 RESULTS**

On June 6, 2022, Barge biologists performed a field survey within the subject properties to determine the presence or absence of jurisdictional waters. Both the USACE and TDEC methodologies were utilized to determine the potential jurisdiction of wetlands and non-wetland waters within the subject property.

Four potentially non-jurisdictional features were identified within the subject properties, all of which were considered as erosional swales and man-made drainage ditches. The sections below detail the features that were delineated within the subject properties. The features identified on site are listed in Table 1 and Table 2 (Appendix B) and are displayed in Figure 6 (Appendix B).

### **3.1 Non-Wetland Waters**

Lead Biologist Frank Amatucci (TN-QHP #1203-TN21) and Daniel Conner (QHP-IT) conducted the HD site investigation in accordance with TDEC Rule 0400-40-17-.04. In addition, water features were considered regarding the *Regulatory Guidance Letter No. 05-05*. The site visit was conducted more than 48 hours following a significant rain event of greater than 1.0 inch in a 24-

hour period. Upon commencement of the study, 0.29 inches of rain was observed in the preceding 7 days (CoCoRaHS STA TN-WL-18). In the preceding 30 days, 2.68 inches of rain were observed. The precipitation for the preceding 3 months is considered “normal” based on the 30-year normal (Table 3, Appendix B).

Two erosional swales were delineated within the subject properties. The waterbody features were based primarily on secondary indicators while conducting the HD. The delineated erosional swales were documented with OHWM indicators, such as a demarcation in bank vegetation and bed and bank morphology. They were, however, determined to not be ephemeral streams due to the lack of a truly defined bed and bank throughout the entire evaluated reach and potential significant nexus to other Waters of the United States (WOTUS). Below is a brief description of the delineated waterbody features within the subject properties. Figure 6 – Existing Conditions Map (Appendix B) illustrates the locations of the erosional swales within the subject properties, and Table 1 (Appendix C) details the locations and lengths of the features. Photographs of each feature are provided in Appendix D, and the HD data forms are provided in Appendix C.

Furthermore, two man-made drainage ditches were observed within the subject properties. These man-made ditches were created to divert stormwater runoff from the adjacent roadway to an intake pipe in the center of the southern property. Figure 6 – Existing Conditions Map (Appendix A) illustrates the locations of the man-made ditches within the subject properties, and Table 1 (Appendix B) details the locations and lengths of the features. Photographs of each feature are provided in Appendix E.

Erosional Swale-1 (ES-1) was observed directly adjacent to Nolensville Pike in the southern property and likely was established by roadside runoff from the parallel roadway. Bed and bank was slightly present at the upslope and mid channel portions of the reach. ES-1 was observed with some sorting of gravel and sand below the rip-rap lined portion of channel, which also served as a small grade control. ES-1 also had a slight presence of a floodplain and was heavily covered with greater periwinkle (*Vinca major*) and Japanese honeysuckle (*Lonicera japonica*) in the lower portion of the reach, prior to the confluence with ES-2. ES-1 is potentially non-jurisdictional to the USACE and non-jurisdictional to the TDEC as a wet weather conveyance.

ES-2 was observed in the center of the southern property and likely receives excess stormwater runoff from adjacent western residential properties. Bed and bank was mostly present within the mid channel and downslope portions of the reach. ES-2 was observed with some sorting of silt, sand, and gravel channel substrate. Additionally, two small headcuts were observed near the end of the reach, downslope of the confluence with ES-1. All excess surface water from ES-2 drains directly into a stormwater culvert under Nolensville Pike. ES-2 is potentially non-jurisdictional to the USACE and non-jurisdictional to the TDEC as a wet weather conveyance.

Man-made drainage ditches D-1 and D-2 were observed directly adjacent to Kinhawk Drive and Nolensville Pike. D-1 originates from roadside and residential stormwater runoff from Kinhawk Drive in the northern property, and D-2 originates from stormwater runoff from Nolensville Pike in the center area of the southern property. Both channels were man-made and were either cement lined or rip-rap lined. D-1 dissipates to overland sheet flow adjacent to the Kinhawk Drive and Nolensville Pike intersection, and D-2 drains directly into the culvert end of ES-2. Both D-1 and D-2 are assumed to be non-jurisdictional to the USACE and TDEC.

### **3.2 Wetlands**

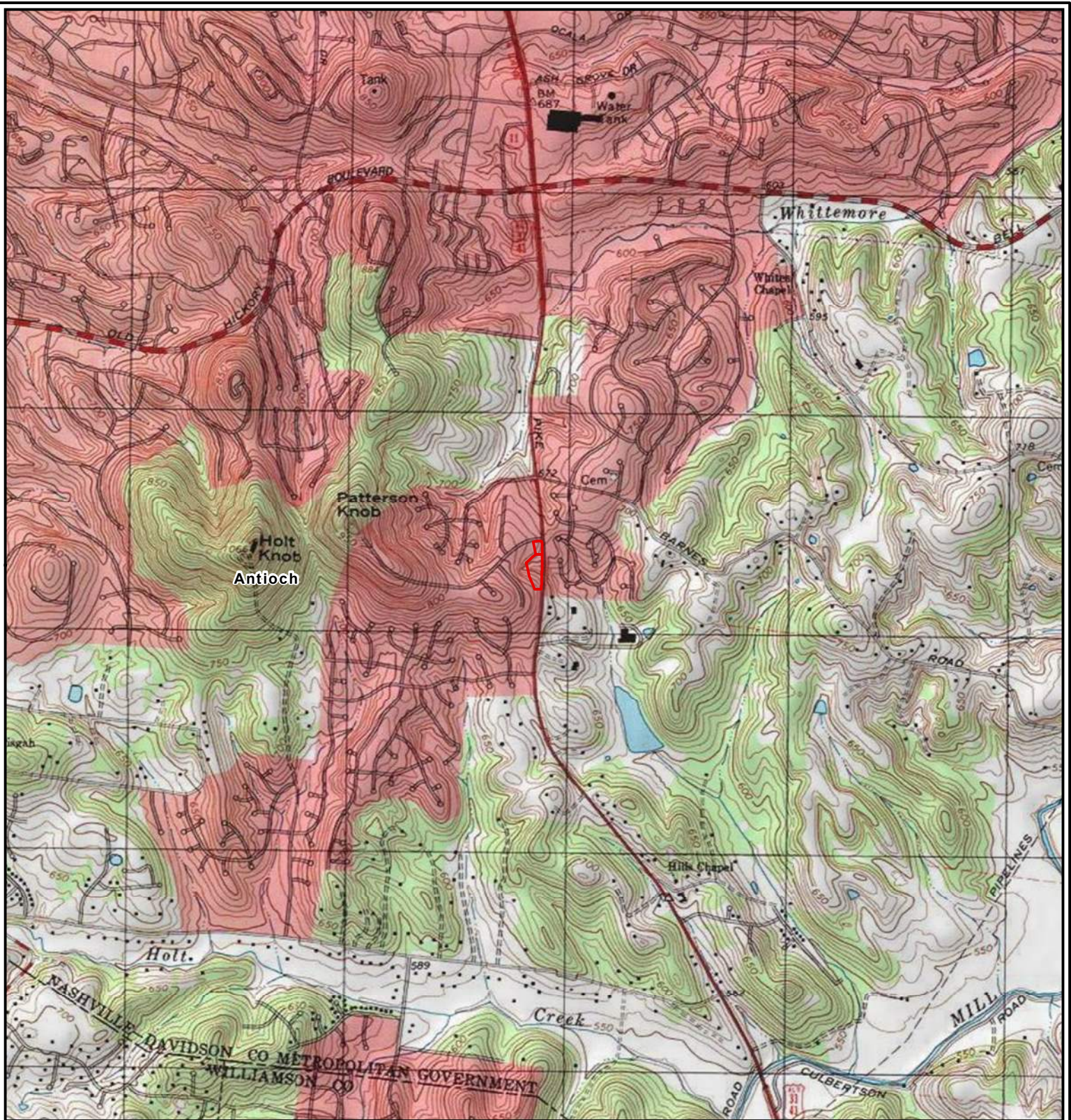
No wetlands were observed within the subject properties. All low depressional areas within the subject properties were inspected for identification of suitable hydrology, hydrophytic vegetation, and hydric soils. The absence of potential wetlands is also represented on the NWI Map provided in Figure 5, Appendix A.

### **4.0 SUMMARY**

Two erosional swales and two man-made drainage ditches were identified during the field investigation of the subject properties. The Existing Conditions Map (Figure 6, Appendix B) visually represents the boundaries of the non-wetland waters delineated within the project area. Table 1 (Appendix C) also summarizes the current locations and linear footages of each feature, and the determination data forms for the delineated natural resources are provided in Appendix D.

# APPENDIX A - FIGURES





# ANTIOCH 7.5 MINUTE QUADRANGLE



- Subject Properties
- USGS 24k Topo Map Boundary

Basemap: ESRI USA Topo Map  
Source Data: ESRI 24K Boundaries

1 inch = 2,000 feet  
0 500 1,000 2,000 3,000 Feet

PROJECT: Nazemi Properties  
Nashville, Davidson County, Tennessee

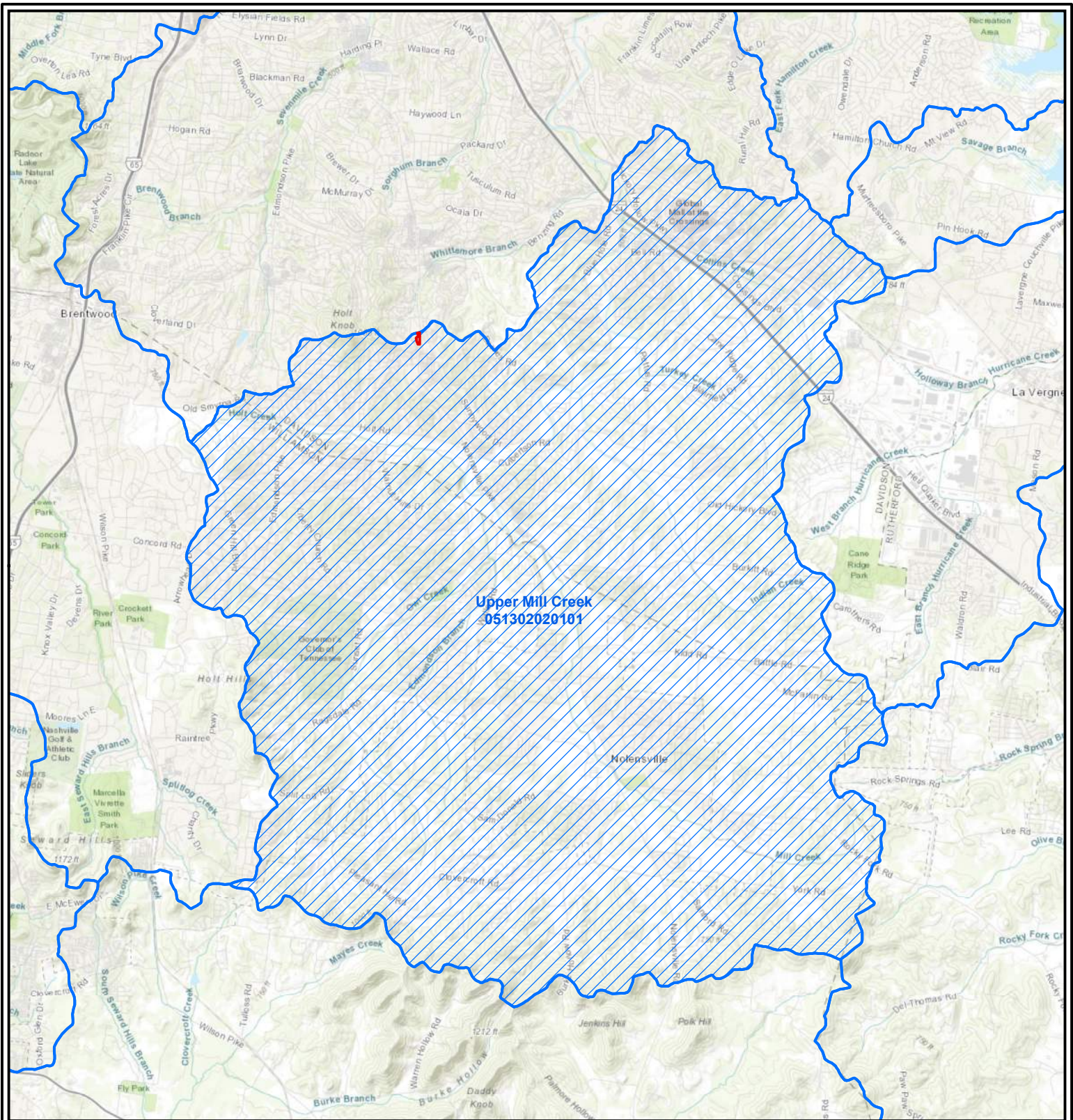
TITLE: **USGS SITE LOCATION MAP**




PROJ NO: 3790100

DATE: June 2022

**FIGURE 2**

**BARGE**  
DESIGN SOLUTIONS  
615 3rd Avenue South, Suite 700  
Nashville, TN 37210



-  Project Watershed
-  HUC 12 Watershed
-  Subject Properties

Basemap: ESRI USA Topo Map  
Source Data: ESRI 24K Boundaries

0 0.5 1 2 3  
1 inch = 2 miles  
Miles

PROJECT:  
Nazemi Properties  
Nashville, Davidson County, Tennessee

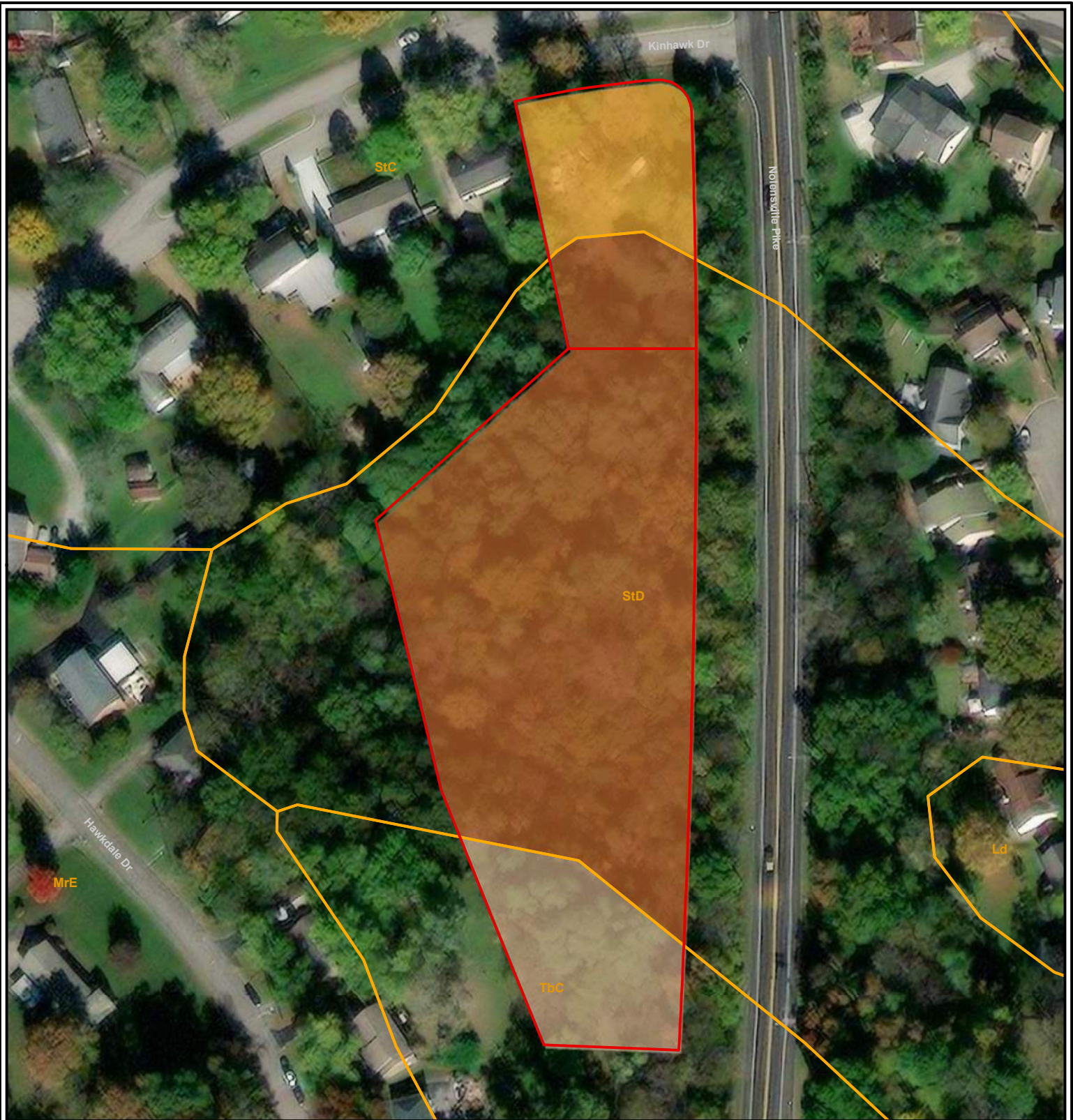
TITLE:  
**PROJECT WATERSHED MAP**

PROJ NO: 3790100

DATE: June 2022

**FIGURE 3**

**BARGE**  
DESIGN SOLUTIONS  
615 3rd Avenue South, Suite 700  
Nashville, TN 37210



#### Project Soils

Soil Unit  
 StC  
 StD  
 TbC

Soil Unit

Subject Properties

1 inch = 100 feet

0 20 40 80 120 Feet

Basemap: ESRI World Imagery  
 Source Data: TN Streets; USDA Soil Survey (TN037)

PROJECT:

Nazemi Properties  
 Nashville, Davidson County, Tennessee

TITLE:

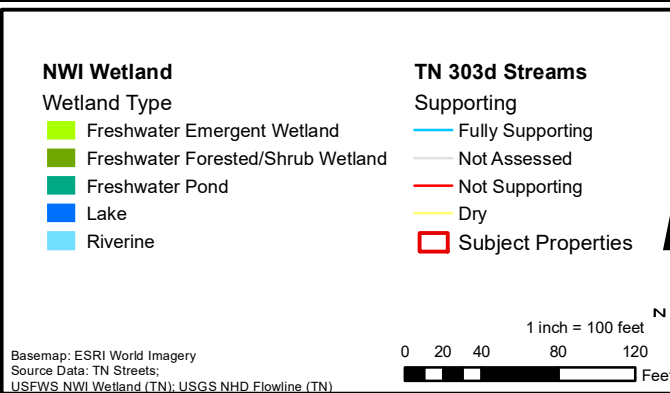
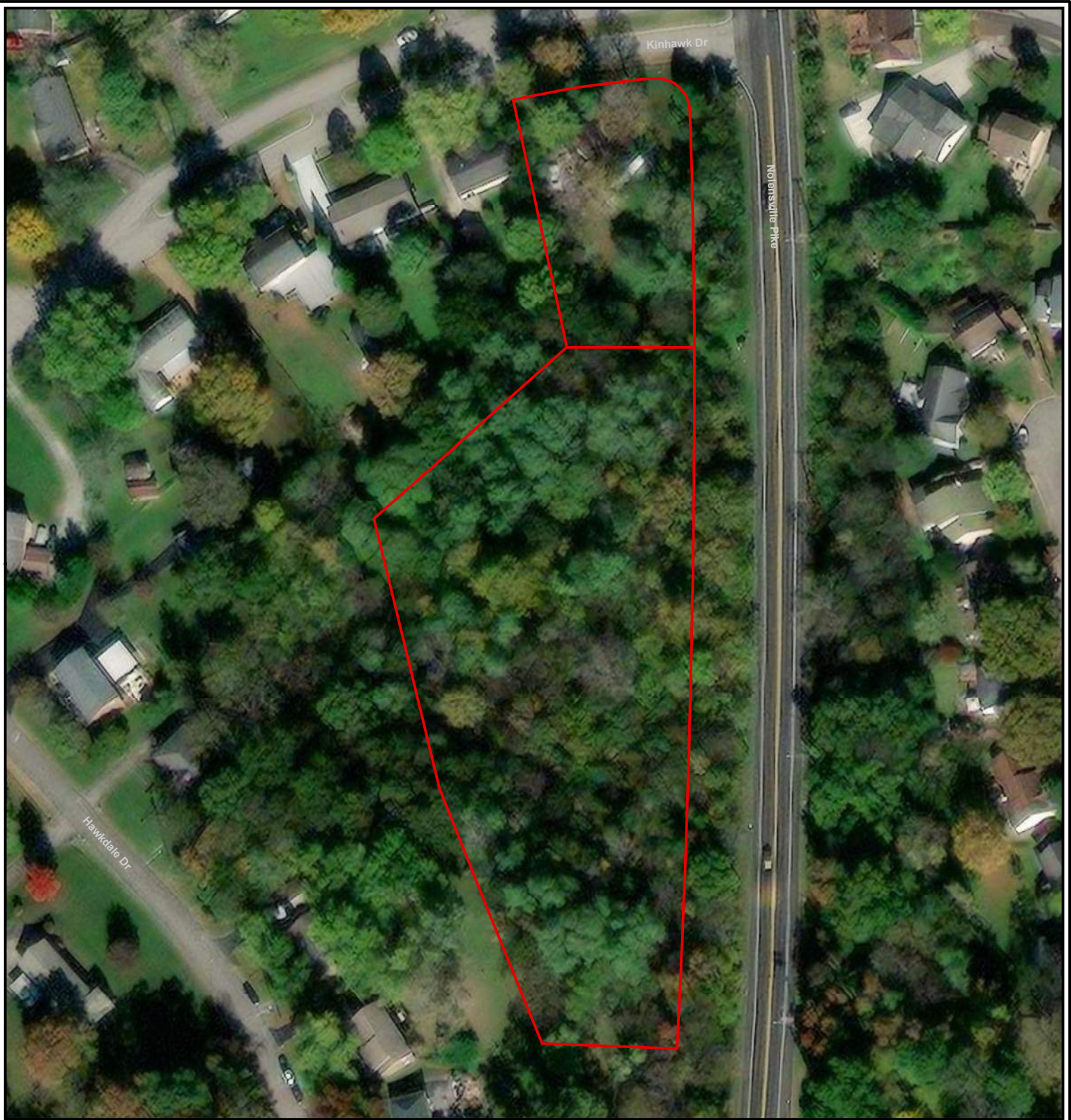
**PROJECT SOIL UNIT MAP**

PROJ NO: 3790100

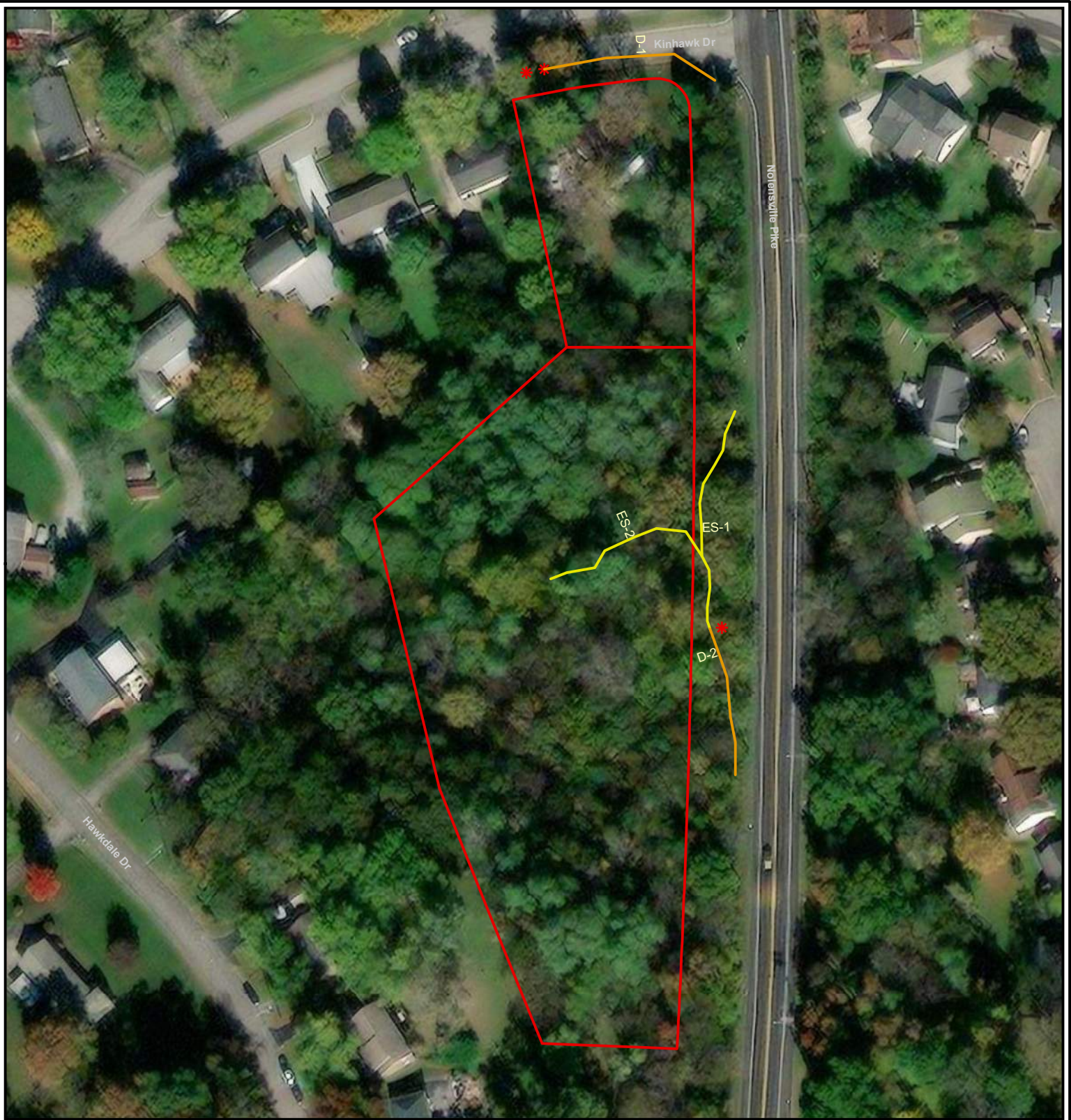
DATE: June 2022

**FIGURE 4**

**BARGE**  
 DESIGN SOLUTIONS  
 615 3rd Avenue South, Suite 700  
 Nashville, TN 37210



PROJECT:		Nazemi Properties Nashville, Davidson County, Tennessee	
TITLE:		<b>NATIONAL WETLAND INVENTORY MAP</b>	
PROJ NO: 3790100		<b>FIGURE 5</b>	
DATE: June 2022			
<b>BARGE</b> DESIGN SOLUTIONS			
615 3rd Avenue South, Suite 700 Nashville, TN 37210			

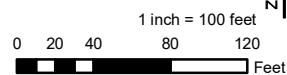


### Delineated Drainage Feature

Feature Type

- Non-Jurisdictional Erosional Swale
- Non-Jurisdictional Drainage Ditch
- \* Culvert Location
- Subject Properties

Basemap: ESRI World Imagery  
 Source Data: TN Streets;  
 USFWS NWI Wetland (TN); USGS NHD Flowline (TN)



PROJECT:

Nazemi Properties  
 Nashville, Davidson County, Tennessee

TITLE:

**EXISTING CONDITIONS MAP**

PROJ NO: 3790100

DATE: June 2022

**FIGURE 6**

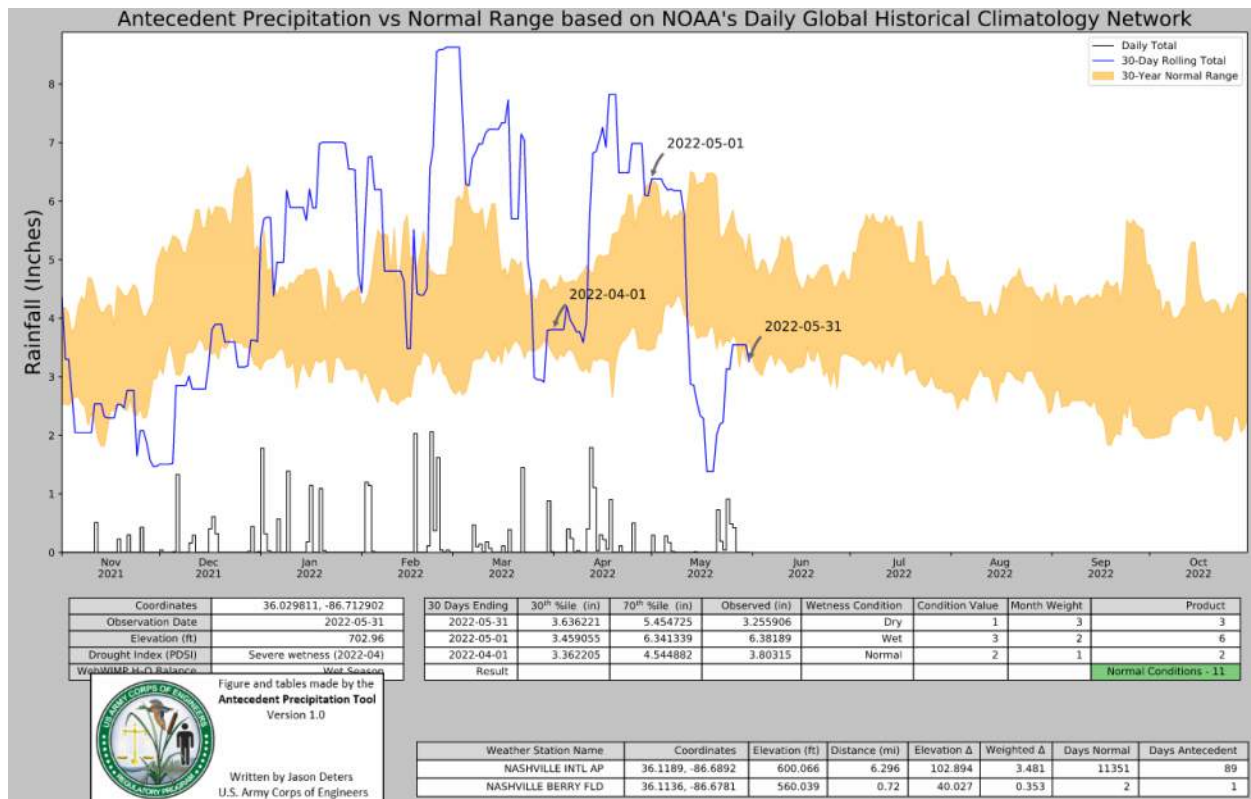
**BARGE**  
 DESIGN SOLUTIONS  
 615 3rd Avenue South, Suite 700  
 Nashville, TN 37210

# **APPENDIX B – NON-WETLAND FEATURES AND WETLANDS TABLES**

**Table 1 – Non-Wetland Features within the Subject Properties**

Waterbody I.D.	Description	Location Within Project Boundaries	Linear Feet within Project	HD Field Score	Federal Jurisdictional Status	State Jurisdictional Status
ES-1	Erosional Swale	Start: 36.030198, -86.712636 End: 36.029905, -86.712718	114	6.25	No <sup>1</sup>	No (WWC)
ES-2	Erosional Swale	Start: 36.029852, -86.713100 End: 36.029753, -86.712696	191	9.25	No <sup>1</sup>	No (WWC)
D-1	Man-made Drainage Ditch	Start: 36.030896, -86.713124 End: 36.030877, -86.712691	134	N/A	No <sup>1</sup>	No (WWC)
D-2	Man-made Drainage Ditch	Start: 36.029450, -86.712632 End: 36.029750, -86.712695	112	N/A	No <sup>1</sup>	No (WWC)

1: Determination based on the potential connection to other WOTUS and potential significant nexus



# **APPENDIX C - STREAM AND WETLAND DETERMINATION DATA FORMS**

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: ES-1		Date/Time: 6/6/2022 10:45
Assessors/Affiliation: Frank Amatucci (1203-TN21) & Daniel Conner (TN-QHPIT): Barge Design Solutions		Project ID :  3790100
Site Name/Description: Nazemi Properties		
Site Location: 401 Kinhawk Dr Nashville, TN 37211		
HUC (12 digit): Upper Mill Creek (051302020102)		Lat/Long: Start: 36.030198, -86.712636 End: 36.029905, -86.712718
Previous Rainfall (7-days) : 0.29in (CoCoRaHS STA TN-WL-18)		
Precipitation this Season vs. Normal : abnormally wet <input type="checkbox"/> elevated <input type="checkbox"/> average <input checked="" type="checkbox"/> low <input type="checkbox"/> abnormally dry <input type="checkbox"/> unknown <input type="checkbox"/>		
Source of recent & seasonal precip data : <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Watershed Size : Approximately less than 0.01 sq mi (StreamStats)		County: Davidson County
Soil Type(s) / Geology : StD- Stiversville loam		Source: USDA WSS
Surrounding Land Use : Residential, Woodland, & Nolensville Pike		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Slight <input type="checkbox"/> Absent <input type="checkbox"/>		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	<input checked="" type="checkbox"/>	WWC <input type="checkbox"/>
2. Defined bed and bank absent, vegetation composed of upland and FACU species	<input checked="" type="checkbox"/>	WWC <input type="checkbox"/>
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	<input checked="" type="checkbox"/>	WWC <input type="checkbox"/>
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	<input checked="" type="checkbox"/>	WWC <input type="checkbox"/>
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	<input checked="" type="checkbox"/>	Stream <input type="checkbox"/>
6. Presence of fish (except <i>Gambusia</i> )	<input checked="" type="checkbox"/>	Stream <input type="checkbox"/>
7. Presence of naturally occurring ground water table connection	<input checked="" type="checkbox"/>	Stream <input type="checkbox"/>
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	<input checked="" type="checkbox"/>	Stream <input type="checkbox"/>
9. Evidence watercourse has been used as a supply of drinking water	<input checked="" type="checkbox"/>	Stream <input type="checkbox"/>

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

**Overall Hydrologic Determination = WWC**

**Secondary Indicator Score (if applicable) = 6.25**

#### Justification / Notes :

This feature collects excess stormwater runoff from Nolensville Pike and conveys into ES-2. Heavily impacted by the proximity to the roadway.

## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 3.75)		<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank		0	<input checked="" type="checkbox"/>	2	3
2. Sinuous channel		0	<input checked="" type="checkbox"/>	2	3
3. In-channel structure: riffle-pool sequences		<input checked="" type="checkbox"/>	1	2	3
4. Sorting of soil textures or other substrate		0	<input checked="" type="checkbox"/>	2	3
5. Active/relic floodplain		0	<del>0.5</del>	1	1.5
6. Depositional bars or benches		<input checked="" type="checkbox"/>	1	2	3
7. Braided channel		<input checked="" type="checkbox"/>	1	2	3
8. Recent alluvial deposits		<input checked="" type="checkbox"/>	0.5	1	1.5
9. Natural levees		<input checked="" type="checkbox"/>	1	2	3
10. Headcuts		<input checked="" type="checkbox"/>	1	2	3
11. Grade controls		0	<input checked="" type="checkbox"/>	0.5	1
12. Natural valley or drainageway		0	<del>0.5</del>	1	1.5
13. At least second order channel on existing USGS or NRCS map		No = 0 <input checked="" type="checkbox"/>		Yes = 3 <input type="checkbox"/>	

<b>B. Hydrology</b> (Subtotal = 1.5)		<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel		<input checked="" type="checkbox"/>	1	2	3
15. Water in channel and >48 hours since sig. rain		<input checked="" type="checkbox"/>	1	2	3
16. Leaf litter in channel (January – September)		<del>1.5</del>	1	0.5	0
17. Sediment on plants or on debris		<input checked="" type="checkbox"/>	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)		<input checked="" type="checkbox"/>	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel		No = 0 <input checked="" type="checkbox"/>		Yes = 1.5 <input type="checkbox"/>	

<b>C. Biology</b> (Subtotal = 1.0)		<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in <del>channel bed</del> <sup>1</sup>		3	2	1	<input checked="" type="checkbox"/>
21. Rooted plants in <del>the thalweg</del> <sup>1</sup>		3	2	1	<input checked="" type="checkbox"/>
22. Crayfish in stream (exclude in floodplain)		<input checked="" type="checkbox"/>	1	2	3
23. Bivalves/mussels		<input checked="" type="checkbox"/>	1	2	3
24. Amphibians		<input checked="" type="checkbox"/>	0.5	1	1.5
25. Macroinvertebrates (record type & abundance)		<input checked="" type="checkbox"/>	1	2	3
26. Filamentous algae; periphyton		<input checked="" type="checkbox"/>	1	2	3
27. Iron oxidizing bacteria/fungus		<input checked="" type="checkbox"/>	0.5	1	1.5
28. Wetland plants in <del>channel bed</del> <sup>2</sup>		<input checked="" type="checkbox"/>	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 6.25

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

No biota observed throughout the length of the reach

Greater periwinkle and japanese honeysuckle observed within the channel

Weak bed and bank present with very little sinuosity

One small grade control observed

No water in the channel after 48 hours of last rainfall

Slight sorting of substrate observed

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: ES-2		Date/Time: 6/6/2022 11:15
Assessors/Affiliation: Frank Amatucci (1203-TN21) & Daniel Conner (TN-QHPIT); Barge Design Solutions		Project ID :  3790100
Site Name/Description: Nazemi Properties		
Site Location: 401 Kinhawk Dr Nashville, TN 37211		
HUC (12 digit): Upper Mill Creek (051302020102)		Lat/Long: Start: 36.029852, -86.713100 End: 36.029753, -86.712696
Previous Rainfall (7-days) : 0.29in (CoCoRaHS STA TN-WL-18)		
Precipitation this Season vs. Normal : abnormally wet <input type="checkbox"/> elevated <input type="checkbox"/> average <input checked="" type="checkbox"/> low <input type="checkbox"/> abnormally dry <input type="checkbox"/> unknown <input type="checkbox"/>		
Source of recent & seasonal precip data : <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Watershed Size : Approximately 0.03 sq mi (StreamStats)		County: Davidson County
Soil Type(s) / Geology : StD- Stiversville loam		Source: USDA WSS
Surrounding Land Use : Residential, Woodland, & Nolensville Pike		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Slight <input type="checkbox"/> Absent <input type="checkbox"/>		

### Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	<input checked="" type="checkbox"/>	WWC <input type="checkbox"/>
2. Defined bed and bank absent, vegetation composed of upland and FACU species	<input checked="" type="checkbox"/>	WWC <input type="checkbox"/>
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	<input checked="" type="checkbox"/>	WWC <input type="checkbox"/>
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	<input checked="" type="checkbox"/>	WWC <input type="checkbox"/>
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	<input checked="" type="checkbox"/>	Stream <input type="checkbox"/>
6. Presence of fish (except <i>Gambusia</i> )	<input checked="" type="checkbox"/>	Stream <input type="checkbox"/>
7. Presence of naturally occurring ground water table connection	<input checked="" type="checkbox"/>	Stream <input type="checkbox"/>
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	<input checked="" type="checkbox"/>	Stream <input type="checkbox"/>
9. Evidence watercourse has been used as a supply of drinking water	<input checked="" type="checkbox"/>	Stream <input type="checkbox"/>

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

**Overall Hydrologic Determination = WWC**

**Secondary Indicator Score (if applicable) = 9.25**

#### Justification / Notes :

This feature collects excess stormwater runoff from the wooded area of the property until it reaches a concrete stormwater intake pipe. Also collects stormwater runoff from conveyance of ES-1.

## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 6.25)		Absent	Weak	Moderate	Strong
1. Continuous bed and bank		0	1	2	3
2. Sinuous channel		0	1	2	3
3. In-channel structure: riffle-pool sequences		0	1	2	3
4. Sorting of soil textures or other substrate		0	1	2	3
5. Active/relic floodplain		0	0.5	1	1.5
6. Depositional bars or benches		0	1	2	3
7. Braided channel		0	1	2	3
8. Recent alluvial deposits		0	0.5	1	1.5
9. Natural levees		0	1	2	3
10. Headcuts		0	1	2	3
11. Grade controls		0	0.5	1	1.5
12. Natural valley or drainageway		0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map		No = 0 <input checked="" type="checkbox"/>		Yes = 3 <input type="checkbox"/>	

<b>B. Hydrology</b> (Subtotal = 2)		Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel		0	1	2	3
15. Water in channel and >48 hours since sig. rain		0	1	2	3
16. Leaf litter in channel (January – September)		1.5	1	0.5	0
17. Sediment on plants or on debris		0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)		0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel		No = 0 <input checked="" type="checkbox"/>		Yes = 1.5 <input type="checkbox"/>	

<b>C. Biology</b> (Subtotal = 1.0)		Absent	Weak	Moderate	Strong
20. Fibrous roots in <b>channel bed</b> <sup>1</sup>		3	2	1	0
21. Rooted plants in <b>the thalweg</b> <sup>1</sup>		3	2	1	0
22. Crayfish in stream (exclude in floodplain)		0	1	2	3
23. Bivalves/mussels		0	1	2	3
24. Amphibians		0	0.5	1	1.5
25. Macroinvertebrates (record type & abundance)		0	1	2	3
26. Filamentous algae; periphyton		0	1	2	3
27. Iron oxidizing bacteria/fungus		0	0.5	1	1.5
28. Wetland plants in <b>channel bed</b> <sup>2</sup>		0	0.5	1	1.5

<sup>1</sup> Focus is on the presence of **terrestrial** plants.<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 9.25

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

No biota observed throughout the length of the reach

Grater periwinkle and japanese honeysuckle observed within the channel

Weak to moderate bed and bank present with some sinuosity

Two small headcuts observed near the end of the reach

No water in the channel after 48 hours of last rainfall

Some sorting of substrate observed

Nonhydric soils observed with multiple soil cores

# APPENDIX D - PHOTOGRAPHIC SUMMARY

## Photo Summary

Summary of Environmental Features Nashville, Davidson County, Tennessee

Page 1 of 4



**Photo: 1**

**By:** F. Amatucci

**Date:** June 6, 2022

**Feature:** ES-1

**Lat:** 36.030150

**Long:** -86.712663

Representative conditions of ES-1 at the start of the reach adjacent to Nolensville Pike.



**Photo: 2**

**By:** F. Amatucci

**Date:** June 6, 2022

**Feature:** ES-1

**Lat:** 36.030150

**Long:** -86.712663

Representative conditions of ES-1 of the lower portion of reach. Note the dominance of Japanese honeysuckle in the channel.

## Photo Summary

Summary of Environmental Features Nashville, Davidson County, Tennessee

Page 2 of 4



**Photo: 3**

**By: F. Amatucci**

**Date: June 6, 2022**

**Feature: ES-2**

**Lat: 36.029936**

**Long: -86.712902**

Representative conditions of ES-2 at the start of the reach.



**Photo: 4**

**By: F. Amatucci**

**Date: June 6, 2022**

**Feature: ES-2**

**Lat: 36.029823**

**Long: -86.712698**

Representative conditions of ES-2 before conveying into a stormwater intake pipe at the end of the reach.

## Photo Summary

Summary of Environmental Features Nashville, Davidson County, Tennessee

Page 3 of 4



**Photo: 5**

**By: F. Amatucci**

**Date: June 6, 2022**

**Feature: D-1**

**Lat: 36.030929**

**Long: -86.712793**

Representative conditions of man-made drainage D-1 along Kinhawk Dr.



**Photo: 6**

**By: F. Amatucci**

**Date: June 6, 2022**

**Feature: D-2**

**Lat: 36.029694**

**Long: -86.712667**

Representative conditions of roadside ditch D-2, which lined with rip rap.

## Photo Summary

Summary of Environmental Features Nashville, Davidson County, Tennessee

Page 4 of 4



**Photo: 7**

**By:** F. Amatucci

**Date:** June 6, 2022

**Feature:** Woodland

**Lat:** 36.029494

**Long:** -86.713018

Representative conditions of the wooded area within the southern subject property.