I. Introduction

The following report discusses the results of the background research and geomorphological evaluation performed by McCormick Taylor, Inc, for the proposed replacement of State Bridge 503 over the Norfolk Southern Railroad and the proposed Levels Road culvert associated with the new alignment of Levels Road in Appoquinimink Hundred, New Castle County, Delaware ***(Figure 1)***. The objective of these studies was to assess the probability of locating archaeological sites within the area of potential effects and to provide an archaeological fieldwork methodology for the two projects.

A project's area of potential effects (APE) is defined by 36CFR§800.16(d) as "the geographic area or areas within which an undertaking my directly or indirectly cause alterations in the character or use of historic properties." The archaeological APE, a subset of the larger project APE, is any area in which ground disturbing activities could occur. DelDOT, on behalf of the Federal Highway Administration (FHWA), has undertaken the archaeological studies at Bridge 503 as part of the Section 106 process. Although no federal funding is involved with the Levels Road Culvert project, the procurement of an Army Corps of Engineers permit for the construction of the culvert has necessitated the archaeological studies at this location.

The Principal Investigator for the Phase IA investigations was Robert H. Eiswert. The geomorphological evaluation was performed by Dr. Frank J. Vento, Professor of Geology, Clarion University of Pennsylvania. Andrew Wyatt and Charles Richmond completed the background research. Graphics were produced by John Watson.

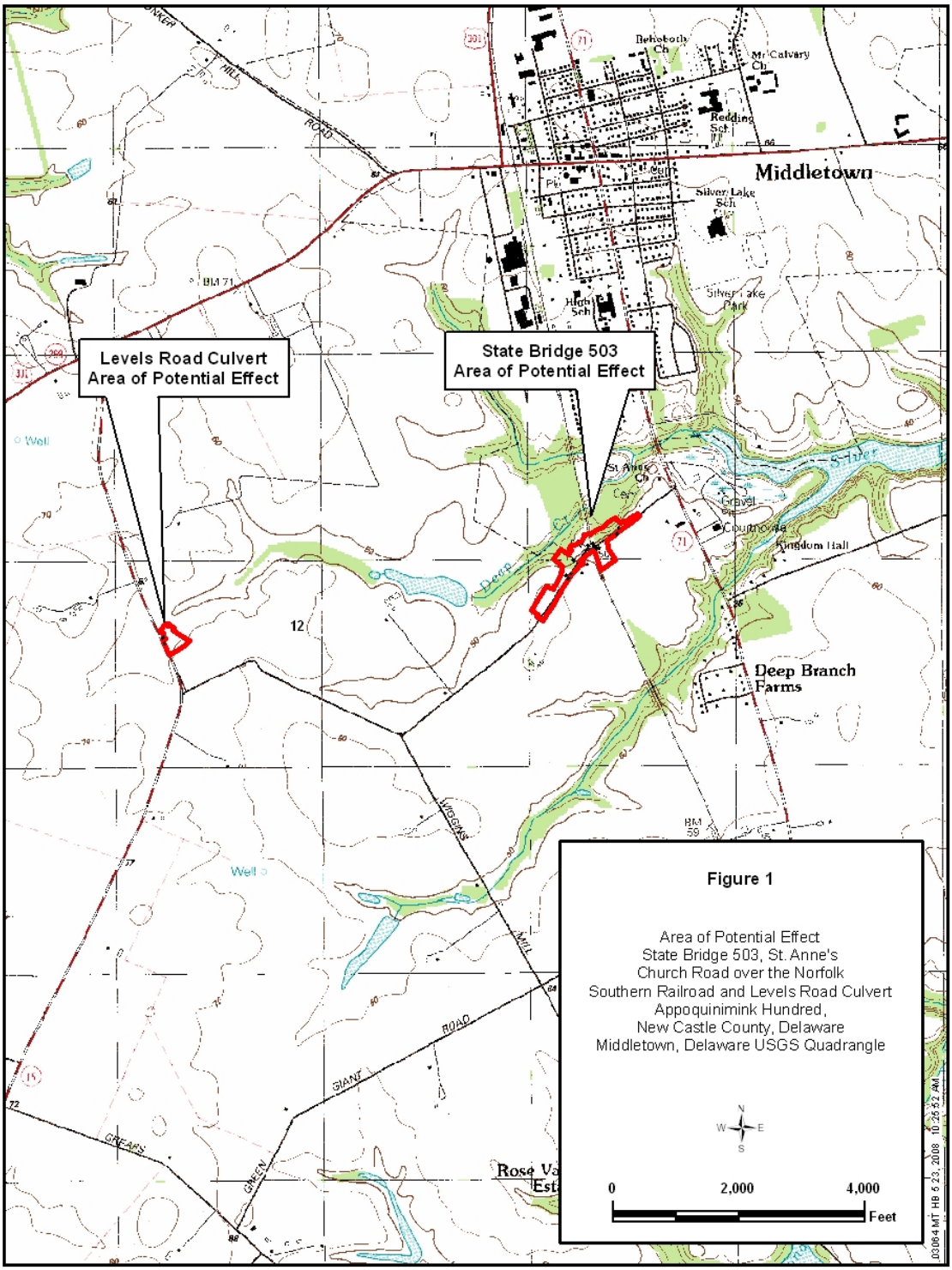
A. Project Descriptions

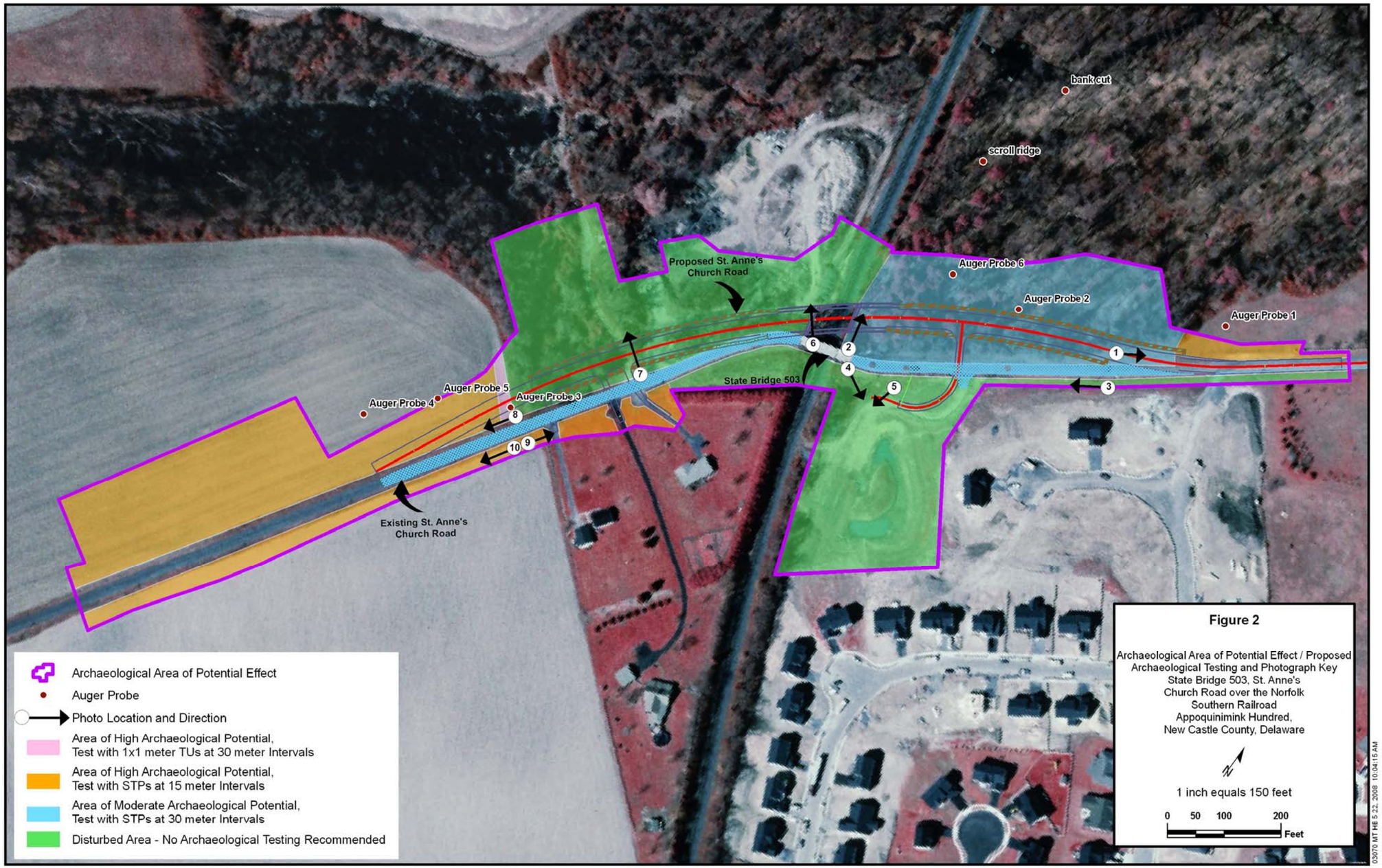
1. State Bridge 503 over the Norfolk Southern Railroad/St. Anne's Church Road

The project is located in Appoquinimink Hundred, New Castle County, Delaware approximately 0.3 miles west of the intersection of Summit Branch Road and St. Anne’s Church Road ***(Figure 1).*** The proposed project involves replacing the existing three span, plate girder bridge that carries St. Anne’s Church Road over the Norfolk Southern Railroad on a new alignment to the north of its existing position ***(Figure 2).*** As part of the project, an existing storm water pond in the southeast quadrant of the bridge may be upgraded to accept the additional storm water volume from the proposed bridge.

The northeastern quadrant of the Area of Potential Effect (APE) is positioned on two distinct landforms. The far eastern portion of the project will impact a small portion of upland landform, currently in lawn, located approximately 300 feet west of the Old St. Anne’s Church Cemetery ***(Figure 2, Photograph 1).*** Between this upland and the existing Norfolk Southern rail line, the APE abruptly drops onto to the wooded T1 terrace of Deep Creek, and extends westward to the disturbed Norfolk Southern Railroad right of way ***(Figure 2, Photograph 2)***.

In the southeast quadrant, the APE initially consists of a sliver take on the northern edge of the Cricklewood Subdivision. This area, which is currently in lawn, was disturbed during the


Levels Road Culvert
Area of Potential Effect
State Bridge 503
Area of Potential Effect
Middletown
Deep Branch
Farms
Figure 1
Area of Potential Effect
State Bridge 503, St. Anne's
Church Road over the Norfolk
Southern Railroad and Levels Road Culvert
Appoquinimink Hundred,
New Castle County, Delaware
Middletown, Delaware USGS Quadrangle
0
2,000
4,000
Feet


bank cut
scroll ridge
Proposed St. Anne's Church Road
Auger Probe 6
Auger Probe 2
Auger Probe 1
State Bridge 503
Auger Probe 5
Auger Probe 4
Auger Probe 3
Existing St. Anne's Church Road
1
2
3
4
5
6
7
8
9
10
Archaeological Area of Potential Effect
Auger Probe
Photo Location and Direction
Area of High Archaeological Potential, Test with 1x1 meter TUs at 30 meter Intervals
Area of High Archaeological Potential, Test with STPs at 15 meter Intervals
Area of Moderate Archaeological Potential, Test with STPs at 30 meter Intervals
Disturbed Area - No Archaeological Testing Recommended
Figure 2
Archaeological Area of Potential Effect / Proposed Archaeological Testing and Photograph Key
State Bridge 503, St. Anne's Church Road over the Norfolk Southern Railroad
Appoquinimink Hundred, New Castle County, Delaware
N
1 inch equals 150 feet
0 50 100 200
Feet
03070 MT HB 5 22, 2008 10:04:15 AM

Photograph 1: Lawn west of the St. Anne's Church Cemetery in the northeast quadrant, facing northeast.

Photograph 2: T1 floodplain in the northeast quadrant, facing north.

construction of the development and contains underground utilities ***(Figure 2, Photograph 3)***. Moving toward the bridge, the APE in the southeast quadrant widens in order to accommodate the realignment of the gas company access road and project-related improvements to the existing stormwater management pond. This portion of the project was disturbed during the construction of this infrastructure. It was graded during the installation of the existing driveway and storm water management pond ***(Figure 2, Photograph 4)***. In addition, this area contains a natural gas testing station and associated underground gas lines ***(Figure 2, Photograph 5)***.

The landform in the northwest quadrant of the APE also contains two distinct landforms. The area immediately to the west of the railroad tracks lies at the approximate elevation of the east side of the railroad tracks, although it contains the heavily disturbed former Middletown landfill ***(Figue 2, Photographs 6 and 7)***. The landform to the west of the landfill rises back to an upland position, and is mostly contained within an agricultural field ***(Figure 2, Photograph 8).***

In the southwest quadrant in the area near the bridge, the APE is contained mostly within the existing disturbed fill slope associated with St Anne's Church Road. Moving to the west, the APE is located within the front lawns of three residential properties; localized disturbances associated with three driveways, landscaping beds, and an underground gas line was noted ***(Figure 2, Photograph 9)***. West of the residential properties, the APE consists of an agricultural field ***(Figure 2, Phototograph 10).***

2. Levels Road Culvert

The project is located in Appoquinimink Hundred, New Castle County, Delaware approximately 5000 feet south of the intersection of S.R. 15 and S.R. 301 and approximately 130 feet to the east of the existing Levels Road (S.R. 15) ***(Figure 1).*** The proposed project involves constructing a culvert that will carry the headwaters of Deep Creek beneath the proposed new alignment of Levels Road. Disturbances associated with the temporary realignment of the stream channel and the construction stockpile and staging area are included within the archaeological APE ***(Figure 3).*** The entire APE associated with the culvert replacement is situated on an upland landform that currently serves as an agricultural field ***(Figure 3, Photographs 11 and 12)***.

Photograph 3: Disturbance associated with the Cricklewood Subdivision in the southeast quadrant, facing west.

Photograph 4: Disturbance associated with the storm water management pond in the southeast quadrant, facing east.

Photograph 5: Natural gas testing station in the southeast quadrant, facing south.

Photograph 6: Landfill in the northwest quadrant, facing northwest.

Photograph 7: Landfill in the northwest quadrant, facing northwest.

Photograph 8: Agricultural field in the northwest quadrant, facing west.

Photograph 9: Lawns in the southwest quadrant, facing northeast.

Photograph 10: Agricultural field in the southwest quadrant, facing southwest.

12
11
Photo Location and Direction
Archaeological Area of Potential Effect
Area of High Archaeological Potential, Test with STPs at 15 meter intervals or 1x1 meter TUs at 30 meter intervals
Figure 3
Archaeological Area of Potential Effect / Proposed Archaeological Testing and Photograph Key
Levels Road Culvert
Appoquinimink Hundred,
New Castle County, Delaware
N
W
E
S
0
150
300
Feet
03064 MT HB 5 23 2008 9:21:54 AM

Photograph 11: View of southern portion of Levels Road Culvert APE, facing east.

Photograph 12: View of northern portion of Levels Road Culvert APE, facing east.