

Permit Drawing Review

Proposed Improvements to Wilson Road (SR 1540) from US 276 to
SR 1504 (Old US 64/Old Hendersonville Highway)

Transylvania County

STIP Project No. R-5763

North Carolina Department of Transportation

Division 14



MERGER CONCURRENCE POINT NUMBER 4C

May 18, 2023

1. Introduction

Lead federal agency: US Army Corps of Engineers

Primary points of contact for the subject project are:

Agency	Name
U.S. Army Corps of Engineers (USACE)	Crystal Amschler
North Carolina Department of Water Resources (NCDWR)	Kevin Mitchell
North Carolina Department of Transportation	Barry Mostellar
HNTB	Kat Bukowy

The purpose of this meeting is to reach concurrence on the Permit Drawings that have been developed and note the potential impacts of the project on the surrounding environment.

1.1. Project Description

The North Carolina Department of Transportation (NCDOT) proposes to improve SR 1540 (Wilson Road) from US 276 to SR 1504 (Old US 64/Old Hendersonville Highway), approximately 3.7 miles, as shown on Figure 1. This state-funded project is included in the State Transportation Improvement Program (STIP) as project number R-5763. The project proposes to upgrade Wilson Road moving it out of the 500-year floodplain associated with the French Broad River and improve the safety of Wilson Road.

Because of the potential impacts to human and natural resources, STIP Project R-5763 will follow the Section 404/NEPA Merger Process. An Individual Permit is expected, although final discretion lies with the US Army Corps of Engineers (USACE).

1.2. Project History and Merger Plan

The project is in the 2020-2029 NCDOT STIP that was approved by the NCDOT Board of Transportation on August 4, 2021. Right-of-way (ROW) began in March 2022 and Construction letting is scheduled for November 2024. The current cost estimate is presented in Table 1. The proposed project schedule is included in Table 2 and is based on the [Merger Plan](#) (). The schedule and cost estimates are draft and subject to change.

Table 1. January 2022 Cost Estimate Verification Memo

Phase	Cost Estimate
Right of Way	\$17,400,000
Utilities	\$2,400,000
Construction	\$40,200,000
Total*	\$60,000,000

Table 2. STIP R-5763 Project Schedule*

Milestone	Format	Anticipated Date
CP 4B	Virtual Meeting	February 2021
Begin ROW Acquisition		March 2022
CP 4C	Meeting	May 18, 2023
Begin Construction		November 2024

*Tentative, subject to change.

1.3. Past Merger Meetings Summary

CP 1: Merger Meeting was held on January 24, 2019. The Purpose and Need and study area were defined. Concurrence was reached.

CP 2: Merger meeting was held on March 20, 2019. Detailed Study Alternatives were carried forward: No-Build and Build Alternative 1. Concurrence was reached.

CP 2A: Merger meeting was held on June 22, 2019. Major Hydraulic structures and Alignment Review were discussed. Concurrence was reached.

CP 3: Merger meeting was held on March 18, 2020. It was determined that the LEDPA is the Build Alternative. Concurrence was reached.

CP 4A: Merger meeting was held on March 18, 2020. The Merger Team concurred with the list of Avoidance and Minimization measures.

CP 4B: Merger meeting was held on September 16, 2020.

1.4. Purpose and Need

The Purpose of the project is upgrade Wilson Road to move it away from the 50-year floodplain associated with the French Broad River. The Need is to improve safety on Wilson Road and prevent flooding and associated infrastructure damage.

2. Project Updates Post-CP4B

- NCDOT Location and Surveys provided a corrected survey file for streams to ensure that the jurisdictional features were labeled correctly.
- Right of way acquisition for the subject project began in March 2022.
- NCDOT determined that additional easement outside of the study area would be needed predominantly for Permanent Utility Easement (PUE) in addition to some new Temporary Construction Easement (TCE), as shown on Figure 1A-F. A desktop review on April 26, 2023, indicates no additional stream or wetland impacts. NCDOT will field verify the assessment.
- NCDOT has determined that an access road will be needed for the construction of the bridge over the French Broad River, shown on Figure 2. As of this Packet distribution, impacts from the proposed access road are 0.071 acre for WN and 0.170 acre for WL. NCDOT is currently reviewing placement to avoid or minimize impacts to wetlands WN and WL to the extent practicable.

3. Additional Avoidance and Minimization Measures

1. Alignment and profile selected to meet project need and purposed of raising SR 1540 (Wilson Rd) above the French Broad River 50 YR floodplain. Alignment and profile selected in accordance with LEDPA guidelines.
2. Build Feasibility Study analyzed three concepts and determined that:
 - a. Concept 1 – Minor upgrades and improvements using 3R guidelines; did not meet proposed purpose and need of project.

- b. Concept 2 – Upgrade the road to Major Collector design standards; meets purpose and need and has fewer impacts and is less costly than Option 3
- c. Concept 3 – Upgrade the road to Principal Arterial design standards; required the road to be realigned on new location, resulting in higher residential relocations, non-disturbed terrestrial community impacts, and a higher cost.

Therefore, NCDOT recommended Concept 2 be carried forward, which includes adjustments to the horizontal and vertical alignment while retaining current alignment to the extent feasible. This concept became Build Alternative 1.

3. Alternative 1 selection replaced French Broad River on new alignment avoiding the need for an additional temporary bridge during construction. This avoided additional impacts created by a temporary condition.
4. The alignment will not impact the Knob Creek Properties fly ash disposal site or the Aqua North Carolina well.
5. Final designs align Ecusta Rd with Wilson Rd improving safety at these locations.
6. NCDOT has used Design Standards in Sensitive Watersheds criteria due to proximity to French Broad River and Williamson Creek
7. A local ditch section was used on Wilson Road to reduce impacts to properties, instead of the standard, hinged arterial ditch for a roadway of this volume and classification. Using a 6:1 ditch frontslope results in a narrower clear zone which allows for use of a 2:1 backslope. This reduced impacts to properties by requiring fewer acquisitions as well as reducing the amount of cut/fill on the slope.
8. Expressway gutter utilized to minimize impacts to Parcels 16, Jenkins House Historical Property on Parcel 19, 23, 24, 25, 25Z, 30, 31, 36
9. Hydraulic 2D modeling was used to study the potential of the proposed design to impact structures in or near the floodplain. Based on the results of the 2D modeling, the vertical alignment in some locations was raised to prevent overtopping in a 50-year storm event
10. Existing bridges replaced with proposed bridges on new locations. Bridge layouts for Williamson Creek and the French Broad River have been designed so that channels have been spanned with at least 10' layback from top of banks
11. Proposed bridge at French Broad River crossing is 1145' in length and spans French Broad River floodplain for floodplain impact minimization.
12. Deck drains not used on either bridge over Williamson Creek or the French Broad River, thereby eliminating direct discharge into the creek and river. Deck drains were used on the French Broad River bridge in overbanks with combination with rip rap energy dissipater pads.
13. Use of fill retaining walls, 1.5:1 slopes with rock embankments, and 2:1 slopes to avoid impact to jurisdictional stream crossings, parallel impacts to French Broad River, or historic properties like the Jenkins House
 - a. Rock embankments used to as needed to stabilize side slopes:
 - i. L 14+00 to 24+50 LT
 - ii. L 92+86.84 to 96+73.32 LT
 - b. Retaining walls:
 - i. L 49+00 to 53+50 LT (reduced are requiring tree clearing on Jenkins house property by 0.3 acre)
 - ii. L 84+50 to 91+00 LT

14. Existing conditions were noted to contain many perched outfalls. All designs for R-5763 have been completed so that pipe inverts are reset to thalweg elevations promoting stabilization, aquatic passage, and live bed conditions. This has been to minimize impacts to the jurisdictional features.
15. Existing culverts in the study area are corrugated metal pipe (CMP) and less than 72 inches and not considered major structures. They have been called to be removed and replaced with appropriately sized pipes that will be realigned with the stream to provide hydraulic conveyance.
16. All cross pipes in jurisdictional features 20% buried or at 1' buried for any cross pipes 54" or bigger.
17. All outfalls have been maintained and evaluated for stability. There are not adverse impacts created in comparison of post construction conditions to pre-construction conditions.
18. Energy dissipators to reduce the velocity of stormwater prior to entering the French Broad River and other streams.
19. Systems 701/714 designed for split flow to protect downstream pond at L 55+00 LT in post construction conditions
20. NCDOT shall require the contractor to use clean stone for the construction of the causeways. This will minimize unnecessary sediment input into the river.
21. To minimize disturbance to the streambed, care will be taken to remove all readily detectable causeway material to the extent practicable, while removing as little of the original streambed as possible.
22. Construction fabric will not be used under the causeway material, as it tends to shred and litter areas downstream during removal.
23. Equipment that is placed on the causeways will be removed any time throughout a workday when the water level rises, or is expected to rise overnight, to a point where the equipment could be flooded, or during periods of inactivity (two or more consecutive days). The only exception to this measure is that the crane may be left in place for periods of inactivity; however, it must also be removed if the water rises, or is expected to rise, to a point where the crane could be flooded.
24. NCDOT shall commit to requiring its contractor to have clean, non-leaking equipment on the causeway or within the waterway limits; diapers on-site for each causeway; and spill kits located at each causeway.
25. With the exceptions noted below for the crane, all construction equipment will be refueled at least 200 feet from all water bodies and be protected with secondary containment. The crane will be refueled provided spill response materials (such as spill blankets and fueling diapers) are used during the refueling. Hazardous materials, fuel, lubricating oils, or other chemicals will be stored outside the 100-year floodplain or at least 200 feet from all water bodies (whichever distance is greater), not in a Water of the U.S., and preferably at an upland site. Areas used for borrow or construction by-products will not be located within wetlands or the 100-year floodplain.
26. When constructing drilled shafts, if required, a containment system will be developed so that substrate material does not enter the river. Any material by-product will be pumped out of the shaft to an upland disposal area and treated through a proper stilling basin or silt bag.

27. The Sediment and Erosion Control Plan will be in place prior to any ground disturbance. When needed, combinations of erosion control measures (such as silt bags in conjunction with a stilling basin) will be used to ensure that the most protective measures are being implemented.
28. Construction of new bridges will be accomplished in a manner that prevents uncured concrete from coming into contact with water entering or flowing in the river.
29. The Contractor will be required to prosecute the work in a continuous and uninterrupted manner from the time he begins the work until completion of each phase of structure construction, demolition and completion. The Contractor will not be permitted to suspend his operations except for reasons beyond his control or except where the Engineer has authorized a suspension of the Contractor's operations in writing.
30. In the event that the Contractor's operations are suspended in violation of the above provisions or it is determined the Contractor is not deemed to be pursuing the work in a continuous manner in accordance with his submitted and approved schedule, the sum of \$1,000 per day will be charged the Contractor for each and every calendar day that such suspension takes place. The said amount is hereby agreed upon as liquidated damaged due to extra engineering and maintenance costs and due to increased public hazard resulting from a suspension of the work. Liquidated damages chargeable due to suspension of the work will be additional to any liquidated damages that may become chargeable due to failure to complete the work on time.

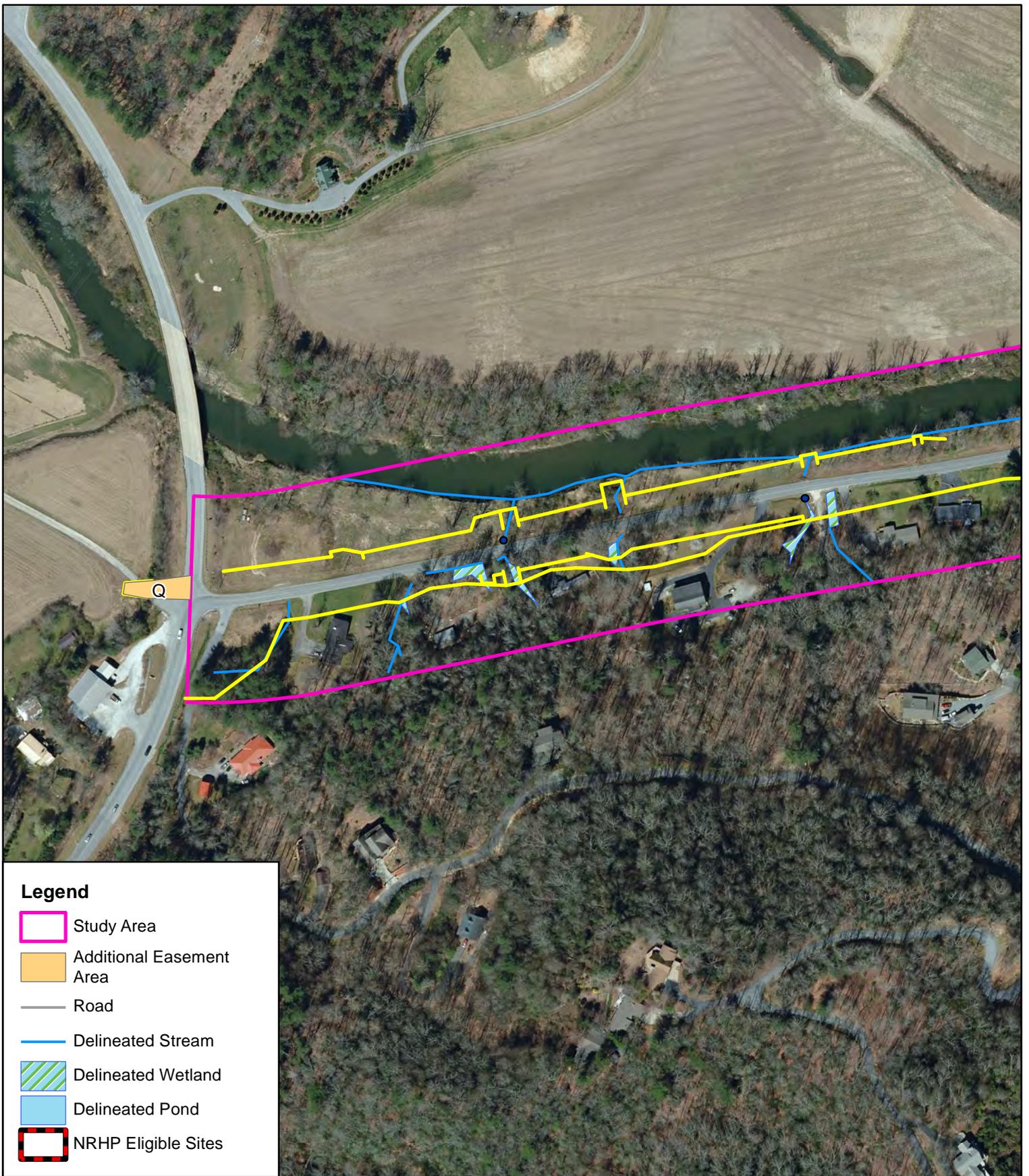
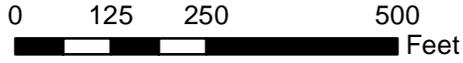
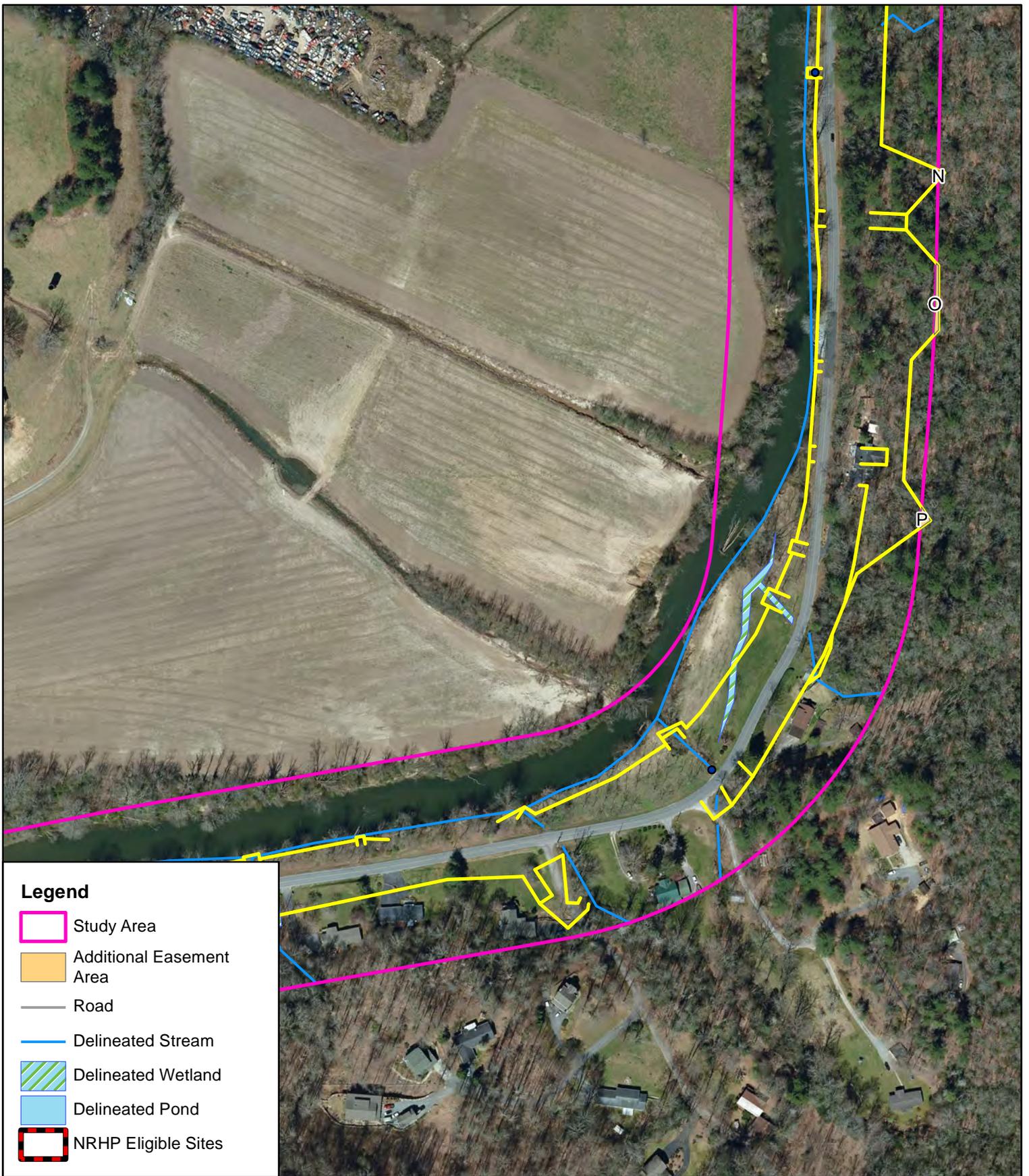


FIGURE 1A
LOCATION OF EASEMENT
OUTSIDE OF STUDY AREA
 STIP Project No. R-5763
 Improvements to Wilson Road from US 276
 to Old US 64/Old Hendersonville Hwy
 Brevard, Transylvania County

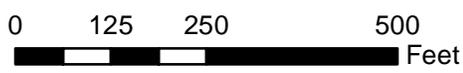


Data Source: HNTB, Transylvania Co GIS, NCDOT
 HNTB, May 2023



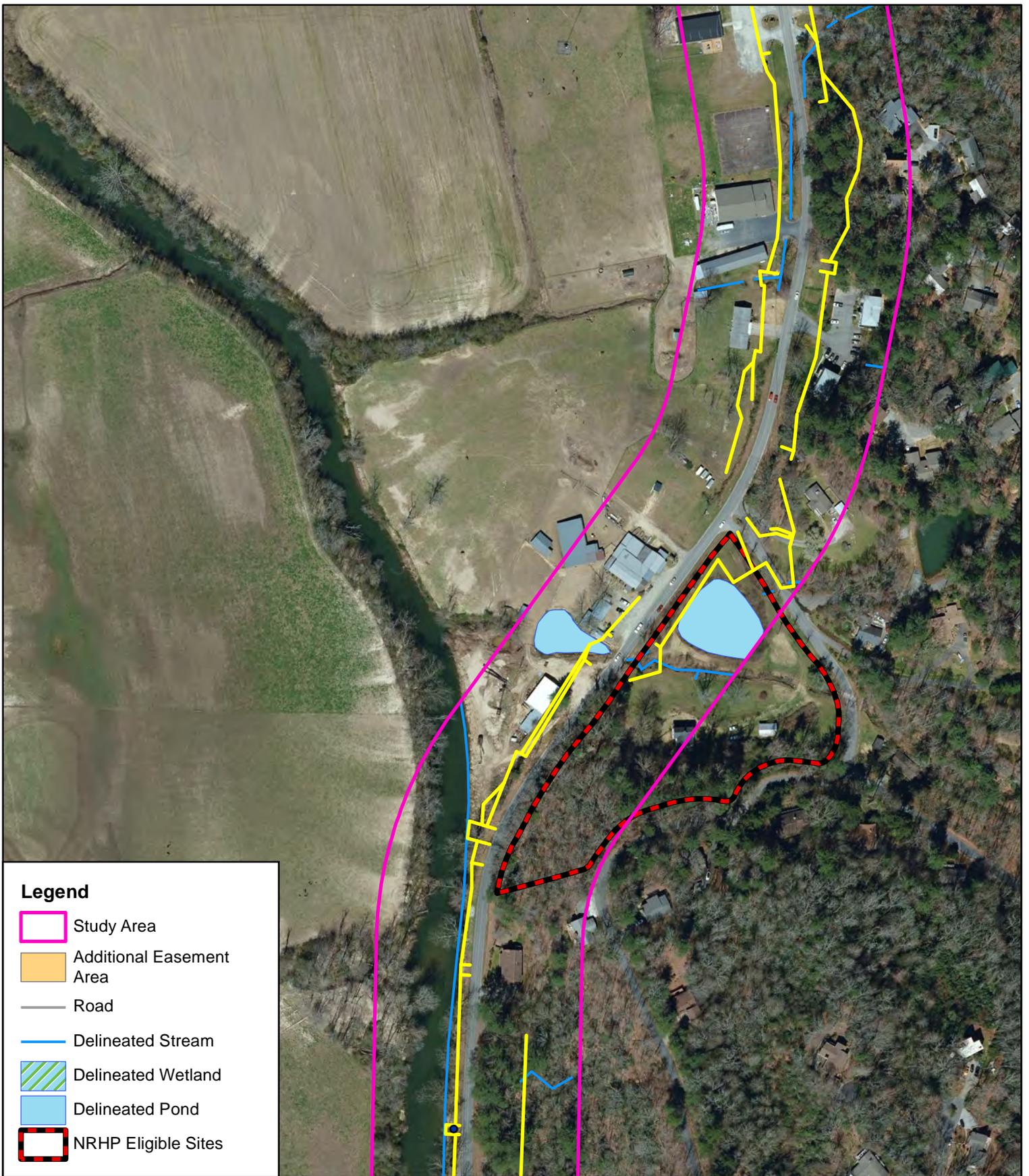
Legend

-  Study Area
-  Additional Easement Area
-  Road
-  Delineated Stream
-  Delineated Wetland
-  Delineated Pond
-  NRHP Eligible Sites



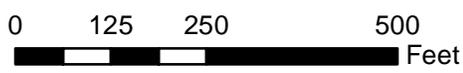
Data Source: HNTB, Transylvania Co GIS, NCDOT
HNTB, May 2023

FIGURE 1B
LOCATION OF EASEMENT
OUTSIDE OF STUDY AREA
 STIP Project No. R-5763
 Improvements to Wilson Road from US 276
 to Old US 64/Old Hendersonville Hwy
 Brevard, Transylvania County



Legend

-  Study Area
-  Additional Easement Area
-  Road
-  Delineated Stream
-  Delineated Wetland
-  Delineated Pond
-  NRHP Eligible Sites



Data Source: HNTB, Transylvania Co GIS, NCDOT
HNTB, May 2023

FIGURE 1C
LOCATION OF EASEMENT
OUTSIDE OF STUDY AREA
 STIP Project No. R-5763
 Improvements to Wilson Road from US 276
 to Old US 64/Old Hendersonville Hwy
 Brevard, Transylvania County

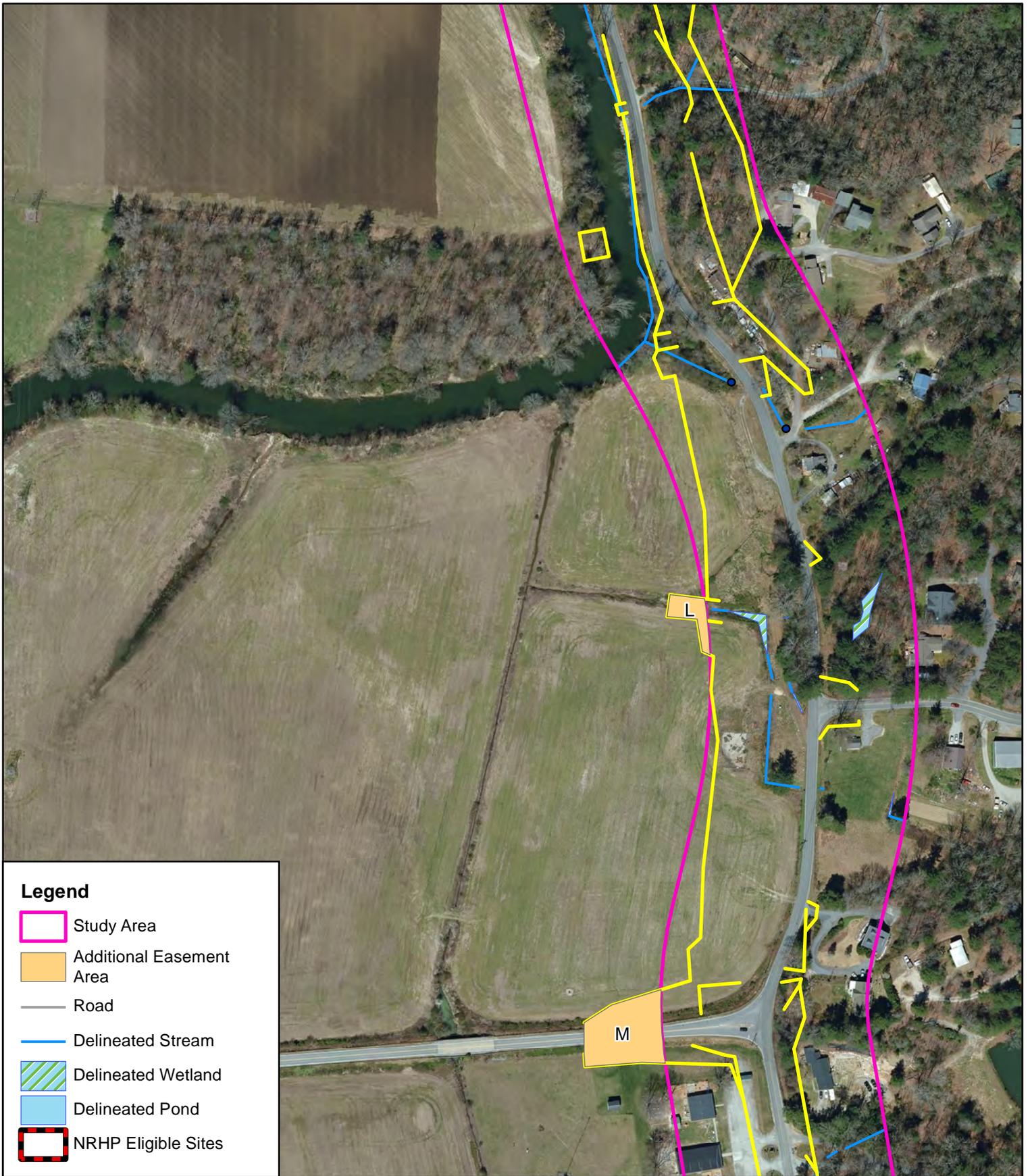
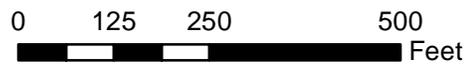


FIGURE 1D

**LOCATION OF EASEMENT
OUTSIDE OF STUDY AREA**

STIP Project No. R-5763

Improvements to Wilson Road from US 276
to Old US 64/Old Hendersonville Hwy
Brevard, Transylvania County



Data Source: HNTB, Transylvania Co GIS, NCDOT
HNTB, May 2023

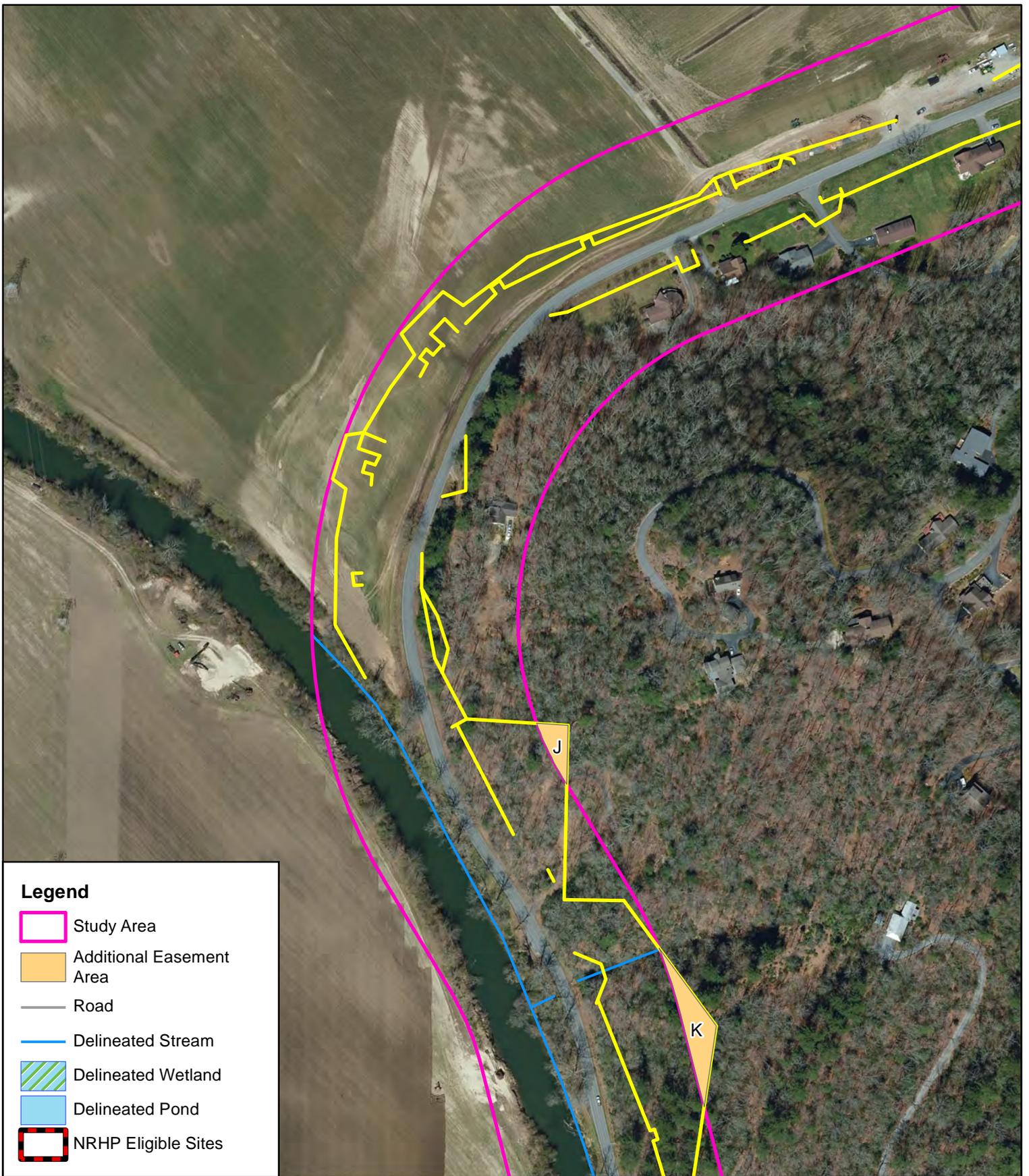


FIGURE 1E
LOCATION OF EASEMENT
OUTSIDE OF STUDY AREA
 STIP Project No. R-5763
 Improvements to Wilson Road from US 276
 to Old US 64/Old Hendersonville Hwy
 Brevard, Transylvania County

Data Source: HNTB, Transylvania Co GIS, NCDOT
 HNTB, May 2023

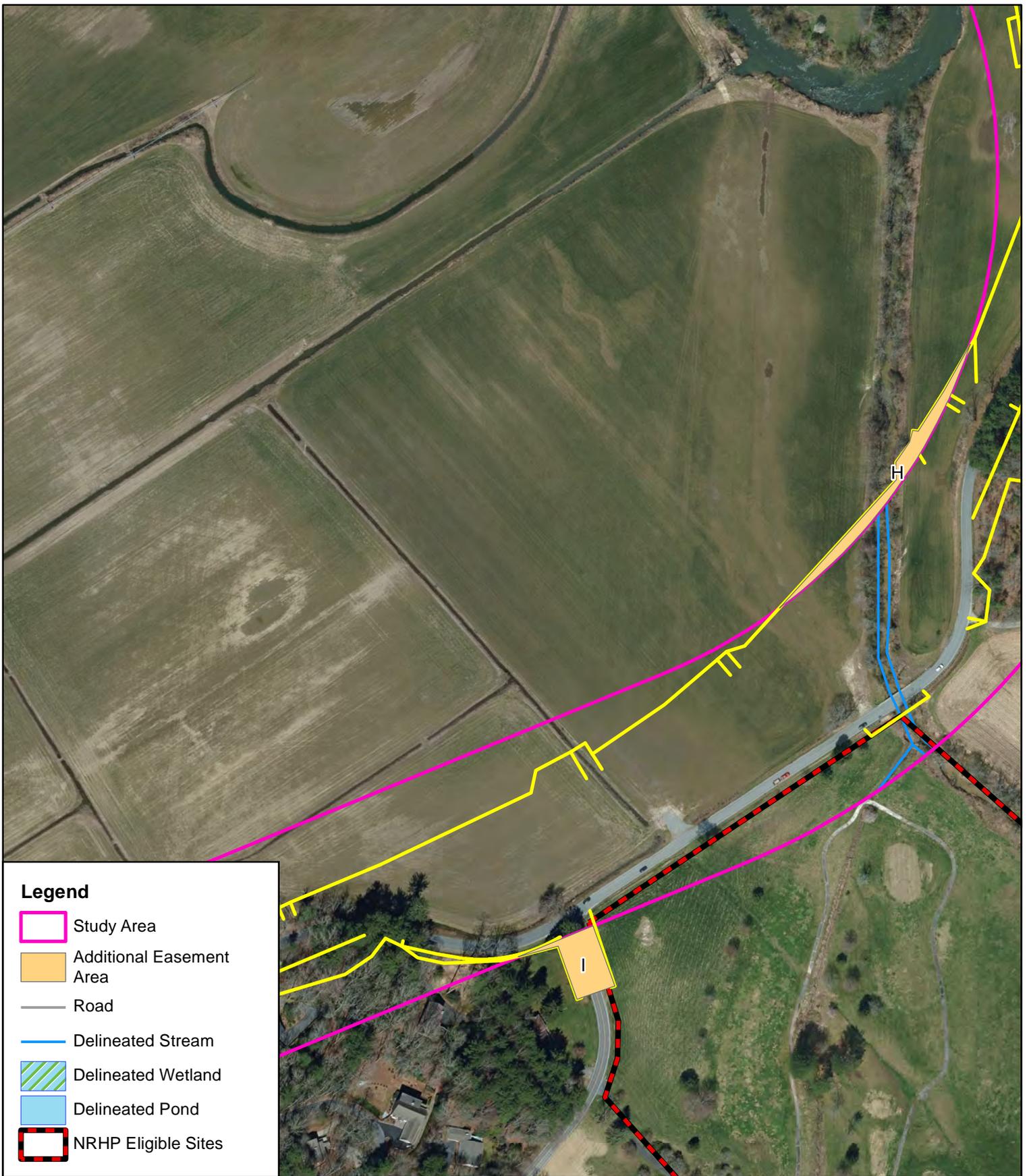
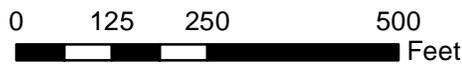


FIGURE 1F
LOCATION OF EASEMENT
OUTSIDE OF STUDY AREA
 STIP Project No. R-5763
 Improvements to Wilson Road from US 276
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 Brevard, Transylvania County



Data Source: HNTB, Transylvania Co GIS, NCDOT
 HNTB, May 2023

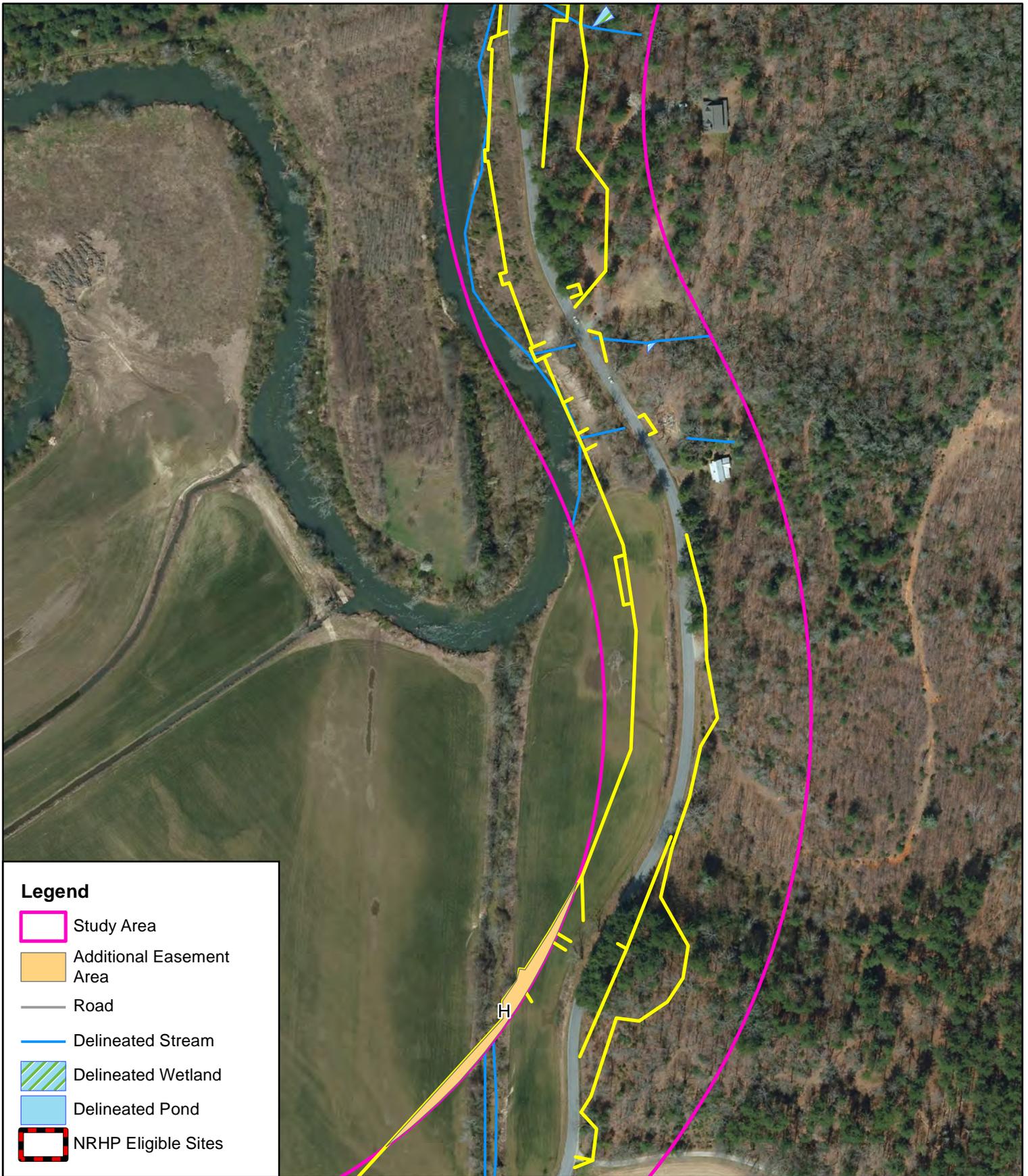
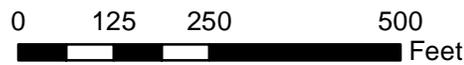


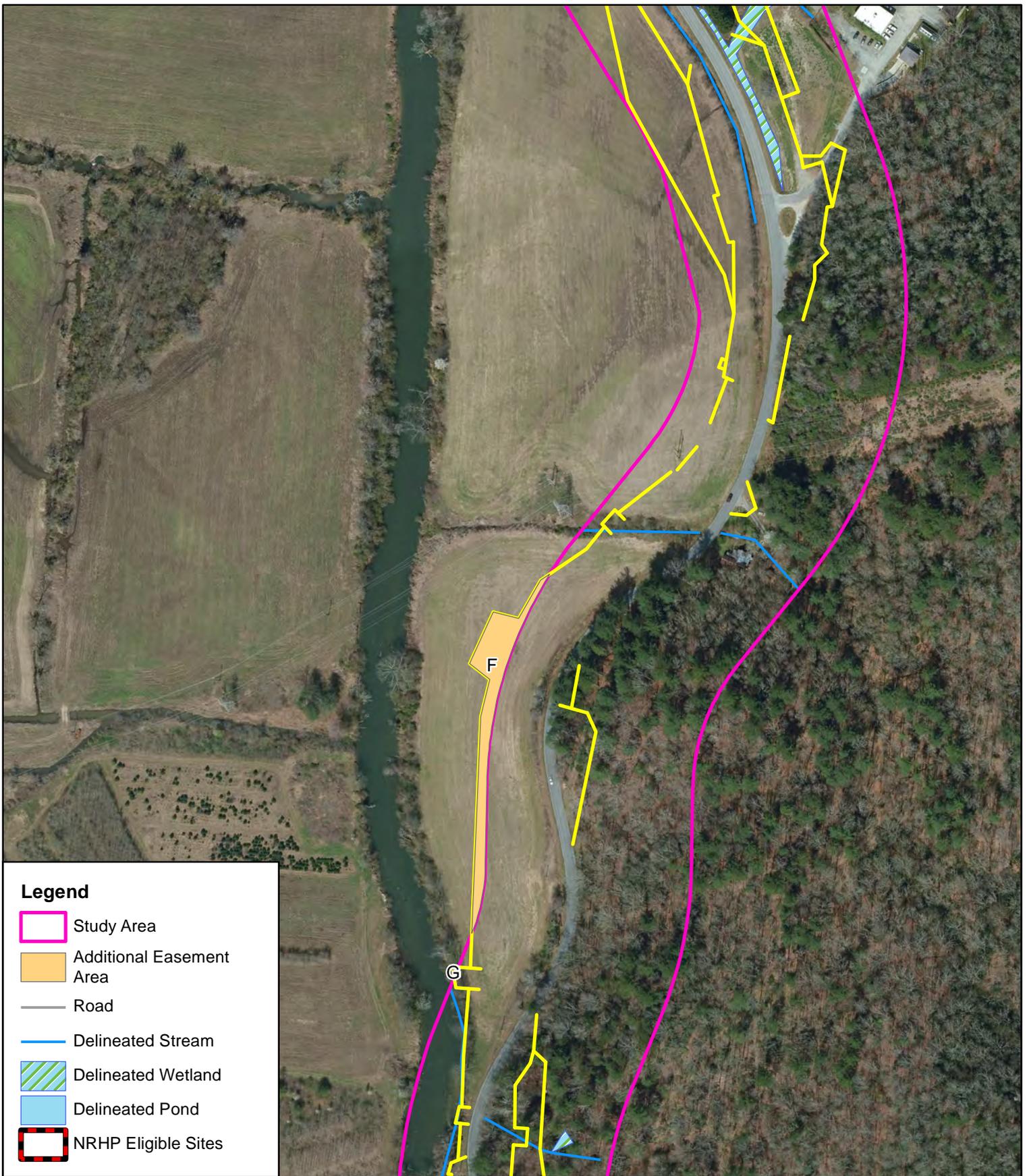
FIGURE 1G

LOCATION OF EASEMENT
OUTSIDE OF STUDY AREA

STIP Project No. R-5763

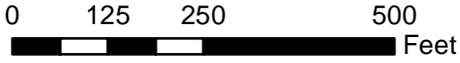
Improvements to Wilson Road from US 276
to Old US 64/Old Hendersonville Hwy
Brevard, Transylvania County





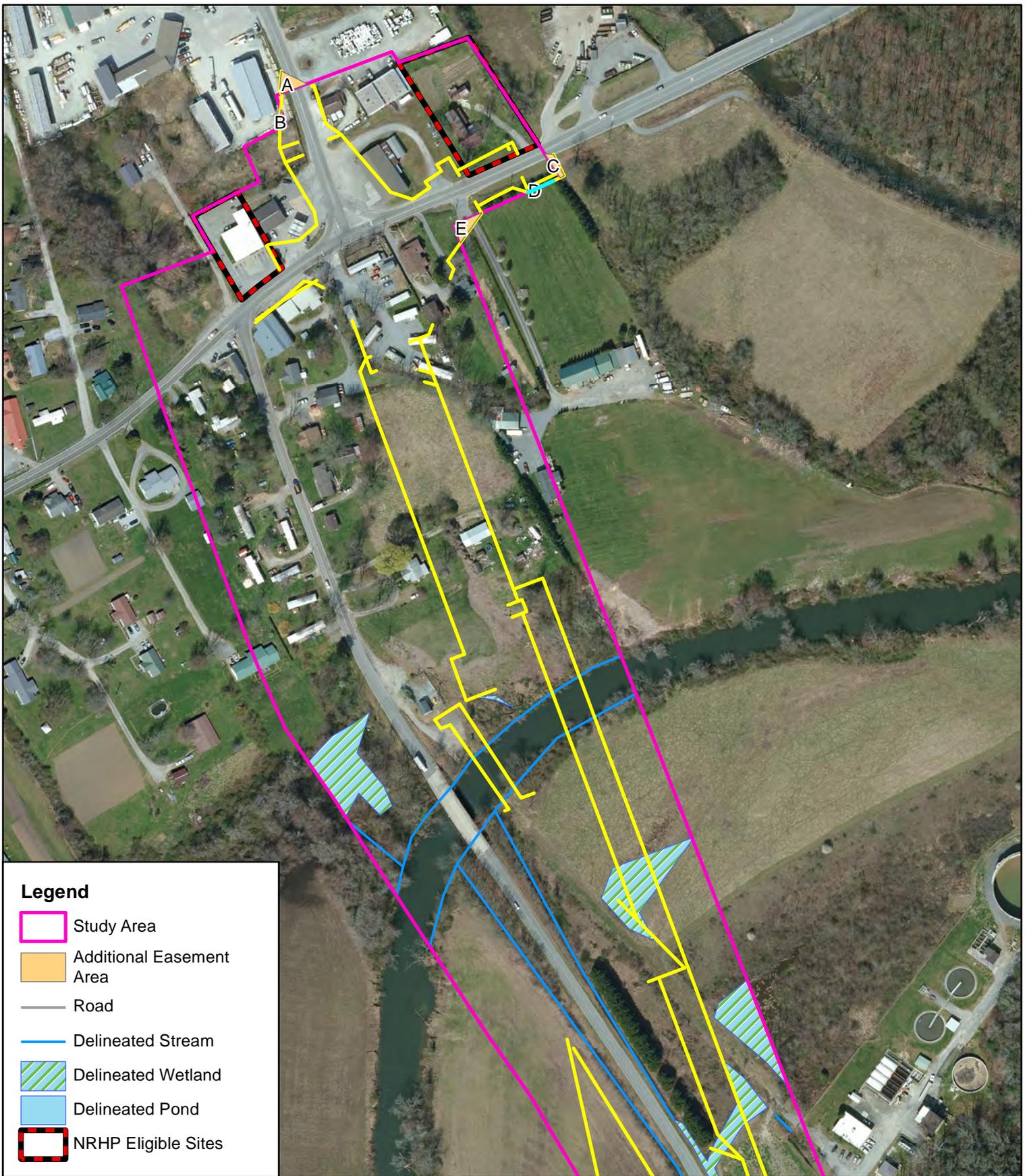
Legend

-  Study Area
-  Additional Easement Area
-  Road
-  Delineated Stream
-  Delineated Wetland
-  Delineated Pond
-  NRHP Eligible Sites



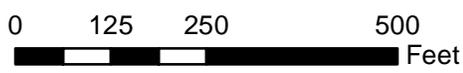
Data Source: HNTB, Transylvania Co GIS, NCDOT
HNTB, May 2023

FIGURE 1H
LOCATION OF EASEMENT
OUTSIDE OF STUDY AREA
 STIP Project No. R-5763
 Improvements to Wilson Road from US 276
 to Old US 64/Old Hendersonville Hwy
 Brevard, Transylvania County



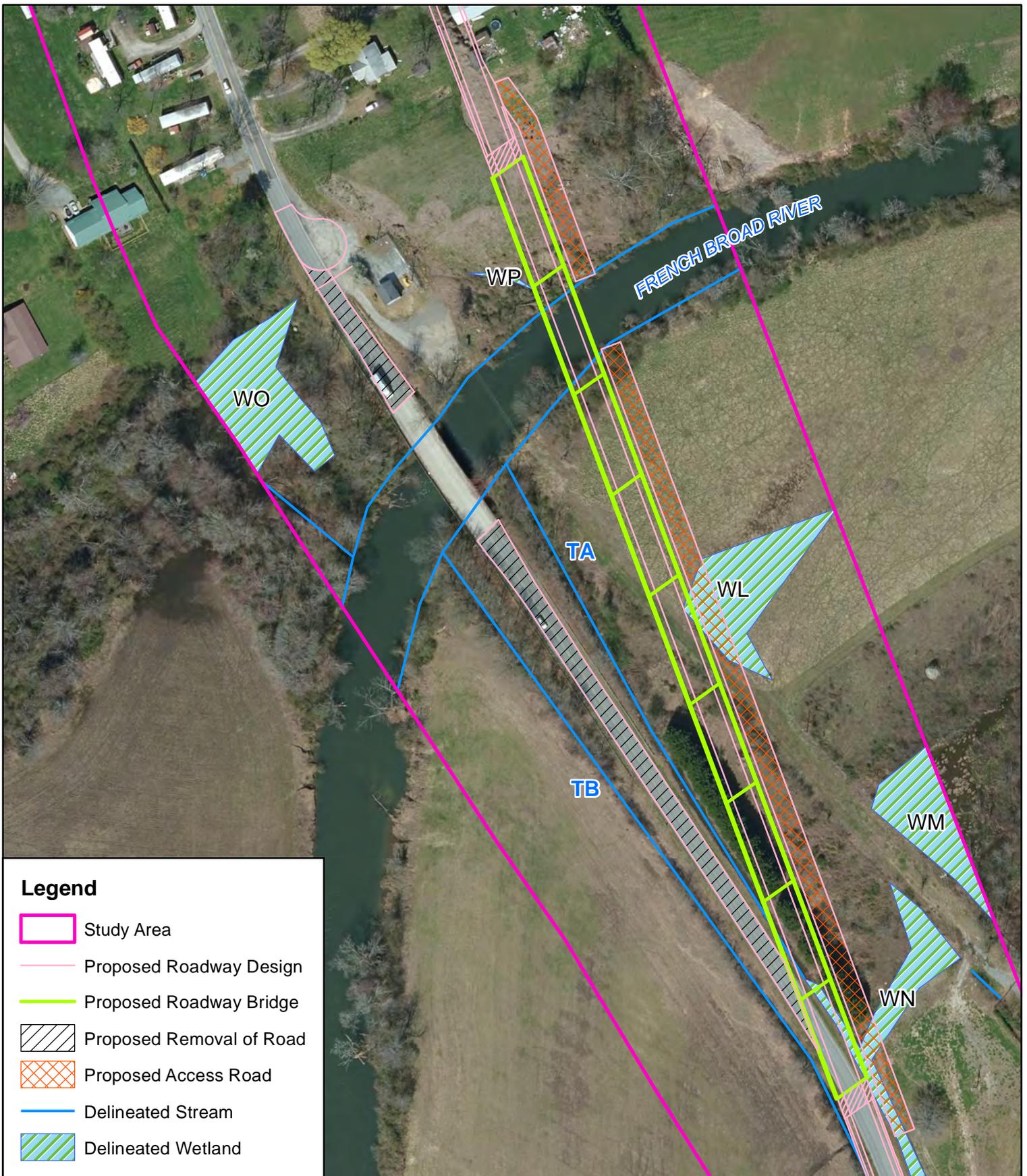
Legend

-  Study Area
-  Additional Easement Area
-  Road
-  Delineated Stream
-  Delineated Wetland
-  Delineated Pond
-  NRHP Eligible Sites



Data Source: HNTB, Transylvania Co GIS, NCDOT
HNTB, May 2023

FIGURE 11
LOCATION OF EASEMENT
OUTSIDE OF STUDY AREA
 STIP Project No. R-5763
 Improvements to Wilson Road from US 276
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 Brevard, Transylvania County

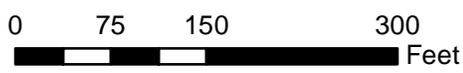


Legend

-  Study Area
-  Proposed Roadway Design
-  Proposed Roadway Bridge
-  Proposed Removal of Road
-  Proposed Access Road
-  Delineated Stream
-  Delineated Wetland

FIGURE 2

CONSTRUCTION ACCESS ROAD AT
 FRENCH BROAD RIVER BRIDGE
 STIP Project No. R-5763
 Improvements to Wilson Road from US 276
 to Old US 64/Old Hendersonville Hwy
 Brevard, Transylvania County



Data Source: HNTB, Transylvania Co GIS, NCDOT
 HNTB, May 2023