219 Meyersdale to Old Salisbury Rd

Archival Study and Archaeological Assessment

October 2023 (Amended Project Description - April 2025)

US 6219, Section 050
Transportation Improvement Project
Meyersdale, PA to Old Salisbury Road, MD

Somerset County, Pennsylvania & Garrett County, Maryland

pennsylvania
DEPARTMENT OF TRANSPORTATION

MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

AMENDED 2025 PROJECT DESCRIPTION REVISIONS

Based on the design change from the Draft Environmental Impact Statement (2024) to the Final Environmental Impact Statement (2025) at the northern end of the project area, the description of the Common Segment Improvements has been updated and included below.

It has been confirmed that these updates fall within the current study area discussed in this report.

All impact information for this subject Appendix is discussed in Chapter 3 of the Final Environmental Impact Statement.

2 DETAILED ALTERNATIVES

2.3 Common Segment Improvements

The northern three miles in Pennsylvania all follow the same alignment, starting from the existing Meyersdale interchange. In addition to the three miles being on the same alignment, other improvements described below are being proposed. These improvements include upgrades to portions of Mason-Dixon Highway, an extension of Mountain Road from its northern terminus to Fike Hollow Road on the east side of U.S. 219, in addition a cul-de-sac of Hunsrick Road, and cul-de-sacs on the bisected Clark Road are proposed. These improvements are intended to ensure that local traffic has continued access. These improvements are included with all alternatives being considered, other than the No Build Alternative. The scope of these proposed improvements is outlined below and depicted in **amended Figure 1**. The numbers below correspond to the number on the figure, illustrating the location of the improvement. Stormwater management facilities, which would result in the need for additional right-of-way and environmental impacts have also been incorporated into the design, as shown on **amended Figure 1**.

2.3.1 Mountain Road

As a result of the Hunsrick Road Bridge removal, a new roadway would be constructed: the Mountain Road Extension. This new roadway would connect existing Mountain Road (T-824) with Fike Hollow Road (T-363) and would parallel the new U.S. 219 alternative along the eastern side. This new connector roadway would provide access from Mountain Road to U.S. Business Route 219 (SR 2047) near the Meyersdale Interchange. The proposed typical section for the Mountain Road Extension includes two 9-foot travel lanes and 2-foot outside shoulders. The design speed is anticipated to be 25 miles per hour.

Prior to the opening of the Meyersdale Bypass, Mason-Dixon Highway carried U.S. 219. After the Meyersdale Bypass opened, PennDOT transferred ownership and maintenance of Mason-Dixon Highway to Summit Township. Following completion of a new U.S. 219

alternative proposed under this study, ownership of Mason-Dixon Highway is to be transferred back to PennDOT as part of re-routed traffic patterns in the area.

2.3.2 Clark Road

Clark Road (T-353) extends west from Mountain Road (T-824) to existing U.S. 219. Due to topographical and geometric constraints, providing a grade separated crossing of a new U.S. 219 alternative proposed under this study was not practical. It was determined Clark Road should be bisected where it crosses a new alternative of U.S. 219 proposed under this study. A cul-de-sac would be placed at each end of the roadway where it intersects the U.S. 219 right-of-way. The eastern side of Clark Road would maintain access to U.S. Business 219 near the Meyersdale interchange via Mountain Road, the Mountain Road Extension, and Fike Hollow Road.

2.3.3 Hunsrick Road Extension

Improvements made to tie a new U.S. 219 alternative into existing U.S. 219 require the removal of the existing Hunsrick Road Bridge (SR 2102). Due to geometric and intersection sight distance constraints at the intersection of Hunsrick Road (T -355) and Mason-Dixon Highway (T-355), it was determined that the Hunsrick Road Bridge would not be replaced and Hunsrick Road would terminate on the east side of U.S. 219.

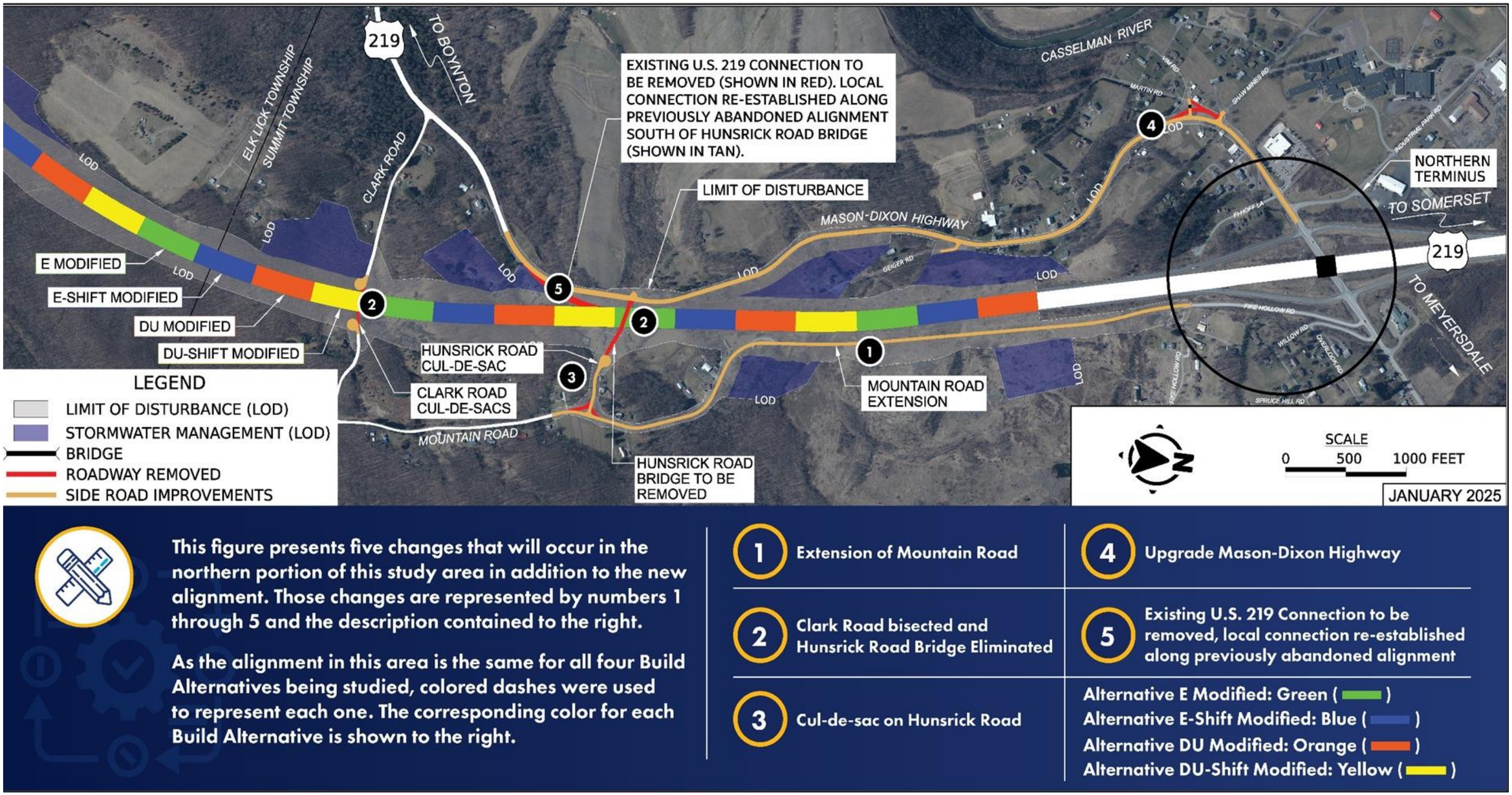
Hunsrick Road currently extends northwest from the intersection with Mountain Road to the Hunsrick Road Bridge. With the removal of the Hunsrick Road Bridge and proposed improvements associated with the Mountain Road Extension, a cul-de-sac would be placed at the northern end of Hunsrick Road. The intersection of Mountain Road with Hunsrick Road would be realigned and maintained. Access to property along Chipmonk Lane would be maintained from Mason-Dixon Highway.

2.3.4 Mason-Dixon Highway

The Mason-Dixon Highway (T-355) would be improved between Hunsrick Road and the U.S. 219 Meyersdale Interchange in accordance with PennDOT's Resurfacing, Restoration, and Rehabilitation (3R) design criteria, using a design speed transition from 55 mph to 35 mph. The upgrades are roughly 1.3-miles in length, starting near Hunsrick Road and ending at the U.S. 219 Meyersdale Interchange.

2.3.5 Existing U.S. 219 Connection to be Removed

Existing U.S. 219 would be severed, and a local connection would be re-established immediately south of the existing Hunsrick Road bridge along the previously abandoned roadway alignment. This new roadway would become Business U.S. 219.



Amended Figure 1: Additional Improvements in Northern Portion of Study Area

Archival Study and Archaeological Assessment

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Transportation Improvement Project
Meyersdale, PA to Old Salisbury Road, MD

Somerset County, Pennsylvania & Garrett County, Maryland

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Abstract

This archival study and archaeological assessment examines the preliminary archaeological APE for the portion of the US 6219 Section 050 Transportation Improvement Project within Garrett County, Maryland. The proposed project will include the construction of a new, 8-mile, four-lane highway in Garrett County, Maryland, and Somerset County, Pennsylvania. The APE in Maryland encompasses 83.69 hectares.

NTM conducted desktop research, a pedestrian reconnaissance, and geomorphological field investigations to evaluate historic and prehistoric archaeological potential within the APE. Environmental factors such as slope gradient, soil drainage, and distance to perennial streams and established transportation corridors, as well as extensive historic and modern disturbances, limit archaeological potential within the APE.

Nearly 60% (50.08 hectares) of the APE was previously examined during Phase I, II, and III archaeological field studies conducted for proposed improvements to US 219 from I-68 to north of Old Salisbury Road between 2015 and 2017. The archaeological resources that were identified within the APE during these studies have either undergone mitigation in advance of recent roadway construction or were determined not eligible for listing in the NRHP. NTM recommends that portions of the APE that have been previously tested for archaeological resources do not require additional work.

An abandoned, modern sugar camp with scattered foundation stones that may pre-date the modern camp was noted within the APE in a Maryland Inventory of Historic Properties Form prepared for the Markowitz Property (G-I-A-139) in 2003. NTM recommends field survey in this location. Additional small, unmapped extraction camps associated with western Maryland's historic coal mining, lumbering, ironmaking, or maple syrup industries may be present on undisturbed, level to gently sloping, well-drained portions of the APE.

NTM determined that 21.83 hectares (65%) within the portion of the APE that has not been tested have no prehistoric archaeological potential due to disturbance from roadway construction, mining, or development; 9.8 hectares (29.2%) have low prehistoric archaeological potential, and 1.98 hectares (5.8%) have moderate to high prehistoric archaeological potential. NTM recommends testing landforms within the APE identified as having low, moderate, and high probability for prehistoric resources.

NTM recommends consultation with Maryland Historical Trust archaeologists to develop an appropriate Phase I archaeological survey strategy for addressing potential historic and prehistoric archaeological resources within the APE.

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APPENDICES

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1.0 INTRODUCTION

This report documents the results of an archival study and archaeological assessment completed for the US 6219 Section 050 Transportation Improvement Project in Somerset County, Pennsylvania and Garrett County, Maryland (**Appendix 1, Figure 1**). The proposed project entails the construction of an 8-mile, four-lane limited access facility from the southern terminus of the Meyersdale Bypass in Pennsylvania to the newly constructed portion of US 219 in Maryland. This report focuses on the 2-mile project corridor in Maryland; a similar study of archaeological sensitivity within the portion of the study area in Pennsylvania has been documented separately by The Markosky Engineering Group, Inc. The project (Federal Project #X097-166) is a collaboration between the Maryland State Highway Administration (MSHA), the Pennsylvania Department of Transportation (PennDOT), and the Federal Highway Administration (FHWA).

This report was prepared in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations found at 36 CFR Part 800 (as amended), as well as the National Environmental Policy Act of 1969, as amended, Maryland Historical Trust Act of 1985 as amended, the State Finance and Procurement Article §§ 5A- 325 and 5A-326 of the Annotated Code of Maryland. Field investigations and reporting were conducted in accordance with the Maryland Historical Trust's *Standards and Guidelines for Archaeological Investigations in Maryland* (Shaffer and Cole 1994).

Background research, a geomorphological assessment, and pedestrian reconnaissance were completed within the study area by NTM Engineering, Inc. of Dillsburg, Pennsylvania in October 2022 and March 2023. Paula R. Miller served as principal investigator and was the primary author of this report. The geomorphological assessment was conducted by Corey Hovanec. The historic context was prepared by Elsie Parrot. The pedestrian reconnaissance was conducted by Paula R. Miller and Corey Hovanec. Report figures were prepared by Corey Hovanec. Qualifications of primary researchers are provided in **Appendix 2**.

1.1 Project History

The "US 219, I-68 (Maryland) to Somerset, Pennsylvania Needs Analysis", prepared by the Pennsylvania Department of Transportation (PennDOT) in 1999, identified two projects with independent utility and logical termini on US 219. These projects were: US 219, Section 019 (currently Section 050) (from I-68 in Maryland to the southern terminus of the Meyersdale Bypass in Pennsylvania) and US 219, Section 020 (from the northern terminus of the Meyersdale Bypass to Somerset, Pennsylvania).

Preliminary engineering and work towards a Draft Environmental Impact Statement (DEIS) for US 219, Section 019, originally began in 2001 by PennDOT and the Maryland Department of Transportation/ Maryland State Highway Administration (MDOT/SHA) but was put on hold in 2007 due to funding constraints. Since that time, PennDOT has

completed construction of US 219, Section 020, Meyersdale to Somerset, which opened to traffic in 2018.

The US 219, Section 020 project involved construction of a new 11-mile, four-lane, limited access roadway extending from the northern end of the Meyersdale Bypass of US 219 (a four-lane limited access roadway) to the southern end of the existing four-lane limited access US 219, south of Somerset.

The US 6219 Section 050 project was re-started in 2014 as a Planning and Environmental Linkage (PEL) study. The study was completed in July 2016 and recommended two alignments that could move forward into the National Environmental Policy Act (NEPA) process: Alignments E and E-Shift. The PEL study also identified an independent, stand-alone breakout project within these two alignments in Maryland: from I-68 to Old Salisbury Road. This 1.4-mile project was advanced, and construction was completed in 2021.

1.2 Study Area Description and Location

This project was re-started in 2020 and includes the proposed construction of an 8-mile (6 miles in Pennsylvania and 2 miles in Maryland), four-lane limited access facility on new alignment from the end of the Meyersdale Bypass in Somerset County, Pennsylvania to the newly constructed portion of US 219 in Garrett County, Maryland.

The study area extends approximately 8 miles from the southern end of the Meyersdale Bypass in Somerset County, Pennsylvania south to US 40 in Garrett County, Maryland. The study area encompasses portions of Elk Lick and Summit Townships in Somerset County, Pennsylvania, and the northeastern corner of Garrett County, Maryland. The study area is mostly rural, with residential and small commercial facilities, as well as larger amounts of forested areas and farmland.

1.3 Project Purpose and Need

The purpose of the US 6219 Section 050 Meyersdale to Old Salisbury Road project is to complete Corridor N of the Appalachian Development Highway System (ADHS), to improve the system linkage in the region, provide safe and efficient access for motorists, and provide a transportation infrastructure to support economic development within the Appalachian Region.

The project needs identified for this project are that existing US 219 does not provide efficient mobility for trucks and freight, there are numerous roadway and geometric deficiencies present along the existing US 219 alignment, and the existing roadway infrastructure is a limiting factor in economic development opportunities in the Appalachian Region.

1.4 Detailed Alternatives

The proposed project alternatives have been divided into three segments, Segment 1, Segment 2, and Segment 3. Segment 1 is also known as Segment 1 DU-E. Segment 2 has segment options, Segment 2 DU and Segment 2 E, and Segment 3 has two segment

options, Segment 3 DU-E and Segment 3 DU-E Shift. When combined, these segments make up the four alternatives under consideration. The segments and a No Build Alternative are being evaluated within the study area (**Appendix 1, Figure 2**). The alternatives under consideration are the following:

- No Build Alternative
- Segment 1 DU-E + Segment 2 DU + Segment 3 DU-E
- Segment 1 DU-E + Segment 2 DU + Segment 3 DU-E Shift
- Segment 1 DU-E + Segment 2 E + Segment 3 DU-E
- Segment 1 DU-E + Segment 2 E + Segment 3 DU-E Shift

1.4.1 No Build Alternative

The No Build Alternative involves taking no action, except routine maintenance, along US 219. The existing two-lane alignment of US 219 between Meyersdale, Pennsylvania and Garrett County, Maryland would remain. No new alignments or additional roadway would be constructed.

1.4.2 Proposed Roadway Layout

Segment 1 DU-E, Segment 2 DU, Segment 2 E, Segment 3 DU-E, and Segment 3 DU-E Shift are being evaluated with a consistent roadway layout, also known as a typical section. The typical section for each segment provides a four-lane divided limited access highway with 12-foot-wide travel lanes, 8-foot-wide inside shoulders, and 10-foot-wide outside shoulders. The width of the median between the inside edges of northbound and southbound travel lanes is 60 feet. In cut sections, where excavation will be required for construction, a proposed swale is located 15 feet outside the edge of the roadway shoulder. The backslope of the swale extends for 5 feet at a 4:1 slope, then continues at a 2:1 slope, until intersecting the existing ground. In fill sections, where fill must be placed for construction, a 10:1 slope extends from the outside roadway shoulder for 6 feet, then continues at a 2:1 slope until intersecting existing ground.

1.4.3 Segment 1 DU-E

Segment 1 DU-E is a 3-mile portion of the proposed alternative, beginning at the north end of the study area at the existing Meyersdale interchange. The segment includes portions of the existing US 219 roadway and the surrounding area, including along Mountain Road and Hunsrick Road. The segment continues to the south of Hunsrick Road, where it diverges from existing US 219 and crosses Clark Road. The segment then turns slightly west, avoiding the Pennsylvania State Gamelands 231. The segment then traverses along the bottom of Meadow Mountain. Stormwater management facilities have also been incorporated into the design.

Improvements to the existing US 219 roadway (Mason-Dixon Highway), Hunsrick Road Extension, Mountain Road, and Clark Road are proposed as part of the construction of Segment 1 DU-E. These improvements are intended to ensure that local traffic has continued access.

1.4.4 Segment 2 DU

Segment 2 DU turns west from Segment 1 DU-E towards existing US 219 and is sited between existing US 219 and Segment 2 E for about three miles. Segment 2 DU runs west across Piney Run Road and Piney Creek until it crosses Greenville Road, about 0.5 miles southeast of Salisbury Borough, and turns south. Segment 2 DU rejoins Segment 2 E at the Pennsylvania/Maryland border. From the Pennsylvania/Maryland border, Segment 2 DU and Segment 2 E angle further towards existing US 219. About 0.1 mile north of the Pennsylvania/Maryland border, there are preliminary plans for a PennDOT maintenance facility along Segment 2 DU, on the western side of the proposed US 219 alternative, with access to US 219 from the southbound lanes. Stormwater management facilities have also been incorporated into the design.

1.4.5 Segment 2 E

After separating from Segment 1 DU-E, Segment 2 E continues southwest for approximately one mile before spanning Piney Run Road. As Segment 2 E crosses Piney Creek and Greenville Road, it angles west towards existing US 219 and Segment 2 DU for 1.3 miles. Subsequently, Segment 2 E rejoins Segment 2 DU at the Pennsylvania/Maryland border. Segment 2 E and Segment 2 DU follow approximately the same path for approximately 0.8 miles, from the Pennsylvania/Maryland border until the beginning of Segment 3. Approximately 0.1 mile north of the Pennsylvania/Maryland border, there are preliminary plans for a PennDOT maintenance facility along Segment 2 E, along the eastern side of the proposed alternative, with access to US 219 from the northbound lanes. Stormwater management facilities have also been incorporated into the design.

1.4.6 Segment 3 DU-E

Segment 3 DU-E continues the proposed alternative south of the Pennsylvania/ Maryland border and ties back into the newly constructed section of US 219, south of Old Salisbury Road. The Segment 3 DU-E alternative is located approximately 0.05 miles east of Old Salisbury Road.

1.4.7 Segment 3 DU-E Shift

Segment 3 DU-E Shift is angled southwest, similarly to Segment 3 DU-E, and ties into the newly constructed section of US 219 at the same location. However, Segment 3 DU-E Shift is shifted eastward, farther from Old Salisbury Road, while avoiding impacts to the Little Meadows Historic District to the extent possible.

2.0 RESEARCH DESIGN

The preliminary archaeological area of potential effects (APE) is defined as a 250-foot buffer from the centerline of the alternative alignments, including additional area beyond this buffer based on the anticipated limits of disturbance (LOD) for the preliminary design as of March 1, 2023. The buffer is intended to provide room for adjustments as design progresses. The APE encompasses 464.5 hectares within Pennsylvania and Maryland.

The purpose of the Archival Study and Archaeological Assessment is to evaluate the sensitivity of the APE for the presence of archaeological resources, and to provide guidance for future field surveys. To accomplish these objectives, the existing body of environmental, prehistoric, and historic literature and data pertaining to the APE were reviewed, and a field reconnaissance was conducted to identify conditions that may limit or contribute to archaeological sensitivity within the APE, such as the presence and nature of cultural features and earth disturbance. Geomorphological field investigations were completed to assess alluvial/colluvial landforms within the APE for prehistoric archaeological potential. The scope of work is provided in **Appendix 3**.

The environmental background was compiled through desktop research, using state-wide geological maps, USGS topographic maps, county soil surveys, and historic and modern aerial imagery to identify the underlying geology, soils, landforms, and hydrology within the APE.

The historic context was compiled using resources found through desktop research, as well as materials found at the Grantsville Public Library, Garrett County Historical Society website, and in the Medusa database. Major sources of information include *History of Western Maryland* by J. Thomas Scharf, *Grantsville, Garrett County, Maryland: A History of the Town and Vicinity* by Sara Stanton Jarrett, and the Garrett County Historical Society Journal, *The Glades Star*.

During the pedestrian reconnaissance, the ground surface was examined to identify cultural features, disturbances, and/or geomorphological conditions which may limit or contribute to archaeological potential within the APE. Digital photographs were taken, and any features or disturbances were recorded on project mapping.

The geomorphological investigation examined the soils and landforms within the APE to assess their potential to contain prehistoric and/or historical archaeological resources. Assessments are based on considerations of the type and age of deposits, the stability of the landscape, and the environmental conditions affecting prehistoric through modern-day anthropogenic utilization of the landscape.

3.0 ENVIRONMENTAL OVERVIEW

The 83.69-ha APE in Maryland is situated within Maryland Archaeological Research Unit 24 (Youghiogheny-Casselman Drainages) (**Appendix 1, Figure 3**). The project is in the Grantsville District of the Allegheny High Plateau Section of the Appalachian Plateaus Physiographic Province, which is characterized as a broad, synclinal valley underlain by the Allegheny and Conemaugh Formations, and markedly less dissected than the adjacent Avilton District (Reger and Cleaves 2008). The landform is moderately to thoroughly dissected. Drainage patterns within the Allegheny High Plateau Section are dendritic, with elevations ranging from 870 to 3360 feet above mean sea level (amsl). The Grantsville District is bounded to the east by the crest of Meadow Mountain, to the west by the crest of Negro Mountain, and to the south by Deep Creek Lake, Maryland's largest freshwater lake.

The project is within the 23,787.27-hectare Casselman River watershed of the Youghiogheny River sub-basin and Upper Ohio River basin. Meadow Run, a first order stream whose source is Little Meadow Lake just south of the study area, flows northward approximately 0.3 miles east of the study area. Shortly after entering Pennsylvania, Meadow Run flows north-northwest to join the Casselman River just west of Salisbury. From Salisbury, the Casselman River extends northwest through Garrett to Rockwood, where it bends to the southwest and flows through Fort Hill before draining into the Youghiogheny River at the town of Confluence, located at the western edge of Somerset County. The Youghiogheny River flows north-northwest through Westmoreland County, joining the Monongahela River at McKeesport (Allegheny County). From McKeesport, the Monongahela continues northwest to Pittsburgh, where it converges with the Allegheny River to form the Ohio River.

The bedrock underlying the APE consists of gray and brown claystone, shale, sandstone, and siltstone (with several coal beds) of the Pennsylvanian-aged Conemaugh Formation. The Allegheny and Pottstown Formations, which also formed during the Pennsylvanian period, lie just east of the study area, on the eastern side of Meadow Run (Cleaves, Edwards, and Glaser 1968). Approximately 15.27 hectares within the APE have been mined for coal.

Soils mapped within the APE are on upland landforms ranging from 0 to at least 50% slope (**Appendix 1, Figure 4**). The majority of the soil series are categorized as channery, stony, or very stony, and several of the soil types, typically channery silt loams on landforms with more than 20% slope, are moderately to severely eroded. Although present within the APE, poorly and somewhat poorly drained soils (mapped on benches, upland flats, and draws) are limited in extent. There are no alluvial soils mapped within the study area; soils in the Brinkerton, Andover, and Ernest series are colluvial. **Table 1** displays the characteristics of the soils mapped within the study area (Soil Survey Staff, NRCS, USDA 2019). Soil series that have favorable and unfavorable characteristics for prehistoric archaeology based on slope gradient and drainage class are shown on **Appendix 1, Figure 5**.

Table 1: Soils Mapped in the Preliminary Archaeological APE

Soil Symbol	Soil Type	Slope	Drainage	Landform
Ar	Armagh silt loam	0-8%	Poorly drained	Upland flats
BrB	Brinkerton and Andover silt loams	3-8%	Poorly drained	Draws
BsC	Brinkerton and Andover very stony silt loams	0-15%	Poorly drained	Draws/footslope
ClE	Calvin and Lehew channery loams	35-50%	Well drained	Hillslopes (backslope)
CoB	Cavode silt loam	0-8%	Somewhat poorly drained	Benches
CuB	Cookport and Ernest very stony silt loams	0-8%	Moderately well drained	Hillslopes
CuD	Cookport and Ernest very stony silt loams	8-25%	Moderately well drained	Hillslopes
DbB	Dekalb channery loam	0-10%	Well drained	Ridges
DbC2	Dekalb channery loam, moderately eroded	10-20%	Well drained	Mountain slopes
DgC	Dekalb and Gilpin very stony loams	0-15%	Well drained	Mountain slopes
DgD	Dekalb and Gilpin very stony loams	15-25%	Well drained	Mountain slopes
ErB	Ernest silt loam	3-8%	Moderately well drained	Hillslopes (footslope)
GnC2	Gilpin channery silt loam	10-20%	Well drained	Hillslopes (shoulder and backslope)
GnD2	Gilpin channery silt loam, moderately eroded	20-30%	Well drained	Hillslopes (backslope)
GnD3	Gilpin channery silt loam, severely eroded	20-35%	Well drained	Hillslopes/summit
SrF	Stony land, steep	25-100%	Well drained	----
WhB2	Wharton silt loam	3-8%	Moderately well drained	Hillslopes (summit, shoulder, backslope)
WhC2	Wharton silt loam	8-15%	Moderately well drained	Hillslopes (summit, shoulder, backslope)

The study area is within the Mixed Mesophytic Forest region of the eastern United States. This region extends along the Allegheny and Cumberland fronts from southwestern Pennsylvania to northern Alabama, through western Maryland, southeastern Ohio, most of West Virginia, western Virginia and North Carolina, eastern Kentucky, and east central Tennessee, and is characterized by temperate broadleaf and mixed forest biomes. Although few, if any, climax forests remain extant in the region due to historic timbering

and subsequent mining, sugar maple, beech, red oak, and tuliptree were at one time abundant, along with birch, ash, chestnut oak, walnut, red maple, basswood, cherry, red elm, sweet birch, chestnut, shellbark hickory, and an occasional white pine and hemlock (Braun 1950). The forests in the study area today represent secondary or tertiary growth, and lack the species diversity within the canopy, understory, and herbaceous that was originally present. Native fauna would have included elk, black bear, white-tailed deer, fox, raccoon, squirrel, hare, beaver, and river otter, along with turkey and other birds, fish, shellfish, reptiles, and amphibians.

4.0 REGIONAL CONTEXTS

4.1 Historic Context

When Maryland was formed in 1696, all of western Maryland was included within Prince George's County. In 1748, Frederick County was formed from the western portion of Prince George's County. The French and Indian War (1754-1763) brought troops and forts to the area. Commissioned with expelling the French from the Ohio Valley by taking Fort Duquesne (in present-day Pittsburgh), in 1755, General Edward Braddock, aided by George Washington, worked to clear a road between present-day Cumberland, Maryland, and Fort Duquesne. The resultant Braddock's Road, which crossed through the study area, followed an established Native American route known as Nemacolin's Path (Garrett County Historical Society 1941). Remnant traces of this historic route are documented just east and west of the APE.

European settlement of the hilly, wooded terrain of western Maryland was slow and began comparatively late, with the first 100 acres claimed in 1761 by Joseph Tomlinson (Stanton Jarrett 2012). During the last several decades of the eighteenth century, the lands of western Maryland were reserved for settlement by Maryland Revolutionary War soldiers, which delayed the arrival of larger numbers of settlers (Garrett County Historical Society 1941). In 1776, Montgomery and Washington Counties were formed from portions of Frederick County. In 1789, Washington County was split to form Allegany County to the west.

European settlement of the portion of Allegany County that would, in 1872, become northern Garrett County, was heavily influenced by the construction of Braddock's Road and later the National Road. For several decades after its construction, Braddock's Road was used by settlers heading west to Ohio and beyond. In 1806, an Act of Congress signed by President Thomas Jefferson called for a road connecting the waters of the Atlantic with those of the Ohio River. Known alternately as the National Pike, Cumberland Road, Cumberland Pike, and Western Pike, the National Road was constructed from Cumberland, Maryland through western Maryland, and southwestern Pennsylvania, to Wheeling, West Virginia by 1818. The road was then continued west through Ohio, Indiana, and Illinois before funding ran out. In western Maryland and southwestern Pennsylvania, the route of the National Road largely approximates Braddock's Road. By the late 1920s, with the creation of the Federal Highway System, the National Road became part of US Route 40.

During the early and mid-nineteenth century, inns and wagon stands were constructed along the National Road to accommodate travelers, and some settlers began to establish farmsteads in the area. The property owned by Joseph Tomlinson and known as the Little Meadows (MHT Inventory G-I-A-012) was adjacent to Braddock's Road and was one of the earliest settled parcels of Garrett County. There, Tomlinson built an inn known as the Red House, and his son Jesse built a stone inn ca. 1818, which still stands as of October 2022. During the late eighteenth and early nineteenth centuries, the Tomlinson family built several more buildings, including a mill and store, on a property along the Little Youghiogheny (Casselman) River (Scharf 1882). This property, located about 2.5 miles west of the Little Meadows along the National Road, was known as the Little Crossings. Although the earliest mill at the Little Crossings was replaced in the mid-nineteenth century, local historians have written that part of one of the Tomlinson buildings may survive, as part of the building which now houses the Penn Alps restaurant (Stanton Jarrett 2012).

The town of Grantsville developed just west of the Little Crossings in response to large amounts of through-traffic on the National Road. The area attracted settlers from varied ethnic backgrounds, including English, German, Swiss, and French. Settlers' religious affiliations included Amish, Mennonite, and Methodist. The introduction of railroads in the 1850s diverted traffic from the National Road, and the road fell into disrepair during the 1870s. The county then assumed responsibility for its upkeep (Stanton Jarrett 2012).

The western expansion of the railroads in the mid- to late nineteenth century brought Irish, Scotch, and Welsh workers to western Maryland for coal mining and timbering and enabled the growth of the tourism and summer mountain resorts in the region. However, by the early twentieth century, spurred by the establishment of the Federal Highway System and the convenience and increased affordability of motor vehicles, the use of railroads for personal travel and the transportation of goods began to steadily decline.

Prior to 1850, farms in Somerset County, Pennsylvania, just north of Grantsville, had relatively low values, low levels of mechanization, and high proportions of unimproved land due to the heavily forested and mountainous landscape (McMurray 2013). It is reasonable to assume that farms in northern Garrett County had similar conditions. Despite the challenges of the terrain, the soil in Garrett County was fertile and there were abundant natural resources including sugar maples (Scharf 1882). Historically, western Maryland played a key role in the U.S. maple syrup industry. In 1928, the major production center was Garrett County; nearly every farm had a maple camp (TDR Admin 2007). Streams provided fish and waterpower for mills. Farms produced rye, buckwheat, and oats, as well as wool and butter (Scharf 1882).

Timber, coal, and iron companies were also prominent in the area. They owned large amounts of land and employed many local residents. The first small-scale coal mining operation began north of the Little Meadows at the end of the eighteenth century and supplied blacksmiths along the National Road (Stanton Jarrett 2012). There was also a strong relationship between agriculture and industry, and it became very common in the late-nineteenth and early-twentieth centuries for men to split their working time between their farms and off-farm work. Farms in the area struggled heavily between 1920 and 1960, especially during the Great Depression, and many farming families sold land and

focused more on their off-farm sources of income while continuing with small-scale farming for subsistence (McMurray 2013). The population of Grantsville grew between 1900 and 1940, and then declined during the 1940s and 1950s when residents left to join the armed services or take jobs in defense contracting during World War II (Stanton Jarrett 2012).

As road improvement projects determined settlement patterns during the eighteenth century, they also influenced mid-twentieth-century development. Increases in both traffic and funding for road work led to more development along major roadways in the twentieth century, including those in Garrett County. The section of US 219 within the project area was improved several times during the early twentieth century, and in the 1950s a section of it was relocated west to a new alignment, now known as Chestnut Ridge Road. Interstate 68 was built during the 1960s and 1970s south of the existing junction of Chestnut Ridge Road (US 219) and the National Road (US 40), making the area an even more important meeting point. Between 1946 and 1982, many commercial buildings and residences were constructed to serve the needs of motorists near the junction of Chestnut Ridge Road and the National Road. The population of Garrett County grew from approximately 20,420 in 1960 to a high of about 30,000 in 2010. Today, the county population is approximately 28,800, and the town of Grantsville has a population of about 1,000.

4.2 Prehistoric Context

The predictive model for archaeological resources prepared in December 2003 for an earlier version of this project, as well as recent Phase I, II, and III archaeological studies for improvements to US 219 from I-68 to north of Old Salisbury Road, contain comprehensive regional prehistoric contexts for the study area (Coppock et al. 2003, Millis et al. 2019). These reports should be consulted for the study details.

5.0 PEDESTRIAN RECONNAISSANCE AND GEOMORPHOLOGY

NTM conducted the pedestrian reconnaissance in October 2022 and March 2023. The reconnaissance examined the landforms within the APE to identify and document the nature and extent of ground disturbance as well as other factors that may limit archaeological potential within the APE, and to identify surface cultural features or artifact scatters, if present. Overview photographs of the APE are provided in **Appendix 4, Photographs 1-15**. Photograph locations are shown on **Figure 6, Sheets 1-3**.

Large, naturally occurring rocks cover much of the surface throughout the wooded portions of the APE, particularly to the north. During the October 2022 reconnaissance, very little, if any, water was flowing within many of the stream channels, and the landscape was relatively dry. The March 2023 reconnaissance was undertaken after a brief but heavy rain, and many of the fields had standing water. The primary sources of disturbance within the APE include modern construction/development and twentieth-century mining. Logging activities were ongoing within a portion of the APE during the pedestrian reconnaissance, resulting in variable ground disturbance and surface obstructions

(**Appendix 4, Photographs 16 and 17**). No rockshelters, artifact scatters, or other cultural features were observed.

The geomorphological investigation was completed in October 2022. This study examined the soils and landforms within the APE to assess their potential to contain prehistoric and/or historical archaeological resources. Assessments are based on considerations of the type and age of deposits, the stability of the landscape, and the environmental conditions affecting prehistoric through modern-day anthropogenic utilization of the landscape. The investigation included background research, a physical examination of the landscape, and the examination of soil profiles visible along stream banks and obtained through hand auger borings. In areas where visible surface conditions preclude the potential for archaeological resources, such as those exhibiting extensive disturbance or submerged below standing water, only cursory observations were made.

KCI's stream and wetland locations, nomenclature, and classifications are referenced in the following discussion and depicted on figures throughout this report in order to maintain consistency with their wetland assessment and delineation reporting for this project. The soil profiles were examined and described in accordance with the standard methods and nomenclature for the field description of soils as prescribed by the Natural Resources Conservation Service (Schoeneberger et al. 2012).

The northern section of the APE has a number of low-volume tributaries draining seeps that originate in steeply sloped, forested areas with surface boulders, as well as a twentieth-century impoundment left by mining. Flow patterns are dendritic.

WL014 is a perennial stream that appears to originate from a seep near the eastern edge of the forest on the Markowitz property (**Appendix 4, Photograph 18**). The stream may also collect runoff from the agricultural field to the east. The north-flowing channel is large and deeply incised. A minimal amount of water was flowing at the time of investigation. The area to the west of WL014, between its head and its confluence with WL016, is steeply sloped and rocky, with little to no soil development. The terrace to the east of WL014 is relatively flat and primarily wooded, with a cultivated field at its eastern margin. Soil examinations on the terrace (Boring 4) revealed a typical A-Bt upland profile (**Appendix 1, Figure 6, Sheet 1; Appendix 4, Photograph 19**). Archaeological shovel testing is recommended on the terrace landform. Deep testing is not anticipated.

As WL014 proceeds north past its confluence with WL016, the north-south slope lessens, and the valley widens. Flat stream benches are present at the base of the valley walls, elevated a foot or two above the active stream channel. Most areas along the stream channel are delineated wetlands and/or poorly drained, and are not testable (**Appendix 4, Photograph 20**). A soil examination (Boring 3) was conducted on the western stream bench within an area which was not saturated at the surface or delineated as a wetland (**Appendix 1, Figure 6, Sheet 1**). The profile consisted of 10 centimeters of a dark brown (10YR 3/3) silt loam A horizon overlying a yellowish brown (10YR 5/6) fine sandy loam B horizon that terminated on rock at 48 centimeters (**Appendix 4, Photograph 21**). The profile portrays a stable, non-alluvial landform. Archaeological shovel testing is

recommended in well-drained, level areas along this section of WL014. Deep testing is not anticipated along WL014.

WL014 remains within the very steeply sloped, western portion of the APE until it crosses into Pennsylvania. The eastern valley wall in the northern extent of the APE is more gently sloped, though still on a gradient that is greater than 10%. The surface is almost entirely boulders (**Appendix 4, Photograph 22**). Soil samples were attempted but were refused on rock at or immediately below the surface. There is no soil development in this area. No archaeological testing is recommended along the eastern hillside of WL014 or its summit.

WL013 is an intermittent tributary to WL014 that flows north from an impoundment associated with twentieth-century mining activities along the eastern edge of the APE (**Appendix 4, Photographs 23 and 24**). The impoundment is flanked by steep mounds of mine spoils (**Appendix 4, Photograph 25**). Soil samples attempted on the spoil piles reveal dense, compact, rocky, redeposited soils. WL013 is a result of modern mining activities and lacks a well-defined channel. Midway between the impoundment and WL013's confluence with WL014, the channel is lost as water flows beneath boulders (**Appendix 4, Photograph 26**). Water was present in the channel in only some areas. No archaeological testing is recommended in association with WL013.

WL016 is a perennial tributary to WL014 that flows north from a wetland situated just west of the APE (**Appendix 4, Photograph 27**). WL016 also receives water from WL019, which originates from a wetland that straddles the western edge of the APE. The channel of WL016 is well defined and deeply incised. There was no water present in the channel at the time of survey, but the channel characteristics and steep gradient suggest water flow has been powerful in the past or during occasions of heavy precipitation. No areas of less than 15% slope are associated with WL016, and no archaeological testing is recommended in association with this stream.

WL012 is an intermittent tributary to WL016 that appears to originate from a seep within a moderate- to steeply sloped area of the hillside (**Appendix 4, Photograph 28**). The stream channel is well-defined and deeply incised in steeper areas, and less well-defined and wider in gently sloped areas (**Appendix 4, Photographs 29 and 30**). Water was continually present within the channel, but volume was low at the time of the field investigation. A few relatively flat areas flank the stream approximately three-quarters of the way between its origin and confluence. These areas are poorly drained, as revealed by the presence of delineated wetlands (WP018) and numerous soil samples which revealed gleyed soils. Most of the area surrounding WL012 is steeply sloped. Any flat areas are poorly drained. No archaeological testing is recommended in association with WL012.

Significant, large-scale disturbances were observed along the southern boundary of the Maust property. These include very large mounds, pits, and ditches, likely resultant of twentieth-century mining (**Appendix 4, Photographs 31 and 32**).

WL010 and its tributary, WL009, are located approximately 1,500 feet southwest of the stream heads of WL012 and WL013 in a wooded area near the western edge of the APE

(**Appendix 4, Photographs 33 and 34**). Both ephemeral streams appear to originate from seeps or receive runoff from the nearby agricultural field. Both streams have very shallow channels, with no water present at the time of survey. Soil Borings 1 and 2 were retrieved via split spoon auger, one from each side of the channel (**Appendix 1, Figure 6, Sheet 2**). Boring 1, retrieved from the east side, had an upland profile consisting of 6 centimeters of a dark grayish brown (10YR 4/2) loamy Oe horizon, overlying 11 centimeters of a dark brown (10YR 3/3) silt loam A horizon. The Bt horizon, present 17 centimeters beneath the surface, was yellowish brown (10YR 5/6) silt loam, and terminated on rock at 28 centimeters. Boring 2 was similar. Archaeological shovel testing is recommended. Deep testing is not anticipated.

The southern extent of the project has a stream and wetland complex near the eastern edge of the APE, comprised of intermittent streams WL003, WL005, WL007 and WL008, perennial stream WL006, as well as wetland WL004. Although the area is now mostly wooded, topographic maps and aerial imagery indicate that this portion of the APE was extensively mined during the third quarter of the twentieth century, and none of these streams or wetlands are mapped or visible on aerial imagery that pre-dates the mining activities. The recent construction of US 219 and associated stormwater management (SWM) features further disturbed landforms in the southern portion of the APE.

WL003, WL005, and WL006 flow within a flat-bottomed valley along the base of a steep hillside to the west; all three streams are associated with wetland WL004, which stretches the length of the valley (**Appendix 4, Photographs 35 and 36**). WL007 funnels drainage from a recently constructed SWM basin at the top of the slope and receives run-off from the surrounding hillside before emptying into WL006. The source of WL008 is unknown; it flows only a short distance before also emptying into WL006.

The eastern slope adjacent to WL006 and WL005 is less steep than to the west but is still greater than 10%. Soil examinations in this area were refused just below the surface on rocky mine spoils (**Appendix 4, Photograph 37**). Further south, the surface to the east is comprised of exposed, flaggy sandstone (**Appendix 4, Photograph 38**). There are no areas which would require archaeological testing in the vicinity of this stream and wetland complex.

East of the newly constructed portion of US 219, and south of the northern SWM basin, the terrain is generally flat. Areas closest to the roadway are likely disturbed, but mature trees in the area between the hill summit and the US 219 right-of-way suggest this portion of the upland has not recently been disturbed. Soil examinations were attempted but were refused on rock at or immediately below the surface. The surface is comprised largely of boulders with minimal soil development in the crevices (**Appendix 4, Photograph 39**).

Within the last two years, a series of three SWM basins were constructed at the south end of the wetland complex to receive runoff from US 219. WL003 receives water from these basins and directs it into WL004 **(Appendix 4, Photograph 14)**. No water was visible in any of the SWMs at the time of the geomorphological study. There are no areas which would require archaeological testing in the vicinity of this SWM basin complex.

6.0 ASSESSMENT OF ARCHAEOLOGICAL POTENTIAL

Historic and prehistoric archaeological potential within the APE were assessed using a variety of factors to help inform testing strategies and to provide a contextual framework within which to evaluate the results of this investigation.

Phase I, II, and III archaeological field studies conducted between 2015 and 2017 for proposed improvements to US 219 from I-68 to north of Old Salisbury Road. comprehensively tested 50.08 hectares at the southern extent of the APE (Millis et al. 2019). Although the entire APE is generally discussed in Section 6 in order to provide context, NTM's assessments of archaeological potential focus on the 33.61 hectares of the APE that have not been subjected to archaeological survey in the past.

6.1 Historic Archaeological Potential

Historic maps, aerial photographs, written accounts, and professional cultural resources surveys were consulted to determine the potential for historic archaeological resources within the preliminary APE. The presence of extant historic buildings adjacent to the preliminary APE was also considered.

Maps from ca. 1797, 1820-1829, 1825, 1840, 1866, 1873, 1886, and 1982 were consulted, as well as aerial photographs taken in 1946 and 1975. Together, along with modern aerial imagery available on Google Earth, they illustrate the development and changing landscape of the study area. The earliest land grants in the region were issued in the 1760s. The ca. 1797 and ca. 1840 maps depict early roads, streams, topographic landmarks, and landowners; houses of worship are shown in 1797, while town names and sawmills are included in 1840 (**Appendix 1, Figures 7 and 8**). At this time, the major transportation corridor was just south of the APE; known as Braddock's Road, it would come to be known as the National Road in the early nineteenth century, and US 40 in the 1920s. Note that "Tomlinson" is identified as a landowner in the vicinity of the APE in both 1797 (likely Joseph Tomlinson) and in 1840 (likely Jesse Tomlinson) (**Appendix 1, Figures 7 and 8**).

An early route of what would become US 219 first appears on the 1840 map, extending south from Salisbury, Pennsylvania (**Appendix 1, Figure 8**). By 1873, a number of buildings are depicted to the west in the town of Grantsville, as well as post offices, hotels, schools, and sawmills across the broader region (**Appendix 1, Figure 9**). The region is depicted much the same in 1886 (**Appendix 1, Figure 10**). No buildings were mapped within or adjacent to the APE during the late eighteenth or nineteenth centuries.

The earliest aerial image of the land within the APE reveals that the preliminary APE was forested or under cultivation prior to 1946; several buildings, are visible south of the APE along the National Road, as well as several widely dispersed farmsteads, including that of Sidney Markowitz, are visible (**Appendix 1, Figure 11**).

The major period of regional growth occurred during the mid-twentieth century. A number of mid-twentieth-century properties, including ten single-family dwellings, a church, a shopping center, a commercial distribution warehouse, and a commercial garage/warehouse property, are visible along US 219 and Old Salisbury Road by 1975 (**Appendix 1, Figure 12**). However, due to changes in sanitation and trash removal during the post-war era, it is unlikely that significant archaeological resources are associated with these resources.

The mid- to late twentieth century also saw the expansion of strip and pit-mining across the region, including within and adjacent to the APE (**Appendix 1, Figures 12 and 13**). It is surmised that the full extent of historic mining activity within the APE is not reflected on the maps and images.

The ca. 264-acre Markowitz Property (Newman Farm) (G-I-A-139) straddles the Mason-Dixon Line and has been determined not eligible for listing in the NRHP. The Maryland Inventory of Historic Properties Form prepared for the Markowitz Property (G-I-A-139) in 2005 indicates that “a derelict modern-era sugar camp, located on the property line with the adjacent Palmer/Maust property, occupies the site of an earlier structure (as evidenced by scattered foundation stones)” (Hunter 2005). The form provides a photograph of the modern sugar camp remnants as they appeared in 2003, along with a scaled photograph location map. The potential resource has not been surveyed for archaeological resources. Remnants of the modern sugar camp and scattered foundation stones were not observed during NTM’s initial pedestrian reconnaissance, but a more intensive, systematic archaeological survey in the area indicated by the photograph location map may identify the structural remains and associated artifacts, if present (**Appendix 1, Figure 14**).

The Markowitz farmstead is approximately 150 feet east of the APE and includes a ca. 1865 dwelling and a highly altered Pennsylvania barn (**Appendix 1, Figure 14**). The original dwelling was reportedly a log I-house that was located downslope and to the east of the extant dwelling, further removed from the APE. A mill, also no longer standing, was situated to the east along Meadow Run. The historic farmstead included a summer kitchen and a spring house, both of which are no longer extant. However, these buildings would have been sited in proximity to the extant dwelling rather than within the APE. It is unlikely that archaeological features or artifacts associated with these buildings are within the APE.

The southernmost extent of the APE intersects the Little Meadows Archaeological District (18GA0323) (**Appendix 1, Figure 14**).The archaeological district extends outside the APE and is eligible for listing in the NRHP under Criterion A for its association with the French and Indian War and subsequent westward expansion; under Criterion B for its association with General Edward Braddock, Nemacolin, and George Washington; and under Criterion D for its ability to provide significant information regarding eighteenth-century exploration, early commerce and trade, transportation, and military (French and Indian War) history; the location, layout, and organization of the military encampment, multiple uses of the nineteenth-century Tomlinson Inn and its outbuildings, as well as the lifeways of the innkeepers and their free and enslaved employees; and the use of the Little Meadows landscape. The archaeological district includes two associated NRHP-

eligible sites within the preliminary APE: Braddock's 4th Encampment (18GA0317), and the Tomlinson Inn (18GA0322) (**Appendix 1, Figure 14**). The portions of these two sites, as well as Little Meadows Archaeological District, within the APE have been destroyed by historic mining activities and/or the recent construction of US 219 between I-68 and Old Salisbury Road following Phase I, II, and III archaeological and geophysical investigations (Millis et al. 2019). The previous Phase I survey also identified two isolated historic finds, 18GAX8-4 (a cut nail and an unidentified iron alloy object) and 18GAX8-5 (a glass bottle lip) within the APE (**Appendix 1, Figure 14**). This portion of the APE was initially within the limits of disturbance for the previous project but later dropped out. These nineteenth-century isolates have been determined not eligible for listing in the NRHP (Millis et al. 2019).

Besides the scattered foundation stones noted at the location of the abandoned modern sugar camp on the Markowitz parcel, no additional loci of historic archaeological potential were identified during NTM's review of historic maps and aerial imagery, or during the pedestrian reconnaissance. However, it cannot be ruled out that other small, short-term extraction camps associated with western Maryland's historic coal mining, lumbering, ironmaking, or maple syrup industries may be present on undisturbed, level to gently sloping, well-drained portions of the APE.

6.2 Prehistoric Archaeological Potential

The potential for prehistoric archaeological resources was evaluated based on the presence of previously identified sites in the vicinity and a number of physical characteristics which are known to influence the likelihood of prehistoric landscape usage, including soil type, drainage, topographic setting, and distance to a reliable water source. Large-scale historic and modern disturbances such as development and mining were also considered, as well as locations that have already been systematically surveyed by professional archaeological consultants.

According to MEDUSA, Maryland Historical Trust's online cultural resource information system, two professional archaeological surveys have been conducted within the APE (Wesler et al. 1981, Millis et al. 2019). No prehistoric archaeological sites were identified within the APE during either of these surveys. No prehistoric archaeological sites are recorded within 0.73 kilometers of the APE. Seven prehistoric archaeological sites are recorded 0.74 to 2.57 kilometers west of the APE, including three short-term camps (18GA0107, 18GA0111, and 18GA0108), two isolated flakes (18GA0121), a lithic scatter (18GA0112), and a possible base camp (18GA0120). Three of the sites yielded temporally diagnostic material ascribed to the Archaic, Late Archaic through Middle and Late Woodland, and Middle Woodland periods. None of the sites have been evaluated for NRHP eligibility. Additional prehistoric sites, including 18GA97, 18GA109,18GA110, 18GA116, 18GA123, 18GA132, and 134 are noted by Millis et al. (2019) outside the APE to the south and west.

Although not considered to be a primary contributing factor for site location, proximity to known Native American paths was considered. The National Road (US 40), located approximately 260 meters south of the APE, generally follows Nemacolin's Path, which was in use by Indigenous people well before European settlement in the region. However,

the southern portion of the APE has been extensively disturbed and has no archaeological potential.

Based on observations made during the pedestrian reconnaissance, slope within the APE primarily ranges from 3-25%. The bedrock formations and landforms within the APE do not support the presence of caves or rock shelters, and none were identified during the pedestrian reconnaissance.

Meadow Run, the primary perennial stream within the study area, is more than 375 meters from the APE, which is too far to be considered a factor for archaeological potential. Prehistoric archaeological potential cannot be ruled out on level to gently sloping, well-drained landforms within 30 meters of smaller perennial streams within the APE, such as WL014 and WL016. However, there are no stable floodplains associated with these streams, and many examined upland locations adjacent to these streams have little to no soil development. Upland benches are generally considered to be attractive landforms for site location, but those within the APE have either been disturbed, or are more than 300 meters from a perennial water source and range from somewhat poorly to poorly drained.

NTM's desktop research, geomorphological investigation, and pedestrian reconnaissance surveys determined that 21.83 hectares (65%) within the APE have no archaeological potential due to disturbances, including the recent construction of the 1.4-mile segment of US 219 between I-68 and Old Salisbury Road and its associated SWM basins and staging areas, mining activities, and residential and commercial development (**Appendix 1, Figure 15**). Areas with standing water are considered to have no archaeological potential.

Areas of low prehistoric archaeological probability, which comprise 9.8 hectares (29.2%) within the APE, include areas with slope gradients greater than 10%, areas more than 300 meters from a natural perennial stream, areas that are somewhat poorly drained or poorly drained (including upland benches), and areas adjacent to modern development that have likely been graded (**Appendix 1, Figure 15**). Although mining is evident in some locations within the APE, it is obscured in other locations by land reclamation and subsequent agricultural use. As a result, some of the areas identified as having low archaeological potential may be found during Phase I survey efforts to have been mined.

Limited portions of the APE have moderate to high probability for prehistoric resources. Assessments of moderate probability, which comprise 1.83 hectares (5.4%) within the APE, are based on the presence of moderately well drained soils, slope gradients less than 10%, and a location 30 to 300 meters from a natural, perennial stream (**Appendix 1, Figure 15**). Assessments of high probability, which comprise 0.15 hectares (0.4%) within the APE, are based on the presence well drained soils, slope gradients less than 10%, and a distance less than 30 meters from a natural, perennial water source (**Appendix 1, Figure 15**).

7.0 SUMMARY AND RECOMMENDATIONS

NTM conducted desktop research, a pedestrian reconnaissance, and geomorphological field investigations to evaluate historic and prehistoric archaeological potential within the APE. Environmental factors such as slope gradient, soil drainage, and distance to perennial streams and established transportation corridors, as well as extensive historic and modern disturbances, limit archaeological potential within the APE. **Figure 16**, which is comprised of an **Index Sheet** followed by **Sheets 1-5**, highlights the portions of the APE recommended for archaeology survey.

Nearly 60% (50.08 hectares) of the APE was previously examined during Phase I, II, and III archaeological field studies conducted for proposed improvements to US 219 from I-68 to north of Old Salisbury Road between 2015 and 2017 (Millis et al. 2019) (**Figure 16, Sheets 2-5**). The archaeological resources that were identified within the APE during these studies have either undergone mitigation in advance of recent roadway construction or were determined not eligible for listing in the NRHP. NTM recommends that portions of the APE that have been previously tested for archaeological resources do not require additional work.

One locus of historic archaeological potential was identified during NTM's desktop research. An abandoned, modern sugar camp with scattered foundation stones that may pre-date the modern camp was noted in a Maryland Inventory of Historic Properties Form prepared for the Markowitz Property (G-I-A-139) in 2003. The area has not been subject to archaeological survey. The remnant camp and scattered stones are in a wooded area on the Markowitz Property. NTM recommends field survey in this location (**Figure 16, Sheet 1**). Additional small, unmapped extraction camps associated with western Maryland's historic coal mining, lumbering, ironmaking, or maple syrup industries may be present on undisturbed, level to gently sloping, well-drained portions of the APE.

NTM determined that 21.83 hectares (65%) within the portion of the APE that has not been tested have no prehistoric archaeological potential due to disturbance from roadway construction, mining, or development; 9.8 hectares (29.2%) have low prehistoric archaeological potential, and 1.98 hectares (5.8%) have moderate to high prehistoric archaeological potential. No alluvial deposits are present within the APE, so there is no potential for deeply buried prehistoric archaeological resources. NTM recommends testing landforms within the APE identified as having low, moderate, and high probability for prehistoric resources (**Figure 16, Sheets 1-4**).

NTM recommends consultation with Maryland Historical Trust archaeologists to develop an appropriate Phase I archaeological survey strategy for addressing potential historic and prehistoric archaeological resources within the APE.

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1981 The M/DOT Archaeological Resources Survey, Volume 4: Western Maryland. Maryland Historical Trust Manuscript Series. Maryland Historical Trust, Annapolis.

APPENDICES

1.0 Figures

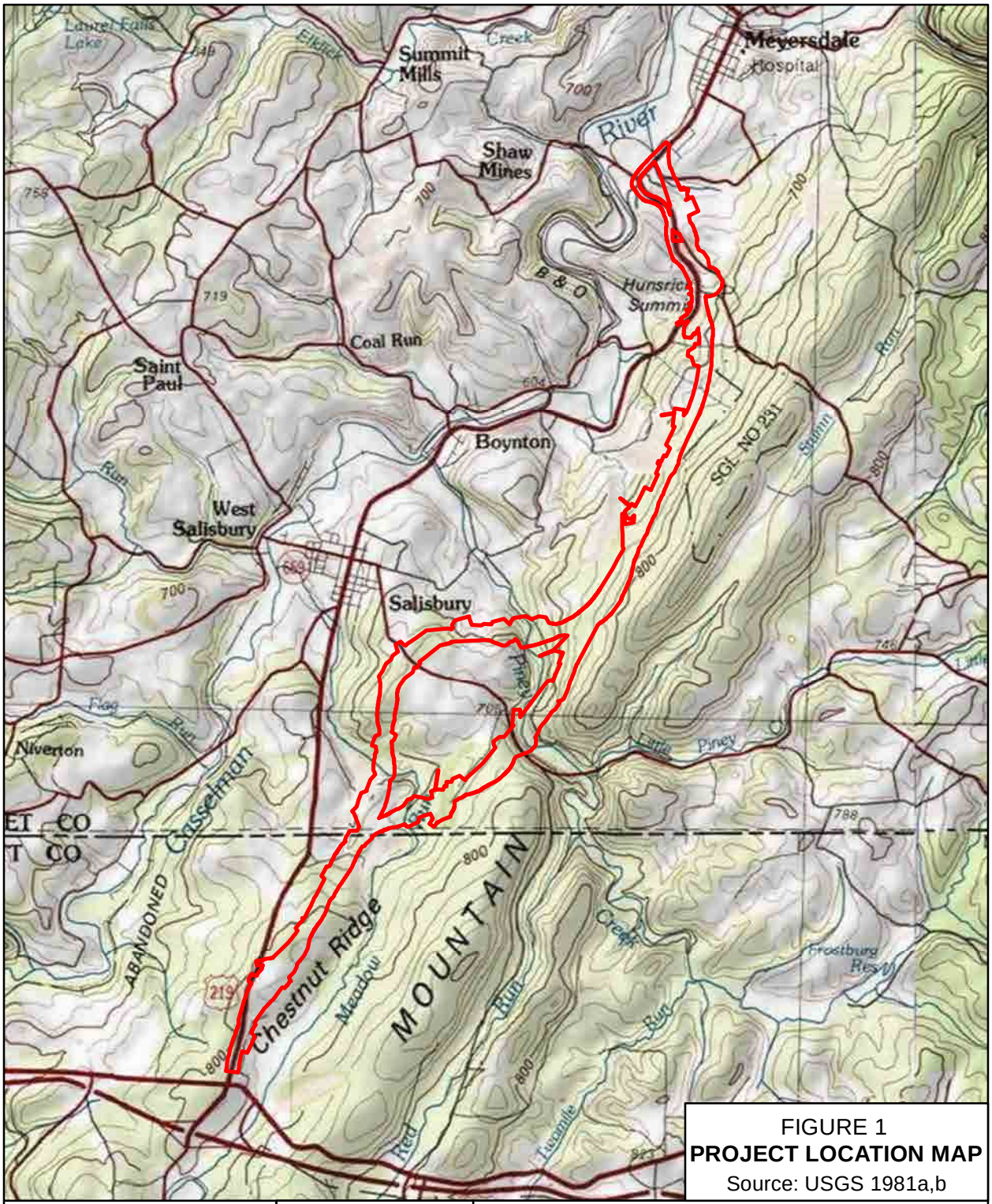


FIGURE 1
PROJECT LOCATION MAP
Source: USGS 1981a,b

219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

pennsylvania DEPARTMENT OF TRANSPORTATION

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

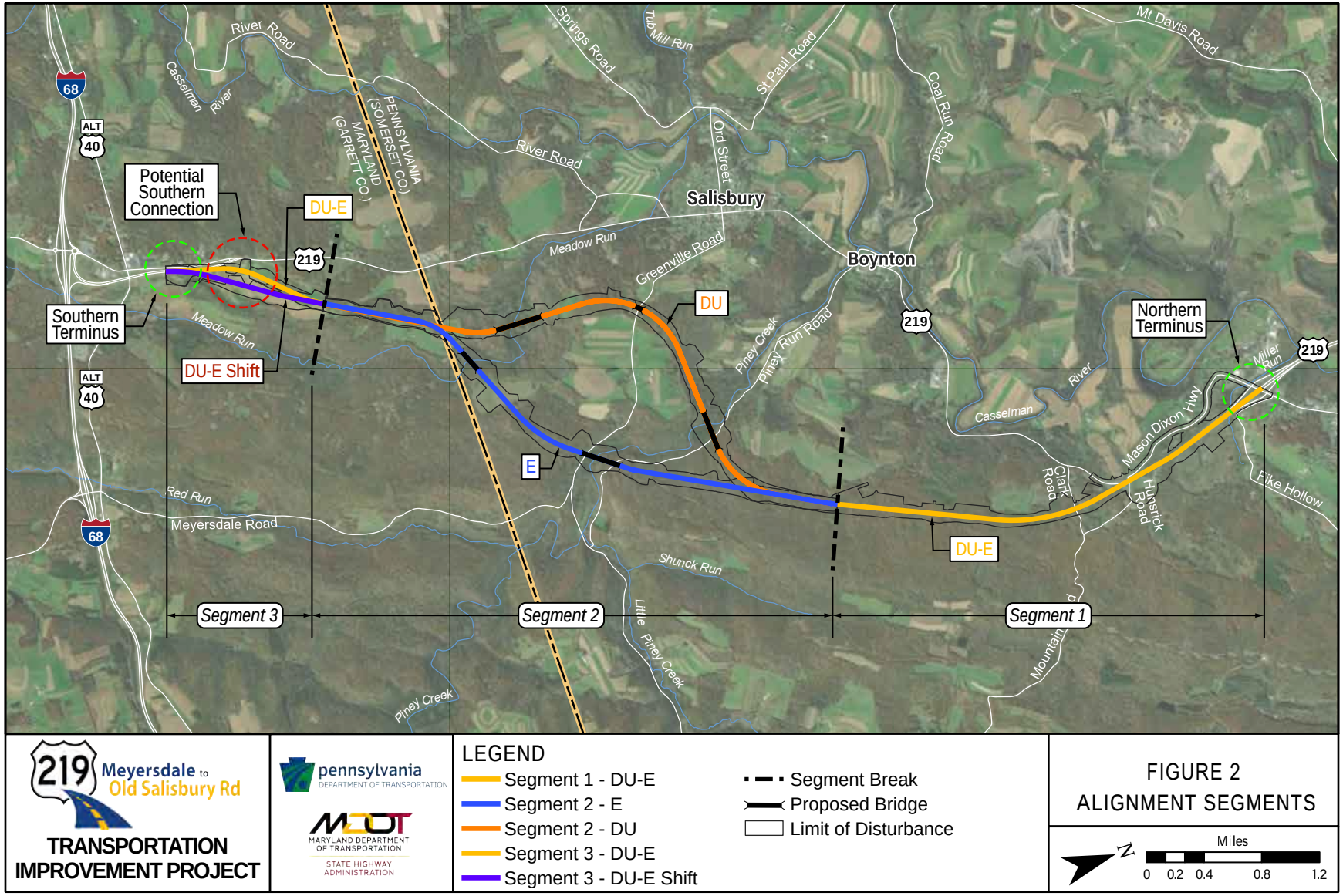
Date: 9/28/2023

LEGEND

Preliminary Archaeological APE

N

0 4,000 8,000 16,000 Feet



219 Meyersdale to Old Salisbury Rd

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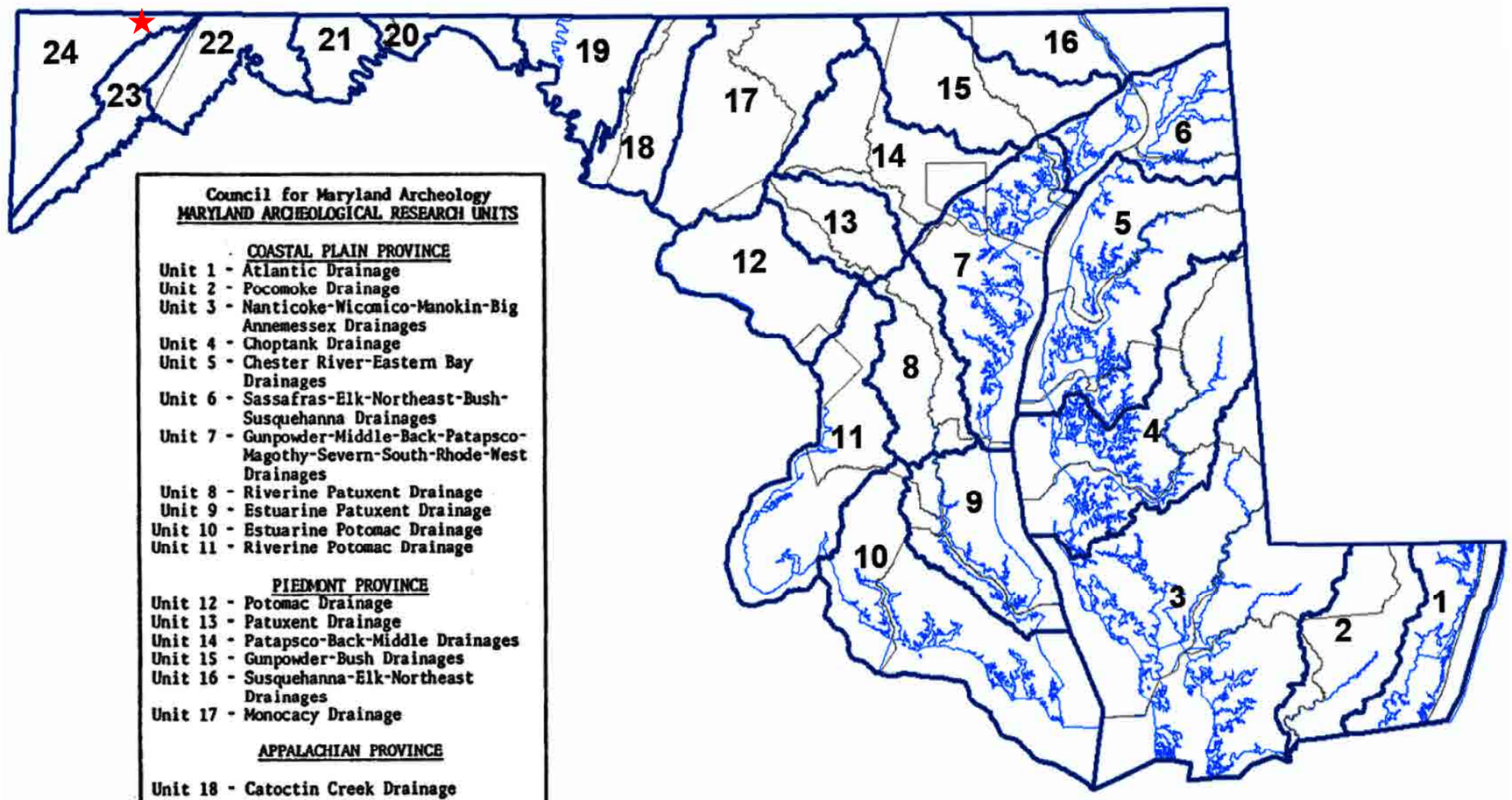
pennsylvania DEPARTMENT OF TRANSPORTATION

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

FIGURE 2
ALIGNMENT SEGMENTS



Council for Maryland Archeology
MARYLAND ARCHEOLOGICAL RESEARCH UNITS

COASTAL PLAIN PROVINCE

Unit 1 - Atlantic Drainage
Unit 2 - Pocomoke Drainage
Unit 3 - Nanticoke-Wicomico-Manokin-Big Annemessex Drainages
Unit 4 - Choptank Drainage
Unit 5 - Chester River-Eastern Bay Drainages
Unit 6 - Sassafras-Elk-Northeast-Bush-Susquehanna Drainages
Unit 7 - Gunpowder-Middle-Back-Patapsco-Magothy-Severn-South-Rhode-West Drainages
Unit 8 - Riverine Patuxent Drainage
Unit 9 - Estuarine Patuxent Drainage
Unit 10 - Estuarine Potomac Drainage
Unit 11 - Riverine Potomac Drainage

PIEDMONT PROVINCE

Unit 12 - Potomac Drainage
Unit 13 - Patuxent Drainage
Unit 14 - Patapsco-Back-Middle Drainages
Unit 15 - Gunpowder-Bush Drainages
Unit 16 - Susquehanna-Elk-Northeast Drainages
Unit 17 - Monocacy Drainage

APPALACHIAN PROVINCE

Unit 18 - Catoctin Creek Drainage
Unit 19 - Antietam Creek-Conococheague Creek Drainages
Unit 20 - Licking Creek-Tonoloway Creek-Fifteenmile Creek Drainages
Unit 21 - Town Creek Drainage
Unit 22 - Evitts Creek-Georges Creek Drainages
Unit 23 - Potomac-Savage Drainages
Unit 24 - Youghiogheny-Casselman Drainages

219 Meyersdale to Old Salisbury Rd
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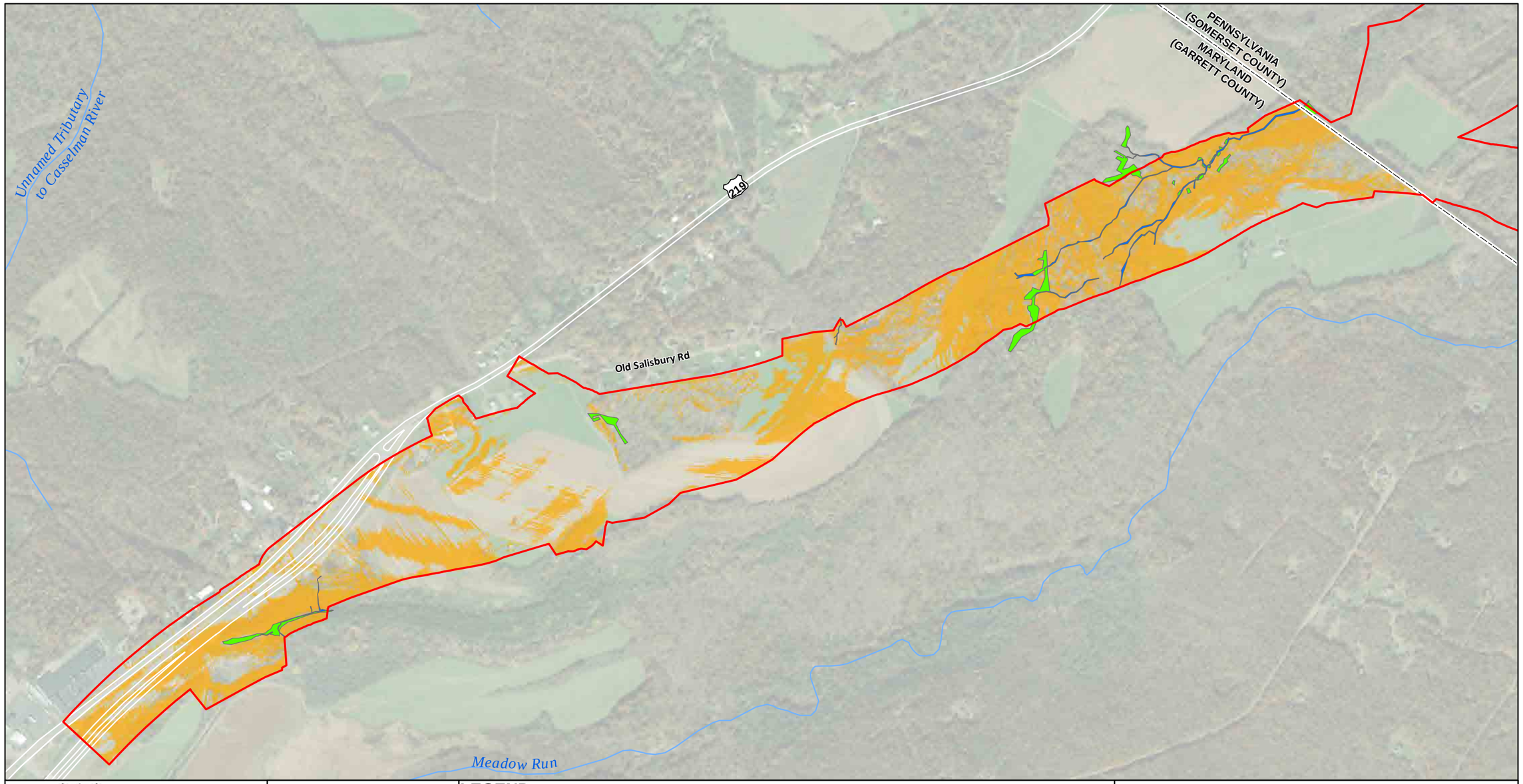
Date: 9/28/2023

LEGEND
★ Project Area

FIGURE 3
MARYLAND ARCHAEOLOGICAL RESEARCH UNITS
Source: Maryland Historical Trust 2021

N
0 25 50 Miles



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

pennsylvania DEPARTMENT OF TRANSPORTATION

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

Date: 9/28/2023

LEGEND

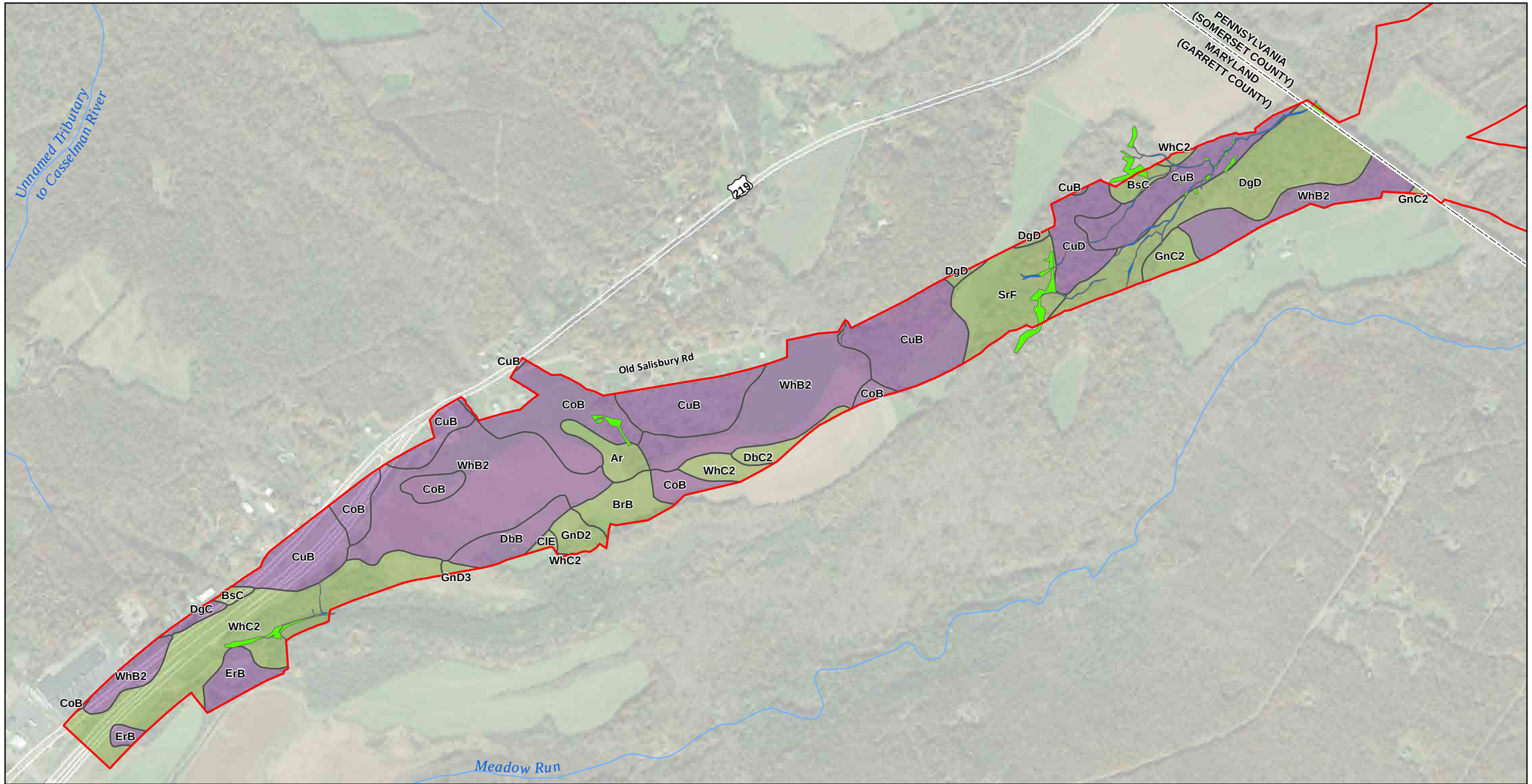
- Preliminary Archaeological APE
- Streams (Delineated)
- Streams (Approximate)
- Wetlands (Delineated
- Slope >10%

FIGURE 4
SLOPE ANALYSIS

Source: ESRI World Imagery (Maxar 2022)

N

0 400 800 1,600 Feet



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

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MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

Date: 9/28/2023

LEGEND

- Preliminary Archaeological APE
- Streams (Delineated)
- Streams (Approximate)
- Wetlands (Delineated)
- Favorable for Pre-Contact Archaeological Potential
- Not Favorable for Pre-Contact Archaeological Potential

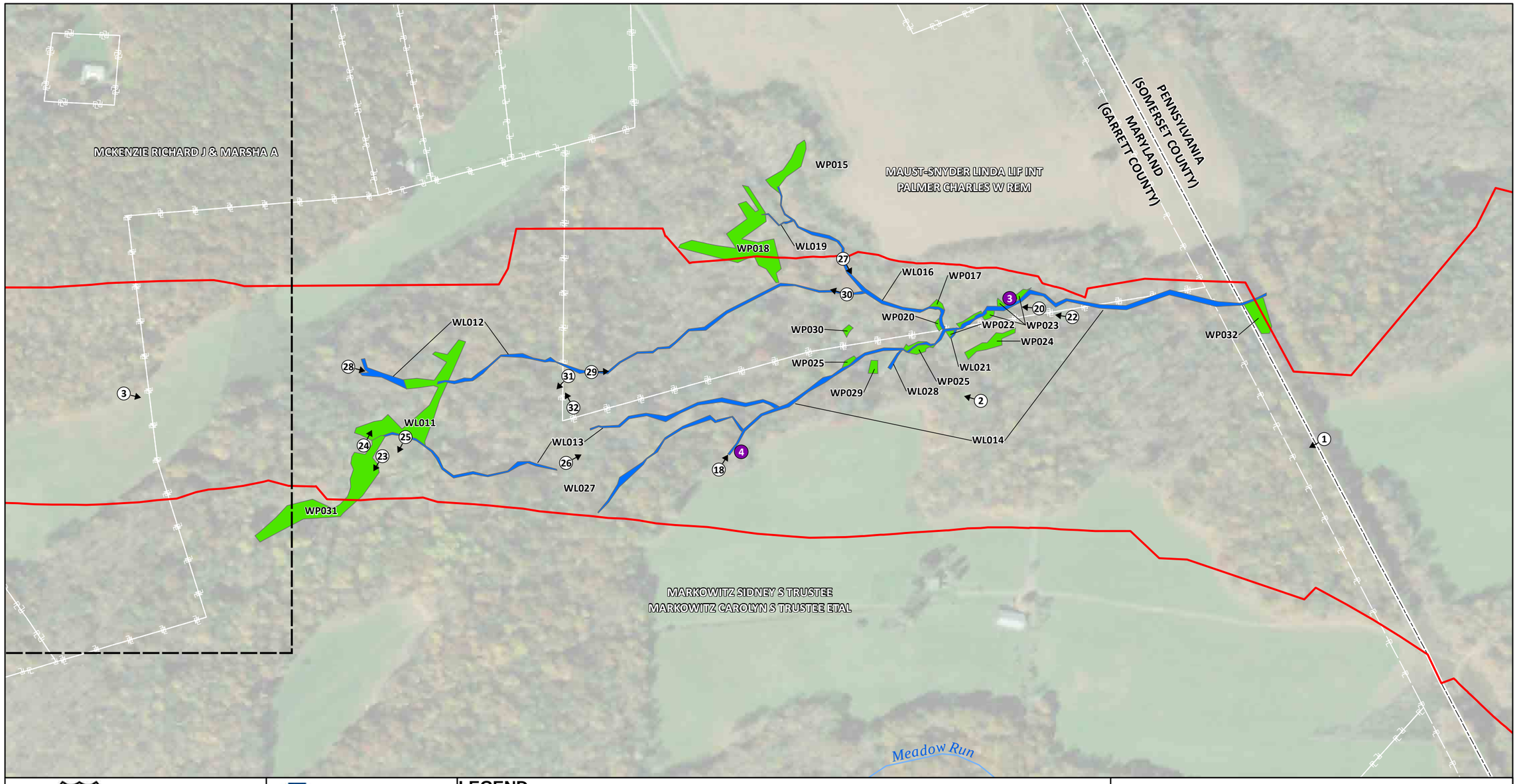
FIGURE 5

MAPPED SOIL TYPES

Source: ESRI World Imagery (Maxar 2022)

N

0 400 800 1,600 Feet



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

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MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

Date: 9/28/2023

LEGEND

- Index Sheet
- Preliminary Archaeological APE
- Tax Parcel Boundary
- Streams (Delineated)
- Streams (Approximate)
- Wetlands (Delineated)
- Geomorphological Boring Location
- Photograph Location

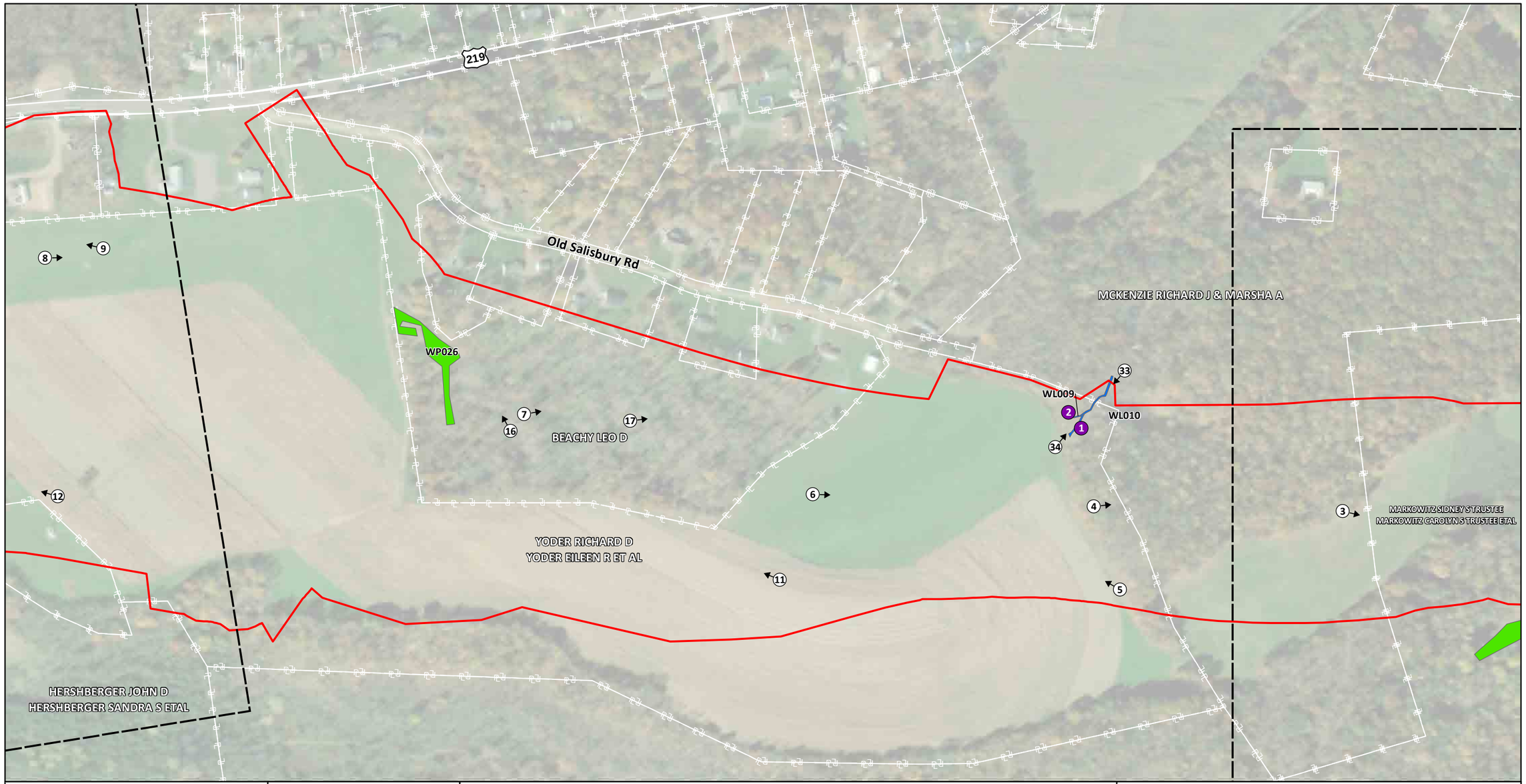
FIGURE 6 - SHEET 1

GEOMORPHOLOGICAL BORING AND PHOTOGRAPH LOCATIONS

Source: ESRI World Imagery (Maxar 2022)

N

0 150 300 600 Feet



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

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MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

Date: 9/28/2023

LEGEND

- Index Sheet
- Preliminary Archaeological APE
- Tax Parcel Boundary
- Streams (Delineated)
- Streams (Approximate)
- Wetlands (Delineated)
- Geomorphological Boring Location
- Photograph Location

FIGURE 6 - SHEET 2

GEOMORPHOLOGICAL BORING AND PHOTOGRAPH LOCATIONS

Source: ESRI World Imagery (Maxar 2022)

N

0 150 300 600 Feet

219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

pennsylvania DEPARTMENT OF TRANSPORTATION

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

Date: 9/28/2023

LEGEND

- Index Sheet
- Preliminary Archaeological APE
- Tax Parcel Boundary
- Streams (Delineated)
- Streams (Approximate)
- Wetlands (Delineated)
- Geomorphological Boring Location
- Photograph Location

FIGURE 6 - SHEET 3

GEOMORPHOLOGICAL BORING AND PHOTOGRAPH LOCATIONS

Source: ESRI World Imagery (Maxar 2022)

N

0 150 300 600 Feet

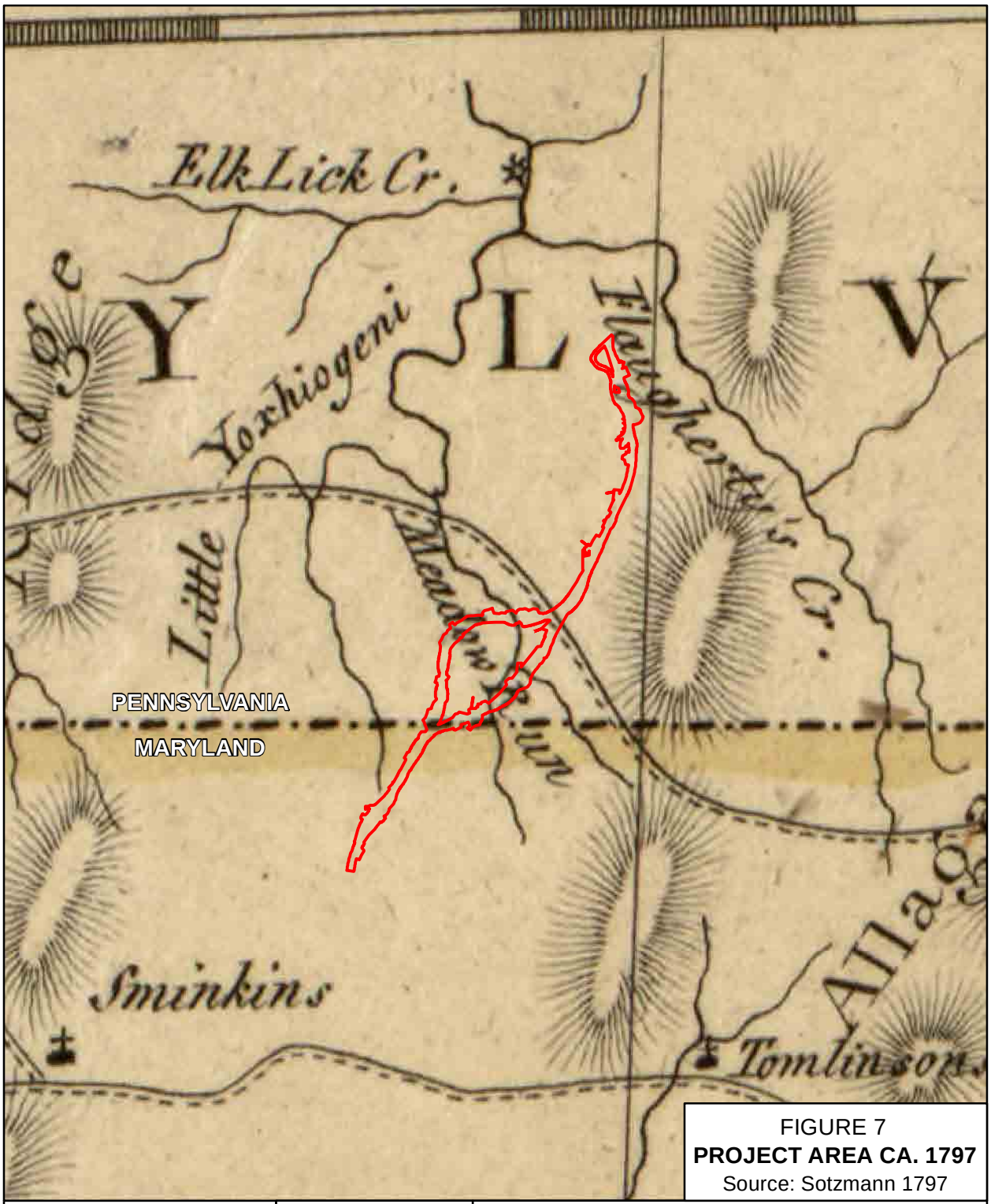

FIGURE 7
PROJECT AREA CA. 1797
Source: Sotzmann 1797

219 Meyersdale to Old Salisbury Rd
TRANSPORTATION IMPROVEMENT PROJECT

pennsylvania DEPARTMENT OF TRANSPORTATION
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
Date: 9/28/2023

LEGEND
Preliminary Archaeological APE

N
0 0.5 1 2 3 4 Miles

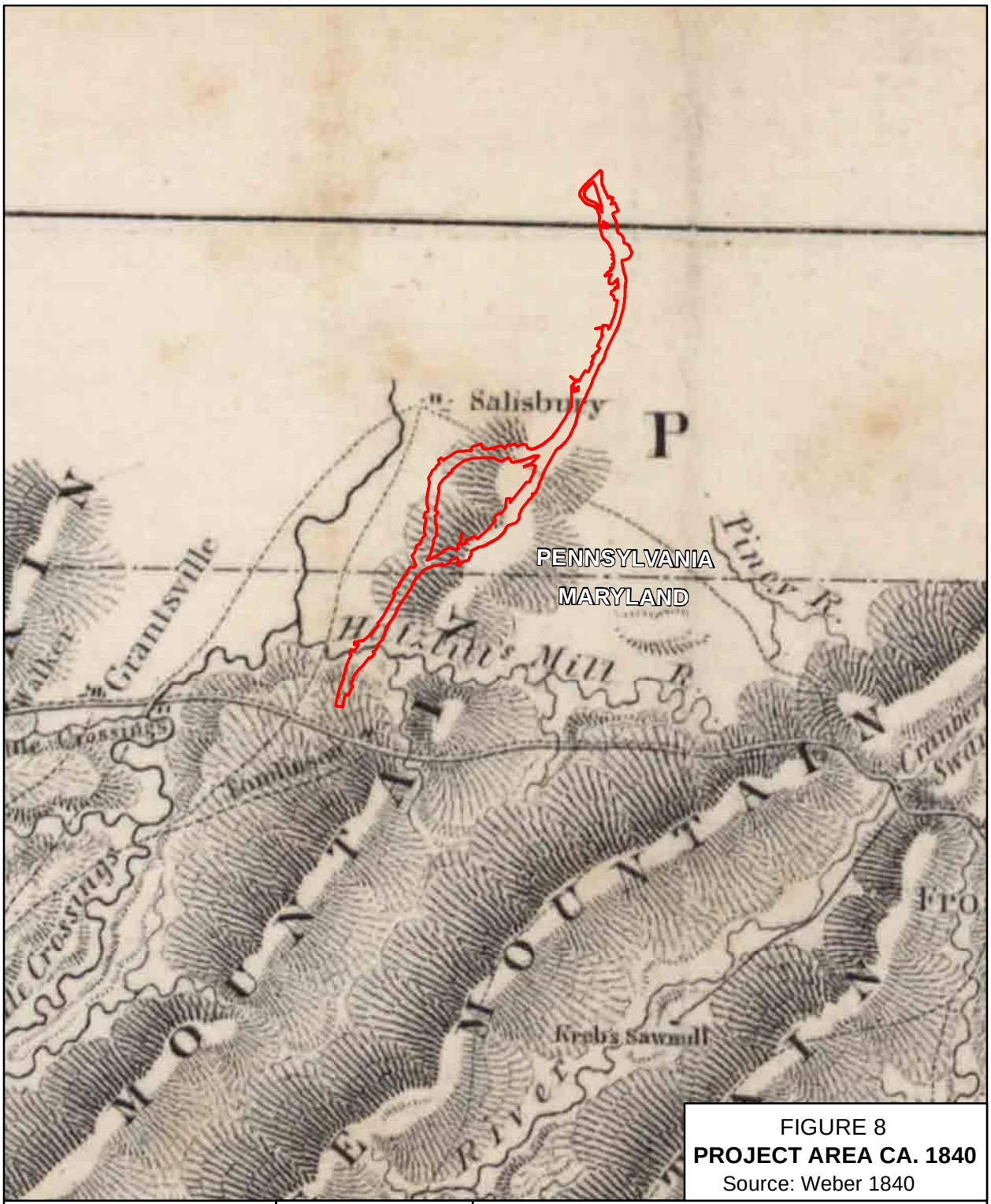

FIGURE 8
PROJECT AREA CA. 1840
Source: Weber 1840

219 Meyersdale to Old Salisbury Rd
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STATE HIGHWAY ADMINISTRATION
Date: 9/28/2023

LEGEND

Preliminary Archaeological APE

N

0 0.5 1 2 3 4 Miles

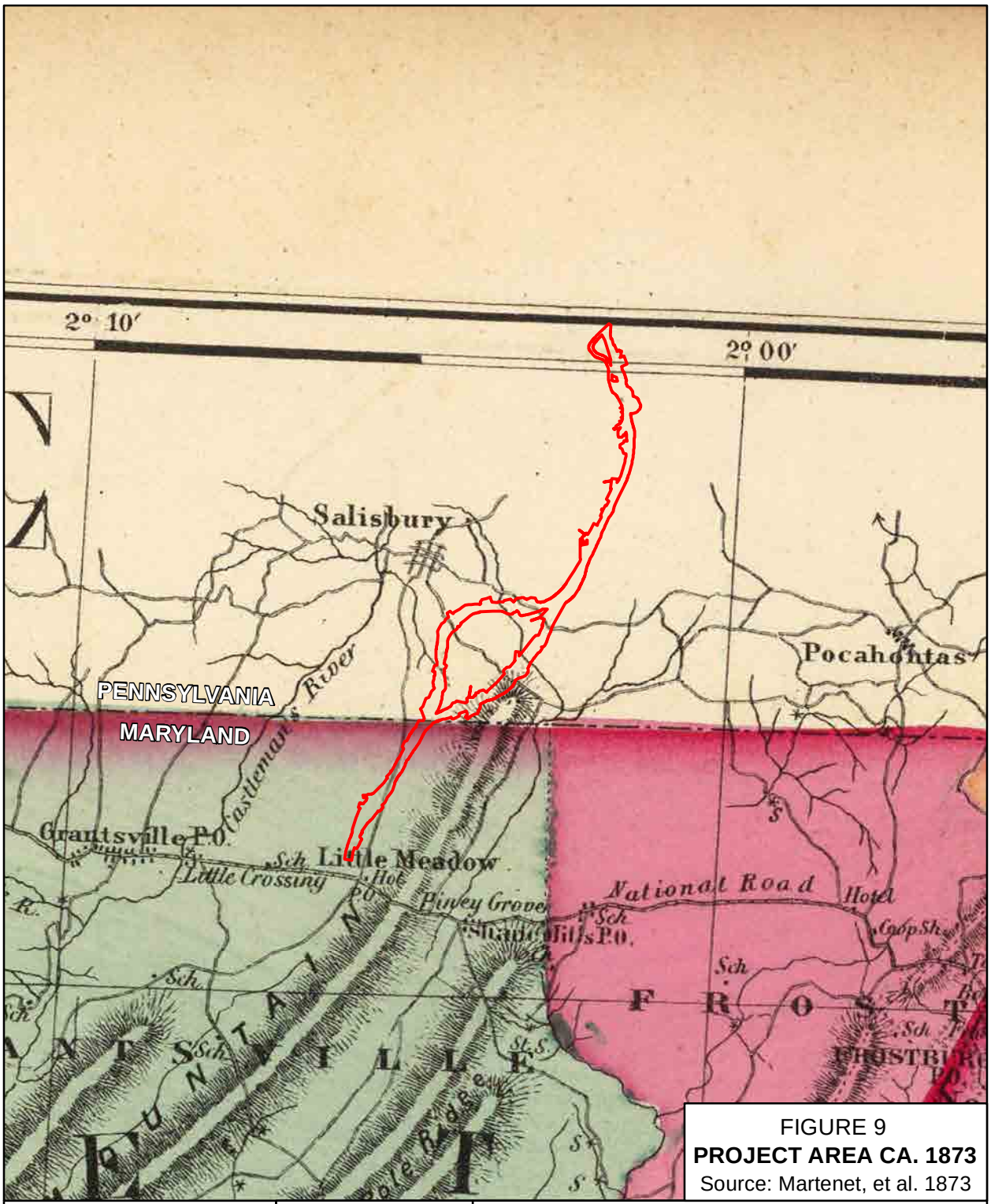

FIGURE 9
PROJECT AREA CA. 1873
Source: Martenet, et al. 1873

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STATE HIGHWAY ADMINISTRATION

LEGEND

Preliminary Archaeological APE

N

0 0.5 1 2 3 4 Miles

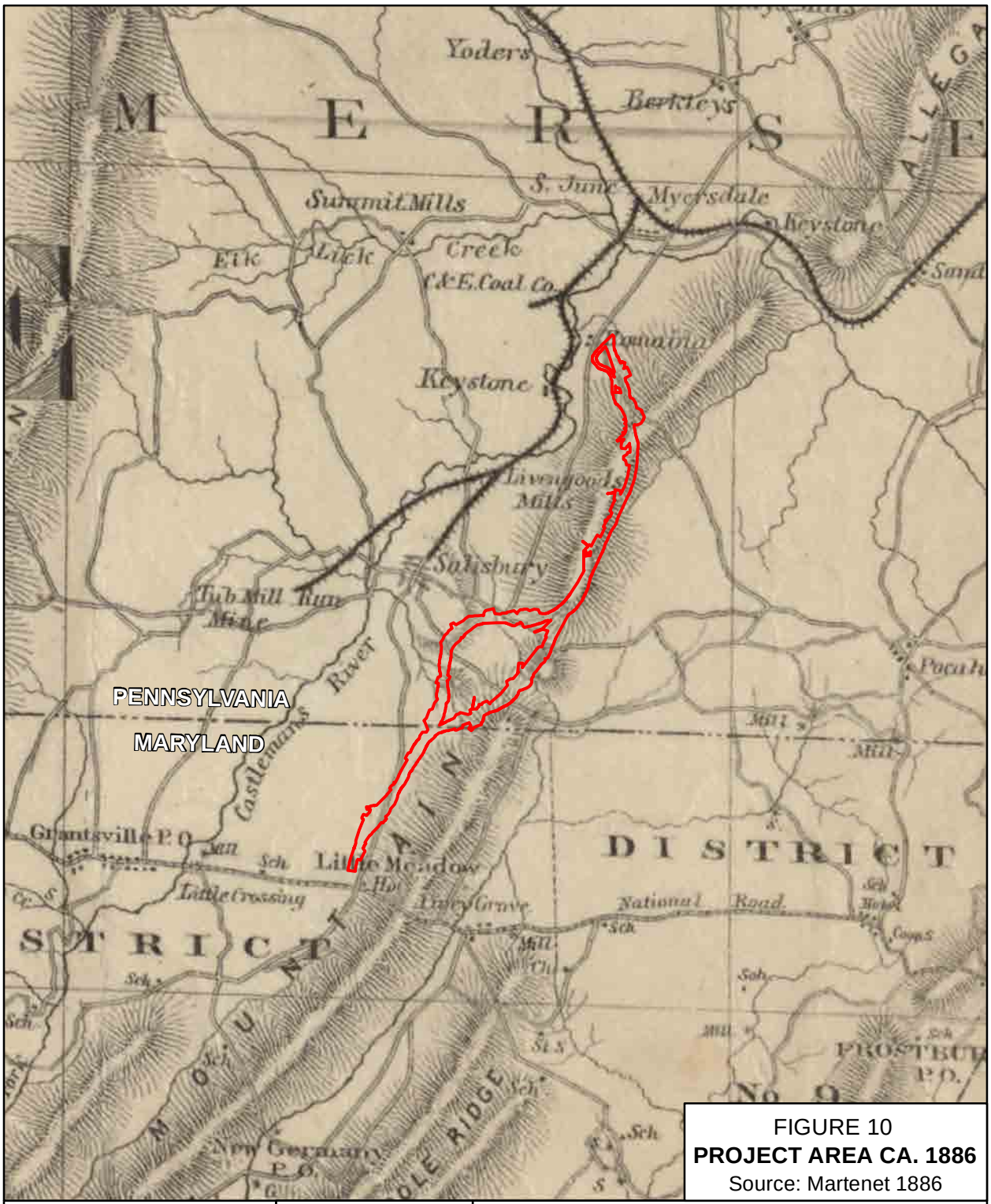

FIGURE 10
PROJECT AREA CA. 1886
Source: Martenet 1886

219 Meyersdale to Old Salisbury Rd
TRANSPORTATION IMPROVEMENT PROJECT

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STATE HIGHWAY ADMINISTRATION

Date: 9/28/2023

LEGEND

Preliminary Archaeological APE

N

0 0.5 1 2 3 4 Miles

FIGURE 11
PROJECT AREA 1946
Source: USGS 1946

219 Meyersdale to Old Salisbury Rd
TRANSPORTATION IMPROVEMENT PROJECT

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MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Date: 9/28/2023

LEGEND

Preliminary Archaeological APE

N

0 750 1,500 3,000 Feet

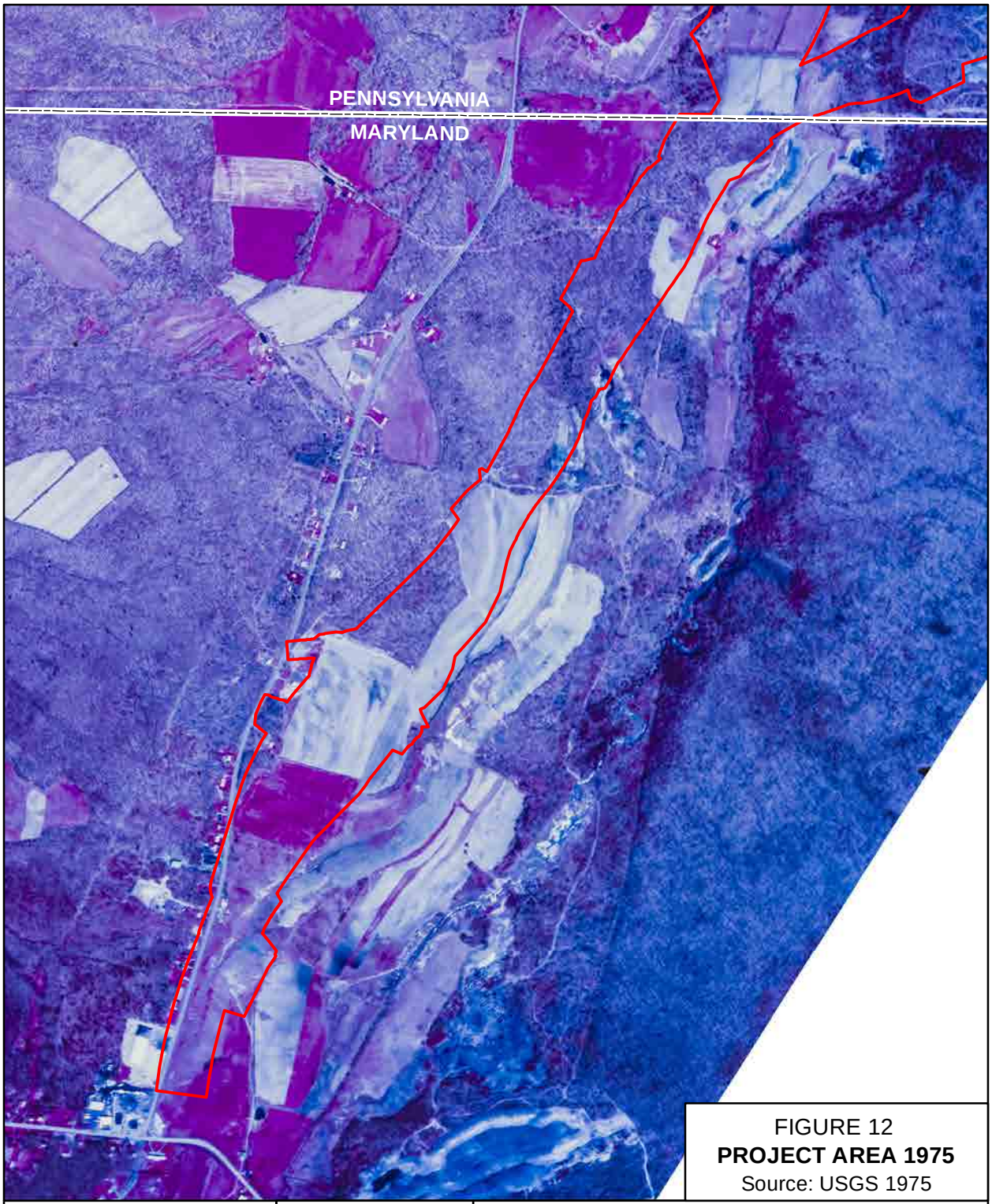


FIGURE 12
PROJECT AREA 1975
Source: USGS 1975

219 Meyersdale to Old Salisbury Rd
TRANSPORTATION IMPROVEMENT PROJECT

pennsylvania DEPARTMENT OF TRANSPORTATION
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Date: 9/28/2023

LEGEND

Preliminary Archaeological APE

N

0 750 1,500 3,000 Feet

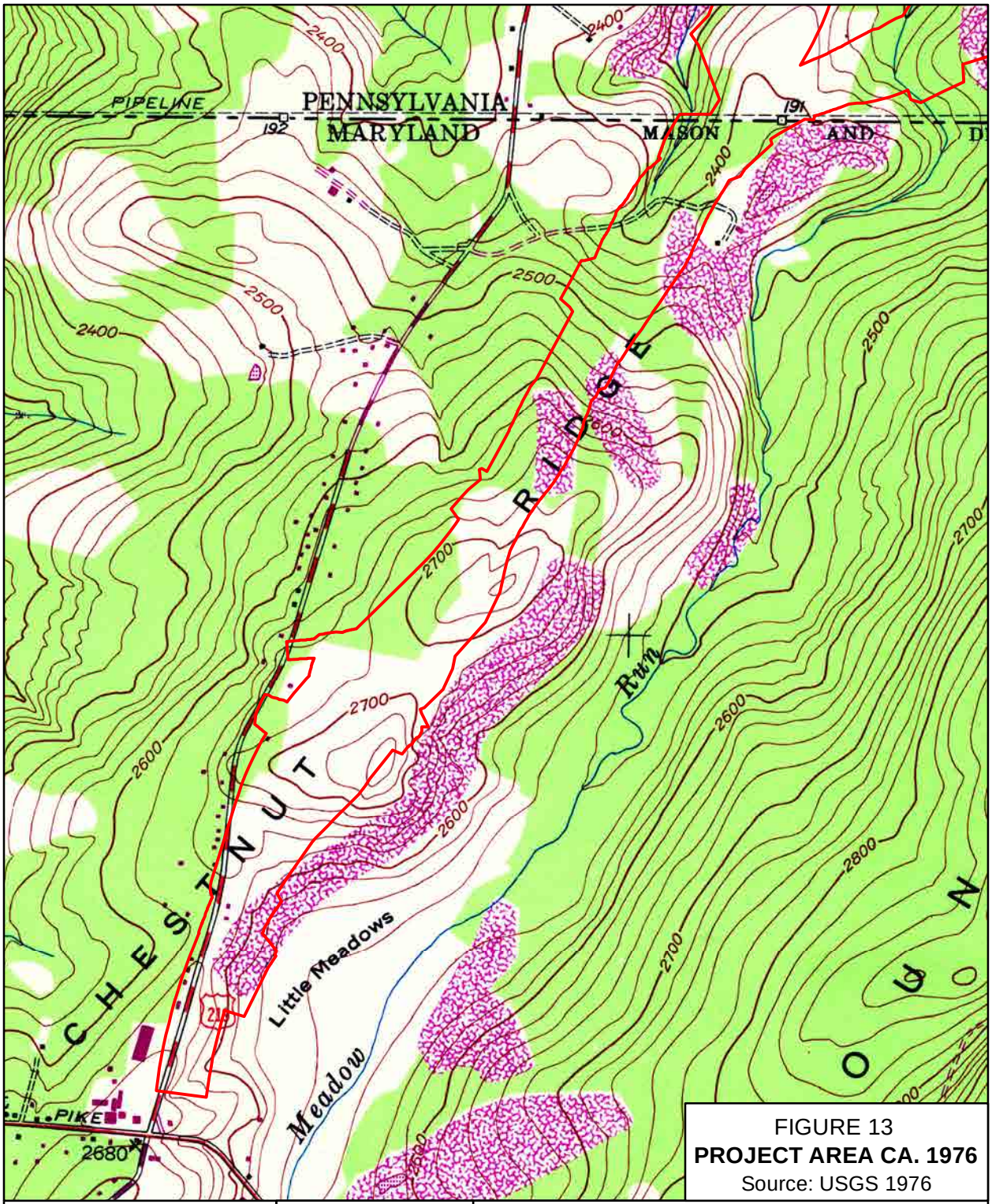


FIGURE 13
PROJECT AREA CA. 1976
Source: USGS 1976

219 Meyersdale to Old Salisbury Rd
TRANSPORTATION IMPROVEMENT PROJECT

pennsylvania DEPARTMENT OF TRANSPORTATION
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Date: 9/28/2023

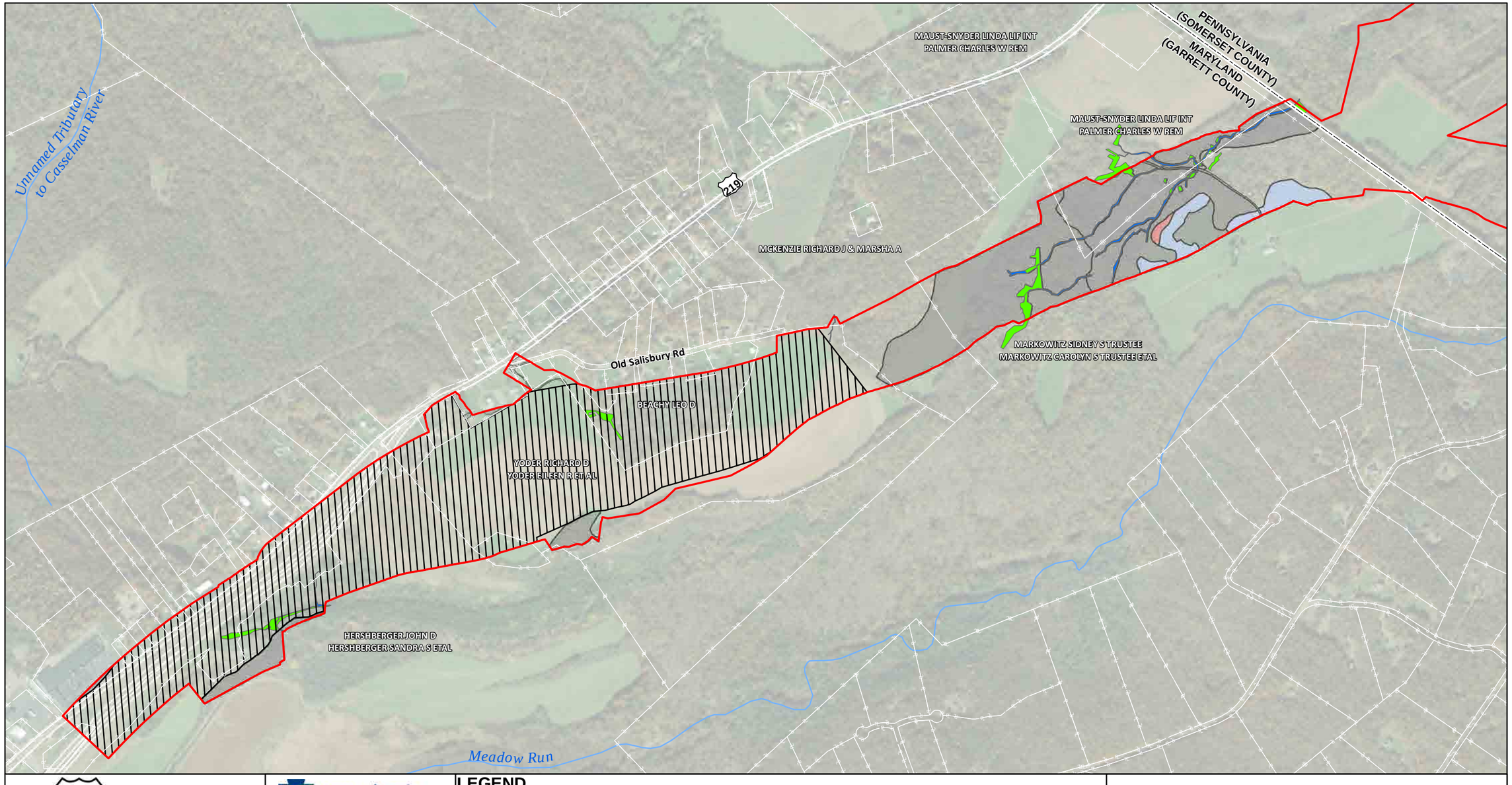
LEGEND

Preliminary Archaeological APE

N

0 750 1,500 3,000 Feet

Due to containing sensitive information, **FIGURE 14: Historic Archaeology Probability** has been redacted from this report



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

pennsylvania DEPARTMENT OF TRANSPORTATION

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

Date: 10/4/2023

LEGEND

- Preliminary Archaeological APE
- Tax Parcel Boundary
- Streams (Delineated)
- Streams (Approximate)
- Wetlands (Delineated
- Previously Surveyed (Millis et al. 2019)
- High Probability for Prehistoric Archaeological Resources
- Moderate Probability for Prehistoric Archaeological Resources
- Low Probability for Prehistoric Archaeological Resources
- No Probability for Prehistoric Archaeological Resources

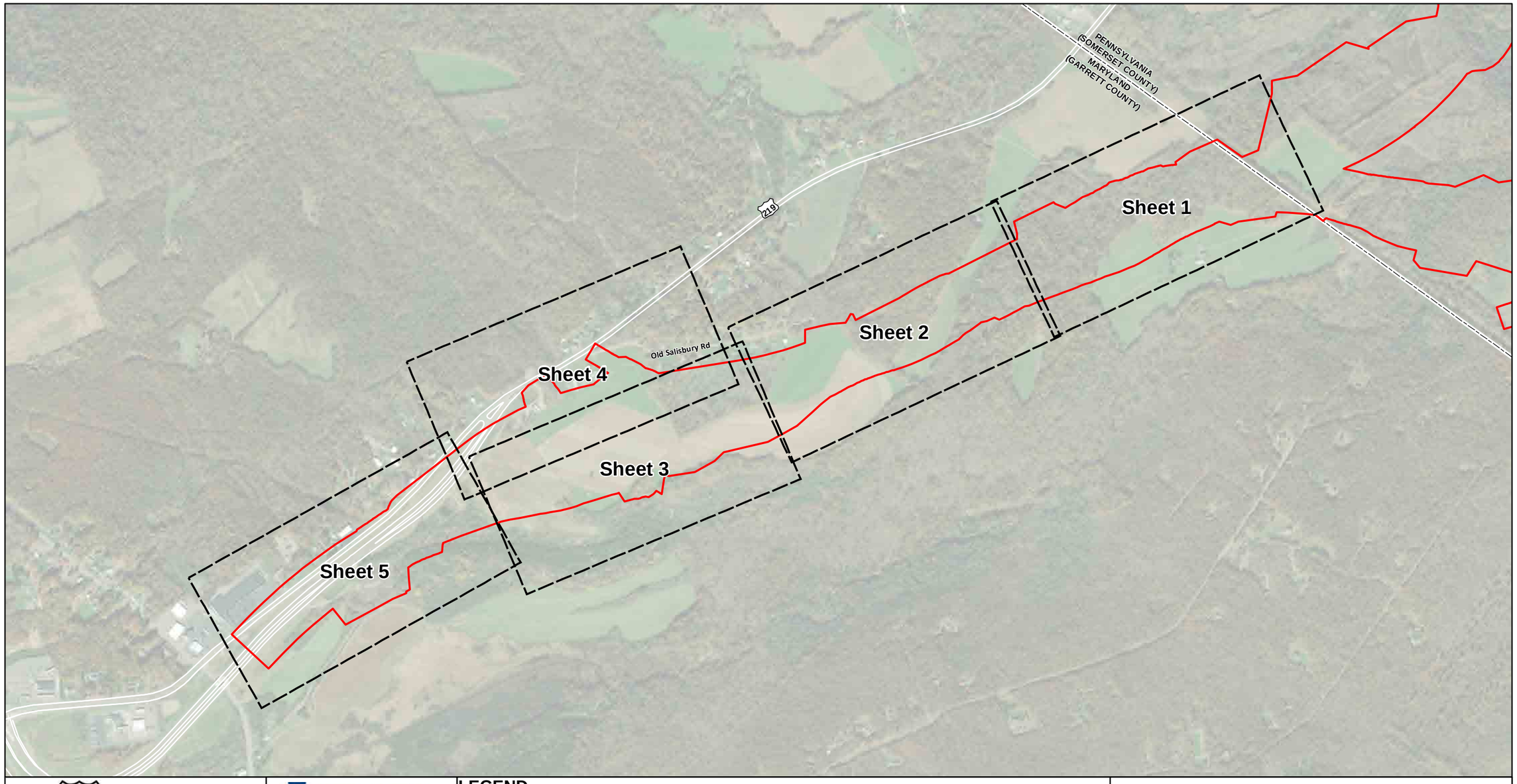
FIGURE 15

PREHISTORIC ARCHAEOLOGY PROBABILITY

Source: ESRI World Imagery (Maxar 2022)

N

0 400 800 1,600 Feet



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

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MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

Date: 10/4/2023

LEGEND

- Sheet Boundary
- Preliminary Archaeological APE

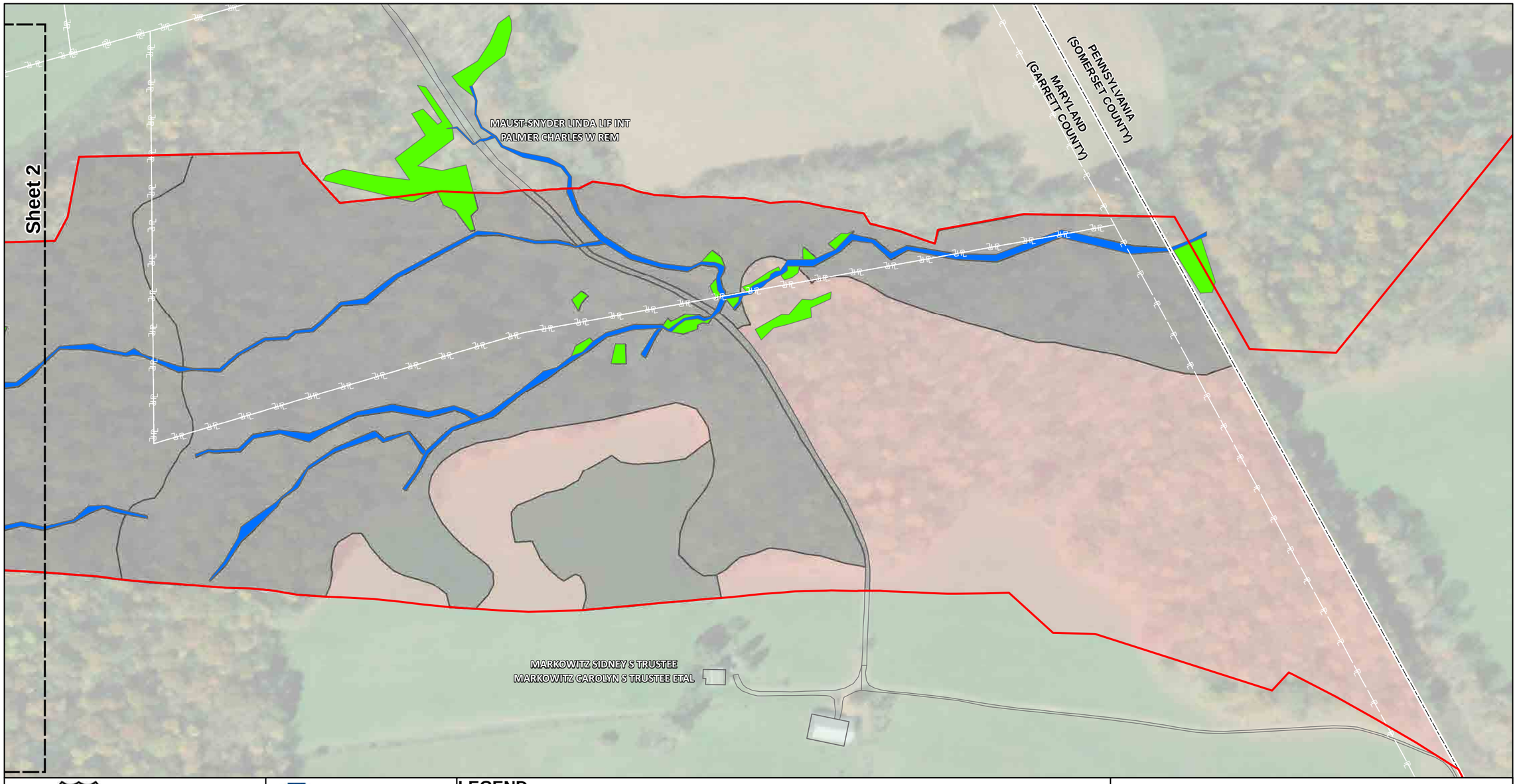
FIGURE 16 - INDEX SHEET

ARCHAEOLOGICAL ASSESSMENT RESULTS AND RECOMMENDATIONS

Source: ESRI World Imagery (Maxar 2022)

N

0 500 1,000 2,000 Feet



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pennsylvania DEPARTMENT OF TRANSPORTATION

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

Date: 10/5/2023

LEGEND

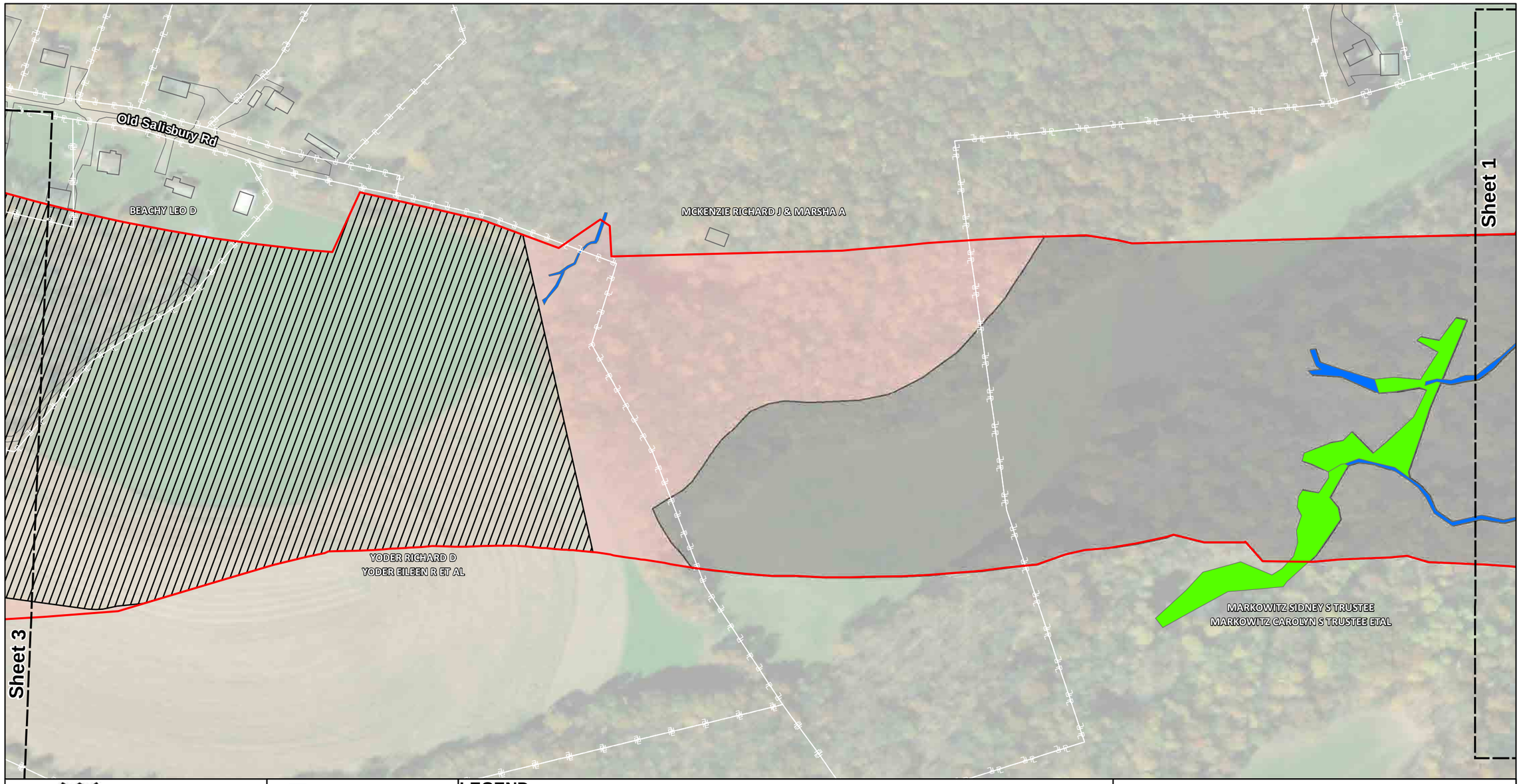
- Sheet Boundary
- Tax Parcel Boundary
- Preliminary Archaeological APE
- Streams (Delineated)
- Wetlands (Delineated
- Previously Surveyed (Millis et al. 2019)
- Historic Archaeological Resources (Within APE)
- Not Recommended for Archaeological Testing
- Recommended for Archaeological Testing

FIGURE 16 - SHEET 1

ARCHAEOLOGICAL ASSESSMENT RESULTS AND RECOMMENDATIONS

Source: ESRI World Imagery (Maxar 2022)

0 100 200 400 Feet



219 Meyersdale to Old Salisbury Rd

TRANSPORTATION IMPROVEMENT PROJECT

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MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

Date: 10/4/2023

LEGEND

- Sheet Boundary
- Tax Parcel Boundary
- Preliminary Archaeological APE
- Streams (Delineated)
- Wetlands (Delineated
- Previously Surveyed (Millis et al. 2019)
- Historic Archaeological Resources (Within APE)
- Not Recommended for Archaeological Testing
- Recommended for Archaeological Testing

FIGURE 16 - SHEET 2

ARCHAEOLOGICAL ASSESSMENT RESULTS AND RECOMMENDATIONS

Source: ESRI World Imagery (Maxar 2022)

N

0 100 200 400 Feet

Due to containing sensitive information, **FIGURE 16, Sheets 3, 4 and 5: Archaeological Assessment Results and Recommendations** has been redacted from this report

Due to containing sensitive information, **FIGURE 16, Sheets 3, 4 and 5: Archaeological Assessment Results and Recommendations** has been redacted from this report

Due to containing sensitive information, **FIGURE 16, Sheets 3, 4 and 5: Archaeological Assessment Results and Recommendations** has been redacted from this report

2.0 Qualifications of Preparers

Paula R. Miller, MA is a Principal Investigator and Senior Cultural Resources Specialist with expertise in the implementation and best practices of Section 106 for archaeological and above-ground cultural resources. She has developed and executed archaeological and architectural studies for the transportation, energy, oil and gas, development, and telecommunications projects in the Appalachian, Mid-Atlantic, Chesapeake, and Ohio Valley regions, and has prepared archaeological predictive models and Phase I, II, and III technical reports, data recovery workplans, evaluations of eligibility and effects for above-ground historic resources, Section 4(f) statements; and Section 106 agreement documents; designed interpretive panels for mitigation; and contributed to environmental assessments for NEPA compliance. Ms. Miller has experience in collections management; public archaeology; and the inventory, assessment, and interpretation of landscapes and material culture for nationally and internationally significant historic sites.

Corey Hovanec, MS, GIT is a Registered Professional Archaeologist (RPA) with 18 years of regional experience specializing in archaeological and architectural surveys in the Mid-Atlantic. He has extensive knowledge of both pre- and post-contact site excavation, project planning, budgeting, SHPO form completion, geomorphological assessments, radiometric dating, historic structures surveys, National Register evaluations, Determinations of Effect, and GIS and GPS operations and data processing.

Elsie Parrot, MA is an Architectural Historian who conducts cultural resources investigations in accordance with NHPA Section 106 and NEPA requirements. Ms. Parrot meets the Secretary of the Interior's qualifications (36CFR61) for Architectural History. She has worked in the documentation and analysis of historic properties, including rural, urban, agricultural, and industrial resources, as well as historic and cultural landscapes. Additional responsibilities include preparation of project reports and environmental documents, as well as compilation of Section 106 consulting parties and detailed background research. Ms. Parrot has additional experience in the conservation of historic materials.

Preparer Contact Information		
Paula R. Miller, MA pmiller@ntmeng.com 717-432-4425 x182	Corey Hovanec, MS, GIT chovanec@ntmeng.com 610-605-3104 x101	Elsie Parrot, MA eparrot@ntmeng.com 215-397-4055 x140

3.0 Scope of Work

The archaeological investigations will be conducted in compliance with Federal and Maryland historic preservation legislation and regulations. Federal mandates include the National Historic Preservation Act of 1966, as amended, the National Environmental Policy Act of 1969, as amended, and the implementing regulation of the Advisory Council on Historic Preservation (36 CFR Part 800). Maryland mandates include the Maryland Historical Trust Act of 1985 as amended, the State Finance and Procurement Article §§ 5A-325 and 5A-326 of the Annotated Code of Maryland; and policies and guidelines of the Maryland Historical Trust (MHT). Investigations will be conducted in accordance with MHT Standards and Guidelines for Archaeological Investigations in Maryland (Shaffer and Cole, 1994).

Phase IA Archaeological Investigations

NTM will develop an Archaeological Probability Model to assess the potential for sites to be present within the Maryland APE. The potential for pre-contact archaeological resources will assessed based on the presence of previously identified pre-contact archaeological resources in the vicinity of the project area and physical characteristics of the project area which may have increased or decreased the likelihood of pre-contact usage, including soil type, drainage, topographic setting, and distance to a natural water source. Historical archaeological potential will be assessed through a search of the MHT's historic site and above-ground historic resource files, and an examination of historic maps, and aerial photographs, and local histories.

NTM will conduct background research on the environmental setting, previous research, and the prehistory and history of the project area to provide a context within which archaeological and historic structure resources can be assessed. Relevant published local, regional, and state histories, archaeological investigation reports, and historic maps and atlases will also be reviewed.

NTM will also attempt to identify local residents, historians, and archaeologists that may provide valuable information on the past history of the project area, particularly as it relates to landscape modifications and structure construction/demolition.

NTM will also conduct geomorphological study of the APE. Soils and buried sediments across the project area will be assessed for relative age, depositional context, internal drainage restrictions, and degree of past disturbances. Excavations will extend (if possible) through floodplain alluvial sediments down to sands and/or gravels of either post-glacial lateral accretion from the existing river or from Pleistocene glacial deposition, or to a water table. The soils observed from the auger borings will be examined and described according to USDA-Natural Resources Conservation Service methods and nomenclature.

Relatively undisturbed soil horizons with the potential to contain intact archaeological resources will be identified. It will be determined whether the potential to contain archaeological resources is limited to the surface horizon or extends down into the soil

profile and the general depth to which such sediments extend. Areas and/or soil horizons with no potential to contain intact archaeological resources will also be identified and delineated. These areas may include land with slopes of greater than 15 percent, soils which exhibit characteristics indicating constant wetland or slackwater conditions during and since deposition, the subsoils of Pleistocene-aged (or older) sediment, deposits resulting from recent stream scour and redeposition, and/or locations displaying significant disturbance such that any soil horizons which may have had the potential to contain intact archaeological resources have been removed or extensively disturbed. Documentation supporting the lack of these areas to contain intact archaeological resources will be collected, interpreted, and included in the report. It is assumed that geomorphological testing will occur in a maximum of 10 locations within the Study Area.

NTM will also undertake a preliminary pedestrian field reconnaissance to assess the condition of the Study Area and field verify information gathered during the background research and probability assessment, and to document current land use and observable surface and potential subsurface disturbances within the APE. Attention will be paid to the current and historic topographic and physiographic characteristics of the study area, along with existing land use conditions, and historic and recent disturbances.

NTM will prepare a Phase IA Archaeological Investigations Report, including results of background research, the Archaeological Probability Model, and field observations. The final report will then be used for MDOT/SHA's for the evaluation of alternatives in the EIS phase of the project.

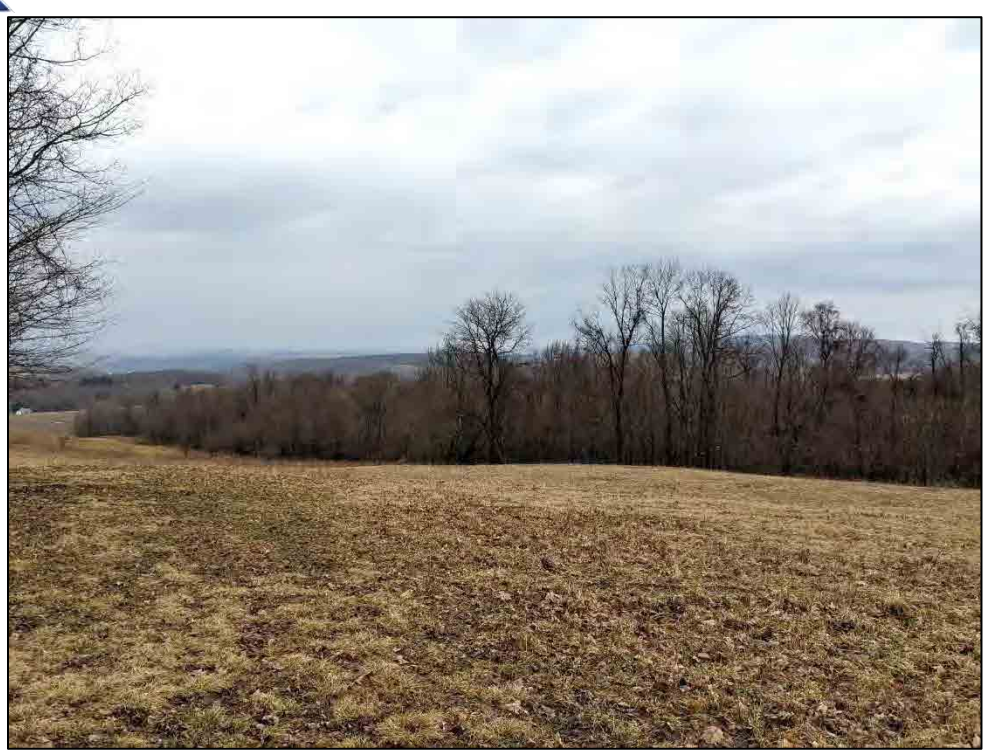
It is anticipated that NTM and Markosky will participate in reciprocal peer review of technical documents and reports prior to submission to state agencies for review. NTM anticipates one (1) round of peer review and revision for each document prepared for this effort.

NTM will coordinate with Stantec and KCI to compile the necessary Technical Files and Administrative Record for archaeological resources in Maryland for the EIS.

4.0 Photographs

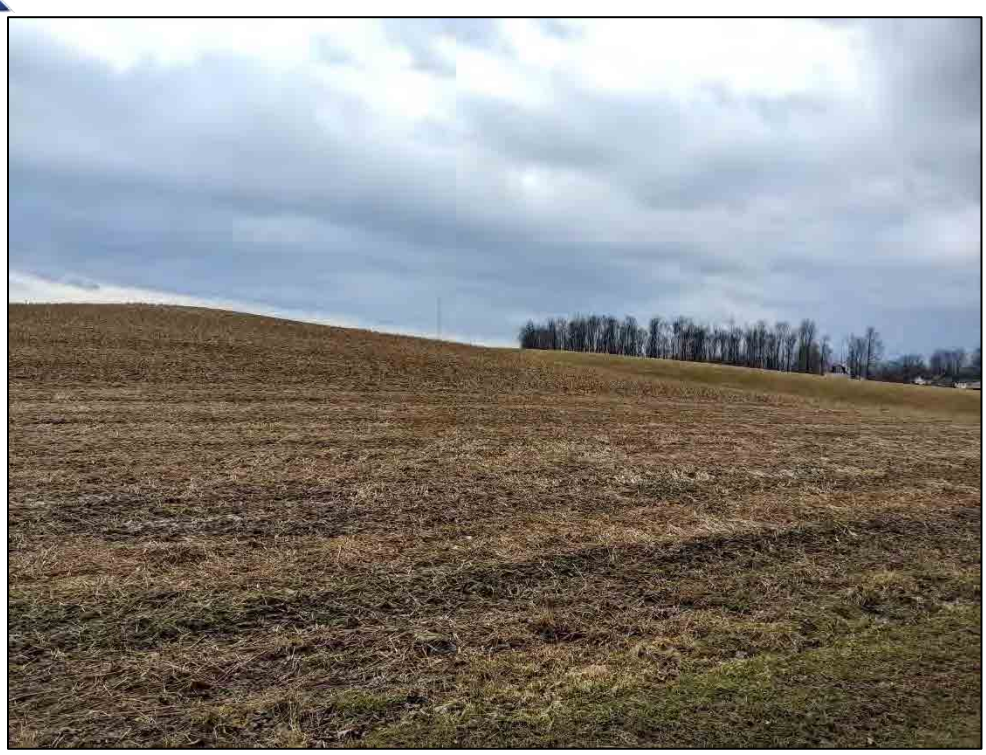
Photograph 1: View of the APE (Segment 2 DU and Segment 2 E) looking south from the Mason Dixon Line. Photograph taken March 23, 2023.

Photograph 2: View of the APE (Segment 2 DU and Segment 2 E) looking southwest from the Markowitz driveway. Photograph taken March 23, 2023.



Photograph 3: Overview of the APE (Segment 2 DU and Segment 2 E) looking northeast. Photograph taken March 23, 2023.

Photograph 4: Overview of the APE (Segment 2 DU and Segment 2 E) looking north-northeast. Photograph taken March 23, 2023.



Photograph 5: Overview of the APE (Segment 3 DU-E and Segment 3 DU-E Shift) looking southwest. Photograph taken March 23, 2023.

Photograph 6: Overview of the APE (Segment 3 DU-E and Segment 3 DU-E Shift) looking northeast. Photograph taken March 23, 2023.

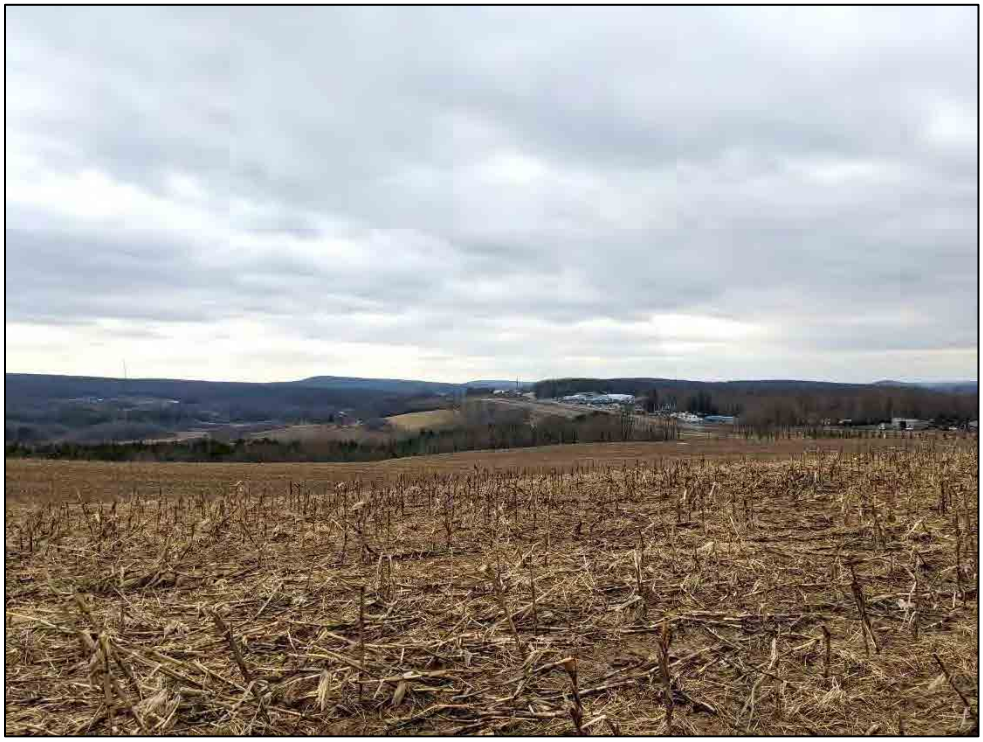
Photograph 7: Overview of the APE (Segment 3 DU-E) looking north-northeast. Photograph taken March 23, 2023.

Photograph 8: Overview of the APE (Segment 3 DU-E) looking north-northeast. Photograph taken March 23, 2023.

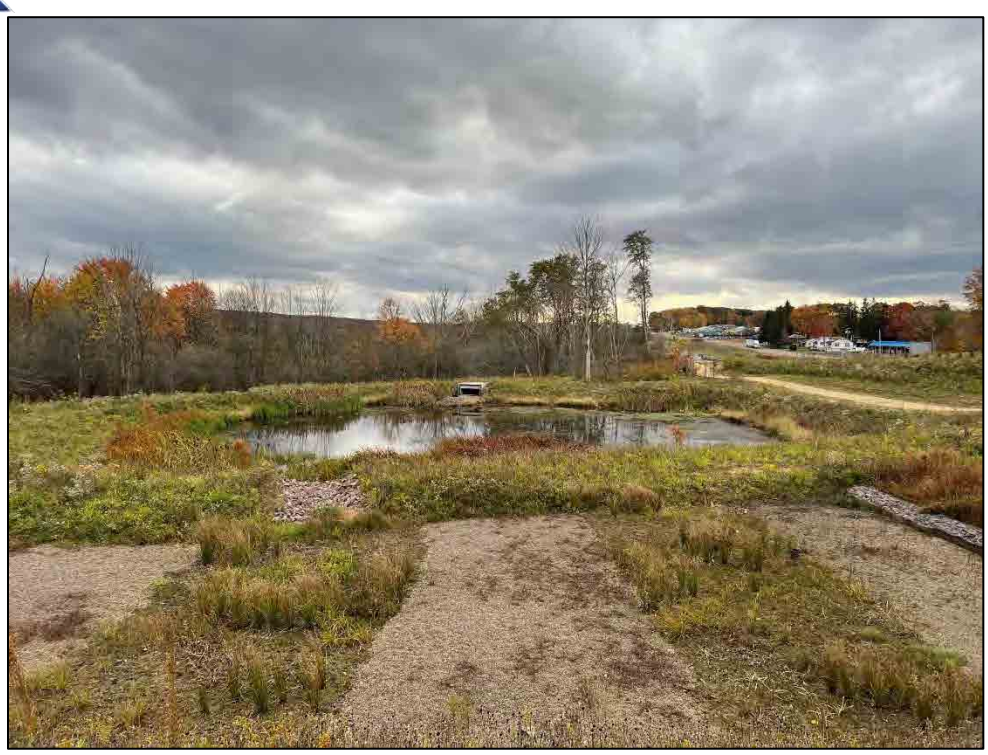
Photograph 9: Overview of the APE (Segment 3 DU-E) looking southwest. Photograph taken March 23, 2023.

Photograph 10: Overview of the APE (Segment 3 DU-E) looking southwest. Photograph taken March 23, 2023.

Photograph 11: Overview of the APE (Segment 3 DU-E Shift) looking southwest. Photograph taken March 23, 2023.



Photograph 12: Overview of the APE (Segment 3 DU-E Shift) looking southwest. Photograph taken March 23, 2023.



Photograph 13: Overview of the APE (Segment 3 DU-E) looking south-southwest from the northern SWM basin. Photograph taken October 17, 2022.

Photograph 14: Overview of the APE (Segment 3 DU-E and Segment 3 DU-E Shift) looking northeast from the southern SWM basins. Photograph taken March 23, 2023.

Photograph 15: Overview of the APE (Segment 3 DU-E and Segment 3 DU-E Shift) looking northeast. Photograph taken March 23, 2023.

Photograph 16: View of on-going logging activity within Segment DU-E, looking west. Surface disturbance appears to be minimal. Photograph taken March 23, 2023.

Photograph 17: View of on-going logging activity within Segment DU-E, looking north-northeast. Expansive piles of tree branches are piled on the ground surface in this portion of the APE. Photograph taken March 23, 2023.

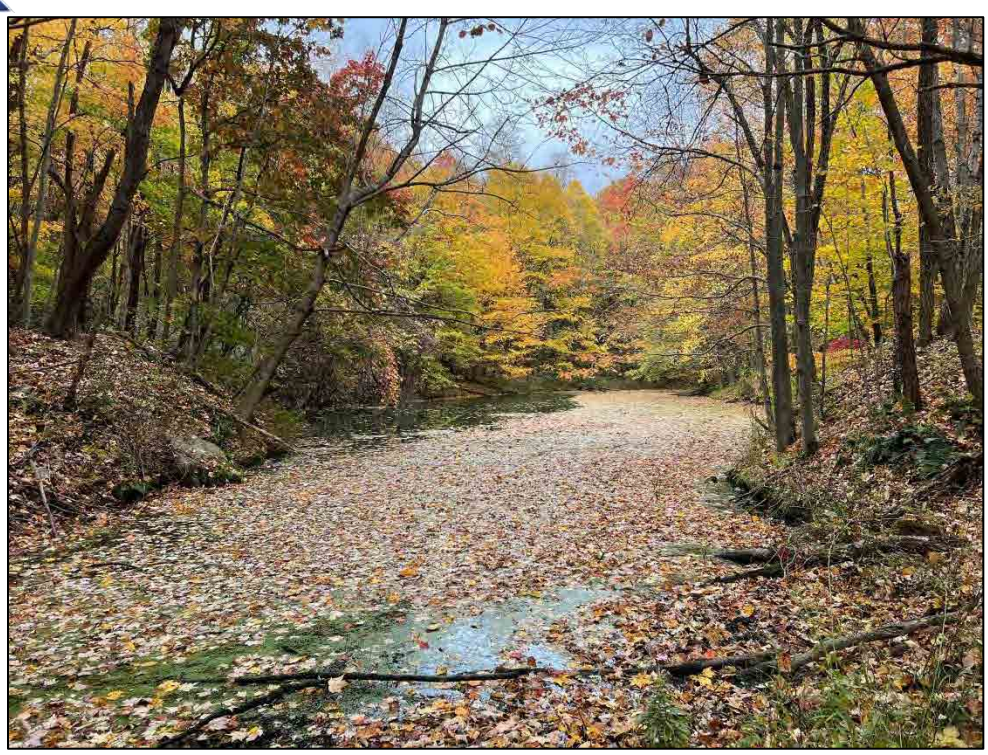
Photograph 18: Downstream view of WL0014 from its source, looking north-northwest. Photograph taken October 18, 2022.

Photograph 19: Upland soil profile in Boring 4, retrieved from eastern terrace along WL014 near its source. Photograph taken October 18, 2022.

Photograph 20: View of the WL014 valley showing adjacent wetlands, looking south-southwest. Photograph taken October 18, 2022.

Photograph 21: Upland profile of Boring 3, retrieved west of WL014. Photograph taken October 18, 2022.

Photograph 22: View of the nearly-level terrace east of WL014, looking southwest. Note the boulders on the surface. Photograph taken October 18, 2022.



Photograph 23: View of the impoundment at the southern extent of WL013, looking southeast. Photograph taken October 18, 2022.

Photograph 24: Downstream view of WL013 looking northwest from the impoundment. Photograph taken October 18, 2022.

Photograph 25: View of mine spoils surrounding the impoundment, looking southeast. Photograph taken October 18, 2022.

Photograph 26: View of WL013 where it flows beneath boulders, looking north. Photograph taken October 18, 2022.

Photograph 27: View of WL016 from the western edge of the APE, looking east. Photograph taken October 18, 2022.

Photograph 28: Downstream view of WL012 from its source, looking northeast. Photograph taken October 18, 2022.

Photograph 29: View of WL012 from its approximate mid-point within the APE, looking north-northeast. Photograph taken October 18, 2022.

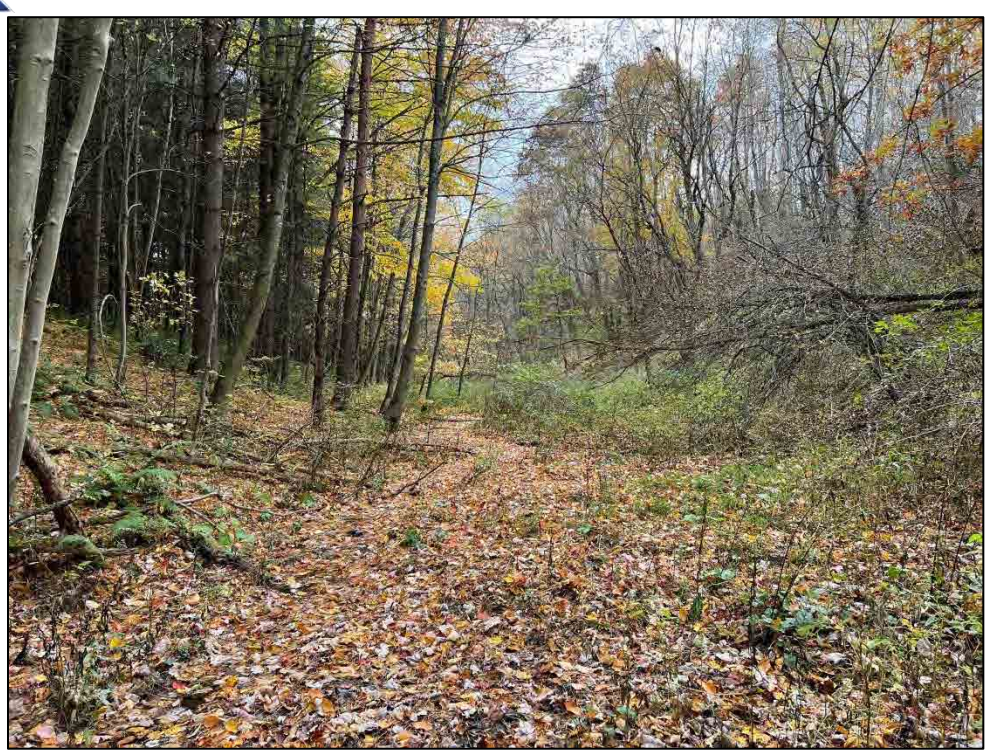
Photograph 30: View of WL012 from gravel drive, looking southwest. Photograph taken October 18, 2022.

Photograph 31: View of spoil piles along the Maust/Markowitz property line, looking south-southeast. Photograph taken October 18, 2022.

Photograph 32: View of spoil piles and a ditch along the Maust/Markowitz property line, looking west. Photograph taken October 18, 2022.

Photograph 33: View of WL009 and WL010 from the western edge of the APE, looking south-southeast. Photograph taken October 17, 2022.

Photograph 34: View of WL009 and WL010 from the southeastern extent of WL009, looking north-northwest. Photograph taken October 17, 2022.



Photograph 35: View of the WL006 stream valley from the edge of the APE, looking southwest. Photograph taken October 17, 2022.

Photograph 36: View of the southern extent of the WL006 stream valley, looking northeast. Photograph taken October 17, 2022.

Photograph 37: View of the strip-mined hillside east of WL003, 004, and 005, looking south-southwest. Photograph taken October 17, 2022.

Photograph 38: View of the strip-mined hillside east of WL003, 004, and 005, looking south. Photograph taken October 17, 2022.

Photograph 39: View of boulders at the surface on the hillside between the northern SWM basin and the WL006 stream valley, looking southeast. Photograph taken October 17, 2022.