DC TO RICHMOND
SOUTHEAST HIGH SPEED RAIL

R-18 PHASE IB ARCHAEOLOGICAL SURVEY, SEGMENTS ROAF–BBHW (SEGMENTS 1-20)

D.C. TO RICHMOND SOUTHEAST HIGH SPEED RAIL

November 2016

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Phase IB Archaeological Survey for the Washington, D.C. to Richmond, Virginia High Speed Rail Project

Rosslyn to Alexandria (ROAF) through
Buckingham Branch/Hospital Wye (BBHW) Segments
DHR #2014-0666

DRPT
Virginia Department of Rail and Public Transportation

U.S. Department of Transportation
Federal Railroad Administration

Phase IB Archaeological Survey for the Washington, D.C. to Richmond, Virginia High Speed Rail Project Rosslyn to Alexandria (ROAF) through Buckingham Branch/Hospital Wye (BBHW) Segments

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ARPA PERMIT 2015.FRSP.02

by

Kevin McCloskey, Earl Proper, Curtis McCoy, Emily Calhoun,
Morgan MacKenzie, and Joseph Blondino

Prepared for

Virginia Department of Rail and Public Transportation

600 E. Main Street, Suite 2102
Richmond, Virginia 23219

Prepared by

DC2RVA Project Team

801 E. Main Street, Suite 1000
Richmond, Virginia 23219

November 2016

November 11, 2016

Kerri S. Barile, Principal Investigator — Date

ABSTRACT

The proposed Washington, D.C. to Richmond (DC2RVA) segment of the Southeast High Speed Rail project was examined through a Phase IB archaeological survey. The proposed project is being completed under the auspices of the Federal Rail Administration (FRA) in conjunction with the Virginia Department of Rail and Public Transportation (DRPT). Because of the FRA's involvement, the undertaking is required to comply with the National Environmental Policy Act of 1969 (NEPA) and Section 106 of the National Historic Preservation Act of 1966, as amended. The project is being completed as Virginia Department of Historic Resources (DHR) File Review #2014-0666.

The current archaeological study included a Phase IB survey of the 20 main line segments (Rosslyn to Alexandria [ROAF] through Buckingham Branch/Hospital Wye [BBHW]) of the DC2RVA corridor based on the results of the previously completed archaeological background review and archaeological predictive model (Klein at al. 2015). The archaeological area of potential effects (APE) for the DC2RVA project includes the footprint of physical improvements associated with the project, inclusive of both the rail modifications and any associated roadwork. Engineering and design work has not yet been completed for the corridor, as such the APE studied as part of the current report was limited to proposed improvement to the existing CSX Transportation (CSXT) rail right-of-way and was specifically defined as an area encompassing 2,109.5 acres (853.7 ha), extending 50 feet (15.2 m) on either side of the railroad centerline, an existing 123-mile (198-km) corridor. Subsequent reports will reflect the study of any areas within the APE but not discussed in this report, such as road modifications and station locations.

The archaeological study consisted of a pedestrian survey and subsurface testing, supplemented by metal detector survey in selected locations, throughout the areas identified by predictive modeling within the APE to have high, medium, and low potential for archaeological deposits (termed archaeological areas). Additionally, all sites within the APE previously determined eligible or potentially eligible for listing on the National Register of Historic Places (NRHP) as well as those previously recorded sites that had not been evaluated by the DHR were examined regardless of their probability ranking/location within the probability model. Based on the pedestrian survey, subsurface testing (and, where necessary, metal detection) was carried out in locations deemed to have potential for intact subsurface deposits. The archaeological areas subjected to Phase IB survey encompassed 156.1 acres (63.2 ha).

All archaeological areas were subjected to pedestrian survey and photo documentation followed by systematic subsurface testing in locations deemed to have the potential for subsurface deposits. Pedestrian survey found that the majority of the archaeological APE was disturbed by buried utility corridors, modern development, and grading associated with the railroad. Despite these disturbances, a total of 424 shovel test pits (STPs) was excavated across the 123-mile (198-km) APE, within 51 discrete archaeological areas. The excavation of the shovel tests resulted in the recovery of 19 artifacts that date to the historic period and include ceramics, glass, metal, and architectural debris. Phase IB survey resulted in the identification of 21 archaeological sites and 2

isolated finds within the surveyed portions of the APE. Of these 21 archaeological sites, 18 were previously identified archaeological sites and 3 were newly recorded. It is **recommended that two sites (44CF0680 and 44FX2542) remain potentially eligible or eligible for listing on the NRHP, but the portion of these sites within the APE does not contribute to their overall site eligibility. Two sites (44SP0187 and 44SP0468) are recommended potentially eligible for listing on the NRHP. Two sites (44HE0840 and 44HE0841) remain unevaluated for the NRHP; however, these resources will be surveyed, and if possible evaluated, in conjunction with a forthcoming architectural reconnaissance survey of all structures within the DC2RVA architectural APE. Twelve sites remain unevaluated, but the portion of these sites within the APE have been destroyed or severely compromised and as such they do not contribute to their respective site's overall eligibility. Finally, the three newly recorded sites (44CE0836, 44CE0837, and 44CE0838) and the two isolated finds are recommended not eligible for NRHP listing.** DHR concurred with all recommendations outlined in this report in a letter dated October 11, 2016.

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1 INTRODUCTION

Dovetail Cultural Resource Group (Dovetail), on behalf of the Virginia Department of Rail and Public Transportation (DRPT), conducted a Phase IB archaeological survey of the Rosslyn to Alexandria (ROAF) through Buckingham Branch/Hospital Wye (BBHW) segments of the Washington, D.C. to Richmond (DC2RVA) project. The project is being completed as Virginia Department of Historic Resources (DHR) File #2014-0666.

The Federal Railroad Administration (FRA) and DRPT propose passenger rail service and rail infrastructure improvements in the north-south travel corridor between Washington, D.C. and Richmond, VA. These passenger rail service and rail infrastructure improvements are collectively known as the DC2RVA project. The Project will deliver higher speed passenger rail service, increase passenger and freight rail capacity, and improve passenger rail service frequency and reliability in a corridor shared by growing volumes of passenger, commuter, and freight rail traffic, thereby providing a competitive option for travelers going between Washington, D.C. and Richmond and those traveling to and from adjacent connecting corridors. The Project is part of the larger Southeast High Speed Rail (SEHSR) corridor (Figure 1-1), which extends from Washington, D.C. through Richmond, VA, and from Richmond continues east to Hampton Roads (Norfolk), VA and south to Raleigh, NC, and Charlotte, NC, and then continues west to Atlanta and south to Florida. The Project connects to the National Railroad Passenger Corporation (Amtrak) Northeast Corridor (NEC) at Union Station in Washington, D.C.

The purpose of the SEHSR program, as stated in the 2002 Tier I Final Environmental Impact Statement (EIS) completed for the full SEHSR corridor, is to provide a competitive transportation choice to travelers within the Washington, D.C. to Charlotte travel corridor. The purpose of the current Washington, D.C. to Richmond SEHSR project described here is to fulfill the purpose of the SEHSR Tier I EIS within this segment of the larger SEHSR corridor. The Project, by increasing rail capacity and improving travel times between Washington, D.C. and Richmond, will improve passenger train performance and reliability in the corridor, enabling intercity passenger rail to be a competitive transportation choice for travelers between Washington, D.C. and Richmond and beyond.

Given FRA's funding involvement and permitting through various other federal agencies, the Project is required to comply with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations under 36CFR800. Additionally, all cultural resource work was designed to comply with the Virginia Antiquities Act (Code of Virginia § 10.1-2300) and guidelines and regulations promulgated by the DHR as necessary.

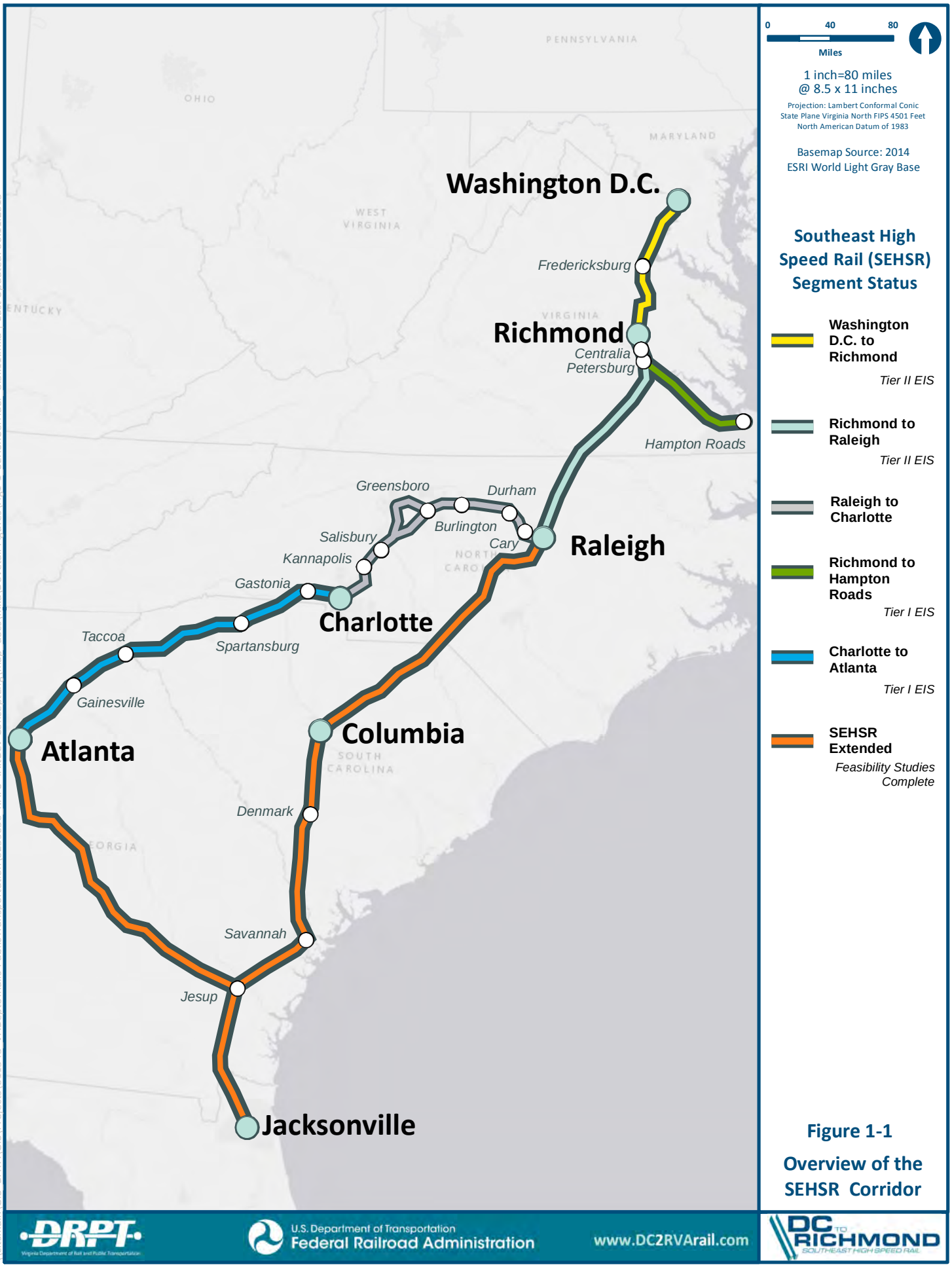

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Figure 1-1

Overview of the SEHSR Corridor

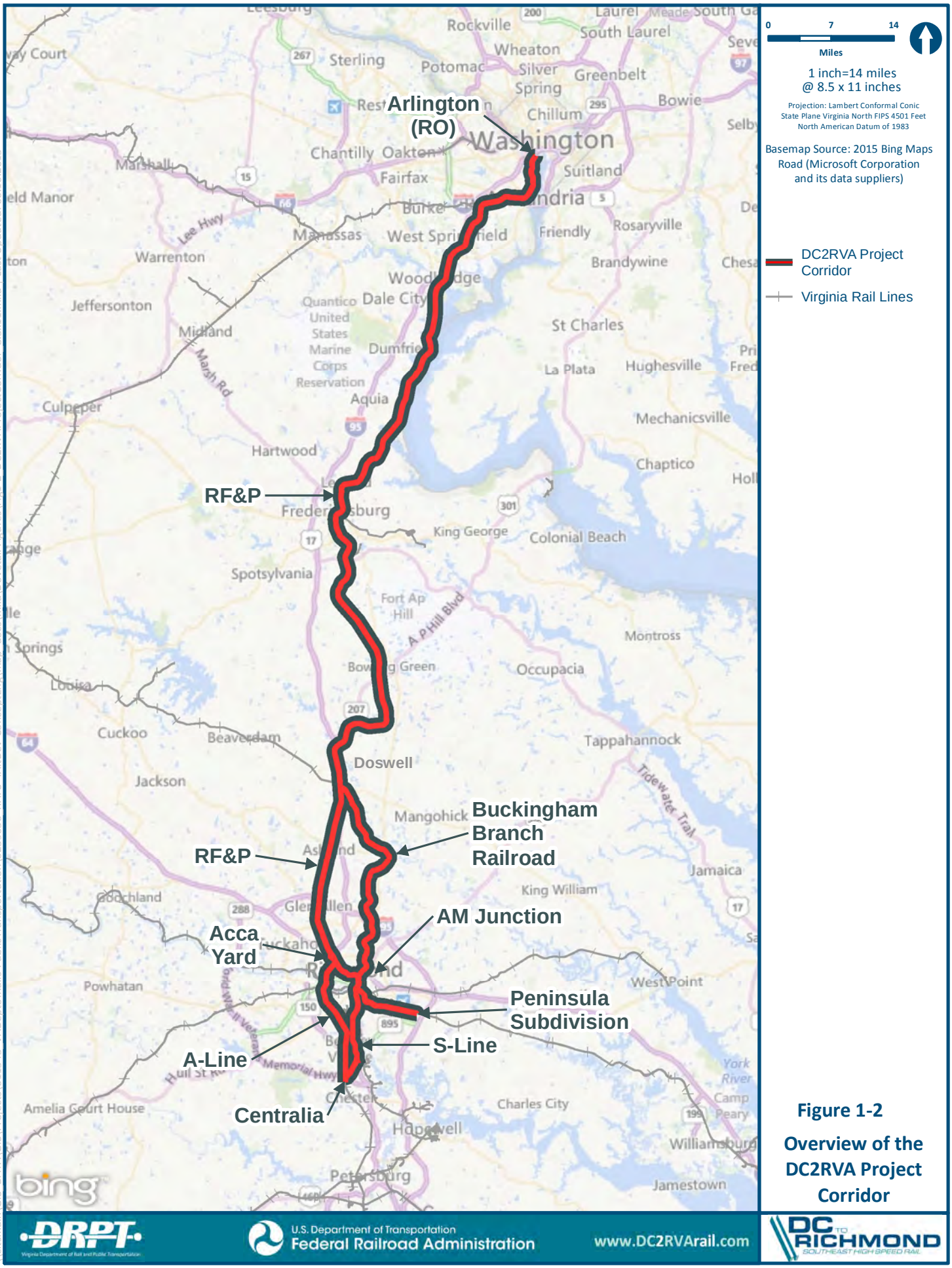
1.1 PROJECT LOCATION

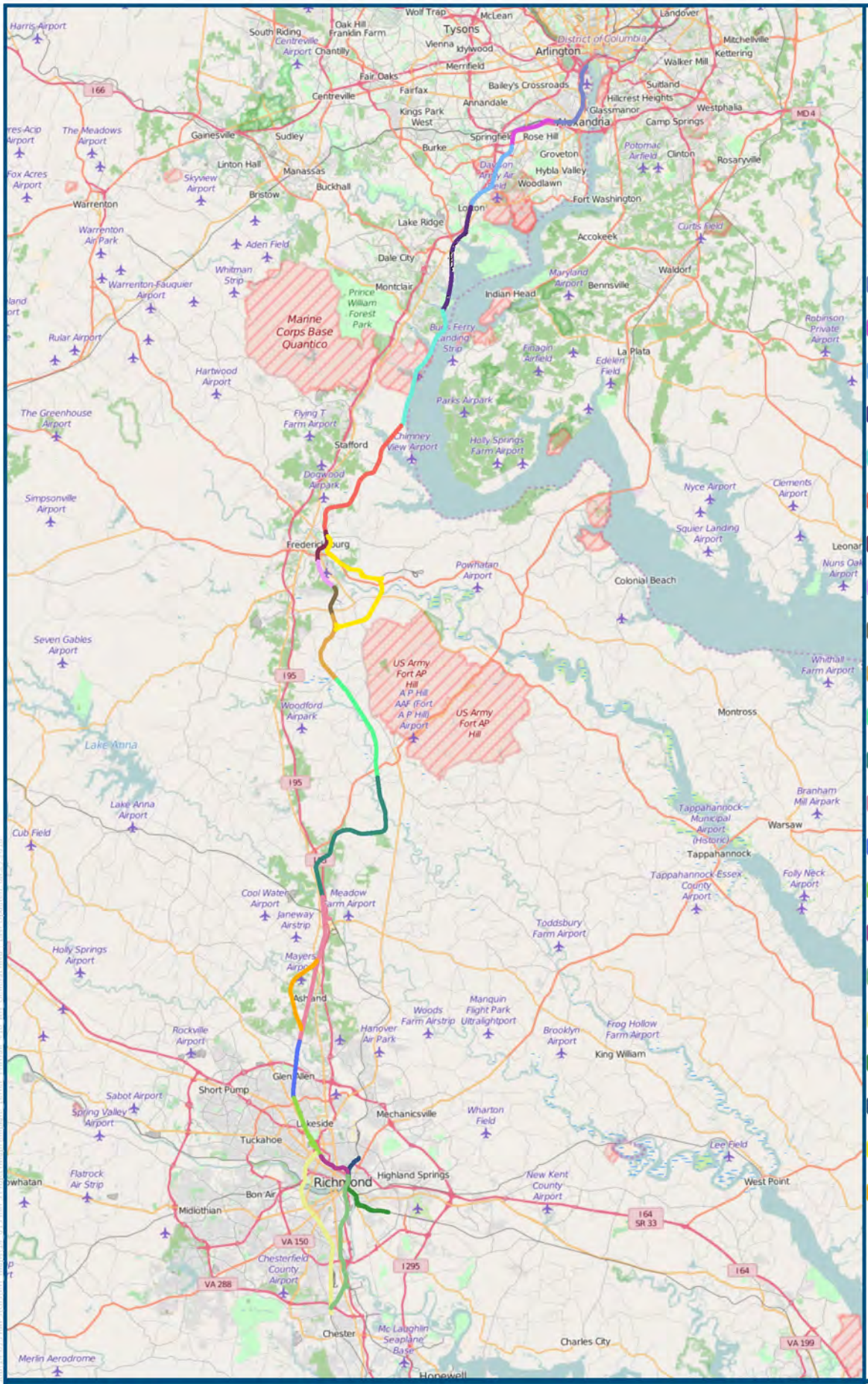
The Washington, D.C. to Richmond corridor spans 123 miles (198 km) along an existing rail corridor owned by CSX Transportation (CSXT) between Control Point RO (milepost [MP] CFP 110) in Arlington, VA to the CSXT A-Line and S-Line junction at MP A-11 in Centralia, VA (Chesterfield County) (Figure 1-2). For the purposes of engineering and environmental planning, the DC2RVA corridor has been subdivided into 22 segments that correspond with improvements and alternatives, and as such have been named and numbered from north to south (Figure 1-3). At the northern terminus in Arlington, VA, the Project limit ends at the southern approach to Long Bridge, a double-track rail bridge taking the rail corridor over the Potomac River; however, the northern terminus of Union Station in Washington, D.C. will be used for ridership and revenue forecasting, as well as service development planning within the Project corridor. The southern terminus in Centralia is the junction of two CSXT routes that begin in Richmond and rejoin approximately 11 miles (17.7 km) south of the city.

Proposed improvements are along CSXT-owned track, generally parallel to the I-95 corridor between northern Virginia and Richmond. From north to south, the project travels through the following counties and cities:

- Arlington County
- City of Alexandria
- Fairfax County
- Prince William County
- Stafford County
- City of Fredericksburg
- Spotsylvania County
- Caroline County
- Hanover County
- Henrico County
- City of Richmond
- Chesterfield County

In Arlington, the Project connects to existing CSXT track extending across the Potomac River on the Long Bridge into Washington, D.C. and Union Station, the southern terminus of Amtrak's NEC. At Centralia, the Project connects to both the Richmond to Raleigh segment of the SEHSR corridor and the Richmond to Hampton Roads segment of the SEHSR corridor. The Washington, D.C. to Richmond segment is an integral part of the overall Washington, D.C. to Charlotte SEHSR corridor and provides a critical link between high speed intercity passenger service from Boston to Washington, D.C. and the southeastern United States.





0 5 10
Miles
0 8 16
Kilometers

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: Esri 2016
Open Street Map

Legend

DC2RVA Project Segments

- 01 Rosslyn to Alexandria (ROAF)
- 02 Alexandria to Franconia (AFFR)
- 03 Franconia to Lorton (FRLO)
- 04 Lorton to Powells Creek (LOPC)
- 05 Powells Creek to Arkendale (PCAR)
- 06 Arkendale to Dahlgren Junction (ARDJ)
- 07 Dahlgren Junction To Fredericksburg (DJFB)
- 08 Fredericksburg to Hamilton (FBHA)
- 09 Hamilton to Crossroads (HAXR)
- 10 Crossroads to Guinea (XRGU)
- 11 Guinea to Milford (GUMD)
- 12 Milford to North Doswell (MDND)
- 13 North Doswell to Elmont (NDEL)
- 14 Elmont to Greendale (ELGN)
- 15 Greendale to SAY/WAY (GNSA)
- 16 SAY/WAY to AM Jct (Hermitage Lead) (SAAM)
- 17 AM Jct to Centralia - S Line (AMCE)
- 18 WAY to Centralia - A Line (WACE)
- 19' AM Jct to Fulton Yard (AMFY)
- 20' Buckingham Branch/ Hospital Wye (BBHW)
- 21 Fredericksburg Bypass (FBBP)
- 22 Ashland Bypass (ASBP)

Figure 1-3
DC2RVA Project Segments

09/2016

DRPT
U.S. Department of Transportation
Federal Railroad Administration
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DC TO RICHMOND SOUTHEAST HIGH SPEED RAIL

1.2 DC2RVA PROJECT DESCRIPTION

The Project will include specific rail infrastructure improvements and service upgrades intended to improve the travel time, service frequency, and on-time performance of passenger trains operating between Washington, D.C. and Richmond, VA. Specific improvements to the existing rail infrastructure between Arlington, VA, and Centralia, VA include:

- Corridor-wide upgrades to existing track and signal systems to achieve higher operating speeds, including curve realignments, higher-speed crossovers between tracks, passing sidings, and grade crossing improvements.
- Corridor-wide improvements to train operating capacity to achieve higher passenger train service frequency and reliability, including an additional main track along most of the corridor, and additional controlled sidings, crossovers, yard bypasses and leads, and other capacity and reliability improvements at certain locations.
- Station and platform improvements for Amtrak and Virginia Railway Express (VRE) stations.

Environmental studies (a Tier II Environmental Impact Statement) in support of the Project will assess the environmental impacts of these improvements and identify ways to avoid, minimize, or otherwise mitigate such impacts.

The Project may include locations for new or replacement intercity passenger stations on the Project corridor, and additional rail capacity and other improvements in the Richmond area and possible bypasses around Fredericksburg and Ashland.

Studies in support of the Project will address passenger and freight rail operations and service between Union Station in Washington, D.C. and Richmond and beyond, but the Project does not include physical improvements to the Long Bridge across the Potomac River or to rail infrastructure within Washington, D.C. Other projects will address improvements to the rail infrastructure north of Arlington and south of Centralia along the SEHSR corridor.

1.3 PREVIOUS CULTURAL RESOURCE STUDIES

The DC2RVA corridor has been the subject of previous and ongoing cultural resource investigations. In 2010, McCormick Taylor conducted Phase I cultural resource investigations along the Powells Creek to Arkendale (PCAR) segment of the current DC2RVA corridor (McCormick Taylor 2010a, 2010b). The architectural investigation identified 11 resources within the defined APE and the archaeological study identified no sites or features within the APE. Based on these results and the ensuing recommendations, the DHR found the proposed rail improvements in this segment of the DC2RVA corridor would have no adverse effect on historic properties. Given this recommendation and through consultation with the DHR, the current archaeological investigation does not include identification and evaluation studies of the PCAR segment of the DC2RVA corridor.

The AM Jct to Centralia- S Line (AMCE) segment of the DC2RVA corridor overlaps the Richmond to Raleigh segment of the SEHSR. The corridor between Richmond to Raleigh has been the subject of several cultural resource investigations over the past decade. This includes the APE surrounding the rail corridor itself as well as the APE of all road modification areas surrounding the rail line. Work was conducted between 2004 and 2012 by Mattson, Alexander and Associates,

Inc., Legacy Research Associates, Inc., Louis Berger Group, Inc., and Dovetail. The results of these studies have been individually coordinated with the DHR, including the submission of reports and Digital Sharing Service (DSS)/ Virginia Cultural Resource Information System (V-CRIS) forms to the agency as well as formal resource eligibility recommendations for listing on the National Register of Historic Places (NRHP). Project effect determinations, on individual historic properties as well as the Richmond to Raleigh segment of the SEHSR project as a whole, were acquired in 2009 and 2013. Preparation of a Memorandum of Agreement to outline stipulations to mitigate adverse effects is currently underway. Due to this ongoing work the current archaeological investigation does not include an examination of the AMCE segment of the DC2RVA corridor.

In 2015, Dovetail examined the entire DC2RVA corridor through an archaeological background review and predictive model (Klein at el. 2015), the purpose of which was to guide the current Phase IB archaeological study. Previous studies throughout the region provided a basis for projection of relative probability of discovering terrestrial archaeological sites using standard Phase I survey techniques in the DC2RVA project corridor. Environmental variables included distance to major drainages, soil fertility as reflected in the Soil Conservation Service's identification of soil classes, and disturbance evident on aerial images of the project corridor. Aspects of the built environment also used as variables included the georeferenced location of historic roads and National Park Service (NPS) historic trails that crossed the DC2RVA corridor. Documentary research provided information on previously identified architectural and archaeological resources, Revolutionary War and Civil War camps depicted on period maps, and the American Battlefield Protection Program-defined location of Civil War battlefields.

Together, these data allowed the prediction of the settings characterized by a high, moderate, and low probability of discovering archaeological sites, as well as areas where previous disturbance, development, previous archaeological survey, or soil attributes indicate that archaeological sites would not be discovered. Based on the results of the background review and predictive modeling Dovetail recommended that 90 percent (1,890.8 acres [765.2 ha]) of the 2,109.5-acre (853.7-ha) APE should not be tested due to previous archaeological survey meeting DHR standards or a location outside of even the lowest ranked probability areas. Additionally it was recommended that all of the high and moderate probability areas, a total of 203.7 acres (82.4 ha), and a 10 percent sample of the low probability areas (approximately 1.5 acres [0.6 ha]) be subjected to shovel test pit and metal detector survey, where appropriate. DHR concurred with these recommendations and the resulting current study is directly based on the parameters and recommendations outlined in the Klein et al. (2015) document. In addition, feedback on the model was received from several project Consulting Parties, notably the City of Alexandria, Arlington County, Prince William County, and the City of Fredericksburg. Their comments were also imbibed into the project methodology.

Dovetail is also conducting ongoing Phase I and II architectural investigations along the DC2RVA corridor. These studies are currently in progress, both in terms of survey and reporting, but are being completed by DC2RVA segment. These reports provide architectural background review results, along with historic contexts and survey results and recommendations (see Staton and Lesiuk 2015). As such, the current Phase IB archaeological report does not include recommendations/evaluations pertaining to architectural resources, including the Richmond, Fredericksburg & Potomac Railroad and Atlantic Coast Line and Seaboard Air Line Railroads themselves. Full discussions and recommendations pertaining to these resources can be found in the corresponding architectural reports. Additionally, the current report does not include background review or historic context sections, as these are presented in both the archaeological

background review and predictive model (Klein et al. 2015), as well as the Phase I and Phase II architecture reports.

1.4 CURRENT ARCHAEOLOGICAL STUDY

The current archaeological study comprises a Phase IB survey of the DC2RVA corridor based on the results of the previously outlined archaeological background review and archaeological predictive model. The archaeological APE for the DC2RVA project, as defined in consultation with the DHR, includes the footprint of physical improvements associated with the project, inclusive of both the rail modifications and any associated roadwork. Engineering and design work has not yet been completed for the corridor, as such the study as presented in the current report was limited to proposed improvement to the existing CSXT rail right-of-way and was specifically defined as extending 50 feet (15.2 m) on either side of the railroad centerline within an existing 123-mile (198-km) corridor, for an area encompassing 2,109.5 acres (853.7 ha). Subsequent reports will reflect the study of any areas within the APE but not discussed in this report, such as road modifications and station locations.

Based on the predictive model and through concurrence with DHR, targeted portions within the APE were identified for Phase IB archaeological survey, consisting of visual reconnaissance followed by subsurface testing and metal detection, as needed. Based on recommendations put forth in the predictive model and accepted by DHR, all of the high and moderate probability areas were subjected to Phase IB survey. Modeling recommendations called for Phase IB archaeological survey of a 10 percent sample of the low probability area; however, due to the small acreage identified as such, the entirety of the low probability area was included within the current investigation. Additionally, all sites within the APE previously determined eligible or potentially eligible for listing on the NRHP, as well as those sites that had been previously recorded but not been evaluated by the DHR, were examined regardless of their probability ranking/location within the probability model.

The goal of the Phase IB survey was to identify archaeological sites greater than 50 years in age and to provide an initial assessment of the integrity and research potential of any archaeological sites discovered within the APE. The cultural resource survey was conducted from October 2015 to March 2016. The fieldwork was conducted by Curtis McCoy, Kevin McCloskey, Kerry González, Mike Klein, Earl Proper, Morgan MacKenzie, Theresa Ulrich, Stephen Mohs, Ella Farahvashi, Bryce Matheny, Olivia McCarty, and Jennifer McDonough, with Kerri S. Barile serving as Principal Investigator. Drs. Barile and Klein, as well as Ms. González, Mr. McCoy, and Ms. MacKenzie, meet or exceed the standards established for Archaeologists by the Secretary of the Interior (SOI).

As noted above, the engineering and design work for the project has not yet been completed, specifically for deep testing, proposed bypasses, station locations, and grade crossings. As such, these items were not included in the predictive model and the current Phase IB archaeological investigation along the DC2RVA corridor. Once these aspects have been designed they will be addressed in subsequent archaeological investigations.

2 ARCHAEOLOGY PROJECT DESCRIPTION

The DC2RVA corridor spans 123 miles (198 km) along an existing rail corridor owned by CSXT between Control Point RO (MP CFP 110) in Arlington, VA to the CSXT A-Line and S-Line junction at MP A-11 in Centralia, VA (Chesterfield County). The corridor generally parallels the I-95 corridor between Northern Virginia and Richmond, traversing twelve cities and counties (Arlington County, City of Alexandria, Fairfax County, Prince William County, Stafford County, City of Fredericksburg, Spotsylvania County, Caroline County, Hanover County, Henrico County, City of Richmond, and Chesterfield County).

As previously mentioned, for the purposes of engineering and environmental planning, the DC2RVA corridor has been subdivided into 22 segments. However, the predictive modeling and the current archaeological investigations only span the 20 main line segments, ROAF to BBHW (see Figure 1-3). The remaining two segments, the Fredericksburg Bypass (FBBP) and the Ashland Bypass (ASBP), were added to the project after the completion of the modeling and therefore were beyond the scope of the developed predictive model and this investigation. Also subsequent to the preparation of the predictive model, proposed improvements to portions of the DC2RVA corridor were either eliminated from consideration and/or the scope of proposed improvements changed as to not require subsurface disturbance. As such, the predictive model output included areas of archaeological potential in both the AM Jct to Fulton Yard (AMFY) and BBHW segments of the DC2RVA corridor that were not examined during the Phase IB investigation. Current proposed improvements to the AMFY segment consist only of upgrades to the rail signals, an undertaking that requires no subsurface disturbance and therefore has no potential to impact known or unknown archaeological resources. As such, the current report includes no survey or results within the AMFY segment. Following the completion of the predictive model large portions of the BBHW segment were removed from consideration, thus this Phase IB survey reflects this reduced area.

Based on the results of the predictive modeling, the DC2RVA project segments were further subdivided for the purposes of the current archaeological study, corresponding to discrete locations of high, medium, and low archaeological probability (Table 2-1). These subdivided locations, referred to as archaeological areas, were given alphabetical letter designations within each of the larger 20 DC2RVA project segments within the scope of this study. In segments, such as ROAF and AFFR where the predictive model did not result in any high, moderate, or low probability locations no area designations were assigned. Additionally, the PCAR and AMCE segments were not assigned archaeological areas as previous survey of the corridor in these segments negated the need for further archaeological study. The same holds for the AMFY and BBHW segments, which were not assigned numbers based on changes to the DC2RVA corridor between modeling and the current Phase IB investigation.

TABLE 2-1: ARCHAEOLOGICAL PREDICTIVE MODEL RESULTS BY SEGMENT AND CORRESPONDING ASSIGNED ARCHAEOLOGICAL AREAS

Project Segment		Probability of Archaeological Site Discovery				Total
		High	Moderate	Low	None	
01 Rosslyn to Alexandria (ROAF)	Acreage	0	0	0	78.1	78.1
	Archaeological Areas	n/a				
02 Alexandria to Franconia (AFFR)	Acreage	0	0	0	58.1	58.1
	Archaeological Areas	n/a				
03 Franconia to Lorton (FRLO)	Acreage	7.1	0.9	0	69.4	77.4
	Archaeological Areas	3A–3R (8.5 acres)				
04 Lorton to Powells Creek (LOPC)	Acreage	8.6	0.1	0	102.4	111.1
	Archaeological Areas	4A–4N (9.65 acres)				
05 Powells Creek to Arkendale (PCAR)	Acreage	0	0	0	127.5	127.5
	Archaeological Areas	n/a: Previously Surveyed				
06 Arkendale to Dahlgren (ARDJ)	Acreage	4.7	4.6	0.6	137.5	147.4
	Archaeological Areas	6A–6Q (10.1 acres)				
07 Dahlgren to Fredericksburg (DJFB)	Acreage	1.5	0	0	29	30.5
	Archaeological Areas	7A and 7B (1.5 acres)				
08 Fredericksburg to Hamilton (FBHA)	Acreage	2.5	0	0	29.6	32.1
	Archaeological Areas	8A–8E (2.5 acres)				
09 Hamilton to Crossroads (HAXR)	Acreage	4.6	0	0	25.3	29.9
	Archaeological Areas	9A–9H (4.3 acres)				
10 Crossroads to Guinea (XRGU)	Acreage	8	1.1	0.1	66.1	75.3
	Archaeological Areas	10A–10M (9.2 acres)				
11 Guinea to Milford (GUMD)	Acreage	16.7	11.8	1.3	80.3	110.1
	Archaeological Areas	11A–11V (29.9 acres)				
12 Milford to North Doswell (MDND)	Acreage	25.4	15.8	8.2	126.6	176.0
	Archaeological Areas	12A–12X (49.4 acres)				
13 North Doswell to Elmont (NDEL)	Acreage	10.2	2.1	0.5	143.3	156.1
	Archaeological Areas	13A–13T (9.7 acres)				
14 Elmont to Greendale (ELGN)	Acreage	1.6	2.7	0.3	52.3	56.9
	Archaeological Areas	14A–14L (4.1 acres)				
15 Greendale to SAY/WAY (GNSA)	Acreage	0.2	0.4	0	66.4	67.0
	Archaeological Areas	15A–15D (0.6 acres)				

TABLE 2-1: ARCHAEOLOGICAL PREDICTIVE MODEL RESULTS BY SEGMENT AND CORRESPONDING ASSIGNED ARCHAEOLOGICAL AREAS

Project Segment		Probability of Archaeological Site Discovery				Total
		High	Moderate	Low	None	
16 SAY to AM Junction-Hermitage Lead (SAAM)	Acreage	0.02	0	0.03	40.1	40.2
	Archaeological Areas	16A–16B (0.04 acres)				
17 AM Junction to Centralia (AMCE)	Acreage	11.7	0	0	147.5	159.1
	Archaeological Areas	n/a: Previously Surveyed				
18 WAY to Centralia (WACE)	Acreage	9.4	1.5	0	164.7	175.5
	Archaeological Areas	18A–18AP (10.5 acres)				
19' AM Jct to Fulton Yard (AMFY)	Acreage	5.8	0	0	88.0	93.7
	Archaeological Areas	n/a				
20' Buckingham Branch/Hospital Wye (BBHW)	Acreage	38.8	5.9	4.0	258.8	307.4
	Archaeological Areas	n/a				
Total Acreage		156.7	46.9	15	1,891	2,109.4

Source: Dovetail Cultural Resource Group 2015.

Table Notes: For Full Archaeological Predictive Model Results see Klein et al. 2015.

Predictive modeling of the DC2RVA corridor, prior to design changes reflected in the current study, identified a total of 203.7 acres (82.4 ha) with high or moderate potential for discovering archaeological resources, and 15 acres (6.1 ha) of low probability area (note predictive model recommendations included a 10 percent sample of low probability areas) (as shown in Table 2-1). However, changes to the corridor and survey parameters, and the elimination of portions based on previous archaeological survey, reduced the total acreage subjected to Phase IB survey. As such, the archaeological areas subjected to Phase IB survey totaled 156.1 acres (63.2 ha).

3 ENVIRONMENTAL SETTING

The DC2RVA corridor spans an area south from Arlington, VA, to the south bank of the James River, in Richmond, VA. This corridor traverses a variety of agricultural, commercial, industrial, residential, rural, and urban settings. The areas subjected to archaeological survey generally parallel the existing CSXT rail corridor. For the purposes of management and organization, the environmental setting for each of the segments examined within this report is presented in this chapter. Summaries pertaining to PCAR and AMCE segments, which were previously surveyed, are omitted from this discussion. Additionally, the environmental settings pertaining to the AMFY and BBHW reflects their current extent, not the larger area that was the subject of the predictive model.

The project segments are generally located along the Fall Zone, where unconsolidated sediments of the Coastal Plain meet crystalline bedrock of the Piedmont. The Fall Line is a low escarpment marking the head of navigable water on major streams. The Coastal Plain region extends from the Fall Line, generally located along the I-95 corridor, east, to the Atlantic Ocean. The Piedmont extends from the Fall Line, west, to the Appalachian Mountains of western Virginia. More specific geologic discussions are included for each segment below.

Soil information is also included for each segment as it pertains to the potential for archaeological deposits. Fertile, well-drained soils attracted both humans and game over millennia. Wild grasses, fruits, and seeds, consumed by people before and after adoption of agriculture, flourished in such settings. Numerous archaeologists have cited the correlation between the distribution of level to gently sloping, well-drained, fertile soils and archaeological sites (e.g., Lukezic 1990; Potter 1993; Turner 1976; Ward 1965). Soil scientists classify soils according to natural and artificial fertility and the threat posed by erosion and flooding, among other attributes. Soil Classes 1 and 2 represent the most fertile soils, those best suited for not only agriculture but for a wide range of uses. Soil productivity must be considered in relation to the productivity of the surrounding soils. A larger discussion of soil types found within each area is detailed within this chapter.

Hydrology is another important factor to consider while undertaking an archaeological study, as access to water is an important determining factor in both prehistoric and historic settlement patterns (Klein et al. 2015). There is generally a direct correlation between access to water and the presence of archaeological sites. Water sources for each area along the DC2RVA were examined. Discussions for each area within the survey are included following the geologic and soil information.

3.1 ROSSLYN TO ALEXANDRIA (ROAF/01)

The environment of ROAF is urban. Located within Arlington and Alexandria, VA, lands west of the existing rail line are almost entirely developed. A small expanse of woodland lies east of the corridor near the northern end of Washington National Airport.

3.1.1 ROAF Geology

Situated in northeastern Virginia, the ROAF segment is located between the Potomac River to the east and Arlington to the west. Geologically, the corridor lies within the western-most section of the Coastal Plain province, in the Fall Zone separating the Coastal Plain from the adjacent Piedmont province to the west. The dominant geologic unit underlying the area is the Shirley Formation, composed of Quaternary fluvial terrace and bay deposits (Dietrich 1990). Sediments of the Shirley Formation are characterized by upward-fining sequences of pebbly sands to sandy silts and silty clays. These sediments were originally deposited in shallow-water environments such as bay floors, estuaries, and marshes, and may contain peat, highly organic silts, and plant detritus. Lands to the east of the segment consist of artificial fill; some of the APE is comprised of this fill. Just west of the APE is the Potomac Formation, composed of poorly sorted Cretaceous-age sands interbedded with sandy clays and silts.

3.1.2 ROAF Soils

Due to the urban setting of the ROAF segment, only one soil type is located within the archaeological APE. Soils in the APE are classified as belonging to the Urban Land-Udorthents complex (Soil Survey Staff 2015). This soil occupies landscape positions with slopes between two and 15 percent and is characterized by heavy disturbance resulting from extensive cutting and/or filling. Exposures of soil may be infrequent in the area due to buildings, roads, parking lots, and other forms of development. These soils are generally unsuitable for agriculture (land capability classification of 6) due to their environmental setting and highly heterogeneous nature. These soils are defined by disturbance and are considered to have limited potential to contain intact archaeological deposits.

3.1.3 ROAF Hydrology

The northern portion of the DC2RVA corridor lies within the drainage basin of the Potomac River, a tributary of Chesapeake Bay. Smaller streams in the area drain directly into the Potomac. Numerous smaller tributaries likely existed in the area prior to the development of the City of Alexandria, resulting in alteration of drainage patterns and culvertization of small creeks and ephemeral drainages. The Potomac River enters the Chesapeake Bay approximately 70 miles (112.7 km) southeast of the ROAF segment.

3.2 ALEXANDRIA TO FRANCONIA (AFFR/02)

The environment of the AFFR segment is also urban in nature, lying within Alexandria and Franconia. Lands on both sides of the existing rail line are almost entirely developed. A small expanse of woodland lies north of the rail lines, along the south bank of Backlick Run, north of where the corridor crosses the Capital Beltway.

3.2.1 AFFR Geology

Situated in northeast Virginia, the AFFR segment is largely located west of the Potomac River, along the banks of Cameron and Backlick Runs. Geologically, the segment lies within the western-most section of the Coastal Plain province, in the Fall Zone separating the Coastal Plain from the adjacent Piedmont province to the west. The dominant geologic units underlying the area are the Shirley Formation, composed of Quaternary fluvial terrace and bay deposits, and the Potomac

Formation, which is composed of poorly sorted Cretaceous-age sands interbedded with sandy clays and silts (Dietrich 1990). More recent Quaternary alluvium is found along the margins of active streams in the area.

3.2.2 AFFR Soils

Fourteen soil types are mapped within the AFFR portion of the archaeological APE (Table 3-1). Class 1 and 2 soils represent the most likely setting for short-term prehistoric sites. Historic sites could also be present. No Class 1 soils are mapped within the APE in AFFR. The Class 2 Grist Mill sandy loam, Kingstowne sandy clay loam, Urban land-Kingstowne complex, Kingstowne-Sassafras complex, Kingstowne-Sassafras-Marumsco complex, Kingstowne-Sassafras-Neabsco complex, and Sumerduck loam soils, representing approximately 11.5 percent of the AFFR APE, indicate high-probability locations for prehistoric and historic sites. Well-drained Class 3 soils, making up 8.2 percent of the AFFR APE, have a moderate probability of containing historic or prehistoric sites. Developed or otherwise disturbed soils, such as urban land complexes, are difficult to use for predictive modeling of archaeological site locations. Archaeological sites located within these soils may be disturbed or destroyed. Poorly drained soils, such as the Codorus and Hatboro soils, have a low probability of containing historic sites, although ephemeral prehistoric sites relating to resource procurement may be found nearby.

TABLE 3-1: SOILS IDENTIFIED WITHIN THE AFFR ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Urban land	n/a	8	Developed/disturbed	50.7%
Urban land-Udorthents complex	2–15%	8	Cut and fill/disturbed	24.8%
Grist Mill sandy loam	0–25%	2	Well-drained	6.7%
Sassafras-Marumsco complex	7–15	3	Well-drained	4%
Urban land-Grist Mill	n/a	8/2	Well-drained and suitable for agriculture where not disturbed by development	3.6%
Kingstowne sandy clay loam	0–45%	2	Well-drained	3%
Codorus and Hatboro soils	0–2%	3	Somewhat poorly drained	3%
Kingstowne-Beltsville complex	2–7%	3	Moderately well-drained	1.2%
Urban land-Kingstowne complex	n/a	2	Well-drained	0.9%
Kingstowne-Sassafras complex	2–7%	2	Well-drained	0.8%
Sassafras-Marumsco complex	15–25%	6	Well-drained	0.5%
Kingstowne-Sassafras-Marumsco complex	7–15%	2	Well-drained	0.4%
Kingstowne-Sassafras-Neabsco complex	2–7%	2	Well-drained	0.3%
Sumerduck loam	2–7%	2	Moderately well-drained	0.1%

Source: Soil Survey Staff 2015; Dovetail 2016

3.2.3 AFFR Hydrology

The AFFR APE lies within the drainage basin of the Potomac River, a tributary to the Chesapeake Bay. Smaller streams in the area drain directly into the Potomac or its tributaries. The major streams directly draining the AFFR segment are Cameron Run and its tributary, Backlick Run. Cameron Run joins the Potomac just south of the City of Alexandria. Numerous smaller tributaries would have existed in the area prior to the development of the City of Alexandria, which resulted in the alteration of drainage patterns and culvertization of small creeks and ephemeral drainages. The Potomac River enters the Chesapeake Bay approximately 70 miles (112.7 km) southeast of the AFFR segment.

3.3 FRANCONIA TO LORTON (FRLO/03)

The environment of the FRLO APE ranges from suburban residential development to commercial/industrial complexes. Wooded areas exist along the banks of Long Branch and Accotink Creek. This represents the highest probability area for identifying undisturbed archaeological sites.

3.3.1 FRLO Geology

Situated in northeast Virginia, the FRLO APE is located south of the Capital Beltway and just east of I-95, which roughly marks the Fall Line separating the Coastal Plain from the adjacent Piedmont province to the west. The APE lies within the western-most section of the Coastal Plain province in the Fall Zone. The dominant geologic unit underlying the APE is the Potomac Formation, which is composed of poorly sorted Cretaceous-age sands interbedded with sandy clays and silts (Dietrich 1990). Unconsolidated Pliocene sands and gravels overlie the Potomac Formation in portions of the APE. More recent Quaternary alluvium is found along the margins of active streams in the segment.

3.3.2 FRLO Soils

Sixteen soil types are mapped within the FRLO segment APE (Table 3-2). Class 1 and 2 soils represent the most likely setting for short-term prehistoric sites. Historic sites could also be present. However, no Class 1 soils are mapped within the FRLO segment of the APE. The Class 2 Woodstown sandy loam, Urban land-Kingstowne complex, Kingstowne-Sassafras-Neabsco complex, Sassafras-Neabsco complex, Kingstowne sandy clay loam, Lunt-Marumsco complex, Meadowville loam, Bourne-Urban land complex, Kingstowne-Sassafras-Marumsco complex, and Mattapex loam, representing approximately 13.4 percent of the FRLO APE, indicate high-probability locations for prehistoric and historic sites. Developed or otherwise disturbed soils, such as urban land complexes, are difficult to use for predictive modeling of archaeological site locations. Archaeological sites located within these soils may be disturbed or destroyed. Poorly drained soils, Codorus and Hatboro soils and Elkton silt loam, have a low probability of containing historic sites, although ephemeral prehistoric sites relating to resource procurement may be found nearby.

TABLE 3-2: SOILS IDENTIFIED WITHIN THE FRLO ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Urban land	n/a	8	Urban land; developed	44%
Sassafras-Marumsco complex	7–15%	3	Well-drained	19.6%
Codorus and Hatboro soils	0–2%	3	Somewhat poorly drained floodplain soil	14.6%
Sassafras-Marumsco complex	15–25%	6	Well-drained	6.7%
Woodstown sandy loam	2–7%	2	Moderately well-drained	3.1%
Urban land-Kingstowne complex	n/a	2	Well-drained	2.6%
Kingstowne-Sassafras-Neabsco complex	2–7%	2	Well-drained	2.3%
Elkton silt loam	0–2%	3	Poorly drained soil located in drainages	1.7%
Sassafras-Neabsco complex	2–7%	2	Well-drained	1.7%
Kingstowne sandy clay loam	0–45%	2	Well-drained	0.7%
Lunt-Marumsco complex	2–7%	2	Well-drained	0.7%
Meadowville loam	2–7%	2	Well-drained	0.7%
Bourne-Urban land complex	2–6%	2	Moderately well-drained	0.6%
Kingstowne-Sassafras-Marumsco complex	15–25%	2	Well-drained	0.5%
Kingstowne-Sassafras-Marumsco complex	7–15%	2	Well-drained	0.3%
Mattapex loam	2–7%	2	Moderately well-drained	0.2%

Source: Soil Survey Staff 2015; Dovetail 2016

3.3.3 FRLO Hydrology

The FRLO segment APE lies within the drainage basin of the Potomac River, a tributary of Chesapeake Bay. Smaller streams in the area drain directly into the Potomac or its tributaries. The major streams directly draining the APE are Accotink Creek, Long Branch, and Pohick Creek. The embayed mouths of Accotink Creek and Pohick Creek converge to form Gunston Cove on the Potomac River. Numerous smaller tributaries would have existed in the region prior to the development and urbanization of the area, which resulted in the alteration of drainage patterns and culvertization of small creeks and ephemeral drainages. The Potomac River enters the Chesapeake Bay approximately 70 miles (112.7 km) southeast of the corridor.

3.4 LORTON TO POWELLS CREEK (LOPC/04)

Much of the LOPC segment is characterized by a suburban environment, especially the west side of the corridor. Occoquan Bay and the Potomac River parallel the APE on the east for much of the LOPC segment. Near the south end of the LOPC segment, the APE abuts Leesylvania State Park, a forested environment; this is the portion of the segment least affected by development and most likely to contain undisturbed archaeological sites.

3.4.1 LOPC Geology

The LOPC segment is located between Accotink and Pohick Creeks, and the Occoquan River, along the western edge of Occoquan Bay. Physiographically, the APE lies within the western-most section of the Coastal Plain province, in the Fall Zone separating the Coastal Plain from the adjacent Piedmont province to the west. The dominant geologic unit underlying the area is the Potomac Formation, composed of poorly sorted Cretaceous-age sands interbedded with sandy clays and silts (Dietrich 1990). The Tertiary Period Bacon's Castle Formation and Tertiary-Quaternary Windsor Formation, composed of sands and gravel, underlie large portions of the LOPC segment. More recent Quaternary alluvium is found along the margins of active streams in the area. Exposures of metamorphic rocks are located in areas where the Piedmont geology is only thinly covered by Coastal Plain sediments. Piedmont rocks, which may be found in the segment, include the Cambrian age Chopawamsic Formation and the Ordovician Quantico Formation.

3.4.2 LOPC Soils

Twenty-eight soil types are mapped within the LOPC segment APE (Table 3-3). Class 1 and 2 soils represent the most likely setting for short-term prehistoric sites, however historic sites may also be present. No Class 1 soils are mapped within the APE. The Class 2 Grist Mill sandy loam, Marumsco loam, Lunt-Marumsco complex, Elsinboro sandy loam, Sycoline-Kelly complex, Urban land-Grist Mill, Kingstowne-Elsinboro complex, Lunt loam, Quantico sandy loam, Delanco fine sandy loam, Neabsco-Quantico complex, and Grist Mill-Gunston complex soils, representing approximately 31.9 percent of the APE, indicate high-probability locations for prehistoric and historic sites. Much of the APE consists of developed or otherwise disturbed soils, such as urban land complexes. Archaeological sites located within these soils are often greatly disturbed or destroyed. Poorly drained soils, such as the Elkton silt loam, Hatboro-Codorus complex, and Codorus and Hatboro soils, have a low probability of containing historic sites, although ephemeral prehistoric sites relating to resource procurement may be found nearby. Very poorly drained and/or frequently flooded soils, such as the Johnston mucky loam, are unlikely to contain archaeological resources from any time period.

TABLE 3-3: SOILS IDENTIFIED WITHIN THE FRLO ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Urban land	n/a	8	Urban land; developed	44%
Grist Mill sandy loam	0–25%	2	Well-drained	11%
Urban land	n/a	8	Urban land; developed	9.6%

TABLE 3-3: SOILS IDENTIFIED WITHIN THE FRLO ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Marumsco loam	0–4%	2	Moderately well-drained	5.7%
Lunt-Marumsco complex	2–7%	2	Well-drained	3.4%
Elsinboro sandy loam	2–7%	2	Well-drained	2.9%
Sycoline-Kelly complex	2–7%	2	Moderately well-drained	2.9%
Sassafras-Marumsco complex	7–15%	3	Well-drained	2.2%
Johnston mucky loam	0–3%	7	Very poorly drained floodplain soil	2.2%
Urban land-Grist Mill	n/a	2	Well-drained	2.1%
Dumfries sandy loam	7–15%	4	Well-drained	2.1%
Dumfries sandy loam	15–25%	6	Well-drained	1.6%
Kingstowne-Elsinboro complex	2–7%	2	Well-drained	1.6%
Marr very fine sandy loam	7–25%	6	Well-drained	1.4%
Elkton silt loam	0–2%	3	Poorly drained soil located in drainages	1.4%
Hatboro-Codorus complex	0–2%	3	Poorly drained floodplain soil	1.3%
Dumfries sandy loam	25–50%	7	Well-drained	1.3%
Codorus and Hatboro soils	0–2%	3	Somewhat poorly drained floodplain soil	0.6%
Lunt loam	7–15%	4	Well-drained	0.6%
Rhodhiss-Rock outcrop complex	24–45%	7	Well-drained	0.5%
Lunt loam	2–7%	2	Well-drained	0.4%
Lunt loam	15–25%	6	Well-drained	0.4%
Quantico sandy loam	2–7%	2	Well-drained	0.4%
Delanco fine sandy loam	0–4%	2	Moderately well-drained	0.3%
Quantico sandy loam	7–15%	3	Well-drained	0.2%
Neabsco-Quantico complex	2–7%	2	Moderately well-drained	0.1%
Grist Mill-Gunston complex	0–2%	2	Well-drained	0.1%

Source: Soil Survey Staff 2015; Dovetail 2016

3.4.3 LOPC Hydrology

The LOPC portion of the APE lies within the drainage basin of the Potomac River, a tributary of Chesapeake Bay. The major tributary within this portion of the APE is the Occoquan River. The APE crosses several smaller streams draining directly to Occoquan Bay. Also present in the APE

are the mouths of Neabsco Creek and Powells Creek, both of which empty directly into the Potomac. Wetlands and tidal marshes fringe the shorelines of the Occoquan Bay, Potomac River, and the mouths of smaller creeks just east of the LOPC APE. The Potomac River enters the Chesapeake Bay approximately 65 miles (104.6 km) southeast of the LOPC segment.

3.5 ARKENDALE TO DAHLGREN JUNCTION (ARDJ/06)

The ARDJ segment is primarily rural, characterized by a forested environment. Low, wet areas occur along the margins of some of the major streams, such as Aquia and Accokeek creeks. Some residential development is present in the southern portion of the ARDJ, just north of Fredericksburg, VA.

3.5.1 ARDJ Geology

The ARDJ segment stretches from the neck of land between Aquia Creek and the Potomac River to north of the Rappahannock River, east of Fredericksburg. The archaeological APE lies within the inner Coastal Plain physiographic province. The dominant geology underlying the APE comprises Late Quaternary terrace deposits (Dietrich 1990). These deposits range in age from the late stages of the Wisconsin Glacial Maximum through the Holocene. Sediments of the Lower Pleistocene Charles City Formation cap riverine terraces in portions of the APE. These sediments, initially deposited in a shallow marine environment, comprise an upward-fining sequence of gravels, sands, and silts. Lower Tertiary glauconitic quartz sands with shell and lime are also present. The Potomac Formation, composed of poorly sorted Cretaceous-age sands interbedded with sandy clays and silts, also underlies portions of the ARDJ segment.

3.5.2 ARDJ Soils

Thirty-three soil types are mapped within the APE in the ARDJ portion of the DC2RVA corridor. Class 1 and 2 soils represent the most likely setting for short-term prehistoric sites and historic sites. However, no Class 1 soils are mapped within ARDJ. The Class 2 Iuka fine sandy loam, Bertie very fine sandy loam, Caroline fine sandy loam, Sassafras fine sandy loam, Tetotum fine sandy loam, Kempsville fine sandy loam, Turbeville loam, and Woodstown fine sandy loam soils, representing approximately 13.4 percent of the study corridor, indicate the most likely locations for encountering prehistoric and historic archaeological sites. Poorly drained soils, such as the Bibb fine sandy loam, Bladen loam, and Wehadkee very fine sandy loam, have a low probability of containing historic sites, although ephemeral prehistoric sites relating to resource procurement may be found nearby. Very poorly drained and/or frequently flooded soils, such as fresh water swamp soils, are unlikely to contain archaeological resources from any time period (Table 3-4).

TABLE 3-4: SOILS IDENTIFIED WITHIN THE ARDJ ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Cut and fill land	n/a	n/a	Heavily altered landscapes	23.1%
Sandy and clayey land, steep, Sassafras and Caroline materials	steep slopes	6	Not prime farmland	9.0%

TABLE 3-4: SOILS IDENTIFIED WITHIN THE ARDJ ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Alluvial land, sandy and gravelly	n/a	4	Moderately well-drained floodplain soil	8.9%
Sassafras fine sandy loam	6–10%	3	Well-drained	5.0%
Kempsville fine sandy loam, gravelly substratum, eroded	10–18%	4	Well-drained	5.0%
Alluvial land, wet	n/a	4	Poorly drained floodplain soil	4.2%
Bibb fine sandy loam	0–4%	5	Poorly drained floodplain soil	4.1%
Sassafras fine sandy loam	15–35%	7	Well-drained	3.6%
Iuka fine sandy loam, local alluvium	0–4%	2	Moderately well-drained	3.1%
Caroline-Sassafras complex	15–30%	7	Well-drained	3.0%
Bladen loam	0–2%	6	Poorly drained	2.8%
Caroline clay loam, severely eroded	10–18%	6	Well-drained	2.7%
Aura-Galestown-Sassafras complex	15–30%	3	Well-drained	2.6%
Bertie very fine sandy loam	0–3%	2	Moderately well-drained	2.6%
Aura-Galestown-Sassafras complex	6–15%	3	Well-drained	2.2%
Caroline fine sandy loam, eroded	6–10%	3	Well-drained	2.1%
Caroline fine sandy loam, eroded	2–6%	2	Well-drained	2.0%
Sassafras fine sandy loam	2–6%	2	Well-drained	2.0%
Sassafras fine sandy loam	10–15%	4	Well-drained	1.9%
Tetotum fine sandy loam	2–6%	2	Moderately well-drained	1.9%
Caroline fine sandy loam, eroded	10–18%	4	Well-drained	1.6%
Galestown-Sassafras complex	30–45%	7	Somewhat excessively drained	1.2%
Fresh water swamp	n/a	6	Poorly drained swamp soil	1.0%
Kempsville fine sandy loam, gravelly substratum	2–6%	2	Well-drained	0.8%
Marr very fine sandy loam	15–30%	6	Well-drained	0.7%
Congaree loam	n/a	3	Well-drained	0.6%
Tetotum fine sandy loam	6–10%	3	Moderately well-drained	0.5%
Turbeville loam	2–6%	2	Well-drained	0.4%
Woodstown fine sandy loam	2–6%	2	Moderately well-drained	0.4%
Ashlar fine sandy loam	15–25%	6	Well-drained	0.3%

TABLE 3-4: SOILS IDENTIFIED WITHIN THE ARDJ ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Wehadkee very fine sandy loam	0–2%	6	Poorly drained floodplain soil	0.3%
Aura gravelly fine sandy loam, eroded	6–10%	3	Well-drained	0.2%
Tetotum fine sandy loam	0–2%	2	Moderately well-drained	0.2%

Source: Soil Survey Staff 2015; Dovetail 2016

3.5.3 ARDJ Hydrology

The ARDJ archaeological APE is drained by the Potomac and Rappahannock Rivers. The streams in the majority of the segment, such as Aquia Creek, Accokeek Creek, Potomac Creek, and their tributaries, drain to the Potomac River. Claiborne Run lies at the southern end of the APE and is a tributary of the Rappahannock. The Potomac River enters the Chesapeake Bay approximately 65 miles (104.6 km) east-southeast of the ARDJ segment. The Rappahannock flows into the Chesapeake approximately 75 (120.7) miles southeast of the corridor.

3.6 DAHLGREN JUNCTION TO FREDERICKSBURG (DJFB/07)

The DJFB segment of the archaeological APE passes through Fredericksburg, VA, and its suburbs north of the Rappahannock River, in Stafford County. The character is primarily urban or otherwise developed.

3.6.1 DJFB Geology

The DJFB segment crosses the Rappahannock River at Fredericksburg, just below the Fall Line, in the western-most portion of the inner Coastal Plain physiographic province. The dominant geology underlying the corridor comprises the Potomac Formation, composed of poorly sorted Cretaceous-age sands interbedded with sandy clays and silts (Dietrich 1990). Sediments of the Lower Pleistocene Charles City Formation cap riverine terraces. These sediments, initially deposited in a shallow marine environment, comprise an upward-fining sequence of gravels, sands, and silts. The Shirley Formation, composed of Quaternary fluvial terrace and bay deposits, underlies portions of the APE. Sediments of the Shirley Formation are characterized by upward-fining sequences of pebbly sands to sandy silts and silty clays. These sediments were originally deposited in shallow-water environments such as bay floors, estuaries, and marshes, and may contain peat, highly organic silts, and plant detritus.

3.6.2 DJFB Soils

Ten soil types are mapped within the APE of the DJFB segment (Table 3-5). No Class 1 soils are mapped within segment. The Class 2 Wickham fine sandy loam and Wickham loam soils, representing approximately 3.5 percent of the study corridor, indicates high-probability locations for prehistoric and historic sites. Developed or otherwise disturbed soils, such as cut and fill land and the Urban land-Udults complex, indicate that if archaeological sites are present they are likely disturbed or destroyed.

TABLE 3-5: SOILS IDENTIFIED WITHIN THE DJFB ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Urban land-Udults complex	smoothed	3	Moderately well-drained	42.0%
Cut and fill land	n/a	n/a	Heavily altered landscapes	32.8%
Alluvial land, sandy and gravelly	n/a	4	Moderately well-drained floodplain soil	7.8%
Udorthents, gravelly	n/a	n/a	Not prime farmland	6.1%
Congaree loam	n/a	3	Well-drained	6.1%
Wickham fine sandy loam	2–6%	2	Well-drained	3.4%
Dystrudepts-Udults complex	slopes	6	Somewhat excessively drained, located on hillslopes	1.4%
Toccoa loamy sand	n/a	3	Well-drained, frequently flooded	0.2%
Wickham loam	2–7%	2	Well-drained	0.1%
Cartecay fine sandy loam	n/a	5	Somewhat poorly drained	0.1%

Source: Soil Survey Staff 2015; Dovetail 2016

3.6.3 DJFB Hydrology

The DJFB segment is traversed and drained by the Rappahannock River. North of the Rappahannock, Claiborne Run passes through the corridor. Hazel Run crosses the APE south of the river. Both Claiborne and Hazel run are tributaries of the Rappahannock. The Rappahannock River enters the Chesapeake Bay approximately 75 miles (120.7 km) southeast of the corridor.

3.7 FREDERICKSBURG TO HAMILTON (FBHA/08)

The FBHA segment lies south of Fredericksburg, VA and west of the Rappahannock River. The northern portion of the segment traverses commercial development. The southern part of the segment traverses wooded land and agricultural fields.

3.7.1 FBHA Geology

The FBHA segment is south of Fredericksburg in the inner Coastal Plain physiographic province. Sediments of the Lower Pleistocene Charles City Formation underlie the majority of the corridor in this segment. These sediments, initially deposited in a shallow marine environment, comprise an upward-fining sequence of gravels, sands, and silts. Lower Tertiary glauconitic quartz sands with shell and lime are present in the southern end of the APE for this segment.

3.7.2 FBHA Soils

Six soil types are mapped within the FBHA archaeological APE (Table 3-6). No Class 1 soils are mapped within the APE. The Class 2 Wickham loam, Dogue loam, and Altavista sandy loam soils, representing approximately 28 percent of the study corridor, indicate high-probability

locations for prehistoric and historic sites. Developed or otherwise disturbed soils, such as cut and fill land and the Urban land-Udults complex, indicate that if archaeological sites are present they are likely disturbed or destroyed.

TABLE 3-6: SOILS IDENTIFIED WITHIN THE FHHA ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Aquults, gravelly substratum	n/a	4	Poorly drained, located in depressions	63.5%
Wickham loam	2–7%	2	Well-drained	17.6%
Urban land-Udults complex	smoothed	3	Moderately well-drained	8.4%
Dogue loam	n/a	2	Moderately well-drained	5.3%
Altavista sandy loam	0–4%	2	Moderately well-drained	5.1%
Udorthents, gravelly	n/a	n/a	Not prime farmland	0.1%

Source: Soil Survey Staff 2015; Dovetail 2016

3.7.3 FBHA Hydrology

The FBHA segment is drained by the Rappahannock River, located east of the APE. Deep Run, a tributary of the Rappahannock, passes through the segment south of Fredericksburg. The Rappahannock River enters the Chesapeake Bay approximately 75 miles (120.7 km) southeast of the corridor.

3.8 HAMILTON TO CROSSROADS (HAXR/09)

The HAXR segment lies south of Fredericksburg, VA, and west of the Rappahannock River. This portion of the corridor is primarily rural and wooded. Some commercial and residential development is present in the northern portion of the APE.

3.8.1 HAXR Geology

The HAXR segment is south of Fredericksburg, in the inner Coastal Plain physiographic province. The Potomac Formation, composed of poorly sorted Cretaceous-age sands interbedded with sandy clays and silts, underlies the majority of the APE (Dietrich 1990). Sediments of the Lower Pleistocene Charles City Formation underlie the majority of the segment. Lower Tertiary glauconitic quartz sands with shell and lime are also present, as are the shelly and diatomaceous Chesapeake Group sediments, also of Triassic age. Sediments of the Lower Pleistocene Charles City Formation cap riverine terraces in the area.

3.8.2 HAXR Soils

Fourteen soil types are mapped within the HAXR segment of the APE (Table 3-7). No Class 1 soils are mapped within Area 9. The Class 2 Goldsboro sandy loam, Altavista sandy loam, Wickham loam, Savannah sandy loam, Kempsville gravelly sandy loam, and Suffolk sandy loam soils, representing approximately 41.8 percent of the study corridor, indicate probable locations for prehistoric and historic sites. The developed or otherwise disturbed soils, such as cut and fill land

and the Urban land-Udults complex, indicate that if archaeological sites are present they are likely disturbed or destroyed.

TABLE 3-7: SOILS IDENTIFIED WITHIN THE HAXR ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Goldsboro sandy loam	n/a	2	Moderately well-drained	25.6%
Aquults, gravelly substratum	n/a	4	Poorly drained, located in depressions	11.6%
Aquults	n/a	4	Poorly drained, located in depressions	11.4%
Udorthents, gravelly	n/a	n/a	Not prime farmland	11.2%
Urban land-Udults complex	smoothed	3	Moderately well-drained	10.1%
Fluvaquents-Udifluvents	n/a	6	Poorly drained floodplain soil	7.5%
Altavista sandy loam	0–4%	2	Moderately well-drained	6.3%
Wickham loam	2–7%	2	Well-drained	4.2%
Dystrochrepts-Udults complex	steep slopes	7	Somewhat excessively drained, located on hillslopes	3.6%
Savannah sandy loam	2–7%	2	Moderately well-drained	2.9%
Kempsville gravelly sandy loam	2–7%	2	Well-drained	2.2%
Udorthents-Udifluvents complex	gently sloping	3	Moderately well-drained	1.8%
Kempsville gravelly sandy loam	7–15%	4	Well-drained	1.3%
Suffolk sandy loam	2–7%	2	Well-drained	0.3%

Source: Soil Survey Staff 2015; Dovetail 2016

3.8.3 HAXR Hydrology

The HAXR segment is drained by the Rappahannock River, located north and east of the corridor. Massaponax Creek passes through the APE and empties into the Rappahannock, approximately 4 miles (6.4 km) south of Fredericksburg, VA. The Rappahannock River enters the Chesapeake Bay approximately 75 miles (120.7 km) east-southeast of the corridor.

3.9 CROSSROADS TO GUINEA (XRGU/10)

The XRGU segment lies south of Fredericksburg, VA, in a predominantly rural area. Much of the segment is wooded with some agricultural fields noted. The segment is predominantly undisturbed by development.

3.9.1 XRGU Geology

The XRGU segment lies south of Fredericksburg, VA, in the inner Coastal Plain physiographic province. The majority of the area is underlain by sands and gravels of Pliocene age (Dietrich

1990). Shelly and diatomaceous Triassic-age sediments of the Chesapeake Group cover ancient shallow shelf environments in the APE. In other portions of the corridor, the geology is dominated by Quaternary and Tertiary deposits, including those of the Windsor Formation.

3.9.2 XRGU Soils

Twenty-three soil types are mapped within the XRGU segment of the DC2RVA corridor (Table 3-8). The Class 1 State fine sandy loam, present in approximately 2.6 percent of the APE, represents probable locations for discovering archaeological sites. The Class 2 Altavista fine sandy loam, Bojac sandy loam, Faceville-Varina complex, State fine sandy loam, Kempsville gravelly sandy loam, Goldsboro sandy loam, Savannah sandy loam, Mattaponi sandy loam, Bama sandy loam soils and State fine sandy loam, representing approximately 36.9 percent of the study corridor, also represent probable locations for prehistoric and historic sites. Poorly drained soils, such as the Fluvaquents-Udifluvents, Wehadkee silt loam, Chastain silt loam, and Tomotley-Roanoke complex, have a low probability of containing historic sites, although ephemeral prehistoric sites relating to resource procurement may be found nearby.

TABLE 3-8: SOILS IDENTIFIED WITHIN THE XRGU ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Udorthents-Udifluvents complex	gently sloping	3	Moderately well-drained	19.9%
Dystrochrepts-Udults complex	steep slopes	7	Somewhat excessively drained, located on hillslopes	15.4%
Altavista fine sandy loam	2–6%	2	Moderately well-drained	10.9%
Bojac sandy loam	0–6%	2	Well-drained stream terrace soil, rarely flooded	9.8%
Kempsville gravelly sandy loam	7–15%	4	Well-drained	9.0%
Altavista fine sandy loam	0–2%	2	Moderately well-drained	5.9%
Fluvaquents-Udifluvents	n/a	6	Poorly drained floodplain soil	4.2%
Dystrudepts-Udults complex	slopes	6	Somewhat excessively drained, located on hillslopes	3.3%
Faceville-Varina complex	2–7%	2	Well-drained	2.7%
Wehadkee silt loam	0–2%	6	Poorly drained floodplain soil	2.7%
State fine sandy loam	0–2%	1	Well-drained	2.6%
Mattaponi sandy clay loam	7–15%	4	Moderately well-drained	2.5%
Slagle-Kempsville complex	2–15%	3	Moderately well-drained	2.0%
Kempsville gravelly sandy loam	2–7%	2	Well-drained	1.9%
Bibb-Chastain complex	0–2%	6	Poorly-drained floodplain soil	1.8%
Goldsboro sandy loam	n/a	2	Moderately well-drained	1.1%
Savannah sandy loam	2–7%	2	Moderately well-drained	1.1%

TABLE 3-8: SOILS IDENTIFIED WITHIN THE XRGU ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Kempsville-Emporia-Remlik complex	15–50%	6	Well-drained	1.0%
Chastain silt loam	0–2%	6	Poorly-drained swamp soil	1.0%
Mattaponi sandy loam	2–7%	2	Moderately well-drained	0.5%
Tomotley-Roanoke complex	0–2%	4	Poorly drained	0.3%
Bama sandy loam	2–7%	2	Well-drained	0.3%
State fine sandy loam	2–6%	2	Well-drained	0.1%

Source: Soil Survey Staff 2015; Dovetail 2016

3.9.3 XRGU Hydrology

The XRGU segment is drained by two unnamed tributaries to the Poni River, flowing south and west of the corridor. The Poni joins the Matta River approximately 2 miles (32 km) south of the segment to form the Mattaponi. The Mattaponi flows generally southeast for approximately 53 miles (85.3 km) before joining the Pamunkey River, in turn forming the York River. The York River enters the Chesapeake Bay approximately 87 miles (140 km) southeast of the corridor.

3.10 GUINEA TO MILFORD (GUMD/11)

The GUMD segment of the DC2RVA corridor lies south of Fredericksburg, VA, in a rural area. Much of the area is wooded with some agricultural fields noted; the segment is relatively undisturbed by development.

3.10.1 GUMD Geology

The GUMD segment lies south of Fredericksburg, VA, in the inner Coastal Plain physiographic province. The majority of the APE is underlain by Quaternary and Tertiary deposits, including those of the Windsor Formation (Dietrich 1990). Lower Tertiary glauconitic quartz sands with shell and lime are present. Alluvium comprises portions of the APE lying within the lower terraces of the Mattaponi River.

3.10.2 GUMD Soils

Sixteen soil types are mapped within the GUMD segment of the DC2RVA corridor (Table 3-9). The Class 1 State fine sandy loam represents probable locations for archaeological sites. The Class 2 Altavista fine sandy loam, State fine sandy loam, Bojac sandy loam, and Wickham fine sandy loam soils, representing approximately 37.6 percent of the APE, are also conducive to the presence and preservation of archaeological sites. Poorly drained soils, such as the Tomotley-Roanoke complex, Roanoke loam, and Chastain silt loam, have a low probability of containing historic sites, although ephemeral prehistoric sites relating to resource procurement may be found nearby.

TABLE 3-9: SOILS IDENTIFIED WITHIN THE GUMD ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Tomotley-Roanoke complex	0–2%	4	Poorly drained	31.8%
Altavista fine sandy loam	0–2%	2	Moderately well-drained	20.8%
Bibb-Chastain complex	0–2%	6	Poorly-drained floodplain soil	16.9%
State fine sandy loam	2–6%	2	Well-drained	6.5%
Bojac sandy loam	0–6%	2	Well-drained stream terrace soil, rarely flooded	5.5%
Altavista fine sandy loam	2–6%	2	Moderately well-drained	4.9%
Roanoke loam	0–2%	6	Poorly drained	4.3%
Udorthents, loamy	0–15%	n/a	Not prime farmland	3.3%
Chewacla silt loam	0–2%	4	Somewhat poorly drained, occasionally flooded	1.7%
Chastain silt loam	0–2%	6	Poorly-drained swamp soil	1.5%
State fine sandy loam	0–2%	1	Well-drained	0.8%
Pits, gravel	0–3%	8	Gravel pits	0.7%
Kempsville-Emporia-Remlik complex	15–50%	6	Well-drained	0.4%
Slagle-Kempsville complex	2–15%	3	Moderately well-drained	0.4%
Nevarc sandy loam	15–50%	6	Moderately well-drained	0.3%
Wickham fine sandy loam	2–6%	2	Well-drained	0.1%

Source: Soil Survey Staff 2015; Dovetail 2016

3.10.3 GUMD Hydrology

The GUMD segment is drained by the Mattaponi River, flowing generally west of the DC2RVA corridor; however, it crosses the APE in two places. Meadow Creek, Campbell Creek, and an unnamed tributary to the Mattaponi also traverse the corridor, as do several ephemeral drainages. The Mattaponi flows generally southeast for approximately 53 miles (85.3 km) before joining the Pamunkey River. The union of these two rivers form the York River. The York enters the Chesapeake Bay approximately 80 miles (128.7 km) southeast of the corridor.

3.11 MILFORD TO NORTH DOSWELL (MDND/12)

The MDND segment lies south of the Fredericksburg, VA, in a rural area that is wooded with occasional agricultural fields and is relatively undisturbed by development.

3.11.1 MDND Geology

The MDND segment is located between Fredericksburg and Richmond, in the inner Coastal Plain physiographic province. The majority of the area is underlain by Pliocene sand and gravel (Dietrich 1990). Lower Tertiary glauconitic quartz sands with shell and lime are present in much of the area. Shelly and diatomaceous Triassic-age sediments of the Chesapeake Group cover ancient shallow shelf environments, and interbedded sandstones, siltstones, and shales of the Newark Supergroup cover the floor of a Triassic basin, partially exposed in the APE. Portions of the corridor are underlain by Quaternary and Tertiary deposits, including those of the Windsor Formation. The Sedgefield member of the Quaternary Tabb Formation, comprising sandy and silty deposits originating in ancient riverbeds and bay floors, is exposed in places.

3.11.2 MDND Soils

Thirty soil types are mapped within the MDND segment of the DC2RVA corridor (Table 3-10). The Class 1 State fine sandy loam, Pamunkey fine sandy loam, and Riverview silt loam, totaling approximately 3.8 percent of the APE, represent probable locations for prehistoric and historic habitation. The Class 2 Kempsville-Emporia complex, Kempsville gravelly sandy loam, Bojac sandy loam, Altavista fine sandy loam, Goldsboro sandy loam, Elsinboro sandy loam, Duplin fine sandy loam, State fine sandy loam, Slagle fine sandy loam, Caroline fine sandy loam, and Dogue loam soils, representing approximately 44.9 percent of the APE, also indicate likely locations for habitation. Poorly drained soils, such as the Bibb-Chastain complex, Chastain silt loam, Forestdale loam, Lenoir loam, Myatt-Slagle complex, and Chewacla silt loam, have a low probability of containing historic sites, although ephemeral prehistoric sites relating to resource procurement may be found nearby.

TABLE 3-10: SOILS IDENTIFIED WITHIN THE MDND ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Slagle-Kempsville complex	2–15%	3	Moderately well-drained	11.6%
Kempsville-Emporia complex	2–6%	2	Well-drained	11.2%
Kempsville-Emporia-Remlik complex	15–50%	6	Well-drained	10.9%
Bibb-Chastain complex	0–2%	6	Poorly-drained floodplain soil	8.9%
Kempsville gravelly sandy loam	2–7%	2	Well-drained	7.7%
Bojac sandy loam	0–6%	2	Well-drained stream terrace soil, rarely flooded	7.5%
Kempsville-Emporia complex	2–6%	2	Well-drained	6.3%
Nevarc sandy loam	15–50%	6	Moderately well-drained	5.2%
Altavista fine sandy loam	2–6%	2	Moderately well-drained	4.2%
Tomotley-Roanoke complex	0–2%	4	Poorly drained	4.0%
Altavista fine sandy loam	0–2%	2	Moderately well-drained	3.6%
State fine sandy loam	0–2%	1	Well-drained	2.7%

TABLE 3-10: SOILS IDENTIFIED WITHIN THE MDND ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Udorthents, loamy	0–15%	n/a	Not prime farmland	2.6%
Chastain silt loam	0–2%	6	Poorly-drained swamp soil	2.1%
Goldsboro sandy loam	n/a	2	Moderately well-drained	1.3%
Elsinboro sandy loam	2–7%	2	Well-drained	1.2%
Pamunkey variant gravelly sandy loam	0–4%	3	Somewhat excessively drained	1.1%
Udults-Ochrepts complex, sloping	slopes	4	Well-drained	1.1%
Duplin fine sandy loam	0–2%	2	Moderately well-drained	1.0%
State fine sandy loam	2–6%	2	Well-drained	0.9%
Pamunkey fine sandy loam	0–2%	1	Well-drained	0.9%
Rumford loamy sand	6–10%	3	Well-drained	0.9%
Forestdale loam	n/a	5	Poorly drained	0.8%
Lenoir loam	n/a	3	Somewhat poorly drained floodplain soil	0.6%
Slagle fine sandy loam	2–6%	2	Moderately well-drained	0.6%
Myatt-Slagle complex	0–2%	4	Poorly drained	0.3%
Caroline fine sandy loam	2–7%	2	Well-drained	0.3%
Riverview silt loam	0–2%	1	Well-drained, located on floodplains and occasionally flooded	0.2%
Chewacla silt loam	0–2%	4	Somewhat poorly drained, occasionally flooded	0.2%
Dogue loam	n/a	2	Moderately well-drained	0.1%

Source: Soil Survey Staff 2015; Dovetail 2016

3.11.3 MDND Hydrology

The MDND segment is drained by the Mattaponi and Pamunkey rivers and their tributaries. The portion of the APE lying east of I-95 is drained by the Mattaponi via Reedy Creek, Swamp Creek, and several smaller tributaries. The area lying west of I-95 is drained by the Pamunkey via Long Creek and the North Anna River, as well as smaller tributary streams. The Mattaponi and Pamunkey Rivers come together to form the York River approximately 45 miles (72.4 km) southeast of the corridor. The York enters the Chesapeake Bay approximately 75 miles (120.7 km) southeast of the corridor.

3.12 NORTH DOSWELL TO ELMONT (NDEL/13)

The NDEL segment is predominantly rural, except for portions that pass through Ashland, VA. Much of the segment is undeveloped and wooded with a few agricultural fields noted. The portion of the segment surrounding Ashland has both residential and commercial development.

3.12.1 NDEL Geology

The NDEL segment spans Ashland and lies between Fredericksburg and Richmond, in the inner Coastal Plain physiographic province. The majority of the APE is underlain by Pliocene sand and gravel (Dietrich 1990). Lower Tertiary glauconitic quartz sands with shell and lime are also present in much of the area. Shelly and diatomaceous Triassic-age sediments of the Chesapeake Group cover ancient shallow shelf environments, and interbedded sandstones, siltstones, and shales of the Newark Supergroup cover the floor of a Triassic basin partially exposed in the APE. Portions of the NDEL segment are underlain by Quaternary and Tertiary deposits, including those of the Windsor Formation. The Sedgefield member of the Quaternary Tabb Formation, comprising sandy and silty deposits originating in ancient riverbeds and bay floors, is exposed in places.

3.12.2 NDEL Soils

A total of 31 soil types was mapped within the NDEL segment (Table 3-11). The Class 1 Norfolk fine sandy loam, totaling only approximately 0.1 percent of the APE, represents probable locations for prehistoric and historic habitation sites. The Class 2 Goldsboro sandy loam, Kempsville gravelly sandy loam, Quantico sandy loam, Bourne fine sandy loam, Kingstowne-Sassafras complex, Kempsville-Bourne fine sandy loams, Atlee loam, Caroline fine sandy loam, Orangeburg-Faceville fine sandy loams, Goldsboro fine sandy loam, Dogue loam, Wahee loam, Pamunkey fine sandy loam, Duplin fine sandy loam, and Orangeburg fine sandy loam soils, representing approximately 57.5 percent of the APE, also indicate probable locations for prehistoric and historic sites. Poorly drained soils, such as the Coxville loam and the Fluvaquents, have a low probability of containing historic sites, although ephemeral prehistoric sites relating to resource procurement may be found nearby.

TABLE 3-11: SOILS IDENTIFIED WITHIN THE NDEL ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Goldsboro sandy loam	n/a	2	Moderately well-drained	14.5%
Kempsville gravelly sandy loam	2–7%	2	Well-drained	14.3%
Coxville loam	n/a	4	Poorly drained	10.5%
Udults-Ochrepts complex, sloping	slopes	4	Well-drained	9.5%
Quantico sandy loam	2–7%	2	Well-drained	7.7%
Fluvaquents	n/a	6	Poorly drained floodplain soil	7.5%
Bourne fine sandy loam	2–7%	2	Moderately well-drained	6.3%
Pinkston/Mayodan sandy loams	7–15%	4	Well-drained	3.8%

TABLE 3-11: SOILS IDENTIFIED WITHIN THE NDEL ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Kingstowne-Sassafras complex	2–7%	2	Well-drained	2.8%
Kempsville-Bourne fine sandy loams	2–7%	2	Well-drained	2.7%
Atlee loam	0–4%	2	Moderately well-drained	2.3%
Caroline fine sandy loam	2–7%	2	Well-drained	2.3%
Pinkston/Mayodan sandy loams	25–45%	7	Well-drained	2.1%
Orangeburg-Faceville fine sandy loams	2–7%	2	Well-drained	2.1%
Udults-Ochrepts complex, moderately steep	slopes	6	Well-drained	1.9%
Udults-Ochrepts complex, moderately steep	slopes	6	Well-drained	1.9%
Caroline-Dogue complex, eroded	7–15%	4	Well-drained	1.8%
Augusta fine sandy loam	n/a	3	Somewhat poorly drained stream terrace soil	1.3%
Pinkston/Mayodan sandy loams	12–25%	6	Well-drained	1.0%
Goldsboro fine sandy loam	0–4%	2	Moderately well-drained	0.7%
Dogue loam	n/a	2	Moderately well-drained	0.7%
Wahee loam	n/a	2	Somewhat poorly drained	0.4%
Udults-Ochrepts complex, steep	slopes	7	Well-drained	0.4%
Pamunkey fine sandy loam	2–7%	2	Well-drained	0.4%
Udalfs-Ochrepts complex	steep	7	Well-drained; hillslopes	0.3%
Udults, sloping	slopes	4	Well-drained	0.2%
Duplin fine sandy loam	0–2%	2	Moderately well-drained	0.2%
Udorthents-Udifluvents complex	gently sloping	3	Moderately well-drained	0.1%
Norfolk fine sandy loam	0–2%	1	Well-drained	0.1%
Orangeburg fine sandy loam	2–7%	2	Well-drained	0.1%
Udorthents, smoothed	n/a	n/a	Well-drained	0.1%

Source: Soil Survey Staff 2015; Dovetail 2016

3.12.3 NDEL Hydrology

The NDEL segment is drained by the Pamunkey River, and associated tributaries. The Pamunkey is formed by the confluence of the North Anna River and South Anna River. The Mattaponi and Pamunkey Rivers form the York River approximately 45 miles (72.4 km) southeast of the corridor. The York enters the Chesapeake Bay approximately 75 miles (120.7 km) southeast of the corridor.

3.13 ELMONT TO GREENDALE (ELGN/14)

The environment of the APE of the ELGN segment ranges from rural to suburban residential subdivision development. The actual APE corridor is predominantly wooded with mixed vegetation dominated alternately by pine and hardwood stands. Road traces, a powerline cut, and streams were also encountered in or adjacent to the APE.

3.13.1 ELGN Geology

Situated in east-central Virginia, the ELGN APE straddles I-295 in Glen Allen, VA, north of Richmond and west of I-95, which roughly marks the Fall Line separating the Coastal Plain from the adjacent Piedmont province to the west. The APE lies within the extreme western-most section of the Coastal Plain province in the Fall Zone. The dominant geologic unit underlying the APE is the Pliocene sand and gravel, which is composed of Tertiary-age gravelly sand interbedded with sandy gravel, poorly to well sorted fine to coarse sand, and clays and silts (Dietrich 1990). The second geologic unit underlying the APE is Mississippian-age Petersburg Granite, which is found in one narrow cross-section in the very northern part of this segment's APE. This granite is light- to dark-gray to pink, fine- to coarse-grained, and ranges from granite to granodiorite in composition.

3.13.2 ELGN Soils

Twenty-two soil types are mapped within the ELGN segment APE (Table 3-12). Class 1 and 2 soils represent the most likely setting for short-term prehistoric sites. Historic sites could also be present. The one Class 1 soil mapped within the APE, State fine sandy loam with a clayey substratum, only encompasses 0.2 percent of the segment's APE. However, the Class 2 Spotsylvania-Bourne fine sandy loam, Appling fine sandy loam, Kempsville very fine sandy loam, clayey substratum, Helena fine sandy loam, Bourne fine sandy loam, Norfolk fine sandy loam, State fine sandy loam and Wedowee sandy loam, representing approximately 28.2 percent of the ELGN APE, indicate high-probability locations for prehistoric and historic sites. Poorly drained soils have a low probability of containing historic sites, although ephemeral prehistoric sites relating to resource procurement may be found nearby. The loamy udorthents are the result of the removal of natural soil and/or the placement of fill from elsewhere. Archaeological sites located within these soils may be disturbed or destroyed.

TABLE 3-12: SOILS IDENTIFIED WITHIN THE ELGN ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Colfax fine sandy loam, indurated substratum	0–6%	3w	Poorly drained	46.8%
Spotsylvania-Bourne fine sandy loams	7–15%	3e, 2e	Well-drained	7.4%
Appling fine sandy loam	2–6%	2e	Well-drained	5.6%
Kinston and Mantachie soils	7–15	6w, 5w	Poorly drained	5.6%
Pouncey sandy loam	0–2%	4w	Poorly drained	4.7%

TABLE 3-12: SOILS IDENTIFIED WITHIN THE ELGN ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Kempsville very fine sandy loam, clayey substratum	2–6%	2e	Well-drained	4%
Udorthents, loamy	0–6%	n/a	Cut and fill, not prime farmland	3.9%
Appling fine sandy loam	6–15%	3e	Well-drained	3.7%
Helena fine sandy loam	2–6%	2e	Moderately Well-drained	3.4%
Bourne fine sandy loam	0–2%	2w	Moderately Well-drained, high water table	2.5%
Ashlar gravelly sandy loam	6–15%	4e	Excessively drained	1.8%
Caroline-Dogue complex, eroded	7–15%	4e	Well-drained	1.8%
Rains very fine sandy loam	0–2%	4w	Poorly drained, frequent flooding	1.5%
Bourne fine sandy loam	2–6%	2e	Moderately Well-drained	1.3%
Norfolk fine sandy loam	2–6%	2e	Well-drained	1.3%
State fine sandy loam, clayey substratum	2–6%	2e	Well-drained	1.3%
Wedowee sandy loam	2–6%	2e	Well-drained	1.2%
Wedowee sandy loam	6–15%	4e	Well-drained	1%
Ashlar gravelly sandy loam	15–45%	6e	Somewhat excessively drained	0.5%
Inundated	n/a	n/a	n/a	0.3%
Spotsylvania-Bourne fine sandy loams	2–7%	2e	Well-drained – Moderately Well-drained	0.2%
State fine sandy loam, clayey substratum	0–2%	1	Well-drained	0.2%

Source: Soil Survey Staff 2015; Dovetail 2016

3.13.3 ELGN Hydrology

The ELGN segment lies within the drainage basin of the James River, a tributary to the Chesapeake Bay. The major streams directly draining this segment are the Chickahominy River in the north, North Run and its tributaries in the center, and Hungary Creek and its tributaries in the south. Hungary Creek flows east into North Run. North Run flows into Upham Brook approximately 3 miles (4.8 km) southeast of the APE and Upham Brook flows east and joins the Chickahominy River at the border of Henrico and Hanover counties. The Chickahominy River joins the James River between Charles City and James City counties, approximately 45 miles (72.4 km) southeast of the segment's APE.

3.14 GREENDALE TO SAY/WAY (GNSA/15)

The environment of the APE in the GNSA segment ranges from suburban residential subdivision development to commercial/industrial complexes. The northernmost portion of the Segment 15 corridor is predominantly forested in pine with scattered hardwood saplings. The remainder of the GNSA corridor is in a graded, grass-covered area between the existing railroad grade and paved roads or commercial/industrial buildings.

3.14.1 GNSA Geology

Situated in east-central Virginia, the GNSA corridor lies between East Parham Road in Henrico County in the north and the north end of I-195 in Richmond on the south. The corridor here roughly follows the Fall Line separating the Coastal Plain from the adjacent Piedmont province to the west. More specifically, the segment's APE lies within the extreme western-most section of the Coastal Plain province, in the Fall Zone. The dominant geologic unit underlying the APE is Pliocene sand and gravel, which is composed of Tertiary-age gravelly sand interbedded with sandy gravel, poorly to well sorted fine to coarse sand, and clays and silts (Dietrich 1990). The second geologic unit underlying the APE is Mississippian-age Petersburg Granite, which is found in one narrow cross-section in the south-central portion. This granite is light- to dark-gray to pink, fine- to coarse-grained, and ranges from granite to granodiorite in composition.

3.14.2 GNSA Soils

Twelve soil types are mapped within the GNSA segment APE (Table 3-13). The Class 1 Kempsville very fine sandy loam with a clayey substratum and the Class 2 State fine sandy loam with a clayey substratum, Bourne fine sandy loam, and Kempsville very fine sandy loam, clayey substratum, representing approximately 12.5 percent of the APE, indicate likely locations for prehistoric and historic sites. Poorly drained soils have a low probability of containing historic sites, although ephemeral prehistoric sites relating to resource procurement may be found nearby. The Urban land, loamy udorthents and the Udorthents-Dumps complex with pits, constituting 70.1 percent of this APE mapped soils, are the result of development, the removal of natural soil, and/or the placement of fill from elsewhere. Archaeological sites located within these soils may be disturbed or destroyed.

TABLE 3-13: SOILS IDENTIFIED WITHIN THE GNSA ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Urban land	n/a	n/a	Developed/disturbed	55.2%
Udorthents, loamy	0–6%	n/a	Cut and fill	10.8%
Colfax fine sandy loam, indurated substratum	0–6%	3w	Poorly drained	9.2%
Pouncey sandy loam	0–2%	4w	Poorly drained	4.6%
State fine sandy loam, clayey substratum	2–6%	2e	Well-drained	4.5%
Udorthents-Dumps complex, pits	n/a	n/a	Cut and fill	4.1%
Bourne fine sandy loam	2–6%	2e	Well-drained	3.7%

TABLE 3-13: SOILS IDENTIFIED WITHIN THE GNSA ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Kempsville very fine sandy loam, clayey substratum	2–6%	2e	Well-drained	2.4%
Appling fine sandy loam	6–15%	3e	Well-drained	2.1%
Kempsville very fine sandy loam, clayey substratum	0–2%	1	Well-drained	1.9%
Kinston and Mantachie soils	0–2%	6w, 5w	Poorly drained	1.3%
Chewacla and Riverview soils	0–2%	4w	Poorly drained	0.2%

Source: Soil Survey Staff 2015; Dovetail 2016

3.14.3 GNSA Hydrology

The GNSA segment lies within the drainage basin of the James River, a tributary to the Chesapeake Bay. The major streams directly draining this segment are Rocky Branch in the north and Upham Brook and its tributaries in the south. Rocky Branch flows east into North Run. North Run flows into Upham Brook approximately 2 miles (3.2 km) east of the corridor and Upham Brook flows east and joins the Chickahominy River at the border of Henrico and Hanover counties. The Chickahominy River joins the James River between Charles City and James City counties, approximately 40 miles (64.4 km) southeast of the GNSA corridor.

3.15 SAY/WAY TO AM JCT (SAAM/16)

The environment of the SAAM is completely urban. Apartment complexes and commercial buildings border the SAAM corridor APE. A thin swath of young vegetation buffers the existing railroad grade and the APE from the surrounding urban setting.

3.15.1 SAAM Geology

Situated in east-central Virginia, the SAAM portion of the APE roughly parallels the combined section of I-64/95 from the north end of I-195 in Richmond to the southeastern I-64/I95 split. The corridor here roughly follows the Fall Line separating the Coastal Plain from the adjacent Piedmont province to the west. The SAAM segment APE lies within the western-most section of the Coastal Plain. The geologic unit underlying the northwestern portion of the APE is the Pliocene sand and gravel, which is composed of Tertiary-age gravelly sand interbedded with sandy gravel, poorly to well sorted fine to coarse sand, and clays and silts (Dietrich 1990). In the central portion of the SAAM segment is the Bacons Castle Formation of the Tertiary age, gravel grading upward into sand and sandy clayey silt. In the southeastern portion of the APE, the Chesapeake Group, defined as fine-to coarse-grained, quartzose sand, silt, and clay which is variably shelly and diatomaceous, comprises the underlying geology.

3.15.2 SAAM Soils

Two soil types are mapped within the SAAM segment APE (Table 3-14). Class 1 and 2 soils represent the most likely setting for short-term prehistoric sites. Historic sites could also be

present. However, no Class 1 or 2 soils are present in this segment. The Urban land and the Udorthents-Dumps complex with pits, constituting 99.7 percent of this segment's mapped soil types, are the result of development, the removal of natural soil, and/or the placement of fill from elsewhere. Archaeological sites located within these soils may be disturbed or destroyed.

TABLE 3-14: SOILS IDENTIFIED WITHIN THE SAAM ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Udorthents-Dumps complex, pits	n/a	n/a	Cut and fill	63.6%
Urban land	n/a	n/a	Developed/disturbed	36.4%

Source: Soil Survey Staff 2015; Dovetail 2016

3.15.3 SAAM Hydrology

The SAAM segment lies within the drainage basin of the James River, a tributary of Chesapeake Bay. Smaller streams in the area drain directly into the James. Numerous smaller tributaries likely existed in the area prior to the development of the city of Richmond, resulting in alteration of drainage patterns and culvertization of small creeks and ephemeral drainages. The James River enters the Chesapeake Bay approximately 75 miles (120.7 km) southeast of the corridor.

3.16 WAY TO CENTRALIA- A LINE (WACE/18)

The environment of the WACE segment ranges from urban single family residential development, to suburban subdivision development, to commercial/industrial complexes. The existing railroad grade and this segment of the DC2RVA corridor are buffered by mixed vegetation dominated alternately by pine and hardwood stands. Road traces, utility cuts, and streams were also encountered in or adjacent to the APE.

3.16.1 WACE Geology

Beginning in east-central Virginia and continuing into southeastern Virginia, the WACE segment is located to the west of the AMCE segment. The north end of this portion of the corridor begins at East Parham Road in Henrico County and the southern end is located just south of Route 288. The corridor here roughly follows the Fall Line separating the Coastal Plain from the adjacent Piedmont province to the west. More specifically, the segment lies within the extreme western-most section of Coastal Plain in the Fall Zone. The geologic unit underlying the majority of the northern portion of the APE is the Pliocene sand and gravel, which is composed of Tertiary-age gravelly sand interbedded with sandy gravel, poorly to well sorted fine to coarse sand, and clays and silts (Dietrich 1990). There is also a thin area of Proterozoic Migmatitic Paragneiss in the north which is defined as leucocratic to mesocratic, medium- to coarse-grained layered gneiss. The central and southern portions of the WACE segment are dominated by the Bacons Castle Formation of the Tertiary age: gravel grading upward into sand and sandy clayey silt. There are also thin areas of the Mississippian aged Petersburg Granite in the north and central portions of the segment's APE. This granite is light- to dark-gray to pink, fine- to coarse-grained, and ranges from granite to granodiorite in composition.

3.16.2 WACE Soils

Thirty-seven soil types are mapped within the WACE segment APE (Table 3-15). Class 1 and 2 soils represent the most likely setting for short-term prehistoric sites. Historic sites could also be present. No Class 1 soils are mapped within the WACE segment of the APE. The Class 2 Faceville-Gritney-Urban land complex, Bourne fine sandy loam, Bourne-Urban land complex, Tetotum-Urban land complex, Norfolk fine sandy loam, Faceville-Gritney fine sandy loams, Tetotum loam with a clayey substratum, Turbeville-Urban land complex, Faceville-Gritney gravelly fine sandy loams, Gritney fine sandy loam, and Kempsville-Urban land complex, representing approximately 21.9 percent of the APE, indicate high-probability locations for prehistoric and historic sites. Poorly drained soils and soils on slopes of greater than 15 percent have a low probability of containing historic sites, although ephemeral prehistoric sites relating to resource procurement may be found nearby. The Urban land, Udorthents-Dumps complex with pits, and Made land, constituting 33.3 percent of this segment's mapped soil types, are the result of development, the removal of natural soil, and/or the placement of fill from elsewhere. Archaeological sites located within these soils may be disturbed or destroyed. Soil complexes containing Urban land will likely have the same issues.

TABLE 3-15: SOILS IDENTIFIED WITHIN THE WACE ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Urban land	n/a	n/a	Developed/disturbed	12.1%%
Made Land	n/a	n/a	Developed/disturbed	11.3%%
Udorthents-Dumps complex, pits	n/a	n/a	Cut and fill	9.9%%
Roanoke silt loam	0–2%	4w	Poorly drained	7.2%
Fluvaquents	0–2%	6w	Poorly drained	5.5%
Roanoke-Chewacla complex	0–2%	4w	Poorly drained	4.9%
Faceville-Gritney-Urban land complex	2–6%	2e	Well-drained	4.5%
Ochrepts and Udults, strongly sloping	12–20%	6e	Well-drained	4.1%%
Dunbar fine sandy loam	0–4%	2w	Poorly drained, excess water	3.9%
Bourne fine sandy loam	2–6%	2e	Well-drained	2.4%
Bourne-Urban land complex	2–6%	2e	Well-drained	2.4%
Tetotum-Urban land complex, clayey substratum	2–6%	2e	Well-drained	2.4%
Inundated	n/a	n/a	n/a	2.3%
Craven fine sandy loam	2–6%	3e	Well-drained	2.1%
Edgehill-Urban land complex	6–12%	4e	Well-drained	1.9%
Faceville-Gritney gravelly fine sandy loams	6–12%	3e	Well-drained	1.9%
Lenoir silt loam	0–4%	3w	Poorly drained	1.7%
Norfolk fine sandy loam	0–6%	2e	Well-drained	1.6%

TABLE 3-15: SOILS IDENTIFIED WITHIN THE WACE ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Faceville-Gritney fine sandy loams	2–6%	2e	Well-drained – Moderately Well-drained	1.5%
Faceville-Gritney-Urban land complex	6–12%	2e	Well-drained – Moderately Well-drained	1.5%
Tetotum loam, clayey substratum	2–6%	2e	Moderately Well-drained	1.5%
Turbeville-Urban land complex	2–6%	2e	Well-drained	1.4%
Faceville-Gritney gravelly fine sandy loams	2–6%	2e	Well-drained – Moderately Well-drained	1.3%
Wateree sandy loam	12–20%	7e	Well-drained	1.3%
Appling-Urban land complex	6–12%	3e	Well-drained	1.3%
Ochrepts and Udults, sloping	6–12%	4e	Well-drained	1.2%
Gritney fine sandy loam	2–6%	2e	Moderately Well-drained, tendency to erode	1.1%
Louisburg sandy loam	20–45%	7e	Well-drained	1%
Wateree-Wedowee-Rock outcrop complex	45–60%	7e	Well-drained	0.9%
Masada loam	2–6%	3e	Well-drained	0.8%
Ochrepts and Udults, steep	20–35%	7e	Well-drained	0.7%
Appling-Wedowee-Urban land complex	6–12%	3e	Well-drained	0.6%
Bourne sandy loam	6–12%	3e	Moderately Well-drained	0.5%
Coxville loam	2–6%	4w	Poorly drained, excess water	0.5%
Aquults	0–2%	5w	Poorly drained, frequent flooding	0.3%
Kempsville-Urban land complex	2–6%	2e	Well-drained	0.3%
Johnston mucky loam	0–3%	7w	Very poorly drained	0.2%

Source: Soil Survey Staff 2015; Dovetail 2016

3.16.3 WACE Hydrology

The WACE segment lies within the drainage basin of the James River, a tributary to the Chesapeake Bay. The northern portion of the segment is drained by the James River itself and channelized streams and ditches feeding into the James. Other water courses draining the WACE segment, listed from north to south within the corridor, include Reedy Creek, Broad Rock Creek, Falling Creek and its tributary Grindall Creek, Kingsland Creek, and Proctors Creek. All of these creeks empty into the James River, which empties into the Chesapeake Bay approximately 73 miles (117.5 km) east-southeast of the corridor.

3.17 AM JCT TO FULTON YARD (AMFY/19)

The environment of the AMFY corridor begins in an urban setting in the west, passing through Shockoe Bottom. Further to the east, the APE enters an urban industrial area which slowly transforms into a suburban commercial area. The APE in this segment of the corridor is mostly urban and suburban, with little vegetation.

3.17.1 AMFY Geology

Situated in east-central Virginia, the AMFY segment begins east of I-95 and north of the Leigh Street viaduct in Richmond and continues in a southerly direction to the James River. Physiographically, the segment's APE lies within the western-most section of the Coastal Plain. The geologic units underlying the APE are the Chesapeake Group, defined as fine-to coarse-grained, quartzose sand, silt, and clay which is variably shelly and diatomaceous, and Lower Tertiary Deposits, described as mostly fine- to coarse-grained glauconitic quartz sand and clay-silt, shelly in part; and including lesser amounts of sandy limestone and limey sand.

3.17.2 AMFY Soils

Two soil types are mapped within the AMFY segment APE (Table 3-16). The Urban land and the Udorthents-Dumps complex with pits, constituting 100 percent of this segment's mapped soil types, are the result of development, the removal of natural soil, and/or the placement of fill from elsewhere. Archaeological sites located within these soils may be disturbed, destroyed, or not in situ.

TABLE 3-16: SOILS IDENTIFIED WITHIN THE AMFY ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Urban land	n/a	n/a	Developed/disturbed	53.9%
Udorthents-Dumps complex, pits	n/a	n/a	Cut and fill	46.1%

Source: Soil Survey Staff 2015; Dovetail 2016

3.17.3 AMFY Hydrology

The APE within the AMFY segment lies within the drainage basin of the James River, a tributary of Chesapeake Bay. Smaller streams in the area drain directly into the James. Numerous smaller tributaries likely existed in the area prior to the development of the city of Richmond, resulting in alteration of drainage patterns and culvertization of small creeks and ephemeral drainages. The James River enters the Chesapeake Bay approximately 75 miles (120.7 km) southeast of the corridor.

3.18 BUCKINGHAM BRANCH/HOSPITAL WYE (BBHW/20)

The BBHW is situated parallel to and immediately east of the SAAM and AMCE segments in Richmond, VA. The environment includes urban residential and commercial/industrial development. A thin swath of young vegetation buffers the existing railroad grade and the segment's APE from the surrounding urban setting.

3.18.1 BBHW Geology

Situated in east-central Virginia, the BBHW segment is located east of I-195 on the south and east of I-64 on the north, crossing Hospital Street in the center. The geologic unit underlying the entire segment is the Chesapeake Group, defined as fine-to coarse-grained, quartzose sand, silt, and clay which is variably shelly and diatomaceous.

3.18.2 BBHW Soils

Two soil types are mapped within the BBHW segment of the APE (Table 3-17). No Class 1 or 2 soils are present in this segment. The Class 7 Johnston mucky loam is considered to have a low probability for the presence of archaeological sites as it is very poorly drained and is subject to frequent flooding and ponding. The Udorthents-Dumps complex with pits is the result of development, the removal of natural soil, and/or the placement of fill from elsewhere. Archaeological sites located within these soils may be disturbed or destroyed.

TABLE 3-17: SOILS IDENTIFIED WITHIN THE BBHW ARCHAEOLOGICAL APE

Soil Name	Slope	Class	Characteristics	Approximate Percentage of APE
Udorthents-Dumps complex, pits	n/a	n/a	Cut and fill	82.8%
Johnston mucky loam	0–3%	7w	Very poorly drained	17.2%

Source: Soil Survey Staff 2015; Dovetail 2016

3.18.3 BBHW Hydrology

The APE within the BBHW segment lies within the drainage basin of the James River, a tributary of Chesapeake Bay. Smaller streams in the area drain directly into the James. Numerous smaller tributaries likely existed in the area prior to the development of the city of Richmond, resulting in alteration of drainage patterns and culvertization of small creeks and ephemeral drainages. The James River enters the Chesapeake Bay approximately 75 miles (120.7 km) southeast of the corridor.

4 SURVEY METHODOLOGY

The goal of the archaeological survey was to identify any archaeological sites within the archaeological APE that are on or eligible for the NRHP. The survey methods employed to meet this goal were chosen with regard to the project's scope (i.e., the project's potential to affect significant resources, should they be present), the potential of the project area to contain significant resources, local field conditions, and the results of prior predictive modeling of the APE.

4.1 ARCHAEOLOGICAL SURVEY

As previously discussed, using the results of the predictive modeling, the DC2RVA project segments were subdivided for the purposes of the current archaeological study, corresponding to discrete locations of high, medium, and low archaeological probability. As outlined in the predictive model report (Klein et al. 2015), historic maps were consulted and incorporated into the model development/output. The archaeological survey consisted of a pedestrian reconnaissance of these archaeological areas and subsurface testing of those portions of the APE identified as having the potential for intact deposits during the pedestrian reconnaissance.

The subdivided locations indicated by predictive modeling, referred to as areas, were given alphabetical letter designations within each of the larger 20 DC2RVA project segments. The archaeological areas were designated first by their DC2RVA segment number and then by their lettered designation assigned as part of this study, for example archaeological area A in the FRLO Segment is notated within this report as "3A". Shovel test pits (STPs) were excavated at 50-foot (15.2-m) intervals along transects across these archaeological areas within the larger APE. Given the highly disturbed nature of the APE, judgmental shovel testing (shovel tests placed not on transect but judgmentally placed given field condition) was also employed in order to maximize subsurface sampling and to verify subsurface integrity. Model output locations less than 5 feet (1.5 m) wide were visually inspected but no area/letter designations were assigned and no subsurface testing was conducted in these locations.

Each STP within the archaeological area was given a numerical designation. The provenience information for each STP included the archaeological area alphabetical designation and the numerical designation. For example, STP 14A-1 refers to the first STP excavated within Area A of the ELGN (14) segment. STPs were not excavated in areas of obvious modern disturbance. STPs measured approximately 1.3 feet (38.1 cm) in diameter and were excavated to penetrate at least 0.3 feet (10.2 cm) into sterile subsoil where possible. Shovel test radials were excavated at 25-foot (7.6-m) intervals in cardinal directions from shovel tests that produced cultural materials.

The STP methodology described in the previous paragraph was employed across the majority of the APE, except for on property owned by the National Park Service (NPS). The archaeological APE intersected, and in some places extended onto, NPS land within the Fredericksburg and Spotsylvania National Military Park (111-0147). An Archaeological Resources Protection Act

(ARPA) permit was acquired for investigations within the Park (see Appendix D). This permit stipulated specific field methods, different from the DHR standards used elsewhere along the corridor. On NPS land STPs measured 1.64 feet (0.5 m) square in size and were separated by no more than 32.8 feet (10 m). Shovel test radials were excavated at 16.4-foot (5-m) intervals in cardinal directions from shovel tests that produced cultural materials.

All soils excavated from STPs were passed through 0.25-inch (0.6-cm) hardware mesh cloth. Each distinct soil horizon was given a stratum designation (e.g., I, II) in order to delineate stratigraphic relationships. All artifacts were recovered and bagged by stratum. The project name, area designation, transect, STP, stratum, excavator, date, and material recovered were recorded on field tags for each level. Soil conditions, weather information, and notations on disturbances were recorded in field notes.

Metal detector survey was carried out within the American Battlefield Protection Program's (ABPP) potential National Register (PotNR) established boundaries of all Civil War battlefields that intersected the archaeological areas within the APE. This survey was only completed in areas deemed through pedestrian survey to have the potential for intact subsurface deposits and thus overlapped the STP survey transects within Civil War resources. The metal detector survey was conducted by staff who have received specialized training in using metal detectors at Civil War sites, using a Whites 9500 pro/psi and a Tesoro Cibola metal detector. Metal detecting was conducted in a zig-zag pattern along transects spaced at 6-foot (1.8-m) intervals. The discriminating function of the metal detector was turned off and any positive contacts were identified with pin flags. The locations of all positive contacts was excavated to determine if the contact was positive for historic ferrous and/or non-ferrous metal artifacts. All contacts positive for artifacts were mapped and if need be were used to produce of artifact distribution maps that show and discriminate between locations of military and non-military and possible dual use artifacts.

4.2 LABORATORY METHODS

Any archaeological specimens collected during the Phase IB survey were transported to Dovetail Cultural Resource Group's laboratory in Fredericksburg, Virginia for processing and analysis. Prior to artifact washing, each bag was cross-referenced with the field log to confirm provenience information and contents. Stable objects were washed with tap water and a soft brush with special attention paid to edges of ceramics and glass to better aid in identification. After washing, the artifacts were grouped by provenience and placed on a drying rack.

Once dry, the artifacts were cataloged for analysis. Specific characteristics were described using currently accepted terminology and were entered into an Access database. After cataloging, diagnostic artifacts were pulled and directly marked with their provenience information or accession number.

Specific ware types and manufacture dates were identified using Adams (2002), Bartoviks (1980), Greer (1970), Nelson (1968), Noël Hume (1991), Pittman et al. (1987), and South (1977). Non-tool prehistoric lithics were identified using Andrefsky (1998), Odell (2004), and Whittaker (1994). Hafted bifaces and prehistoric ceramics, if recovered, were assigned types using standard regional typologies (i.e., Coe 1964; Custer 1989; Ritchie 1971).

As required by the previously outlined ARPA permit, if artifacts were recovered from NPS property all would have been returned to the NPS for curation following Interior Collection

Management System (ICMS) standards. Additionally, all associated field and analysis documents pertaining to the survey on NPS property were entered into ICMS.

5 RESULTS OF ARCHAEOLOGICAL SURVEY

The archaeological survey consisted of a pedestrian survey and subsurface testing, supplemented by metal detector survey in selected locations, throughout the areas identified by predictive modeling within the APE to have high, medium, and low potential for archaeological deposits, designated "archaeological areas". All archaeological areas were subjected to pedestrian survey and photographic documentation. Based on the pedestrian survey of those area identified via modeling, subsurface testing (and as necessary metal detection) was carried out in locations that were not disturbed or otherwise untestable, as discussed below. The archaeological areas subjected to Phase IB survey encompass 156.1 acres (63.2 ha).

The following discussion first presents a general summary of the extensive disturbance noted throughout the APE. Following this discussion, the survey results from each segment within the DC2RVA corridor are presented inclusive of location, noted disturbance, and general results. within each segment description is a detailed presentation of the archaeological areas that warranted subsurface testing, and all of the identified sites are described in detail, including NRHP eligibility recommendations. Maps of archaeological areas surveyed within the APE are not presented within the body of this results section; instead these are presented in Appendix A. Also presented as appendices are the shovel test catalog (Appendix B), the artifact catalog (Appendix C), and archaeological site (Appendix E).

The significance of each site within this survey was evaluated in relation to the NRHP eligibility criteria. Sites were evaluated in regards to Criterion A, for their association with events that have made a significant contribution to the broad patterns of our history; Criterion B, for their association with people significant in our nation's history; Criterion C, for their embodiment of the distinctive characteristics of a style, type, or period of construction; and Criterion D, for their potential to yield information important to our understanding of history or prehistory. Aspects of integrity were also examined, as they pertain to subsurface deposits and particularly in relation to NRHP assessment under Criterion D.

5.1 DISTURBANCE

As expected within a project corridor that is so closely aligned along an existing major railroad corridor, the archaeological areas subjected to Phase IB survey within the DC2RVA corridor contained substantial portions in which subsurface archaeological testing was not feasible. Substantial subsurface disturbance throughout much of the APE rendered systematic shovel testing unnecessary, impracticable, or unsafe. The single largest source of surface disturbance within the corridor is grading associated with the existing railroad. A number of other disturbances are found repeatedly throughout the corridor, including buried utility transmission lines, access roads, and large areas of standing water.

Throughout the 123 miles of the DC2RVA corridor the track of the existing railroad and associated ballast are largely level, with their topographic relief varying only a few feet across the entire length of the corridor. The surrounding natural topographic relief, however, varies substantially, from the tops of significant hills to low lying areas near wetlands and streams. In order to maintain the largely level rail line through these topographic variances, a great deal of grading has been undertaken. Throughout the DC2RVA corridor, where the existing rail is substantially higher than the natural surface, a large artificial berm is required to carry the existing rail at its level. Where the rail needs to be lower than the natural surface, it has been cut through leaving high walled, steeply sloped embankments leading from the natural topography down to the rail bed. The entire width of the APE was often within these graded areas. Not only are these areas disturbed and susceptible to erosion, therefore not likely to contain intact cultural deposits, they are also in many cases so steep as to make any kind of subsurface testing entirely impracticable (Figure 5-1).

Outside of areas disturbed by grading for the existing railroad, the largest cause of disturbance in the DC2RVA archaeological APE is the presence of buried utility corridors. In particular, petroleum transmission pipelines and fiber optic cable parallel the existing railroad line on one or both sides and often are located within the APE (Figure 5-2). The prevalence of these buried utility lines precluded subsurface testing because of obvious safety reasons; additionally, conversations with utility marking personnel knowledgeable about those corridors indicated that their installation involved a great deal of subsurface disturbance/earth moving. In particular the petroleum pipeline was described as occupying a trench that was cut to approximately 20 feet (6.1 m) wide. It is important to note that there are many areas within the corridor, in which these buried utilities combine with other disturbances, in particular the grading discussed above. As such, in many locations multiple subsurface disturbances are evident and occupy the entire width of the APE (see Area 4D in Figure 5-1).

Another source of substantial disturbance throughout the length of the DC2RVA corridor is the presence of standing water in the archeological APE. Whether as a result of natural streams or as a result of drainage from the existing rail corridor accumulating in low-lying or poorly drained areas, large portions of the areas expected to have some potential for archaeological sites were covered in standing water, even where not mapped as being within one of the numerous streams that lie in or near the DC2RVA corridor (Figure 5-3).

FIGURE 5-1: GRADING/SLOPE DISTURBANCE IN THE APE: AREA 3F, LOOKING SOUTH; AREA 4D, LOOKING SOUTHWEST; AREA 6H, LOOKING EAST; AREA 9H, LOOKING NORTHWEST; AND AREA 13E, LOOKING NORTH

FIGURE 5-2: UTILITY DISTURBANCE IN THE APE: AREA 3C, LOOKING WEST; AREA 4A, LOOKING SOUTHEAST; AREA 12Q, LOOKING SOUTH; AND AREA 13C, LOOKING NORTH

FIGURE 5-3: STANDING WATER WITHIN THE APE: AREA 4D, WATER-FILLED DITCH, LOOKING WEST; AREA 11M, WATER-FILLED DITCH, LOOKING NORTH; AND AREA 12J, INUNDATED AREA, LOOKING WEST

5.2 ROSSLYN TO ALEXANDRIA (ROAF/01)

The ROAF segment of the DC2RVA corridor is located within Arlington and Alexandria. Extending a length of approximately 6.5 miles (10.5 km), and encompassing 78.1 acres (31.6 ha), the APE within the ROAF segment begins in Arlington, at the Potomac River in the north, near Ronald Reagan Washington National Airport (Figure 5-4). From there it meanders south into the City of Alexandria and turns to the west, ending within Alexandria City limits at the Washington Metropolitan Area Transit Authority (WMATA) Alexandria Rail Yard. Predictive modeling undertaken prior to field work indicated that the entirety of this segment's APE lacked potential for intact archaeological sites. As such, ROAF was not subdivided into designated archaeological testing areas. However, portions of the ROAF corridor that passed through previously identified sites were visually surveyed to ascertain the current condition of those sites.

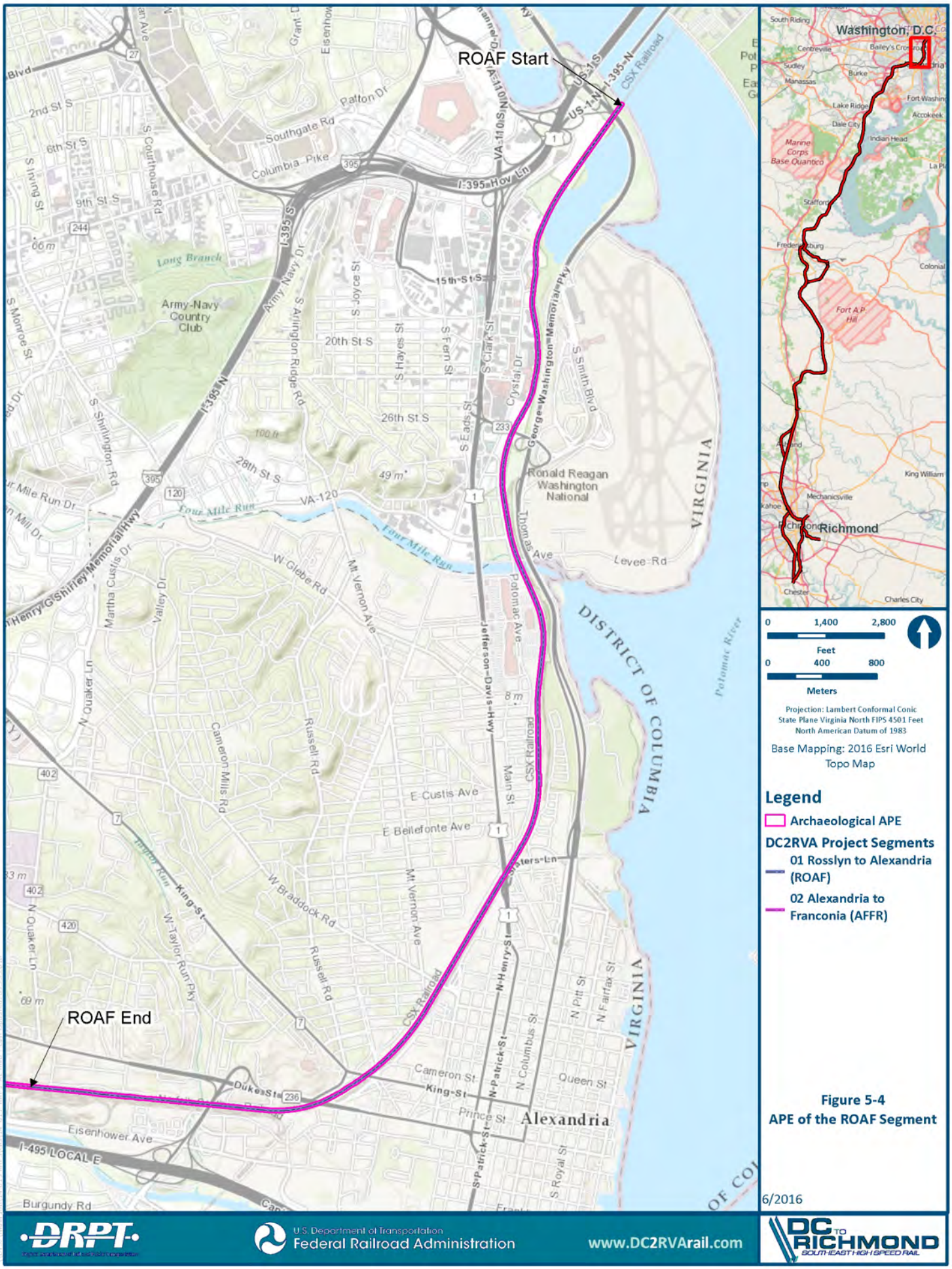


Figure 5-4
APE of the ROAF Segment

6/2016

The entirety of the ROAF segment is located within the highly developed and built up portions of Arlington and Alexandria. Residential, commercial, and industrial development, including large facilities related to the existing railroad, dominate the entirety of the project corridor within this segment. As such, sub-surface testing was impracticable within the project APE in the entirety of this segment. Historic maps and aerials covering Alexandria and throughout the corridor were specifically examined and incorporated in the predictive modeling; however, given the narrow nature of the APE and development of the region no areas of archaeological potential were identified in the ROAF segment.

5.2.1 Previously Recorded Site 44AR0037

Site 44AR0037, part of "Jackson City," a late nineteenth-century red-light district, was previously surveyed by Louis Berger, who identified intact foundations within their project area during a 2004 survey (DHR 2016). Despite prior survey, the site remains unevaluated for listing on the NRHP. The majority of the site lies in an open grassy area just south of the Potomac River (Figure 5-5 and Figure 5-6), and parts of the site outside the ROAF corridor may still be intact; however, within the APE, the site, as previously mapped, lies within the artificially graded landform with notable surface disturbances (Figure 5-7). Because the portion of the site within the project corridor lies within a graded landform the portion of the site within the DC2RVA corridor is unlikely to maintain subsurface integrity. It is **recommended that site 44AR0037 remains unevaluated for the NRHP. However, the portion of the site overlapping the APE, has been compromised by grading and subsurface disturbance, as such any portion of this site within the APE does not contribute to overall site eligibility.** DHR concurred with this recommendation in a letter dated October 11, 2016.

FIGURE 5-5: OVERVIEW OF SITE 44AR0037 FROM PUBLIC BIKE TRAIL OUTSIDE THE APE, LOOKING NORTHWEST

Figure 5-6: Sites 44AR0037, 44AX0028, and 44AX0207. Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data..

FIGURE 5-7: OVERGROWN GRADED LANDFORM OCCUPYING THE APE WITHIN SITE 44AR0037

5.2.2 Previously Recorded Site 44AX0028

Site 44AX0028 is the former route of the Alexandria Canal, which operated from 1843 to 1886 (see Figure 5-6). The most recent archaeological work done at this site was by Dovetail in 2007; however, the site as a whole remains unevaluated in regard to its NRHP eligibility. The DC2RVA corridor intersects only a small part of this large site, which stretches a distance of approximately 7 miles (11.3 km). The ROAF segment APE intersects the site near the intersection of Potomac Avenue and Main Line Boulevard in Alexandria, along the Potomac Yard Walking Trail. The majority of the canal is either destroyed or lying beneath modern development (Figure 5-8). However, a small section of the canal has been preserved near this location, outside of the APE and just outside the existing rail line disturbance (Figure 5-9). **It is recommended that site 44AX0028 remains unevaluated for the NRHP. However, within the archaeological APE, the canal is entirely destroyed by modern development, and as such any portion of site 44AX0028 within the APE does not contribute to the site's overall eligibility**. DHR concurred with this recommendation in a letter dated October 11, 2016.

FIGURE 5-8: SITE 44AX0028 APPROACHING DC2RVA CORRIDOR (RAIL TO LEFT IS A SPUR, MAIN DC2RVA CORRIDOR IS IN BACKGROUND), LOOKING WEST

FIGURE 5-9: LEFT, PRESERVED SECTION OF ALEXANDRIA CANAL (44AX0028), LOOKING SOUTHEAST. RIGHT, DETAIL OF PRESERVED SECTION OF ALEXANDRIA CANAL, LOOKING SOUTHEAST

5.2.3 Previously Recorded Site 44AX0207 (000-9800-0045)

Site 44AX0207 (000-9800-0045) is the site of a possible Franco-American, Revolutionary War, wagon train camp. In 2008 a map survey was undertaken to identify and record all camp sites along the routes taken by all armies to and from the Siege of Yorktown. All possible sites were recorded "independent of their integrity, precisely known location or the extent of historical background information" (Selig 2009). As such, this site is recorded as a large, almost 4,000 x 3,000-foot (1219.2 x 914.4-m) rectangle, the northeast corner of which intersects the APE corner near Ronald Reagan Washington National Airport (see Figure 5-6 and Figure 5-10). This site has not been archaeologically verified, and within the DC2RVA corridor there does not seem to be potential for elements of the site to be preserved intact, given the extensively graded, paved, and otherwise disturbed nature of the APE within the site. **It is recommended that site 44AX0207 remains unevaluated for the NRHP. However, within the archaeological APE, there was no evidence for intact portions of the site that have not been extensively compromised by development, and as such any portion of site 44AX0207 within the APE does not contribute to the site's overall eligibility**. DHR concurred with this recommendation in a letter dated October 11, 2016.

FIGURE 5-10: SITE 44AX0207 WITHIN THE APE, LOOKING SOUTH

5.3 ALEXANDRIA TO FRANCONIA (AFFR/02)

The AFFR segment of the DC2RVA corridor is located within Fairfax County and the City of Alexandria. The archaeological APE for the AFFR segment extends a length of approximately 4.8 miles (7.7 km) and encompasses 58.1 acres (23.5 ha) (Figure 5-11). This segment's north end is in the City of Alexandria at the WMATA Alexandria Rail Yard. From there it runs to the west before turning south and continuing to its south end, approximately 800 feet (243.8 m) south of Franconia Road in Springfield. Predictive modeling undertaken prior to field work indicated that the entirety of this segment had no potential for intact archaeological sites. As such, AFFR was not subdivided into archaeological testing areas as most other segments were. No previously identified sites are located within the AFFR portion of the DC2RVA corridor.

The entirety of the AFFR segment is located within an almost entirely developed and built up portion of the City of Alexandria and Fairfax County. The area containing the DC2RVA APE within AFFR is dominated by residential, commercial and industrial development, including large facilities related to the existing railroad.

5.4 FRANCONIA TO LORTON (FRLO/03)

The FRLO segment of the DC2RVA corridor is located entirely in Fairfax County. Extending approximately 6.5 miles (10.5 km), the FRLO segment of the APE runs from Franconia, just south of Franconia Road, in the north, to Lorton in the south, ending at Lorton Road, south of the Lorton Virginia Rail Express (VRE) Station (Figure 5-12). The FRLO archaeological APE encompasses 88.6 acres (35.9 ha). Based on the prior predictive modeling, high probability areas for intact archaeological deposits cover 7.1 acres (2.9 ha), moderate probability 0.9 acres (0.4 ha), and there were no areas identified as having low probability for archaeological sites. Approximately 77.4 acres (31.3 ha) were classified as lacking significant probability to contain intact archaeological sites. FRLO includes 18 archaeological areas, given alphanumeric designations from 3A to 3R. Of these, only two, 3A and 3I required subsurface testing.

The majority of the FRLO segment was not subjected to subsurface testing due to existing disturbances, as is the case throughout most of the DC2RVA corridor. These disturbances mainly consist of the grading and embankments required by the existing railroad, but disturbances resulting from the substantial urban development of the Franconia/Lorton area were also present. Every area within FRLO, including the two that were subjected to subsurface testing, contained substantial portions of untestable acreage because of grading either up to, or down to the existing rail bed. Additionally, Areas 3C, 3F, 3O and 3R contain buried petroleum and/or fiber optic transmission lines, and 3H and 3J contained substantial amounts of standing water within the corridor (Figures 5-13, 5-14, and 5-15). Area 3G was not tested as it was prohibitively narrow at a maximum width of 2.2 feet (0.7 m) and thus did not meet survey criteria.

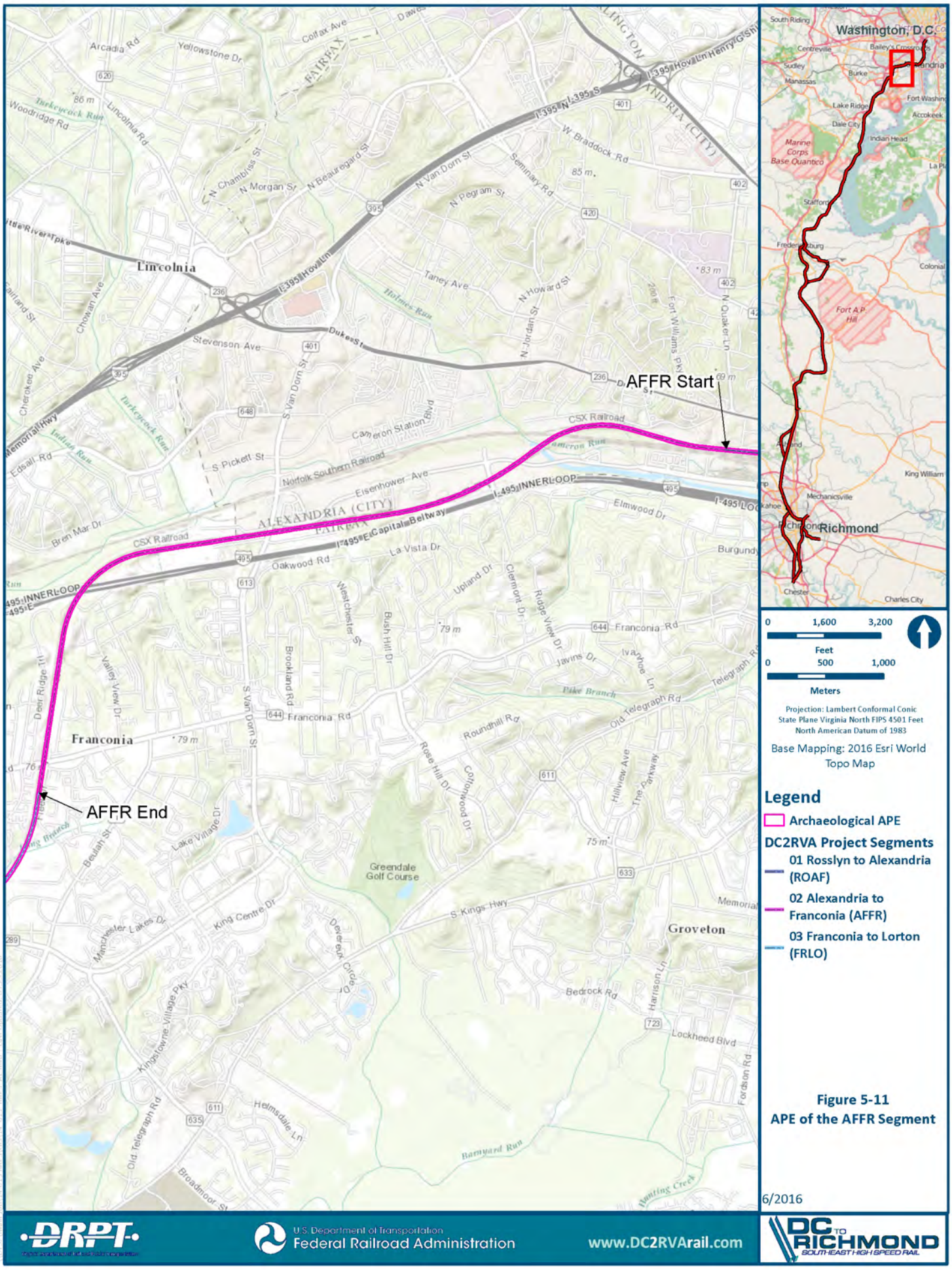


Figure 5-11
APE of the AFFR Segment

6/2016

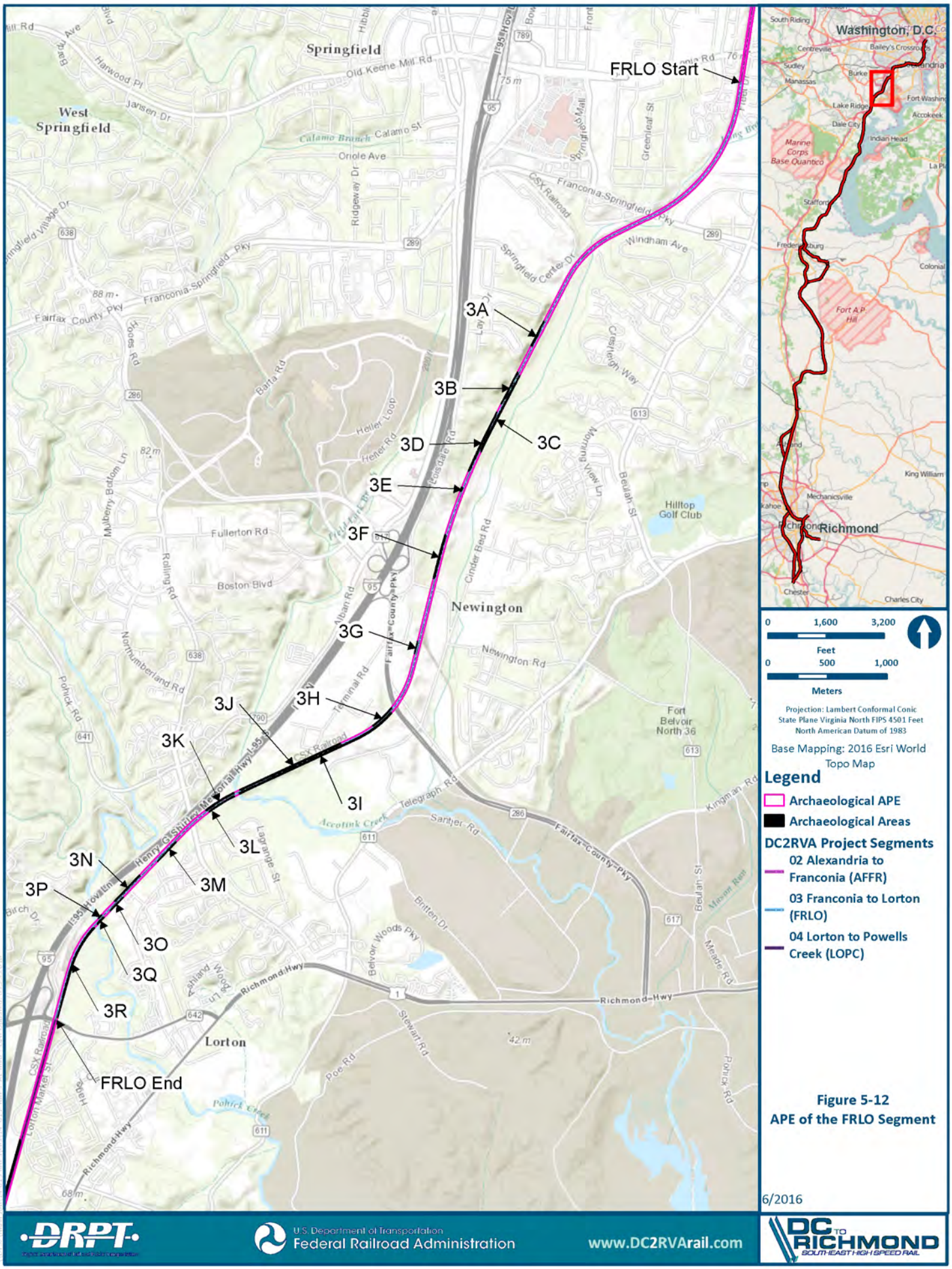


Figure 5-12
APE of the FRLO Segment

6/2016

FIGURE 5-13: DISTURBED AREAS IN FRLO SEGMENT: AREA 3B ARTIFICIAL EMBANKMENT, LOOKING SOUTH; AREA 3C GRAVEL ROAD, LOOKING SOUTH; AREA 3D DITCH AND BERM, LOOKING SOUTH; AREA 3E ARTIFICIAL EMBANKMENT, LOOKING NORTH; AREA 3F BURIED UTILITIES AND ARTIFICIAL BERM, LOOKING EAST; AND AREA 3H WATER-FILLED DITCH AND BURIED UTILITIES, LOOKING SOUTHWEST

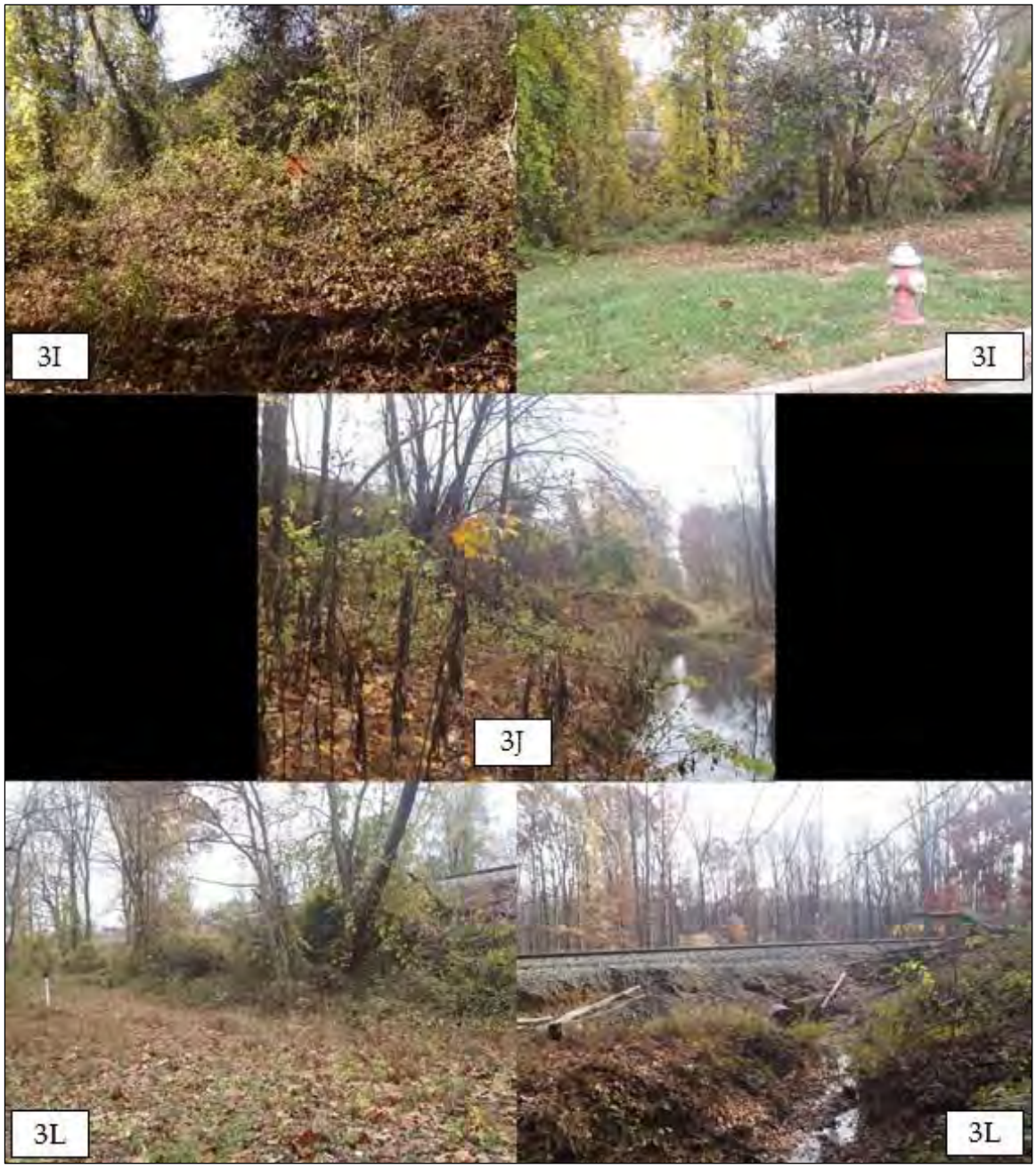


FIGURE 5-14: DISTURBED AREAS IN FRLO SEGMENT: AREA 3I ARTIFICIAL BERM AND BURIED UTILITIES, LOOKING NORTHWEST; AREA 3I GRADED AREA CONTAINING WATER MAIN, LOOKING NORTH; AREA 3J INUNDATION AND ARTIFICIAL BERM, LOOKING SOUTHWEST; AND AREA 3L ARTIFICIAL BERM AND BURIED FIBER OPTIC MARKER, LOOKING NORTHEAST

FIGURE 5-15: DISTURBED AREAS IN FRLO SEGMENT: AREA 3M ARTIFICIAL BERM, LOOKING WEST; AREA 3N ARTIFICIAL EMBANKMENT, LOOKING SOUTHEAST; AREA 3O GRADING AND BURIED UTILITIES, LOOKING SOUTHEAST; AREA 3P ARTFICIAL EMBANKMENT, LOOKING SOUTHEAST; AREA 3Q ARTIFICIAL BERM, LOOKING SOUTHWEST; AND AREA 3R ARTIFICIAL BERM AND BURIED PETROLEUM PIPELINE MARKER, LOOKING NORTH

Of the 18 areas making up the FRLO segment only two of them, areas 3A and 3I, contained undisturbed areas large enough for subsurface testing. The FRLO segment is set in a heavily developed part of the metropolitan Washington, D.C. suburbs of Northern Virginia. Although the corridor itself travels largely through wooded areas, these locations are seldom far from substantial suburban residential developments, light industrial areas, office parks, and other developed areas (Figure 5-16). The overall topographic profile of the area surrounding the corridor is hilly, which requires substantial grading contributing to the disturbance discussed

above. A number of archaeological areas within FRLO are crossed by or adjacent to streams, including Accotink and Pohick creeks (Figure 5-17).

FIGURE 5-16: TYPICAL ENVIRONMENTAL SETTING IN FRLO SEGMENT, LOOKING SOUTH

FIGURE 5-17: RAILROAD BRIDGE OVER ACCOTINK CREEK IN NORTHEASTERN END OF AREA 3L, LOOKING NORTH

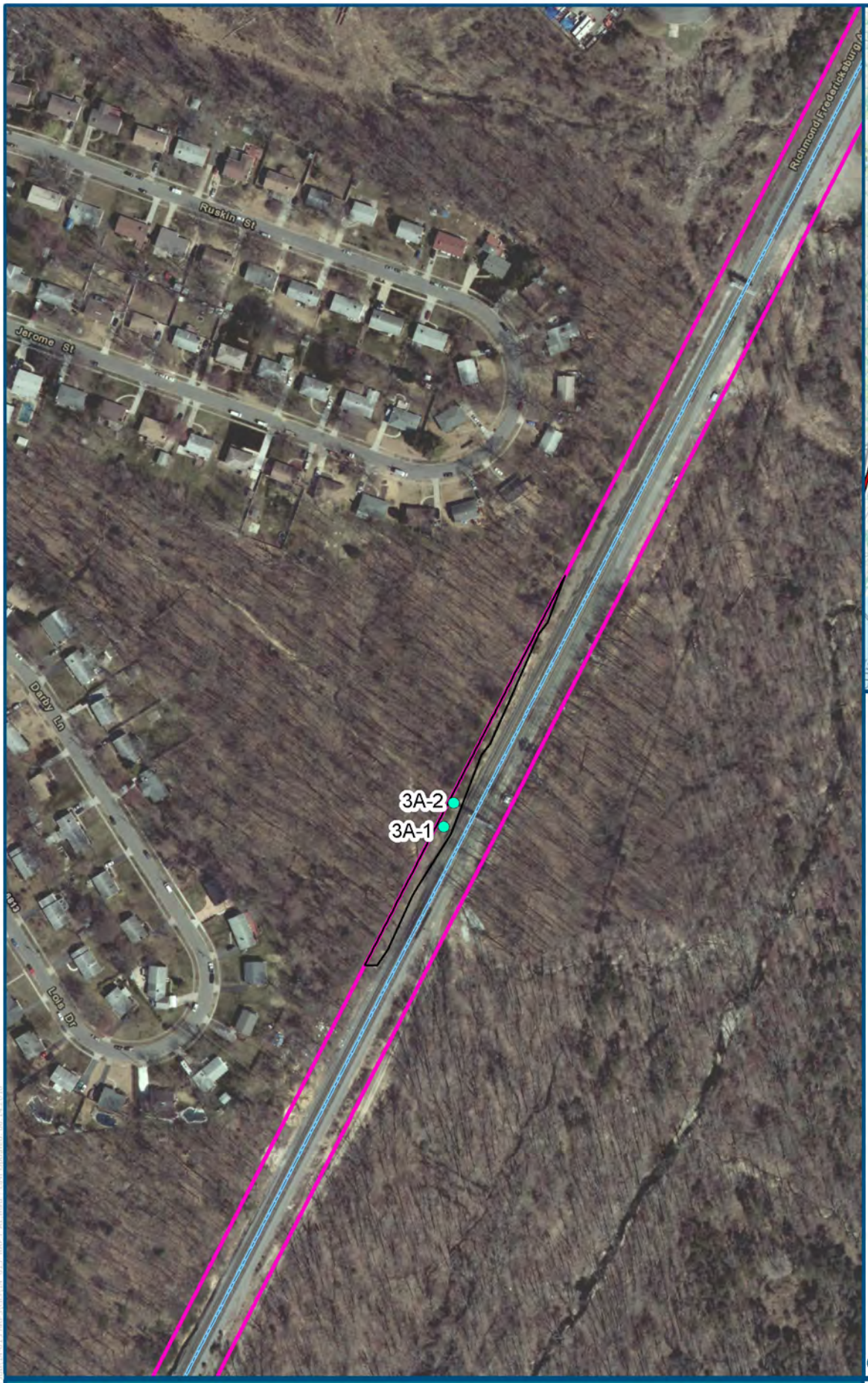
Four shovel tests were excavated in the FRLO segment. No portion of the segment was wide enough to require more than a single transect of STPs, which was placed following the contours

of the corridor. The average STP depth in this area was 1.0 feet (30 cm) with a maximum depth of 1.3 feet (39.6 cm). A horizon depths ranged from 0.2 feet (6.1 cm) to 0.6 feet (18.3 cm) with an average depth of 0.4 feet (12.2 cm). Stratigraphy varied between the areas, but both contained soils that showed evidence of disturbance. No artifacts were recovered from the APE, and no sites were identified.

5.4.1 Archaeological Area 3A

Area 3A is located on the west side of the existing rail, near the northern end of the FRLO segment, in a wooded area lying between a residential subdivision and the existing rail. Predictive modeling indicated this is primarily a high probability area for intact archaeological deposits, with a small portion of moderate probability at its northern end. Area 3A measures 754 feet (229.80 m) in length, and it is generally steeply sloped, with a drainage in the central portion of the area, between two hills . The flat areas on either side of this drainage were the only parts of Area 3A subjected to subsurface testing (Figure 5-18). Two STPs were excavated along a single transect, and both contained disturbed soils (Figure 5-19, Figure 5-20). No artifacts were found, and no sites were discovered.

FIGURE 5-18: CREW MEMBER SCREENING IN SMALL TESTABLE PORTION OF AREA 3A, LOOKING NORTH. NOTE SUBSTANTIAL SLOPE TO NORTH



0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 03 Franconia to Lorton (FRLO)

Figure 5-19
STP Survey in Area 3A

6/2016

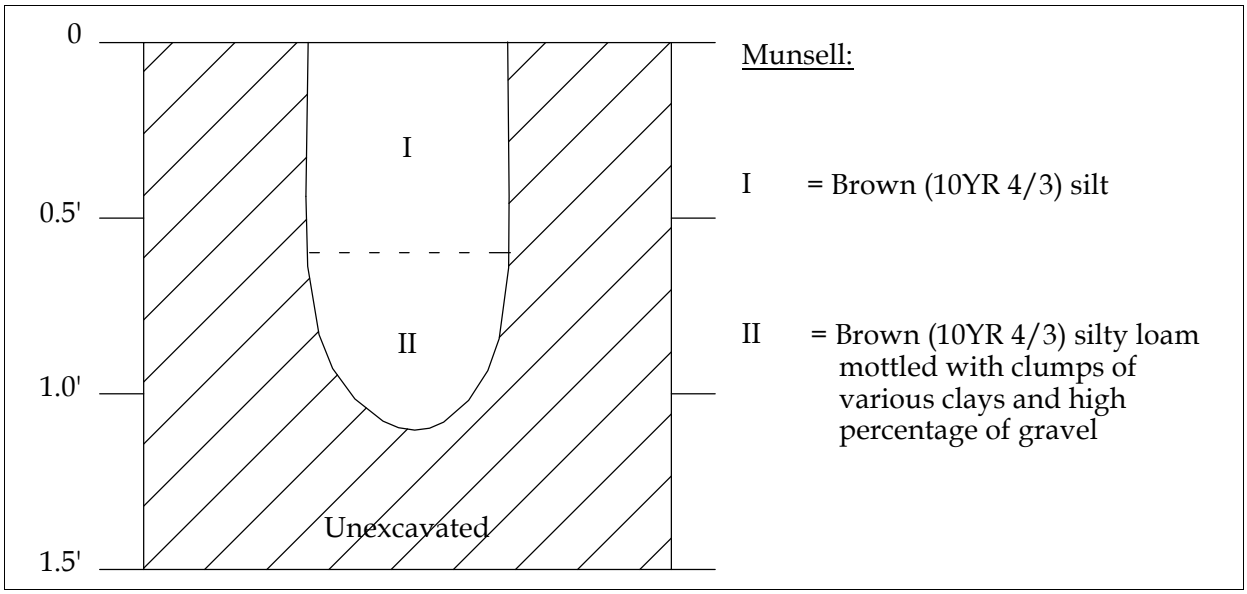


FIGURE 5-20: REPRESENTATIVE SOIL PROFILE FROM AREA 3A, STP 3A-1

5.4.2 Archaeological Area 3I

Area 3I is located on the south side of the existing rail, beginning just West of Route 286 and extending 4,760 feet (1,450.8 m) to the southwest. Predictive modeling indicated this as a high probability area for archaeological deposits. The first two thirds of Area 3I lie in a thin wooded strip behind the parking area of a large office park. The remainder lies in a wooded area approaching Accotink Creek, and containing a pond that drains into Accotink creek. This wooded area was entirely untestable as the width of the APE was entirely within the grade extending up to the existing railroad, but a small portion of the strip behind the office park was testable, although even there the soils were disturbed (Figure 5-21 through Figure 5-23). Two STPs were excavated on a single transect (Figure 5-24). No artifacts were found and no sites were discovered.

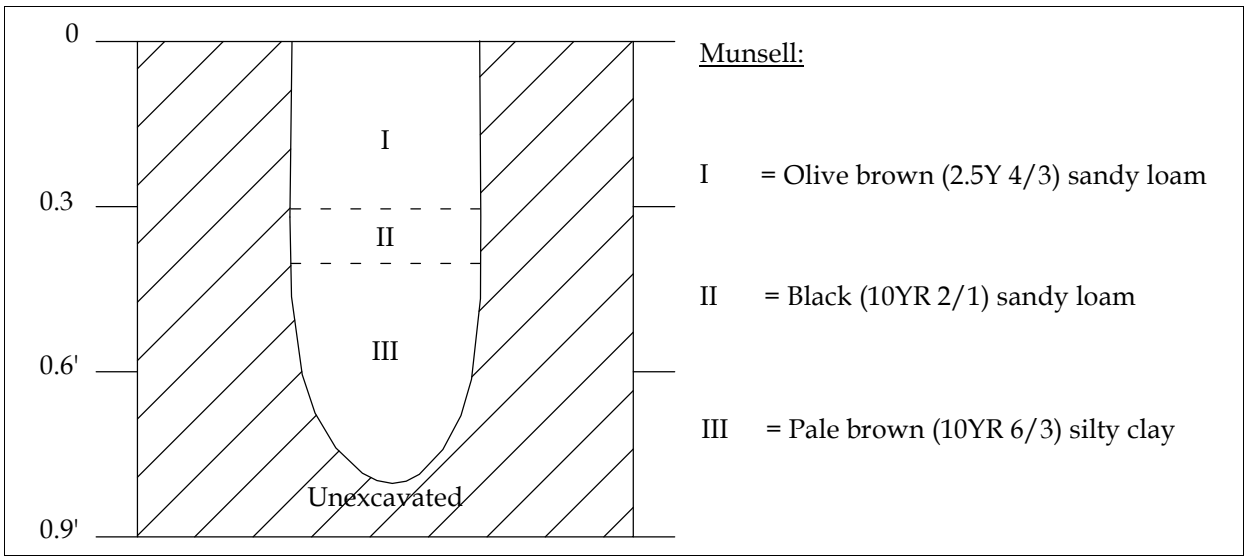
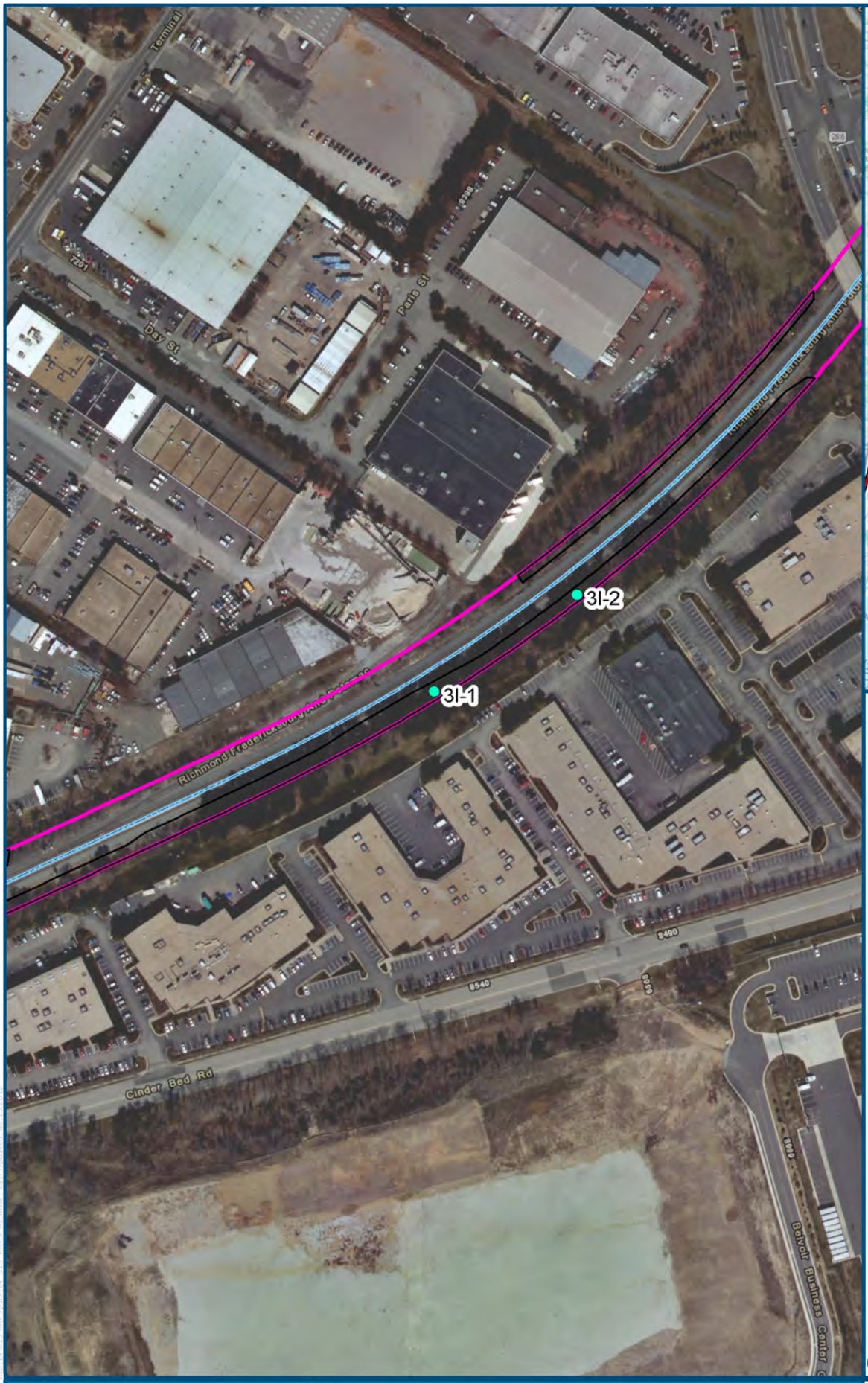


FIGURE 5-21: REPRESENTATIVE SOIL PROFILE FROM AREA 3I, 3I-1

FIGURE 5-22: POND AND STEEP GRADE OCCUPYING CORRIDOR IN SOUTHERN PART OF 31, LOOKING WEST

FIGURE 5-23: PORTION OF AREA 31 SUBJECTED TO STP SURVEY, LOOKING NORTH.



0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 03 Franconia to Lorton (FRLO)

Figure 5-24
STP Survey in Area 3I

6/2016

5.4.3 Previously Recorded Site 44FX0453

Site 44FX0453, a small domestic site, likely dating from after 1915, was identified by Fairfax County Archaeologist Mike Johnson in 1980 and resurveyed in 1988 (see Figure 5-26). DHR site files indicate the site is unevaluated in regards to its NRHP eligibility. At the time a standing farmhouse and surface scatter were observed. The majority of the site now contains a modern building and a parking lot, and the edge of the site that overlaps the APE contains a gravel road and buried utilities (Figure 5-27). It is unlikely that any portion of the site remains intact after the construction of the building and lot. The small portion (approximately 6 feet [1.8 m]) of the site that extends into the APE is also likely to be disturbed as it contains a buried petroleum pipeline and facilities, and a gravel road. **It is recommended that site 44FX0453 remains unevaluated for the NRHP. However, within the archaeological APE, the portion of site 44FX0453 has been extensively compromised by buried utilities and gravel road, and as such any portion of the site within the APE does not contribute to the site's overall eligibility**. DHR concurred with this recommendation in a letter dated October 11, 2016.

5.4.4 Previously Recorded Sites 44FX0561 and 44FX0562

Sites 44FX0561 and 44FX0562, a pair of small prehistoric lithic scatters separated only by a small drainage, were identified by Fairfax County Archaeologist Mike Johnson in 1982 (Figure 5-25). Both sites have not been evaluated for listing on the NRHP. These sites lie immediately adjacent to, and very slightly overlapping Area 3C (Figure 5-26). At the point where these sites abut and overlap the APE, the entire APE width is occupied by a level-graded, gravel covered road that also contains a buried petroleum pipeline. The substantial majority of both of these sites lies outside of the archaeological APE. The subsurface integrity of any portion of these sites overlapping the APE has been severely compromised by the installation of the petroleum pipeline and the grading of the road paralleling the railroad. **It is recommended that sites 44FX0561 and 44FX0562 remain unevaluated for the NRHP. However, the portions of sites 44FX0561 and 44FX0562 within the APE do not contribute to their respective overall site eligibility.** DHR concurred with this recommendation in a letter dated October 11, 2016.

FIGURE 5-25: LEFT, PROJECT CORRIDOR IMMEDIATELY ADJACENT TO SITE 44FX0562, LOOKING SOUTH; AND AREA 3C CORRIDOR ADJACENT TO SITES 44FX0561 AND 44FX0562, LOOKING SOUTH

Figure 5-26: Sites 44FX0561, 44FX0562, and 44FX0453. Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

FIGURE 5-27: OVERVIEW OF SITE 44FX0453, LOOKING EAST

5.5 LORTON TO POWELLS CREEK (LOPC/04)

The LOPC segment of the DC2RVA corridor is in the Lorton area of Fairfax County to the north of the Occoquan River, and in the Woodbridge area of Prince William County to the south of the Occoquan. The northern end of LOPC segment is at Lorton Road and the southern end is at Potomac Shores Golf Club on the southern bank of Powells Creek (Figure 5-28). The segment covers a total distance of approximately 9 miles (14.5 km). The LOPC archaeological APE encompasses 111.1 acres (44.9 ha). Based on the prior predictive modeling, high probability areas cover 8.6 acres (3.5 ha), moderate probability 0.1 acres (0.04 ha), and there were no identified low probability areas. Approximately, 102.4 acres (41.4 ha) were classified as having no measurable potential for intact archaeological sites.

The setting of the LOPC segment is varied; however, the majority of the areas within the LOPC segment consist of rolling terrain containing young deciduous forest with some stands of pine and varying degrees of grasses and brambles (Figure 5-29). The LOPC segment consists of 14 archaeological areas, lettered 4A through 4N, as identified from predictive modeling. Of these, only archaeological areas 4A and 4F required subsurface testing. A number of the archaeological areas are crossed by or adjacent to streams, including the Occoquan River and Marumsco, Farm, and Neabsco Creeks (Figures 5-30).

Like much of the DC2RVA project corridor as a whole, substantial portions of LOPC segment were untestable due to existing disturbances. These disturbances mainly consisted of the grading and embankments required by the existing railroad. Other disturbances included substantial buried fiber optic and petroleum utility transmission lines and artificial ditches. Of the 14 archaeological areas making up the LOPC, only two of them contained testable, undisturbed portions large enough for subsurface testing to be practical. Area 4A contained a small location in the north center and Area 4F had a small flat location in the south where STPs were excavated. Even so, the APE in most of these two areas fell on the side slope of existing railroad grade or on adjacent buried utilities and was not tested (Figure 5-31).

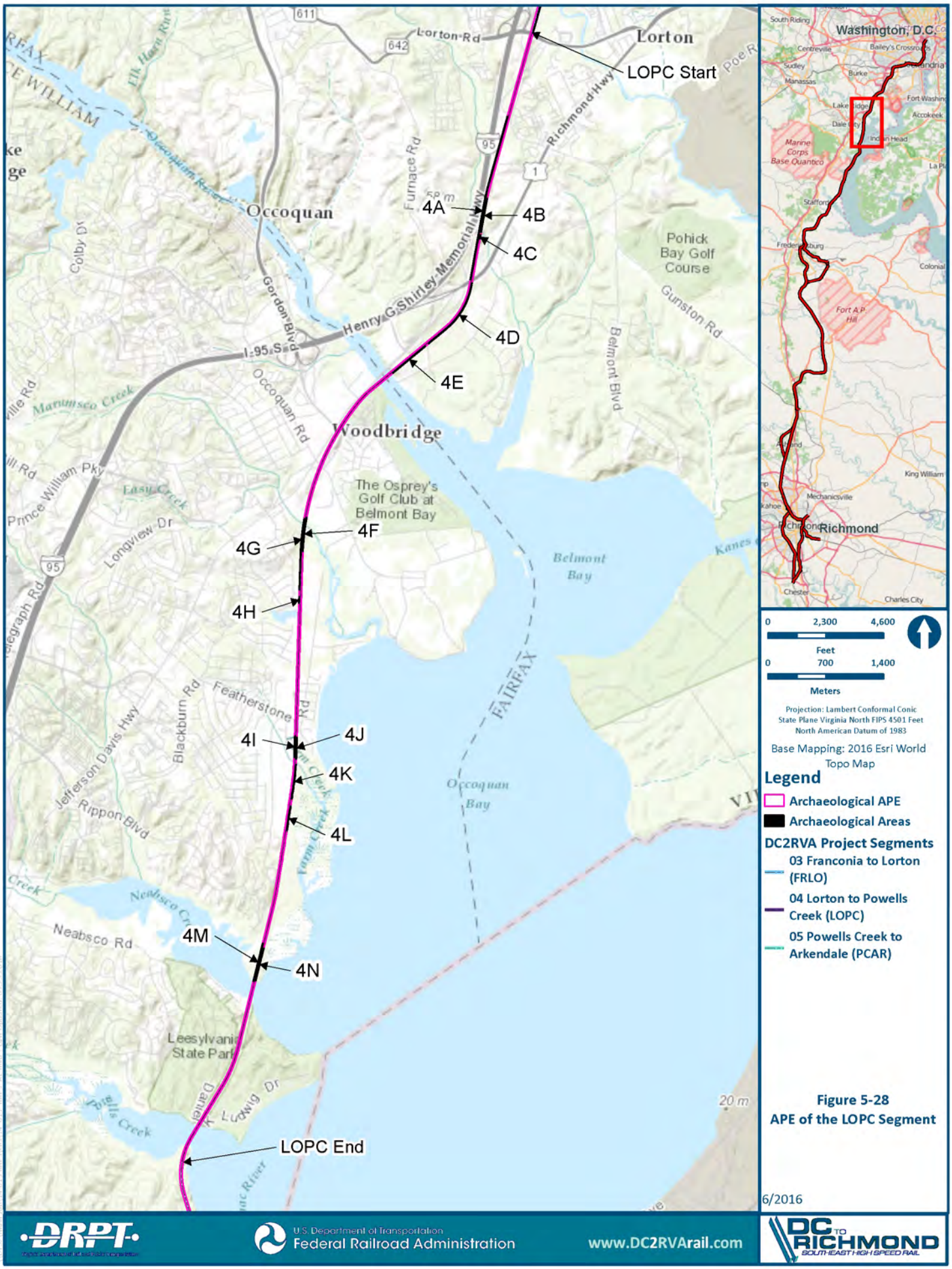


Figure 5-28
APE of the LOPC Segment

6/2016

FIGURE 5-29: REPRESENTATIVE VIEW OF THE LOPC SEGMENT APE SETTING, LOOKING NORTHEAST

FIGURE 5-30: LEFT, MARUMSCO CREEK CROSSING THE APE, LOOKING NORTH; AND RIGHT, OCCOQUAN RIVER CROSSING THE APE, LOOKING SOUTH

Among the other 12 archaeological areas, disturbances precluded subsurface testing (Figures 5-32 through 5-34). The APE in Areas 4C, 4G, 4L, 4M, and 4N was located completely on the side slope of the existing railroad grade. In Areas 4B, 4D, 4E, 4J, and 4K, the APE fell on the side slope of existing railroad grade or on adjacent buried utilities. The Area 4I corridor was entirely in a ditch between the existing railroad grade and an industrial park just south of Featherstone Drive in Woodbridge, VA. Area 4H was initially identified for archaeological survey; however, upon field inspection the area was found to be less than 5 feet (1.5 m) in width and therefore too narrow to meet the testing threshold described in the methods section of this report.

A total of seven shovel tests was excavated in the LOPC segment. Stratigraphy varied greatly across this area, as would be expected from such a small testable sample over such a large geographic area. No two STPs were alike, no artifacts were recovered from the LOPC segment, and no sites were identified.

FIGURE 5-31: LEFT, DISTURBED PORTION OF AREA 4A, LOOKING SOUTH; AND RIGHT, DISTURBED PORTION OF AREA 4F, LOOKING NORTHWEST

FIGURE 5-32: AREA 4I DITCH ADJACENT TO THE EXISTING RAILROAD GRADE, LOOKING EAST

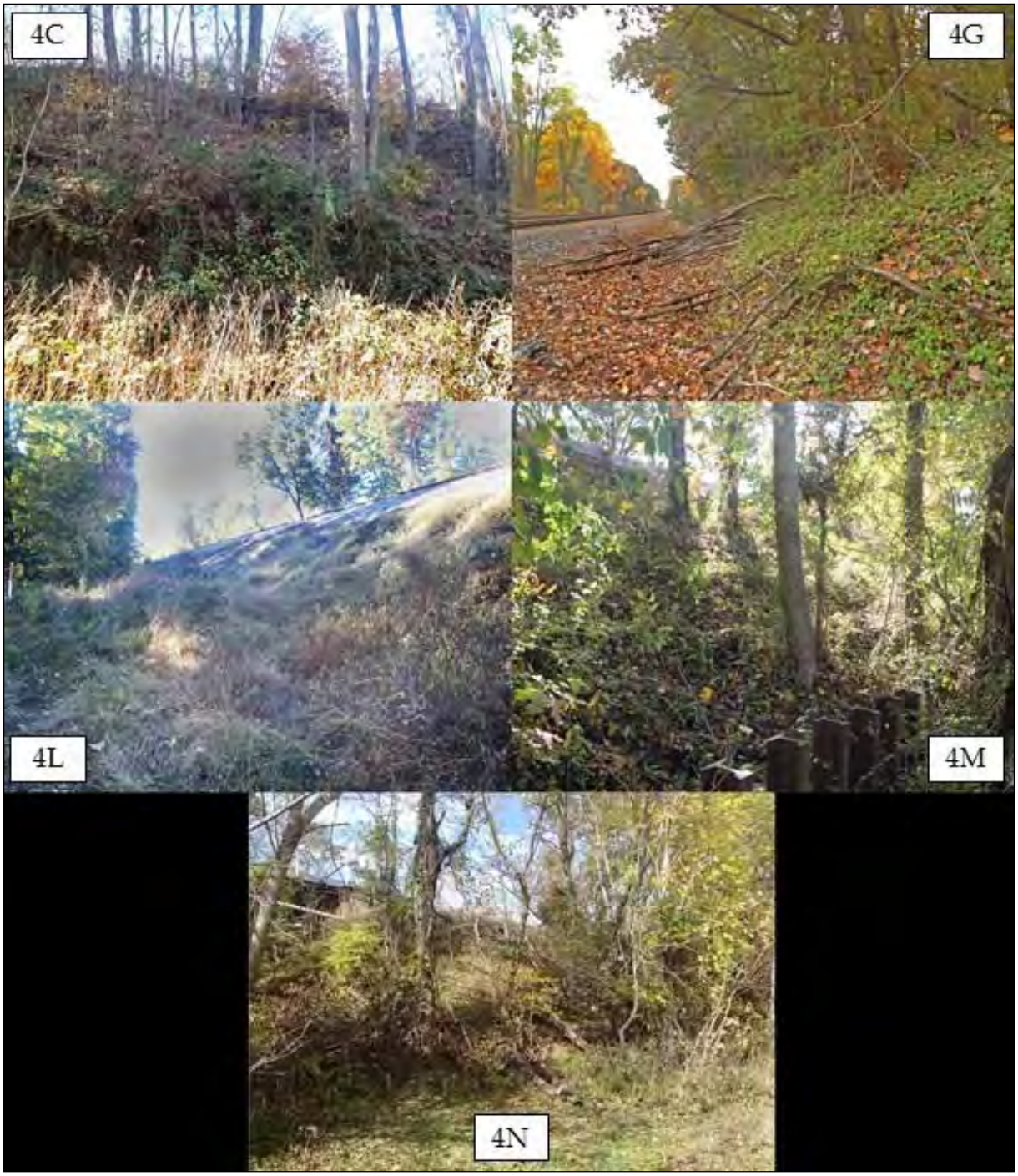


FIGURE 5-33: STEEPLY SLOPING SIDE OF THE EXISTING RAILROAD GRADE IN THE LOPC APE: AREA 4C, LOOKING WEST; AREA 4G, LOOKING SOUTH; AREA 4L, LOOKING SOUTHWEST; AREA 4M, LOOKING EAST; AND AREA 4N, LOOKING NORTHWEST

FIGURE 5-34: BURIED UTILITIES PRESENT IN THE LOPC APE: AREA 4B, LOOKING NORTHWEST; AREA 4D, LOOKING NORTHWEST; AREA 4E, LOOKING SOUTH; AREA 4J SIDE, LOOKING SOUTH; AND AREA 4K, LOOKING NORTH.

5.5.1 Archaeological Area 4A

Area 4A is located on the west side of the existing railroad grade, with the south central portion across from Areas 4B and 4C. Predictive modeling indicated this as a predominantly high probability area for archaeological deposits with a very small medium probability location in the

center. Area 4A measures 6,646.94 feet (2025.99 m) in length. A forested area, 4A is located south of Gunston Cove Road and north of U.S. Route 1 (Richmond Highway). Almost all of Area 4A falls on the steep artificial slope up to the existing railroad grade and is untestable. A small location in the north-central portion of the area was testable (Figure 5-35). Five STPs were excavated along a single transect (Figure 5-36). No artifacts were found and no sites were discovered.

The average STP depth in Area 4A was 1.3 feet (39.6 cm) with a maximum depth of 1.8 feet (54.9 cm). A horizon depths ranged from 0.1 feet (3.0 cm) to 1.0 feet (30.5 cm) with an average depth of 0.4 feet (12.2 cm). While the stratigraphy in each STP was different, all five exhibited evidence of disturbance. A representative profile has a brown (10YR 4/3) sandy loam organic A horizon, over yellowish brown (10YR 5/4) sandy loam containing pockets of brownish yellow (10YR 6/8) sandy clay, covering gray (10YR 6/1) loamy sand mottled with brownish yellow (10YR 6/8) sandy clay (Figure 5-37).

FIGURE 5-35: TESTABLE PORTION OF AREA 4A, LOOKING SOUTH

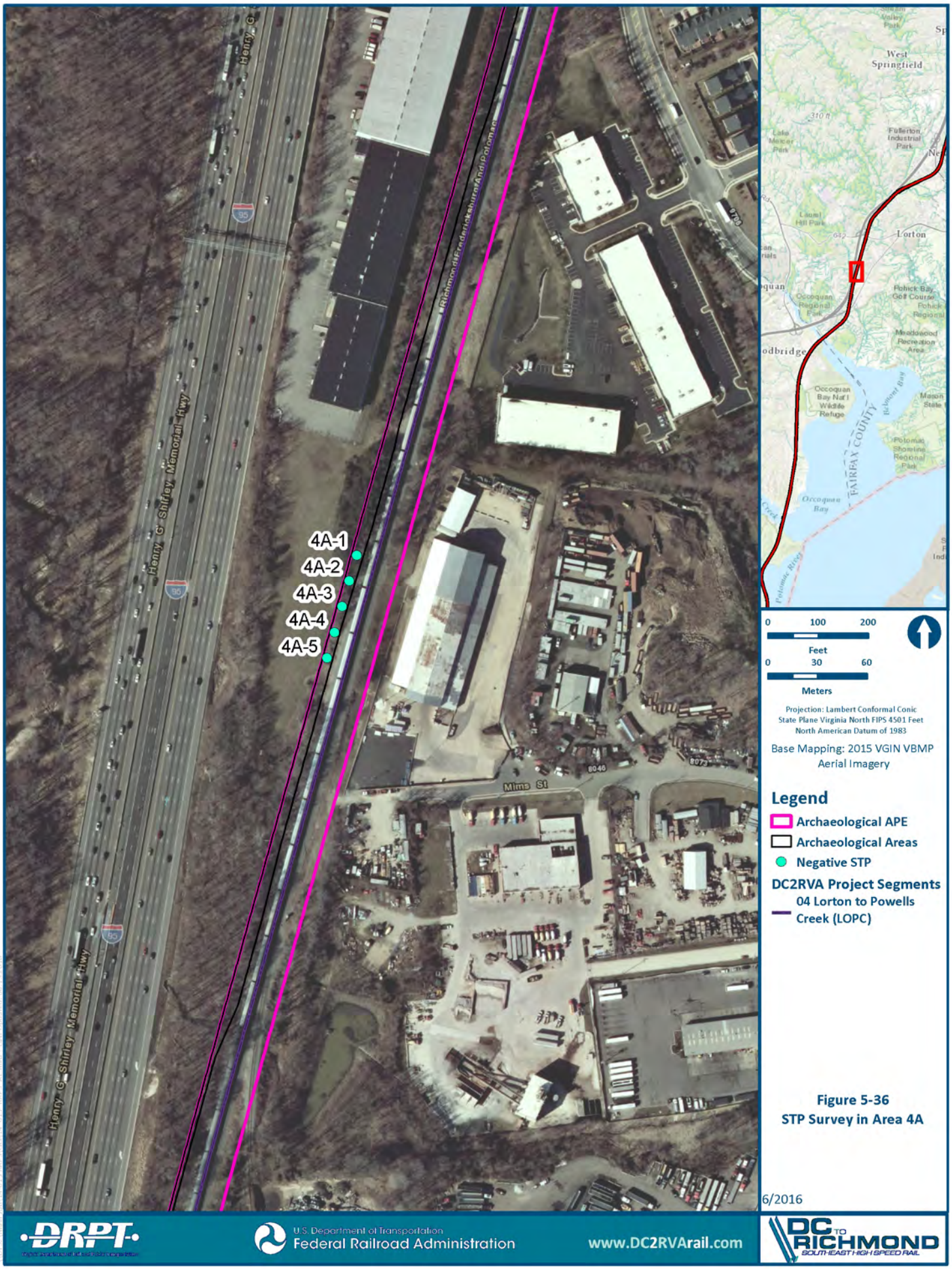


Figure 5-36
STP Survey in Area 4A

6/2016

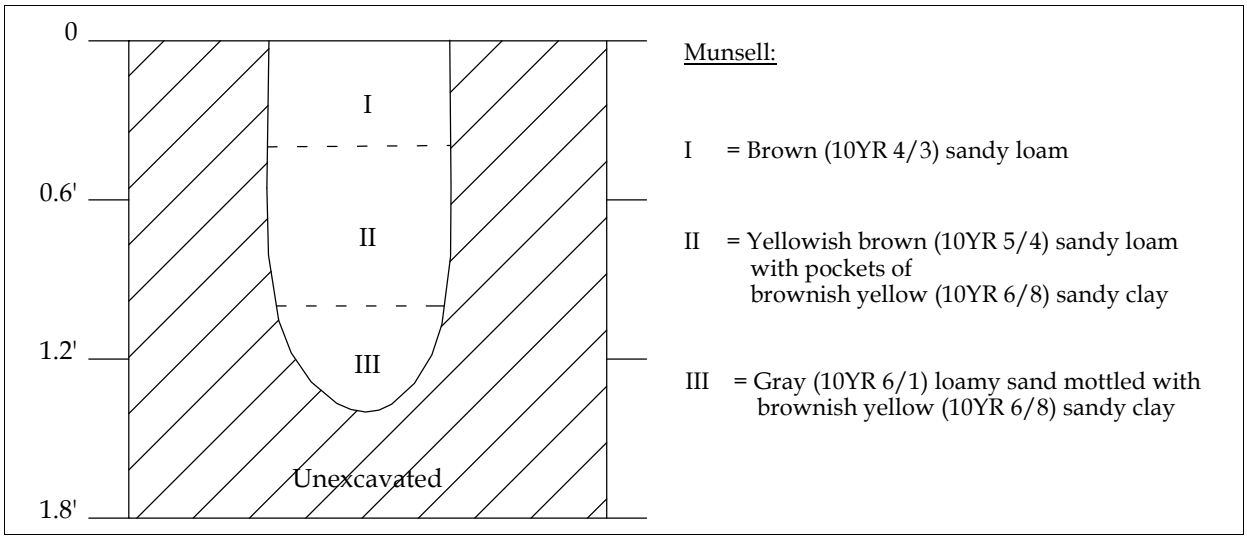


FIGURE 5-37: REPRESENTATIVE SOIL PROFILE FROM AREA 4A, STP 4A-3

5.5.2 Archaeological Area 4F

Area 4F is located on the east side of the existing railroad grade, across from Area 4G. Predictive modeling indicated this as a high probability area for archaeological deposits. Area 4F measures 1,347.52 feet (410.72 m) in length. A forested area, 4F is located just north of Veterans Memorial Park in Woodbridge, Virginia. Almost all of Area 4F falls on the steep artificial slope up to the existing railroad grade and is untestable. A small location in the southern portion of the area was testable (Figure 5-38). Two STPs were excavated along a single transect (Figure 5-39). No artifacts were found and no sites were discovered.

FIGURE 5-38: TESTABLE PORTION OF AREA 4F, LOOKING NORTH

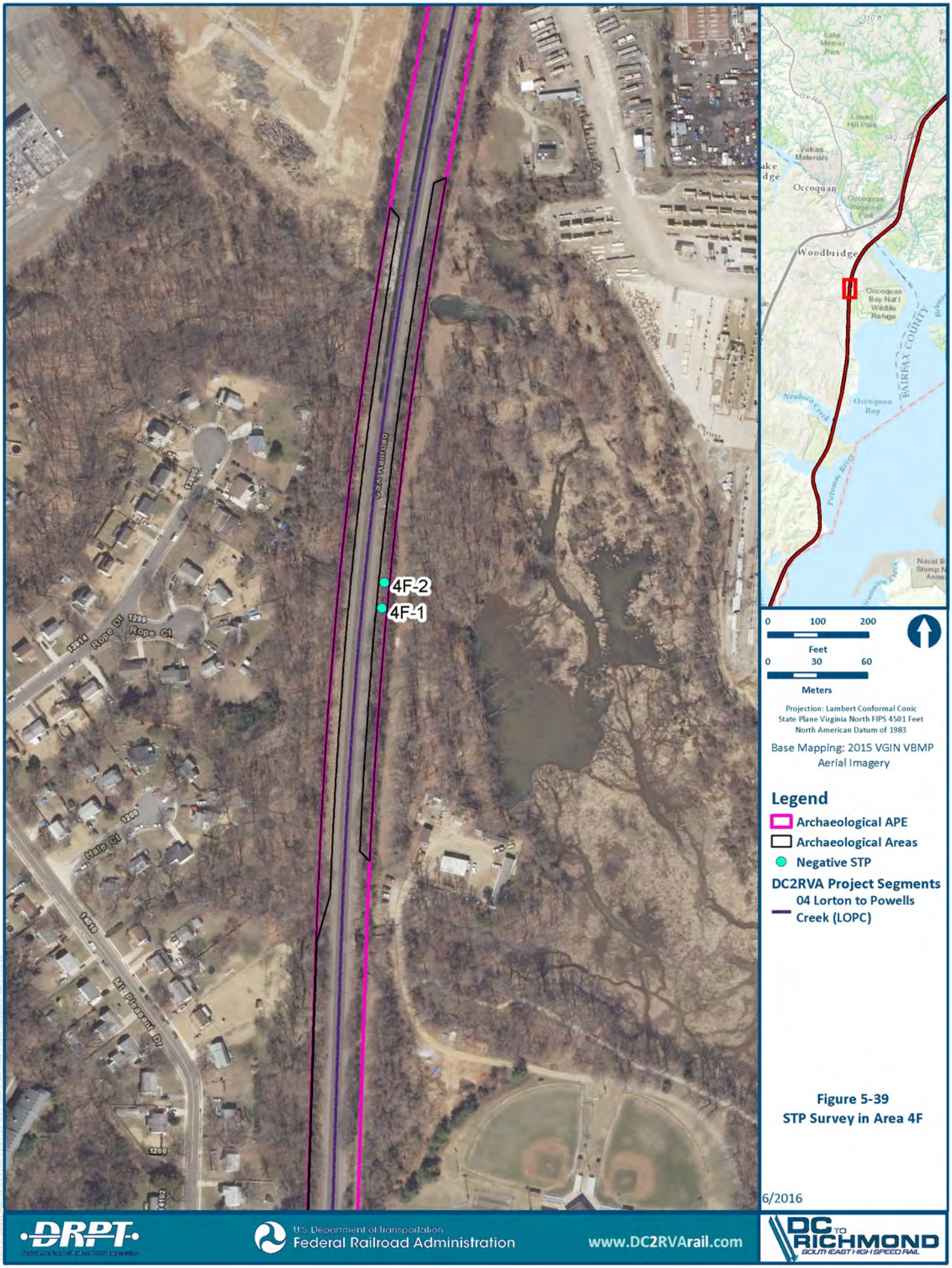


Figure 5-39
STP Survey in Area 4F

6/2016

The average STP depth in Area 4F was 1.25 feet (38.1 cm) with a maximum depth of 1.3 feet (39.6 cm). A-horizon depths ranged from 0.4 feet (12.2 cm) to 0.8 feet (24.4 cm) with an average depth of 0.6 feet (18.3 cm). A representative profile has a dark grayish brown (10YR 4/2) silty loam organic A horizon, over black (10YR 2/1) silty loam, covering pale brown (10YR 6/1) sand and degrading sandstone (Figure 5-40).

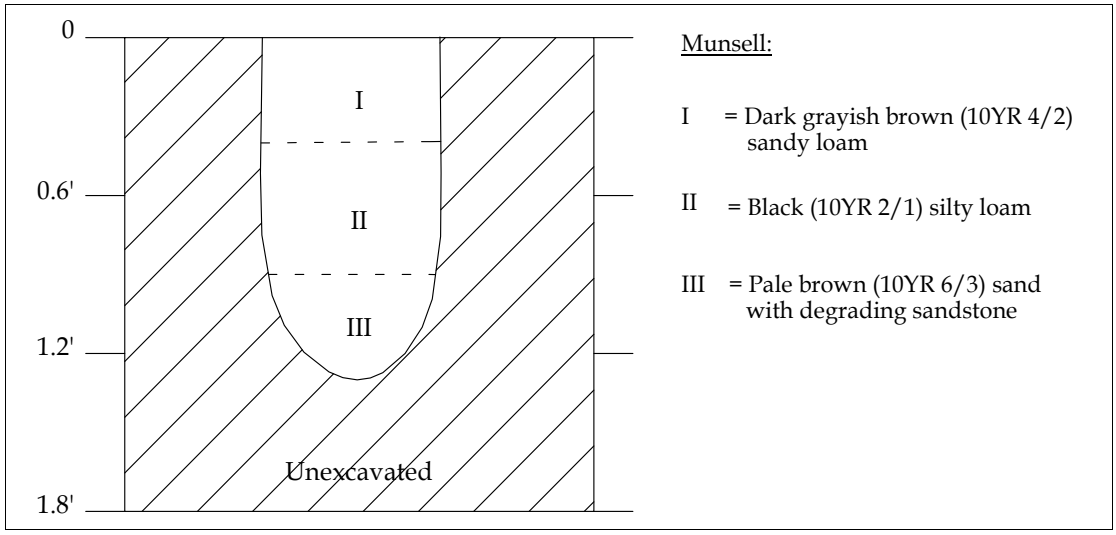


FIGURE 5-40: REPRESENTATIVE SOIL PROFILE FROM AREA 4F, STP 4F-2

5.5.3 Previously Recorded Site 44FX2455

Site 44FX2455 was recorded as a multi-component site based on information provided by an informant, property owner Frederick C. Craig, Jr and is located in Area 4E of the LOPC segment (Figure 5-41). The prehistoric component, described as a camp, dates to all periods, from Paleoindian through Late Woodland. The historic component, a possible single dwelling, dates to the first half of the twentieth century. The DHR site form does not provide the date when the site was recorded but does indicate that it is not evaluated for the NRHP. The portion of site 44FX2455 within the LOPC archaeological APE was found to be significantly disturbed by grading associated with the railroad and adjacent buried utilities (Figure 5-42). As such, it is **recommended that the site as a whole remain unevaluated for the NRHP, but that portion of site 44FX2455 within the corridor lacks subsurface integrity and therefore does not contribute the site's overall NRHP eligibility.** DHR concurred with this recommendation in a letter dated October 11, 2016.

5.5.4 Previously Recorded Site 44FX2542

Site 44FX2542 is known as King's House Hill and was recorded as a multi-component site in 2001 by Coastal Carolina Research, Inc. (CCR) (Cooke et al. 2001). It is located on the west side of the existing railroad grade in the APE of the LOPC segment, across from Area 4E (see Figure 5-41 and Figure 5-43). The prehistoric component dates to all periods, from Paleoindian through Late Woodland. However, King's House Hill is thought to be the location of Tauxenent, the political center of the Dogue (Moyumpse) mentioned by John Smith in 1612. The historic

Figure 5-41: Sites 44FX2455 and 44FX2542. Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

FIGURE 5-42: SITE 44FX2455 IN AREA 4E, LOOKING WEST

FIGURE 5-43: PORTION OF SITE 44FX2542 IN THE LOPC CORRIDOR, LOOKING EAST-NORTHEAST

component dates to the eighteenth century. CCR recommended the site potentially eligible for NRHP listing under Criterion D and DHR concurred. Site 44FX2542 was revisited during field investigations, and the landform known as King's House Hill was located. However, the portion of King's House Hill in the APE has been truncated by grading associated with construction of the existing railroad grade, destroying any portion of 44FX2542 within the APE. As such, it is **recommended that the portion of site 44FX2542 within the corridor lacks subsurface integrity and therefore does not contribute to the site's NRHP eligibility**. DHR concurred with this recommendation in a letter dated October 11, 2016.

5.5.5 Previously Recorded Site 44PW1843 (000-9800-0079)

Site 44PW1843 (000-9800-0079) was recorded as French Revolutionary War Wagon Train Camp Number 3 at Marumsco Creek in conjunction with the previously outlined study by Robert A. Selig, of W3R Consultants in 2009. It is located on the west side of the existing railroad grade in the LOPC segment APE, approximately 1,000 feet (304.8 m) north of Area 4G (Figure 5-44 and Figure 5-45). The camp was one of many identified through historic research into the land routes taken by Continental, French, and British troops on their way to and from the siege of Yorktown that were recorded as archaeological sites (Selig 2009). The camp location is an estimate based on the historic research and the camp was given arbitrary site dimensions. Site 44PW1843 has not been archaeologically verified and has not been evaluated by DHR. The arbitrary site boundaries intersect the LOPC segment APE and the portion of the site purported to be within the APE was situated in the existing railroad ballast and adjacent slope, likely obscuring any subsurface integrity in the location. Additionally, residential development borders the APE to the west. As such, it is recommended **that the portion of site 44PW1843 (000-9800-0079) within the APE does not contribute to the site's overall eligibility**.

FIGURE 5-44: SITE 44PW1843 WITHIN THE APE OF THE LOPC SEGMENT, LOOKING EAST

Figure 5-45: Site 44PW1843.
Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

5.6 ARKENDALE TO DAHLGREN JUNCTION (ARDJ/06)

The ARDJ segment of the DC2RVA corridor is entirely in Stafford County, running from near Arkendale in the North, just north of Aquia creek, to Brookfield in the South, just north of the existing Railroad's crossing with Route 218 (Figure 5-46). The ARDJ segment APE covers a total distance of approximately 12 miles (19.3 km) and encompasses 147.4 acres (59.7 ha). Based on the prior predictive modeling, high probability areas cover 4.7 acres (1.9 ha), moderate probability 4.6 acres (1.9 ha), and low probability areas cover 0.6 acres (0.2 ha). Approximately, 137.5 acres (55.7 ha) were classified as having no probable potential for intact archaeological sites. The ARDJ segment was divided into 17 archaeological areas, given alphanumeric designations 6A through 6Q. Of these, only four, 6J, 6L, 6M and 6N, required subsurface testing.

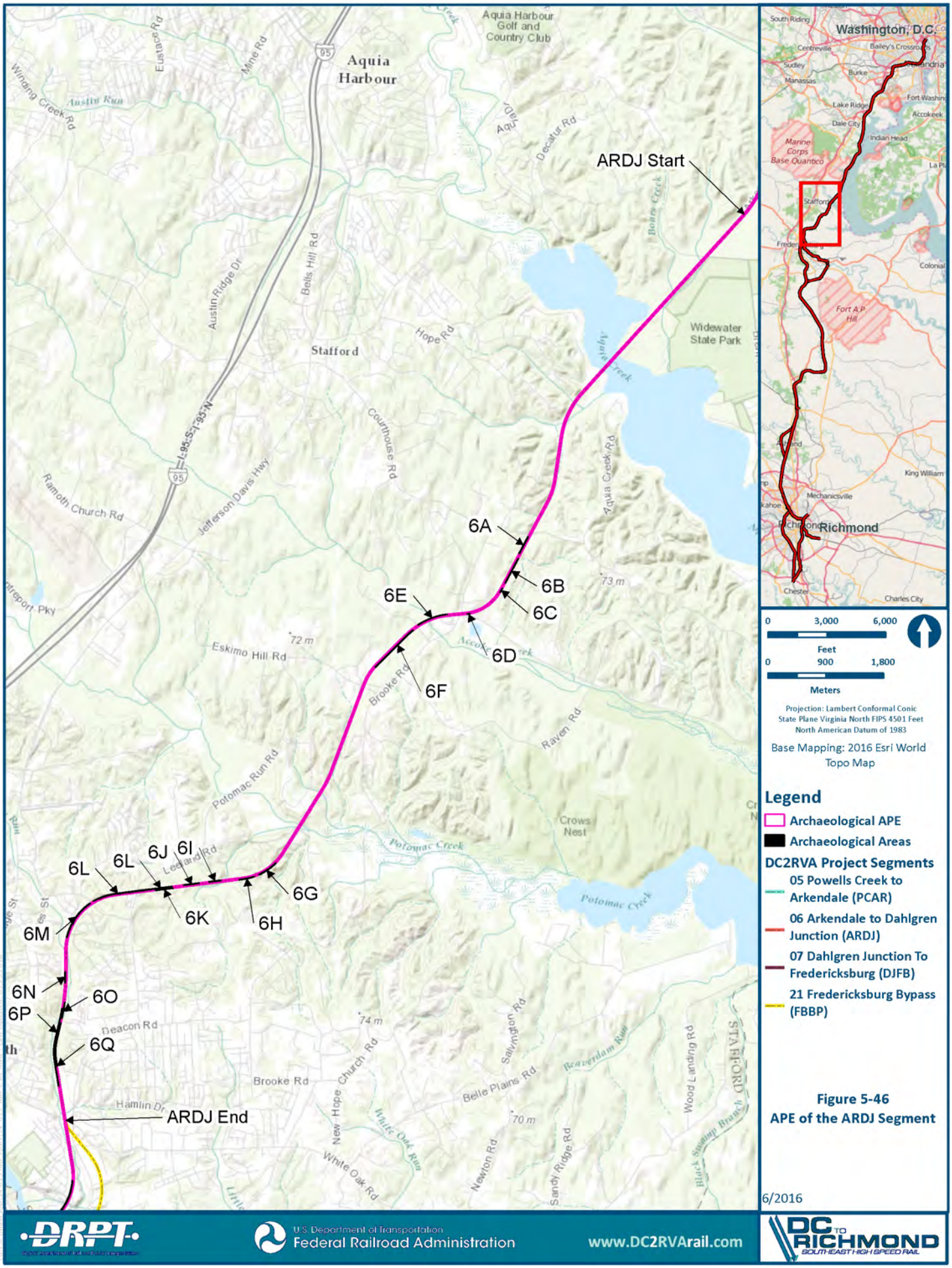
Like much of the DC2RVA project corridor as a whole, substantial portions of the ARDJ segment are untestable due to existing disturbances, mainly consisting of the grading and embankments required by the existing railroad, but other localized disturbances were encountered as well. Areas 6B, 6C, 6E, 6I, 6K, 6Q and most of 6J, and 6L were located almost entirely within the widths of gravel access roads paralleling the existing rail, or the ditches paralleling those roads, and those portions of the APE not lying within these roads lie in the artificial grade between the rail and the access roads (Figure 5-47 and Figure 5-48). Area 6D lies atop an artificial berm and also contains a buried fiber optic line (Figure 5-49). Areas 6A, 6F, 6G and 6H, and the untestable portions of 6M and 6N were located entirely within the embankment between the higher surrounding natural surfaces and the lower lying railroad bed, or within the berm grading upwards to the rail bed from lower areas (Figure 5-50). Area 6O was not tested as it was prohibitively narrow at a maximum width of 4.5 feet (1.4 m) and thus did not meet survey criteria.

Of the 17 areas making up the ARDJ segment, only 4 of them contained testable, undisturbed areas large enough for subsurface testing to be practicable. The general setting of the ARDJ segment is varied. The majority of the APE consists of rolling terrain containing mixed woods either within the corridor or in the immediate vicinity thereof where the corridor has been cleared (Figure 5-51). A number of areas within segment six are crossed by or adjacent to streams, notably Aquia and Accokeek Creeks.

The four areas within the ARDJ segment that required testing were designated as 6J, 6L, 6M, and 6N. All four are located in the general vicinity of the Leeland VRE station. In this location the rural environs to the northeast are rapidly transitioning into the denser suburbs of the Fredericksburg area, but the tested portions within these segments lie mainly in relatively large wooded areas, although 6N runs through the backyards of a suburban development, and portions of 6M lie just behind another development. Notably, Claiborne Run, which drains into the Rappahannock, crosses the existing rail line between areas 6M and 6N.

A total of 17 shovel tests was excavated in the ARDJ segment. No portion of the segment was wide enough to require more than a single transect of STPs, which were placed following the contours of the corridor. The average STP depth in this area was 1.4 feet (42.6 cm) with a maximum depth of 2.0 feet (61.0 cm). A horizon depths ranged from 0.1 feet (3.0 cm) to 0.9 feet (27.4 cm) with an average depth of 0.3 feet (9.1 cm). Stratigraphy varied greatly across APE, as might be expected from such a small testable sample over such a large geographic area. No artifacts were recovered from the APE in the ARDJ segment and no new sites were identified. However, previously recorded site 44ST0296 was revisited during the survey.

FIGURE 5-46: APE OF ARDJ SEGMENT



0 3,000 6,000

Feet

0 900 1,800

Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2016 Esri World Topo Map

Legend

- Archaeological APE
- Archaeological Areas

DC2RVA Project Segments

- 05 Powells Creek to Arkendale (PCAR)
- 06 Arkendale to Dahlgren Junction (ARDJ)
- 07 Dahlgren Junction To Fredericksburg (DJFB)
- 21 Fredericksburg Bypass (FBBP)

Figure 5-46
APE of the ARDJ Segment

6/2016

FIGURE 5-47: DISTURBANCE IN THE ARDJ APE: AREA 6B ACCESS ROAD AND EMBANKMENT, LOOKING SOUTH; AREA 6C GRADING AND BURIED UTILITIES, LOOKING SOUTH; AREA 6E ACCESS ROAD AND ARTFICIAL BERM, LOOKING EAST; AREA 6I ARTIFICIAL GRADE AND DITCH, LOOKING WEST; AND AREA 6K ACCESS ROAD, LOOKING EAST

FIGURE 5-48: DISTURBANCE IN THE ARDJ APE: AREA 6J DITCH OCCUPYING APE, LOOKING WEST; AREA 6L ACCESS ROAD, LOOKING EAST; AND AREA 6Q PETROLEUM PIPELINE MARKER, LOOKING NORTH

FIGURE 5-49: BURIED UTILITIES IN AREA 6D, LOOKING WEST

FIGURE 5-50: DISTURBANCE IN THE ARDJ APE: AREA 6A, LOOKING SOUTH; AREA 6F, LOOKING SOUTHWEST; AREA 6G, LOOKING NORTHEAST; AND AREA 6H, LOOKING EAST

FIGURE 5-51: TYPICAL ENVIRONMENTAL SETTING IN ARDJ SEGMENT, LOOKING WEST

5.6.1 Archaeological Area 6J

Area 6J is an east-west oriented area on the northern side of the existing rail line, south of Leeland Road and approximately 0.5 miles (0.8 km) east of the Leeland VRE Station. Predictive modeling indicated this area is roughly evenly divided between high and low probability. Area 6J is 800 feet (243.8 m) long. The majority of this area is untestable as most of the corridor width falls either in the grade leading to the existing rail, or in a graded strip containing buried fiber optic cable (Figure 5-52). There is a small drainage leading to a pond near the center of the corridor. However, a few small portions of the corridor were sufficiently undisturbed as to attempt STP excavation. A typical STP profile within Area 6J consisted of dark brown (10YR 3/3) silty loam mottled with brownish yellow (10YR 6/6) silty loam topsoil overlying brown (10YR 5/3) silty loam, which capped a brownish yellow (10YR 6/6) silty clay loam subsoil (Figure 5-53). Four STPs were excavated along a single transect (Figure 5-54 and Figure 5-55). No artifacts were found and no sites were identified in 6J.

FIGURE 5-52: LEFT, AREA 6J GRADE AND BURIED UTILITIES, LOOKING WEST; AND RIGHT, DETAIL OF ERODED SECTION OF UTILITY CORRIDOR

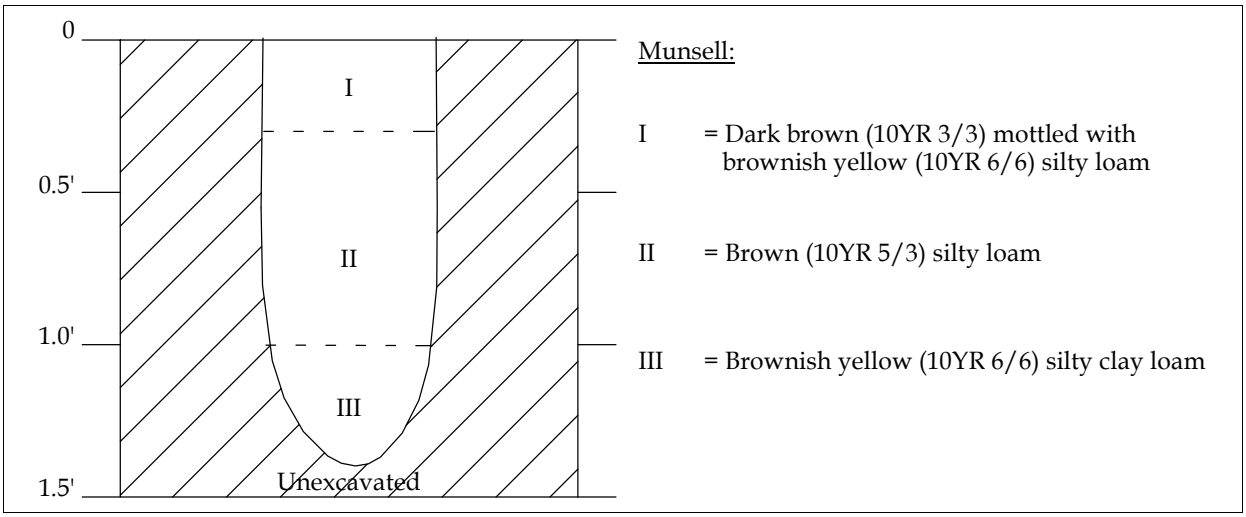
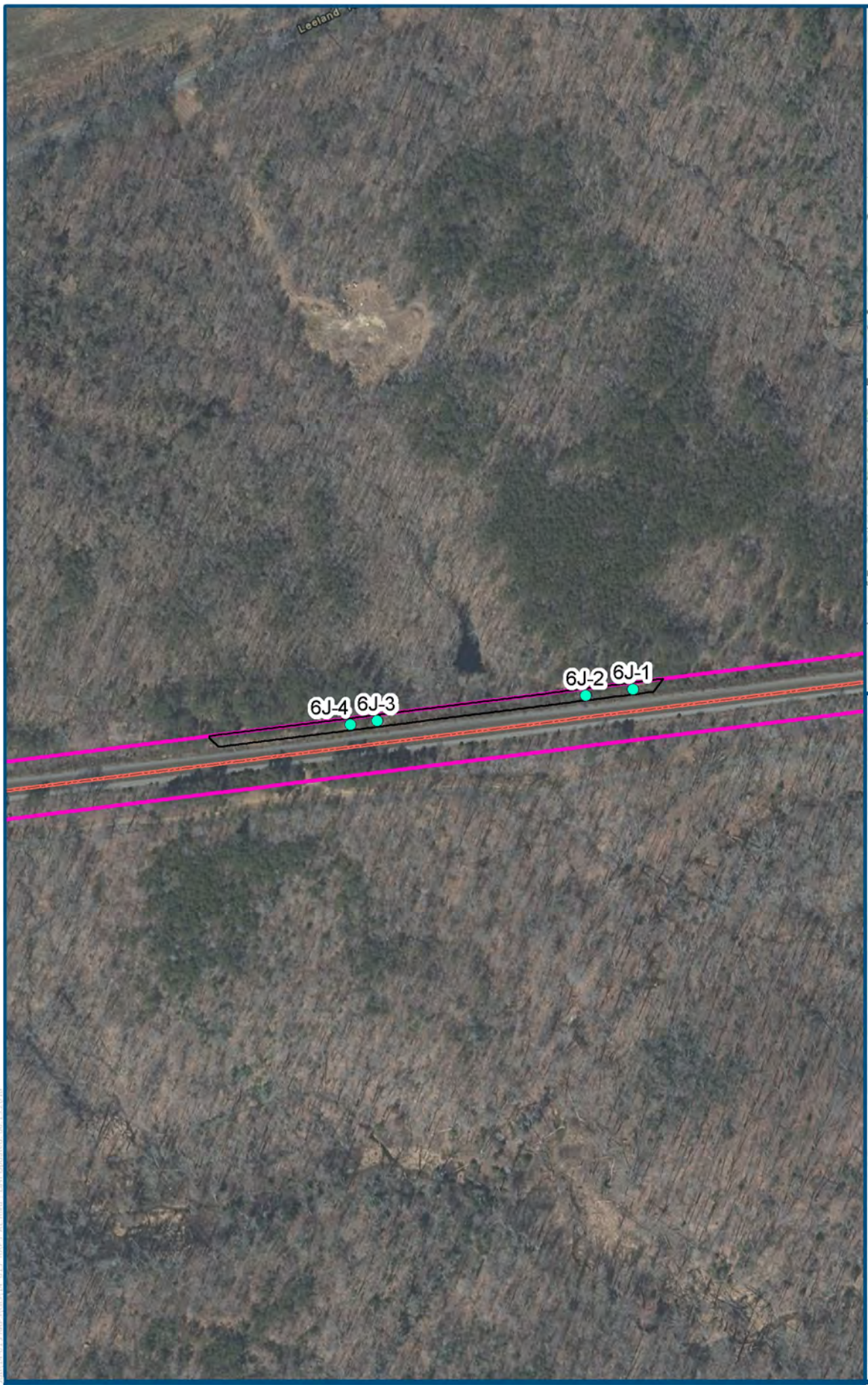


FIGURE 5-53: REPRESENTATIVE SOIL PROFILE FROM AREA 6J, STP 6J-3



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Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 06 Arkendale to Dahlgren Junction (ARDJ)

Figure 5-54
STP Survey in Area 6J

6/2016

FIGURE 5-55: SMALL TESTABLE PORTION OF AREA 6J, LOOKING SOUTHWEST

5.6.2 Archaeological Area 6L

Area 6L, located on the north side of the existing rail as it passes the Leeland VRE station, begins just 600 feet (182.9 m) west of the end of Area 6J. From there Area 6L continues to the west, passing under Leeland Road and across from the VRE station while curving towards the southwest, and extending across 4,100 feet (1,249.7 m), ending just east of Primmer House Road. The predictive model indicated that this area was split between high and moderate probability for archaeological sites, with a slight predominance of high probability. The area is mainly dominated by relatively young pine woods, with dense undergrowth of brambles, vines and deciduous saplings. The bulk of Area 6L lies in the grade running from the natural surface to the lower lying railroad bed (Figure 5-56). Small areas where the natural ungraded surfaces and the existing rail are closer in elevation provided level enough surfaces to make subsurface testing practicable (Figure 5-57 and Figure 5-58). A typical STP profile within area 6L showed substantial evidence of disturbance consisting of brown (7.5YR 4/3) sandy loam, overlying a slightly lighter brown (7.5YR 5/4) sandy loam mottled with strong brown (10YR 5/6) clay and dark brown (10YR 3/2) sandy loam, under which was strong brown (7.5YR 5/6) sandy clay subsoil (Figure 5-59). Eight STPs were excavated along a single transect. No artifacts were found and no sites were discovered.

FIGURE 5-56:VIEW OF AREA 6L FROM LEELAND ROAD, LOOKING EAST

FIGURE 5-57: SMALL TESTABLE LOCATION IN AREA 6L, LOOKING EAST

Figure 5-58
STP Survey in Area 6L

6/2016

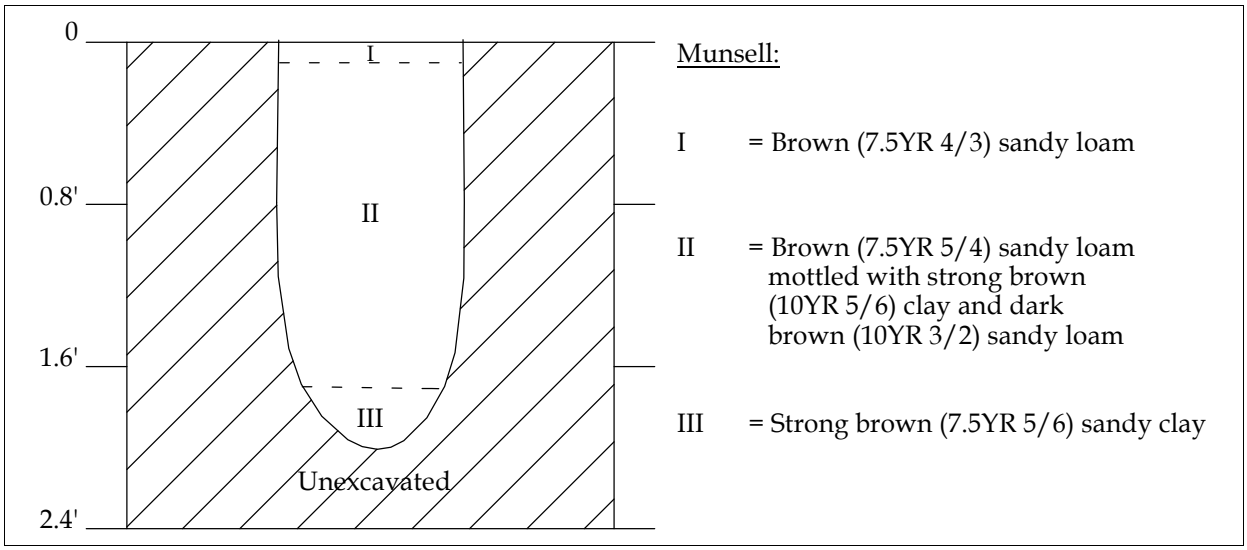


FIGURE 5-59: REPRESENTATIVE SOIL PROFILE FROM AREA 6L, STP 6L-1

5.6.3 Archaeological Area 6M

Area 6M is located on the northwest side of the existing rail, just southwest of Primmer House Road. Paralleling the curve of the existing rail and extending across a length of 2,150 feet (655.3 m). Predictive modeling indicated that Area 6M contained primarily moderate probability for archaeological sites, but it does contain a small section of high probability. Lying in a wooded location between a residential subdivision and the existing railroad line, most of Area 6M is untestable as a result of various disturbances, primarily because the width of the corridor through most of the area lies entirely within the steep embankment leading down from the surrounding area to the lower existing rail (Figure 5-60). A small area was tested where this embankment is narrow enough to leave some testable width inside the corridor but outside the embankment (Figure 5-61 and Figure 5-62). The STPs in this area all showed disturbance. A typical STP profile contained olive brown (10YR 4/3) sandy loam which overlay light yellowish brown (10YR 4/3) sandy loam with large pockets of the black (10YR 2/1) gritty deposits that were often observed within the project corridor and appeared to be the result of railroad activity of some kind (Figure 5-63). Three STPs were excavated along a single transect. No artifacts were found and no sites were identified in Area 6M.

5.6.4 Archaeological Area 6N

Area 6N is located on the west side of the existing rail, running north to south across a length of 575 feet (175.3 m). The southern end of Area 6N is located approximately 1,900 feet (579.1 m) north of Harrell Road. This area lies between a residential subdivision and the existing rail, and parts of this area lie in the manicured backyards of houses (Figure 5-64). Buried utilities and grading adjacent to the existing rail make most of this area untestable. A small area was tested, but even in that area the STPs showed that the soils were clearly disturbed, either from grading for the subdivision, the railroad, or both (Figure 5-65 and Figure 5-66). A single STP was excavated along a single transect (Figure 5-67). No artifacts were found and no sites were discovered.

FIGURE 5-60: EMBANKMENT CONTAINING CORRIDOR WIDTH IN LARGE PART OF AREA 6M, LOOKING SOUTHEAST

FIGURE 5-61: TESTED AREA IN 6M, LOOKING NORTH

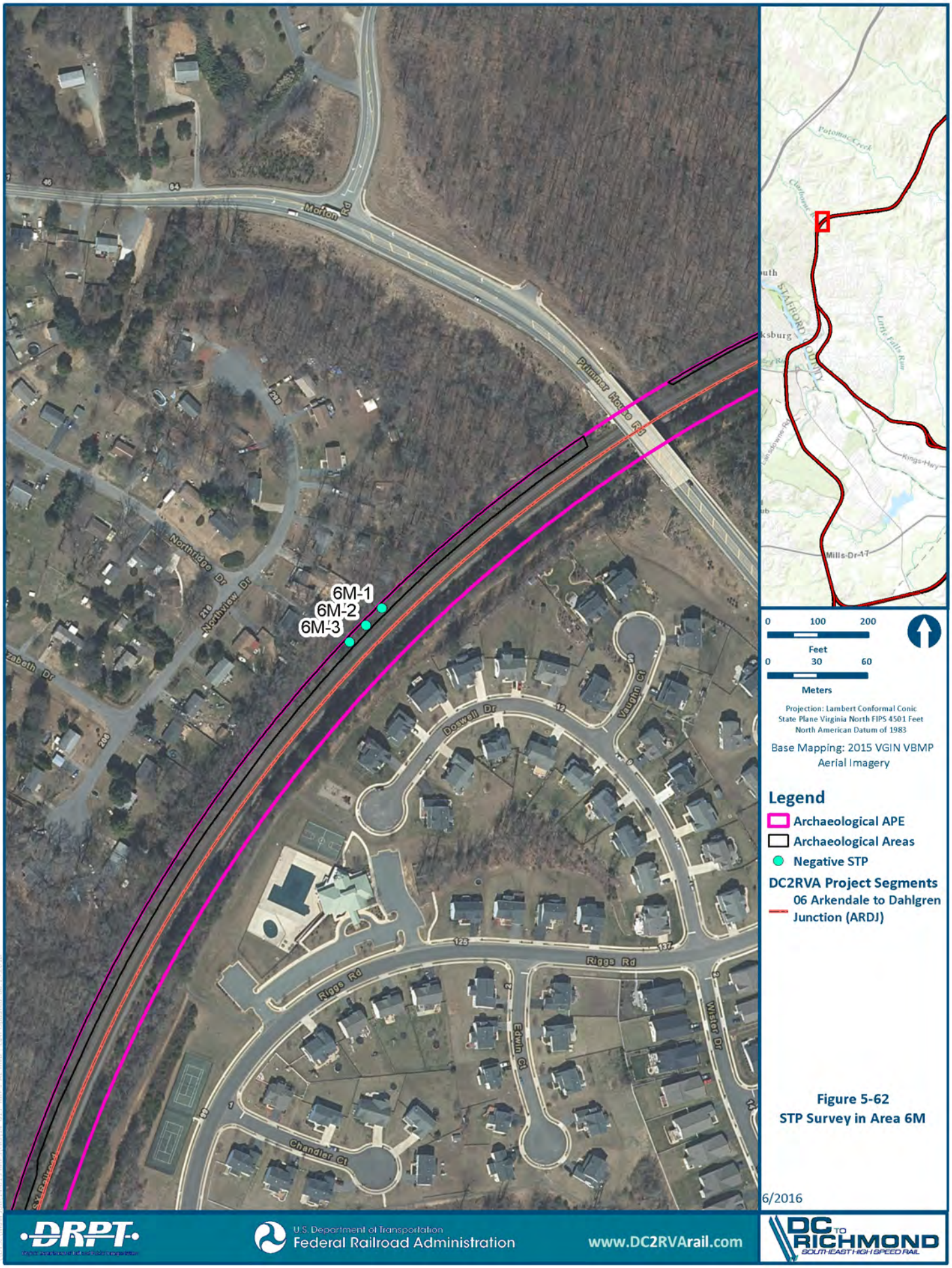


Figure 5-62
STP Survey in Area 6M

6/2016

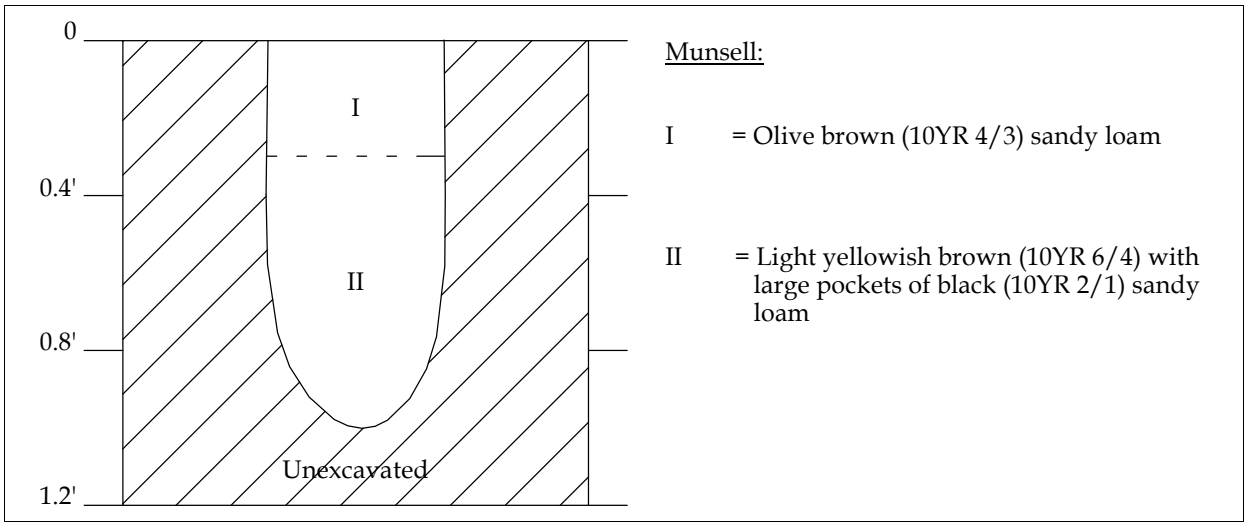


FIGURE 5-63: REPRESENTATIVE SOIL PROFILE FROM AREA 6M, STP 6M-1

FIGURE 5-64: TESTED PORTION OF AREA 6N, LOOKING SOUTH

FIGURE 5-65: DETAIL OF STP 6N1 IN AREA 6N

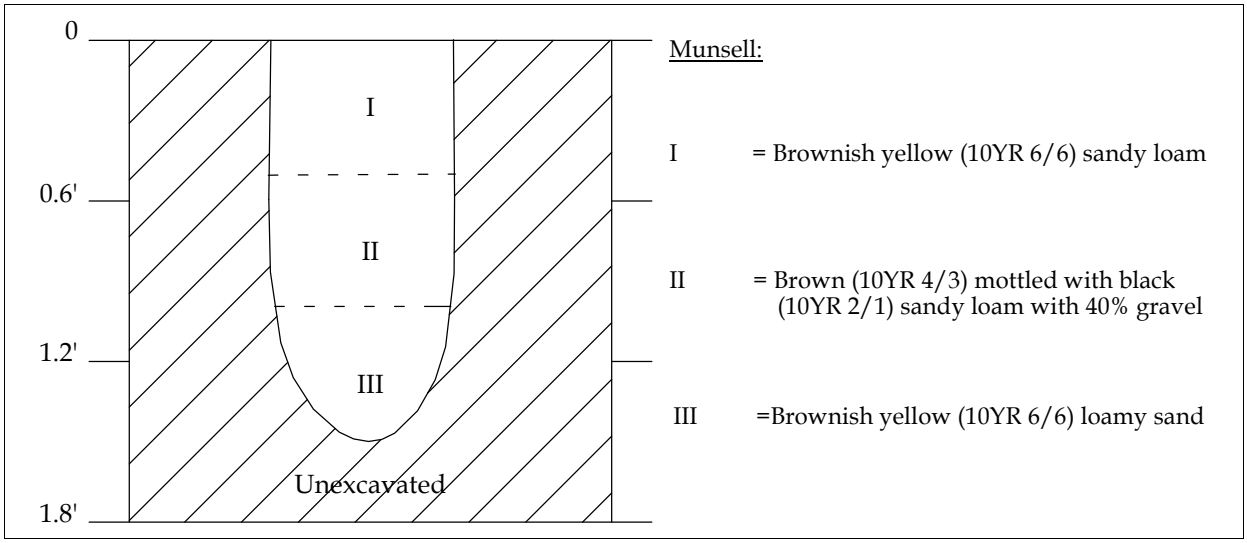
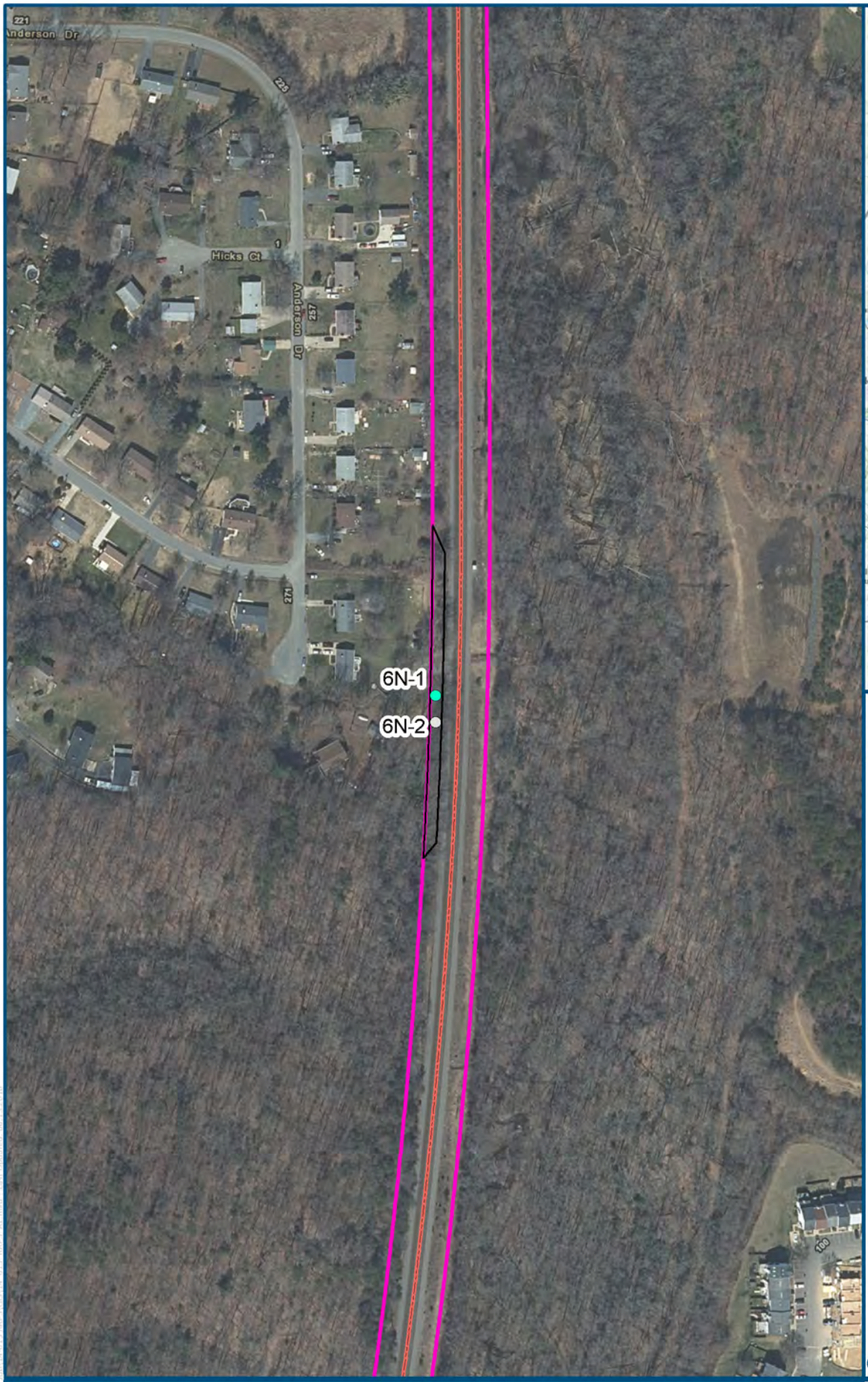


FIGURE 5-66: REPRESENTATIVE SOIL PROFILE FROM AREA 6N, STP 6N-1



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Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP
Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP
- Not Excavated

DC2RVA Project Segments

- 06 Arkendale to Dahlgren Junction (ARDJ)

Figure 5-67
STP Survey in Area 6N

6/2016

5.6.5 Previously Recorded Site 44ST0296

Sites 44ST0296 is a Civil War camp, identified by a DHR informant in 2008 and is currently unevaluated for listing on the NRHP. As mapped, this site lies primarily in the woods to the southeast of Area 6G, but the site boundaries do include a section that intersects with the APE. within the APE the existence of a gravel road and a steep embankment, both of which are graded well below the surrounding woods, indicate that any portion of the camp extending into the project area has been destroyed (Figure 5-68). From within the APE looking toward the woods where the site is mapped no obvious depressions or other indicators of a camp site are visible, indicating that the surface features lie well outside the APE. The substantial majority of this site lies outside of the project APE, and appears undisturbed, when viewed from the corridor (Figure 5-69). However, any portion of this site overlapping the APE has been destroyed by the access road and rail line. As such, it is **recommended that the site as a whole remain unevaluated for the NRHP, but that portion of site 44ST0296 within the APE lacks subsurface integrity and therefore does not contribute the site's overall NRHP eligibility.** DHR concurred with this recommendation in a letter dated October 11, 2016.

FIGURE 5-68:PROJECT CORRIDOR IMMEDIATELY ADJACENT TO SITE 44ST0296

Figure 5-69: Site 44ST0296.
Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

5.7 DAHLGREN JUNCTION TO FREDERICKSBURG (DJFB/07)

The northern end of the DJFB segment of the DC2RVA corridor begins in Dahlgren Junction at Butler Road and the southern end is at the southern limits of Fredericksburg, VA, where the existing railroad grade crosses Deep Run. The setting of the DJFB segment is varied, the majority of it consists of rolling terrain containing young deciduous forest with some stands of pine (Figure 5-70). This segment covers a total distance of approximately 3 miles (4.8 km) and the APE encompasses 30.5 acres (12.3 ha) (Figure 5-71). Based on predictive modeling, high probability areas cover 1.5 acres (0.6 ha), while there were no identified medium or low probability areas. The remaining 29 acres (11.7 ha) were classified as having no measurable potential for intact archaeological sites. As such, the DJFB segment consists of two archaeological areas, lettered 7A and 7B. Neither of the archaeological areas required subsurface testing, no artifacts were recovered, nor were no new sites identified; however, the previously recorded site 44SP0187 was revisited, the results of which are summarized below. Portions of the DJFB segment APE are within the PotNR boundaries of the Fredericksburg I (111-5295) and Fredericksburg II (111-5296) Civil War Battlefields; however, since STP survey was not feasible due to disturbance metal detector survey was also deemed impractical.

FIGURE 5-70: REPRESENTATIVE VIEW OF THE DJFB CORRIDOR SETTING, LOOKING SOUTH

Like much of the DC2RVA project corridor as a whole, all of the DJFB segment was not subjected to subsurface testing due to existing disturbances, mainly consisting of the grading and embankments required by the existing railroad, but also substantial buried utility transmission lines, including fiber optic and petroleum lines, and artificial ditches. The APE in Area 7A was located completely on the side slope of the existing railroad grade or a steep cut slope down to the existing railroad grade (Figure 5-72). In Area B, the DC2RVA APE fell on the side slope of existing railroad grade or on adjacent buried utilities (Figure 5-73).

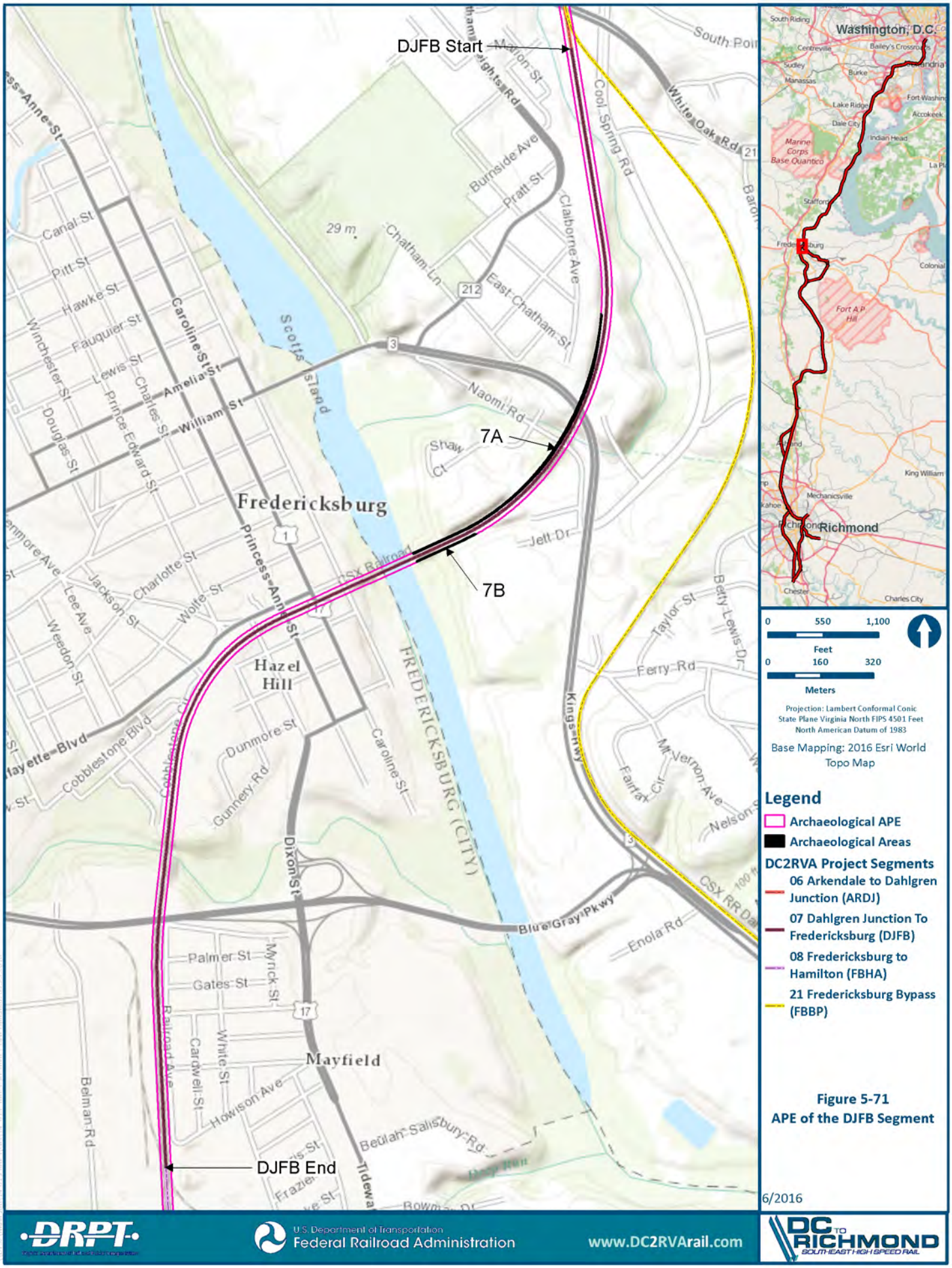


Figure 5-71
APE of the DJFB Segment

6/2016

FIGURE 5-72: LEFT, AREA 7A STEEP SIDE SLOPE OF THE EXISTING RAILROAD GRADE, LOOKING NORTHWEST; AND RIGHT, AREA 7A STEEP CUT SLOPE DOWN TO THE EXISTING RAILROAD GRADE, LOOKING SOUTHWEST

FIGURE 5-73: AREA 7B ON THE SIDE SLOPE OF THE EXISTING RAILROAD GRADE OR ON ADJACENT BURIED UTILITY CORRIDORS, LOOKING NORTHEAST

5.7.1 Previously Recorded Site 44SP0187

Previously recorded site 44SP0187 in the DJFB archaeological APE, a nineteenth-century cut stone bridge pier on the south bank of the Rappahannock River, was revisited and the vicinity photodocumented (Figure 5-74). The site area was not subjected to testing as it was not included in the locations the probability model identified for testing. The site was recorded in 1990, is dated to the nineteenth century, and has not been evaluated by the DHR. The recorder described site 44SP0187 as a cut stone pier at the water's edge on the south bank of the

Figure 5-74: Site 44SP0187.
Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

Rappahannock River. The pier consisted of well fit cut granite stone and was observed by boat at low tide. However, site 44SP0188, also not evaluated by DHR, was recorded at the same time by the same recorder from the same boat as a stone flour mill foundation. This site is located to the south of and immediately adjacent to site 44SP0187 with the site form placing it in the railroad right-of-way. This mill had been replaced by a series of industrial plants over time and several incarnations of the railroad bridge had moved slightly up and down the south bank of the river over time. All of this suggests that the remains of several buildings and structures may be present in the combined location of sites 44SP0187 and 44SP0188 (Figure 5-75). Although the remains may be jumbled together through construction and demolition activities over time, pedestrian survey of the location revealed the presence of multiple surface features extant within the APE in the vicinity of 44SP0187. As such, Dovetail **recommends that site 44SP0187 is potentially eligible for the NRHP under Criterion A for its association with the nineteenth-century milling industry in the region and under Criterion D for its archaeological potential. A Phase II archaeological evaluation should be undertaken to determine the nature and extent of the archaeological remains associated with site 44SP0187**, if project design plans dictate improvements in the vicinity. DHR concurred with this recommendation in a letter dated October 11, 2016.

FIGURE 5-75: SITE 44SP0187 AND POSSIBLY SITE 44SP0188, LOOKING NORTHEAST (NOTE THE EXISTING RAILROAD BRIDGE OVER THE RAPPAHANNOCK RIVER IN THE UPPER LEFT)

5.8 FREDERICKSBURG TO HAMILTON (FBHA/08)

The FBHA segment of the DC2RVA corridor is located in the City of Fredericksburg and Spotsylvania County, running from near Howison Road in the North, and continuing into the National Park Service's Fredericksburg and Spotsylvania National Military Park (111-0147), ending within that park approximately 0.8 miles (1.3 km) along the existing rail northeast of Mine Road (Figure 5-76). The FBHA segment APE covers a total distance of approximately 2.7

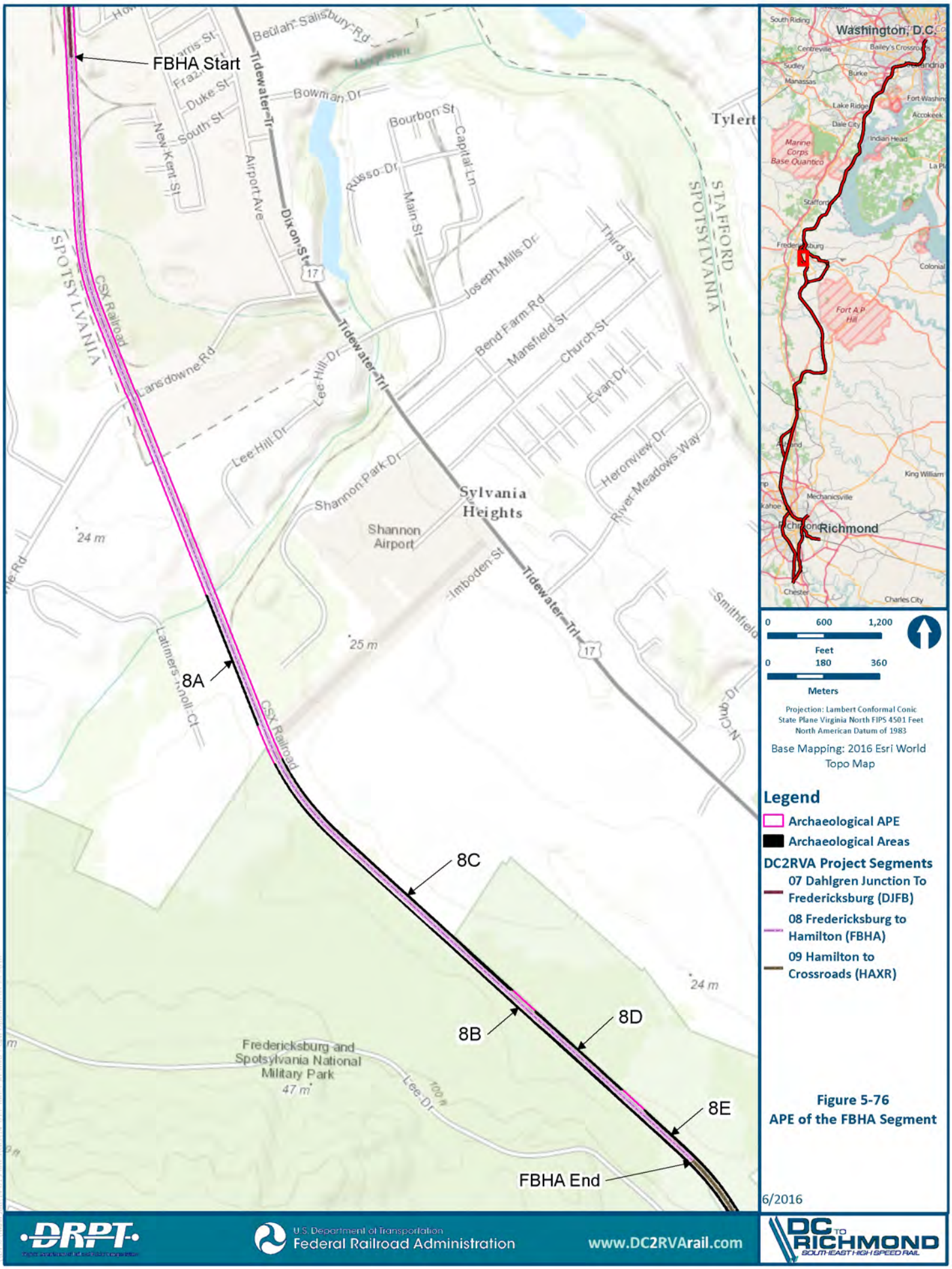


Figure 5-76
APE of the FBHA Segment

6/2016

miles (4.3 km), encompassing 32.1 acres (13.0 ha) with archaeological areas subjected to survey extending along 0.5 miles (0.8 km), encompassing 2.5 acres (1.0 ha). Based on the prior predictive modeling, high probability areas cover the entirety of those 2.5 acres (1.0 ha), the remaining 29.6 acres (12.0 ha) were classified as not having measurable potential for intact archaeological sites. The FBHA segment was divided into four archaeological areas, given alphanumeric designations 8A through 8D. Of these, two, 8C and 8D, required subsurface testing.

Like much of the DC2RVA project corridor as a whole, substantial portions of the FBHA segment are untestable due to existing disturbances, but a higher proportion of FBHA was testable than in many other areas. Nonetheless, the majority of FBHA was untestable due to disturbance. In Area 8A the entire width of the APE was either in the grade running from the lower natural surface up to the existing rail, in a dry stream adjacent to that grade, or contained buried utilities (Figure 5-77). In Area 8B a graded and graveled access road paralleled the existing tracks and the area adjacent to this was dominated by CSX equipment and standing water (Figure 5-78). Area 8C was the most suitable for subsurface testing, but even here large portions of the APE were either in standing water, or in the grade between the rail and the surrounding area(Figure 5-79). Low lying Area 8D was mainly within the grade from the natural surface up to the rail, and the remainder of the area was either inundated or saturated(Figure 5-80).

FIGURE 5-77: TYPICAL CORRIDOR SETTING IN AREA 8A, SHOWING DRY STREAM, UTILITY CORRIDOR AND ARTIFICIAL GRADE COMBINING TO OCCUPY ENTIRE WIDTH OF APE, LOOKING NORTHEAST

FIGURE 5-78: TYPICAL APE SETTING IN AREA 8B, LOOKING WEST

FIGURE 5-79: METAL RETAINING WALL ABOVE DITCH IN NORTHERN PORTION OF AREA 8C, LOOKING NORTH

FIGURE 5-80: TYPICAL CORRIDOR SETTING IN AREA 8D, LOOKING NORTHWEST

Two of the four areas in the FBHA segment contained testable, undisturbed areas large enough for subsurface testing to be practicable. The general setting of the FBHA segment is varied with a mixture of woods, farmland, and grassy park-land. Topographic relief within FBHA is gently rolling but sufficient to place some of the corridor roughly level with the track while other parts are both above and below.

The two areas within the FBHA segment that were subjected to subsurface testing were designated 8C and 8D. Both are within portions of the PotNR boundaries of the Fredericksburg I (111-5295) and Fredericksburg II (111-5296) Civil War Battlefields, with Area 8D falling almost entirely within the Fredericksburg and Spotsylvania National Military Park (111-0147) (or within the CSX right of way through the park). Area 8C is partially within the park and the remainder within Slaughter Pen Farm (088-0254), which is under a DHR easement. Permits/permission were obtained for archaeological survey both within the NPS and Slaughter Pen Farm properties (Appendix D).

A total of 36 shovel tests was excavated in the FBHA segment, 5 of which were located on NPS property.. No portion of the APE was wide enough to require more than a single transect of STPs, which were placed following the contours of the corridor. The average STP depth in this area was 1.0 feet (30.5 cm) with a maximum depth of 1.8 feet (54.9 cm). A horizon depths ranged from 0.1 feet (3.0 cm) to 1.3 feet (39.6 cm) with an average depth of 0.6 feet (18.3 cm). Stratigraphy varied across this APE, as might be expected from such a small testable sample over such a large geographic area. Additionally, because all these areas were located either within the Fredericksburg and Spotsylvania National Military Park (111-0147), or within the ABPP PotNR boundaries a metal detector survey was undertaken wherever STPs were excavated. Where STPs

were not practicable metal detector was even less so. No artifacts were recovered from FBHA and no sites were identified.

5.8.1 Archaeological Area 8C

Area 8C is located on the northern side of the existing rail line, immediately southeast of Shannon Airport. Predictive modeling indicated that the entirety of Area 8C had high probability to contain archaeological sites. Area 8C is 3,470 feet (1,057.7 m) long. The western two thirds of this area lie within the privately owned portion of the Slaughter Pen Farm property (088-0254), the remainder lies within NPS property. The tested portion of this area was entirely within the non-federal portion of the area, as the federal property was within a lower lying and therefore wetter area requiring more grading for the existing rail, essentially identical to Area 8D discussed below (Figure 5-81).

FIGURE 5-81: UNTESTABLE EASTERN END OF AREA 8C, LOOKING WEST

The area containing STPs consisted mainly of a narrow, overgrown strip between farm fields and the existing rail line (Figure 5-82). From there it continued through a more wooded section and out into an open field, until the area narrowed as it approached Shannon Airport to the point where it no longer lay outside of grading for the existing railroad (Figure 5-83). Thirty-five STPs were excavated along a single transect. There was some variance in STP profiles across Area 8C, but the majority of STPs showed evidence that although they are currently located just outside of the active farm fields, they have nonetheless been subjected to significant plowing in the past. A typical profile consisted of dark brown (10YR 4/3) silty loam plowzone lying on top of pale brown (10YR 6/3) silty clay culturally sterile subsoil. No artifacts were found and no sites were identified in Area 8C (Figure 5-84). Metal Detector Survey was undertaken in all those areas where STP survey was practicable, and produced no artifacts.

Figure 5-82
STP Survey in Area 8C

6/2016

FIGURE 5-83: TESTED LOCATION WITHIN AREA 8C BETWEEN CORN FIELDS AND EXISTING RAILROAD, LOOKING WEST

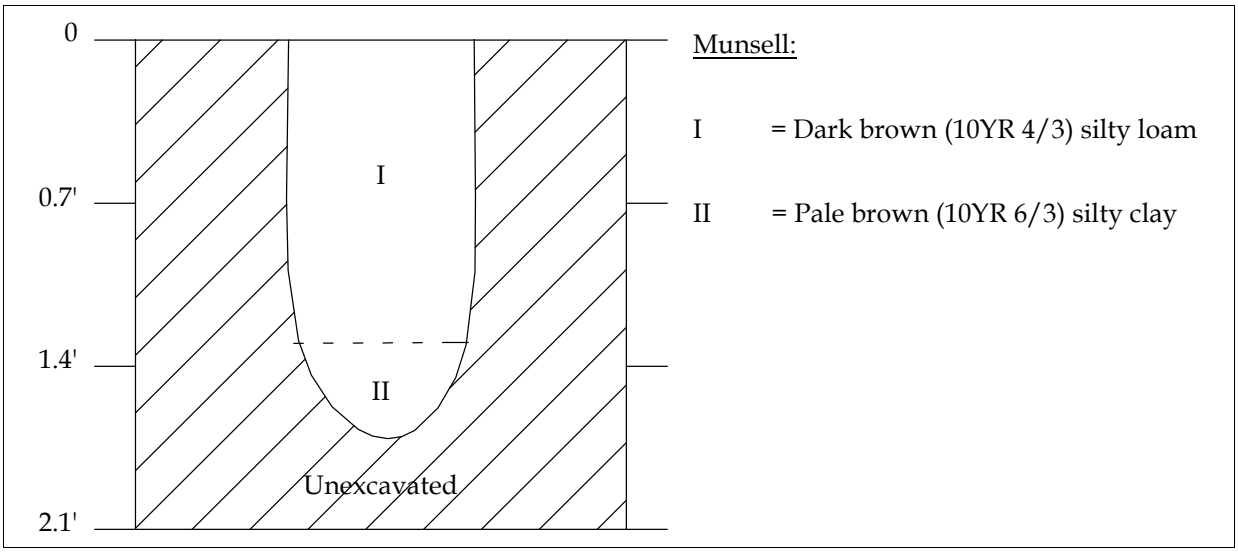


FIGURE 5-84: REPRESENTATIVE SOIL PROFILE FROM AREA 8C, STP 8C-4

5.8.1 Archaeological Area 8D

Area 8D, located on the north side of the existing rail in a low lying wooded part of the NPS's Fredericksburg and Spotsylvania National Military Park (111-0147), begins approximately 350 feet (106.7 m) west of the end of Area 8E, which it is separated from by a railroad spur leading to an industrial complex. Most of Area 8D, which is 1,240 feet (378.0 m) long, lies within the grade from the existing rail down to the lower lying natural surface around it, or within the area

adjacent to this grade, which contains a buried petroleum pipeline. In some places a portion of the APE width extends into the apparently less disturbed woods to the north of the existing rail (Figure 5-85). Even here, however, the APE is dominated by standing water, and a single STP was excavated to attempt to ascertain the nature of the soils within the few, small, apparently dry, undisturbed areas within Area 8D. Upon excavation it became apparent that these areas were in fact both disturbed and saturated (Figure 5-86 and Figure 5-87). A single STP was excavated along a single transect (Figure 5-88). No artifacts were found and no sites were discovered. Metal detector survey was undertaken in all areas where STP survey was practicable, and no artifacts were found.

FIGURE 5-85:TYPICAL LOCATION WITHIN AREA 8D, INCLUDING SMALL DRY AREA CONTAINING STP, LOOKING NORTHWEST

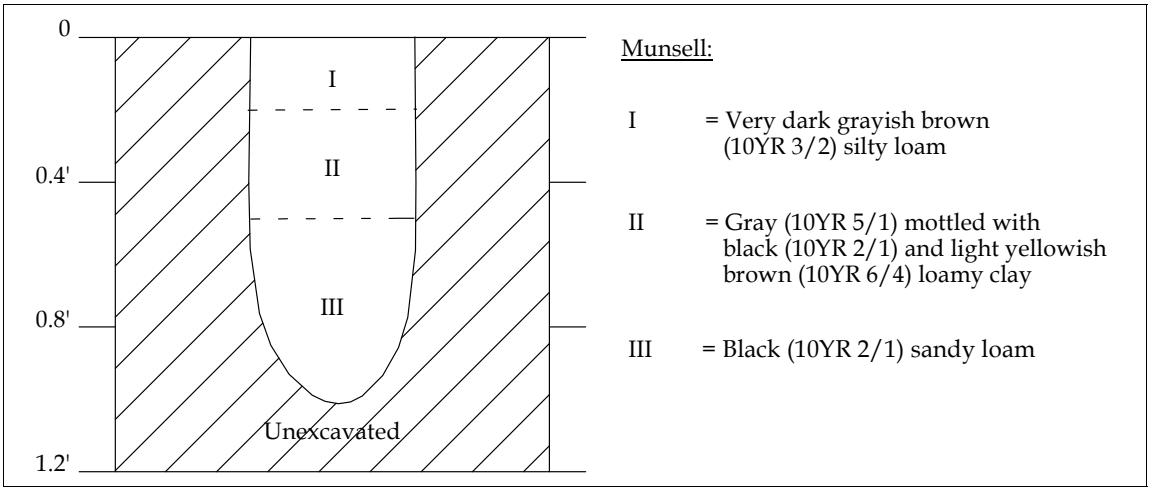


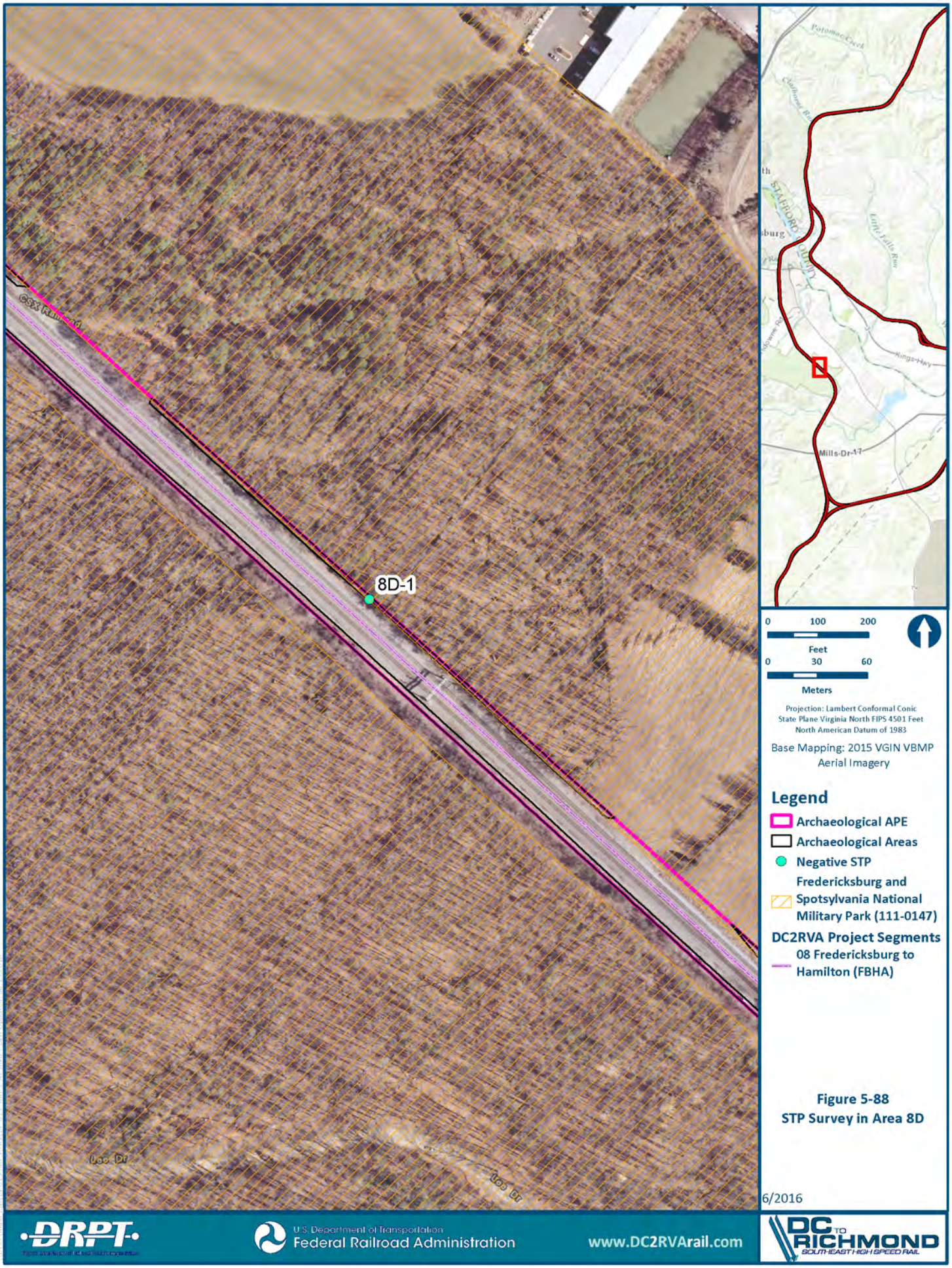
FIGURE 5-86: REPRESENTATIVE SOIL PROFILE FROM AREA 8D, STP 8D-1

FIGURE 5-87: STP 8D-1, SHOWING WATER RAPIDLY FILLING HOLE, AND DISTURBED, REDEPOSITED GLEY SOILS

5.9 HAMILTON TO CROSSROADS (HAXR/09)

The HAXR segment of the DC2RVA corridor is located entirely within Spotsylvania County. Its northern end is within the National Park Service's Fredericksburg and Spotsylvania National Military Park (111-0147), approximately 0.8 miles (0.3 km) along the existing rail northeast of Mine Road (Figure 5-89). It extends south from there in an "S" shaped curve, ending near the new Olive VRE station, approximately 1,860 feet (566.9 m) south of Mills Road (U.S. Highway 17). The HAXR segment APE covers a total distance of approximately 2.5 miles (4.0 km), encompassing 29.9 acres (12.1 ha) with the tested segments of it extending along 2.2 miles (3.5 km), encompassing 4.6 acres (1.9 ha). Based on the prior predictive modeling, high probability areas cover the entirety of those 4.6 acres. The remaining 25.3 acres (10.2 ha) were classified as having no measurable potential for intact archaeological sites. The HAXR segment consists of eight archaeological areas, given alphanumeric designations Area 9A through 9H. Of these, five areas required subsurface testing: 9A, 9B, 9E, 9F, and 9G.

Like much of the DC2RVA archaeological APE as a whole, substantial portions of the HAXR segment are untestable due to existing disturbances, but, as in FBHA a relatively higher proportion of HAXR was testable than in many other areas. In fact, the majority of areas within HAXR required limited STP survey. Nonetheless the majority of the APE within HAXR segment was untestable due to disturbance.



Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP
- Fredericksburg and Spotsylvania National Military Park (111-0147)

DC2RVA Project Segments

- 08 Fredericksburg to Hamilton (FBHA)

Figure 5-88
STP Survey in Area 8D

6/2016

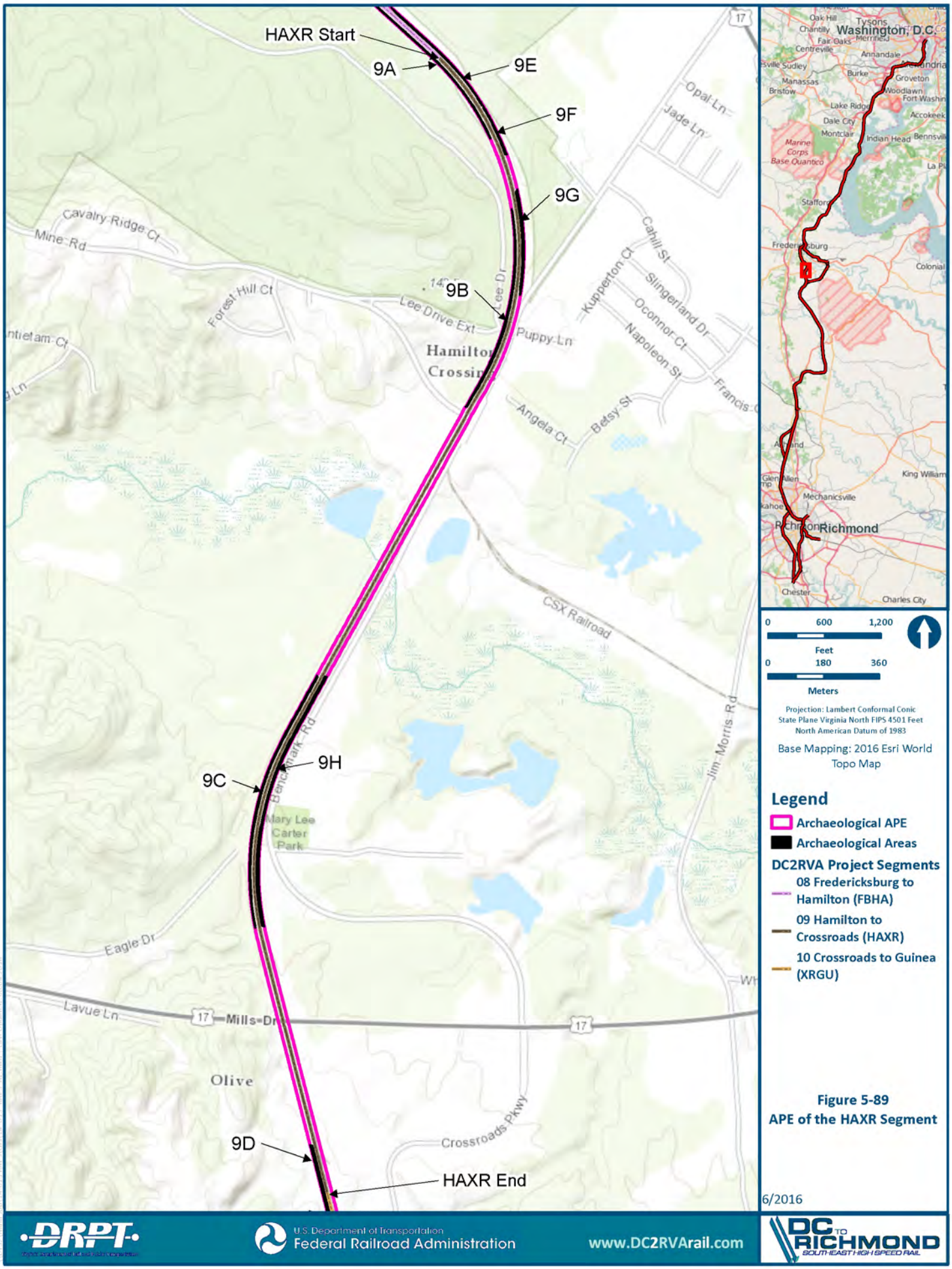


Figure 5-89
APE of the HAXR Segment

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Three areas, 9C, 9D and 9H were not tested at all (Figure 5-90). In Areas 9C and 9H, which are essentially mirror images of each other on opposite sides of the existing rail, the entire width of the APE was contained in a large artificial berm containing the existing rail, and on which extensive work was being done at the time of survey in Area 9H. In Area 9D the APE lies in a heavily graveled ditch between the woods and the existing rail that also contains buried electrical for the existing rail line. The remaining five areas in the HAXR segment required some testing but were nonetheless more untestable than testable due to the presence of standing water, buried utilities and the grading for the existing rail line (Figure 5-91).

FIGURE 5-90: DISTURBANCE IN THE HAXR APE: AREA 9C ARTIFICAL GRADING CONTAINING ENTIRE APE, LOOKING SOUTHEAST; AREA 9D GRAVELLED AREA CONTAINING, LOOKING SOUTHEAST; AND AREA 9H ARTIFICIAL BERM, LOOKING NORTH

The general setting of the HAXR segment is overwhelmingly wooded, either within the NPS property or to the south of that in a relatively undeveloped area as the suburbs of Fredericksburg transition into the more rural parts of Spotsylvania County. The topographic setting of this segment is gently rolling but with slopes just sufficient to place some of the corridor roughly level with the track while other parts are both above and below.

All five areas, Areas 9A, 9B, 9E, 9F and 9G, in HAXR that were subjected to archaeological subsurface testing were located at least in part within the Fredericksburg and Spotsylvania National Military Park (111-0147), and the tested portions within those areas were located within

the park or immediately adjacent in the CSX ROW. Additionally, all and/or portions of the five areas were located within the PotNR boundaries of the Fredericksburg I (111-5295) and Fredericksburg II (111-5296) Civil War Battlefields.

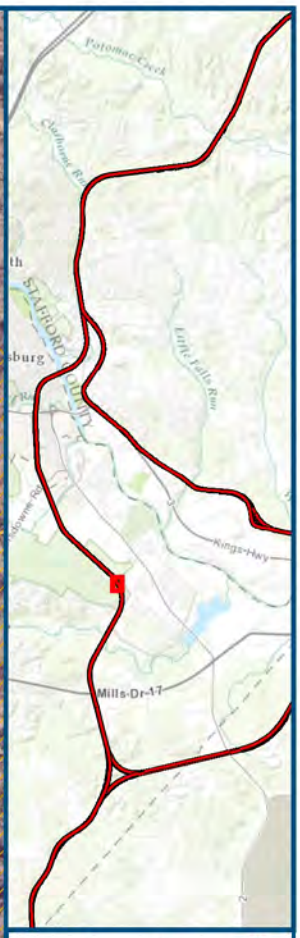
FIGURE 5-91: DISTURBANCE IN THE HAXR APE: AREAS 9A AND 9B INUNDATION AND BURIED UTILIITIES; AND AREAS 9E, 9F AND 9G PETROLEUM PIPELINE MARKERS, ALL LOOKING NORTH

A total of 28 shovel tests was excavated in the HAXR segment, 18 of which were located on NPS property. Given the narrow width of the APE and close proximity of NPS land, all STPs excavated in the HAXR segment were done using the methodology specified in the ARPA permit. No portion of the APE was wide enough to require more than a single transect of STPs, which were placed following the contours of the corridor. Additionally, because all these areas were located either within the Fredericksburg and Spotsylvania National Military Park (111-0147), or within the ABPP PotNR boundaries a metal detector survey was undertaken wherever STPs were excavated. Where STPs were not practicable metal detector was even less so. No artifacts were recovered from the HAXR APE and no sites were identified.

The average STP depth in this segment was 1.2 feet (36.6 cm) with a maximum depth of 1.9 feet (57.9 cm). A horizon depths ranged from 0.1 feet (3.0 cm) to 0.9 feet (27.4 cm) with an average depth of 0.5 feet (15.25 cm). Stratigraphy varied across this segment, as might be expected from such a small testable sample over such a large geographic area. No artifacts were recovered from HAXR and no new sites were identified within the APE. However, an extension of the Jackson's Earthworks, site 44SP0468, was identified directly adjacent to the archaeological APE.

5.9.1 Archaeological Area 9A

Area 9A is located on the southwestern side of the existing rail line as it curves to the south within the Fredericksburg and Spotsylvania National Military Park (111-0147) (Figure 5-92). This area is contiguous with area 8C, discussed above, and begins at Area 8C's eastern end, extending 1,015 feet (309.4 m) from there and ending as the area approaches a relatively large hill. The entirety of this area lies within a treeline separating a grassy area of the park from the existing rail line. Predictive modeling indicated that the entirety of Area 9A had high probability to contain archaeological sites. However, field inspection found the majority of this area as untestable due to the presence of buried utilities, standing water and grading associated with the existing railroad (Figure 5-93), but judgmental shovel tests were placed in a few areas where feasible to investigate the soils in the area (Figure 5-94). Profiles differed in each of these STPs, but a profile indicative of the nature of the disturbance throughout the area consisted of black (10YR 2/1) silty loam, that appeared to contain amounts of coal dust, or some other non-natural black grit, as opposed to a natural dark topsoil, lying atop yellowish brown (10YR 5/8) sandy clay with 75 percent gravel inclusions (Figure 5-95). Three STPs were excavated along a single transect. Where STP survey was practicable. Metal detector survey was also performed and no artifacts were found during the metal detection. No artifacts or features were found and no sites were identified in Area 9A.



0 50 100
Feet
0 10 20 30
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP
- Fredericksburg and Spotsylvania National Military Park (111-0147)

DC2RVA Project Segments

- 09 Hamilton to Crossroads (HAXR)

Figure 5-92
STP Survey in Areas 9A and 9F

6/2016

DRPT

U.S. Department of Transportation
Federal Railroad Administration

www.DC2RVArail.com

DC TO RICHMOND
SOUTHEAST HIGH SPEED RAIL

FIGURE 5-93: TYPICAL SETTING IN AREA 9A, SHOWING BURIED FIBER OPTIC CABLE AND INUNDATED DITCH, LOOKING NORTHEAST

FIGURE 5-94: SOUTHERN END OF AREA 9A, NEAR STP 9A-1, LOOKING NORTHWEST

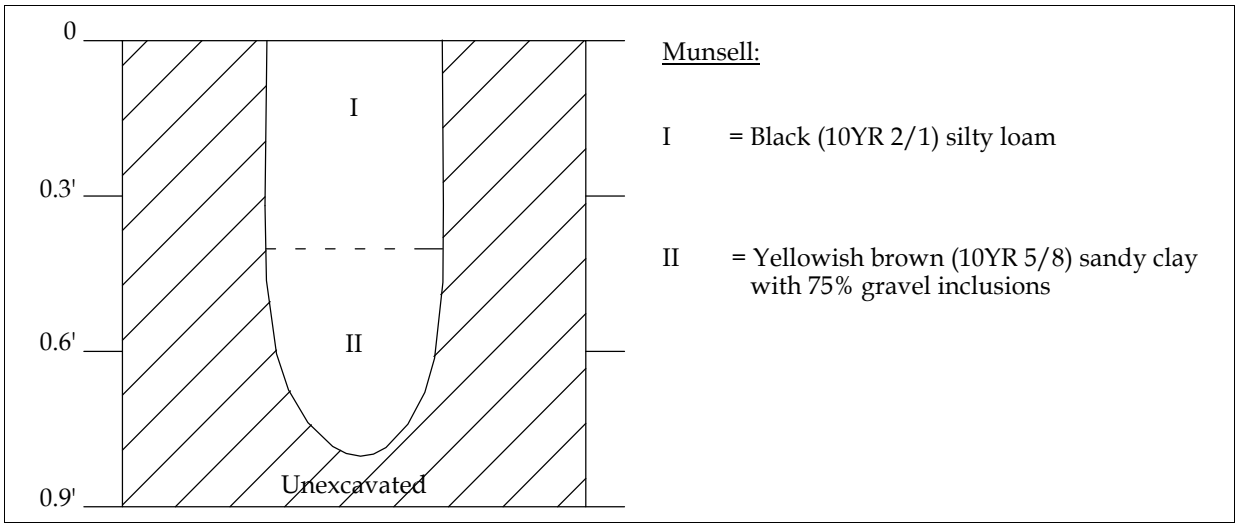


FIGURE 5-95: SOIL PROFILE FROM STP 9A-2

5.9.2 Archaeological Area 9B

Area 9B, begins approximately 800 feet (243.8 m) south of the end of Area 9A, on the southwestern interior side of the southward curve of the existing rail line within the Fredericksburg and Spotsylvania National Military Park (111-0147). From there it continues to the south for 2,200 feet (670.6 m), ending south of the Park, approximately 80 feet (24.4 m) north of Mine Road. The entirety of Area 9B was determined during prior predictive modeling to have a high probability for containing archaeological deposits. The southern portion of 9B, which lies beyond the Park, essentially delineated by Lee Hill Extended, was not tested as it was entirely disturbed, lying in the grade from the higher natural surface down to the existing rail line. North of Lee Hill Extended, within the Park, Area 9B is also mostly disturbed, dominated by standing water and buried utilities, but STPs were placed in a few small areas where these disturbances did not interfere (Figure 5-96). The STPs contained disturbed soils, with a typical profile containing very dark brown (10YR 2/2) silty loam with pockets of light yellowish brown (10YR 6/4) and yellowish brown (10YR 5/6) sandy clay loam with 60 percent gravels, overlying a layer of mixed pockets of olive brown (2.5Y 4/3) and brown (10YR 5/3) sandy loams and brownish yellow (10YR 6/6) clay loam, which in turn overlay a thin but clearly defined layer of black (10YR2/1) sand, which appeared to be stained black by some kind of railroad related coal content. Below these disturbed strata was a light brownish gray (10YR 6/2) clay with ferrous inclusions (Figure 5-97). Three STPs were excavated along a single transect (Figure 5-98 and Figure 5-99). Where STP survey was practicable, metal detector survey was also performed and no artifacts were found during the metal detection. No artifacts were found and no sites were identified within area 9B.

FIGURE 5-96: OVERVIEW OF AREA 9B FROM NORTHERN END OF AREA, STPS WERE EXCAVATED IN THE SMALL DRY STRIP BETWEEN DITCHES

FIGURE 5-97: STP 9B-2, SHOWING DISTURBANCE AND GLEYED SOILS

Figure 5-98: STP Survey in Areas 9B and 9G. Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

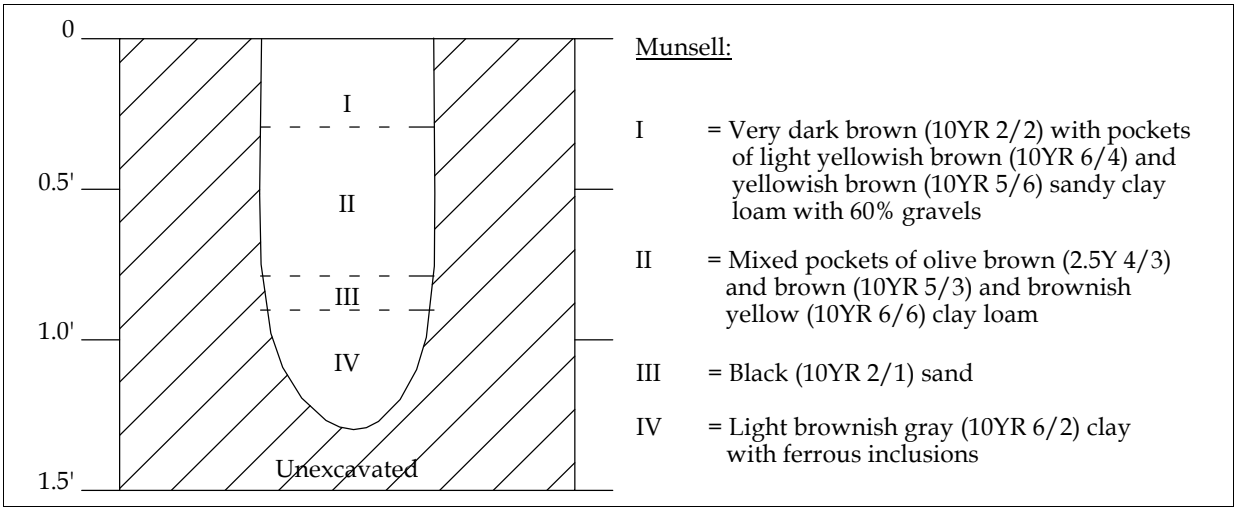


FIGURE 5-99: STP 9B-2 PROFILE IN AREA 9B

5.9.3 Archaeological Area 9E

Area 9E is located on the northern side of the existing rail line as it curves to the south within the Fredericksburg and Spotsylvania National Military Park (111-0147). This area is contiguous with Area 8E, discussed above, and begins at 8E's eastern end, along the edge of an open field containing the large stone Meade Monument pyramid, and extending 682 feet (207.9 m) from there passing two smaller fields and ending near the center of the southward curve of the existing rail, about 15 feet (4.6 m) north of the northern end of Area 9F. Predictive modeling indicated that all of Area 9E had a high probability for containing archaeological sites. The APE lies either within the treeline separating the small fields from the rail line, or at the edge of the larger field. Disturbance related to the existing rail and adjacent petroleum pipeline, which was reported as being laid in a disturbed trench as wide as 20 feet (6.1m), limited the feasibility of subsurface testing throughout much of Area 9E (Figure 5-100).

A small portion of the APE where the petroleum pipeline is far enough from the outside edge of the Area 9E to fit in a number of STPs was, however, tested (Figure 5-101). Although these STPs had to be placed at the very outside edge of the APE to avoid the disturbance from the petroleum pipeline (Figure 5-102). These STPs were located on the edge of an open field and their profiles indicated that the field has probably been used as farmland in the past, with a typical profile consisting of a brown (10YR 4/3) silty clay loam plowzone capping strong brown (7.5YR 5/6) silty clay culturally sterile subsoil (Figure 5-103). Seven STPs were excavated along a single transect. Where STP survey was practicable, metal detector survey was also performed and no artifacts were found during the metal detection. No artifacts were found and no sites were identified in Area 9E.

FIGURE 5-100: TREELINE AND DITCH CONTAINING BURIED PETROLEUM LINE AT SOUTHEASTERN END OF AREA 9E, LOOKING NORTH

FIGURE 5-101: TESTED PORTION OF 9E, LOOKING NORTH

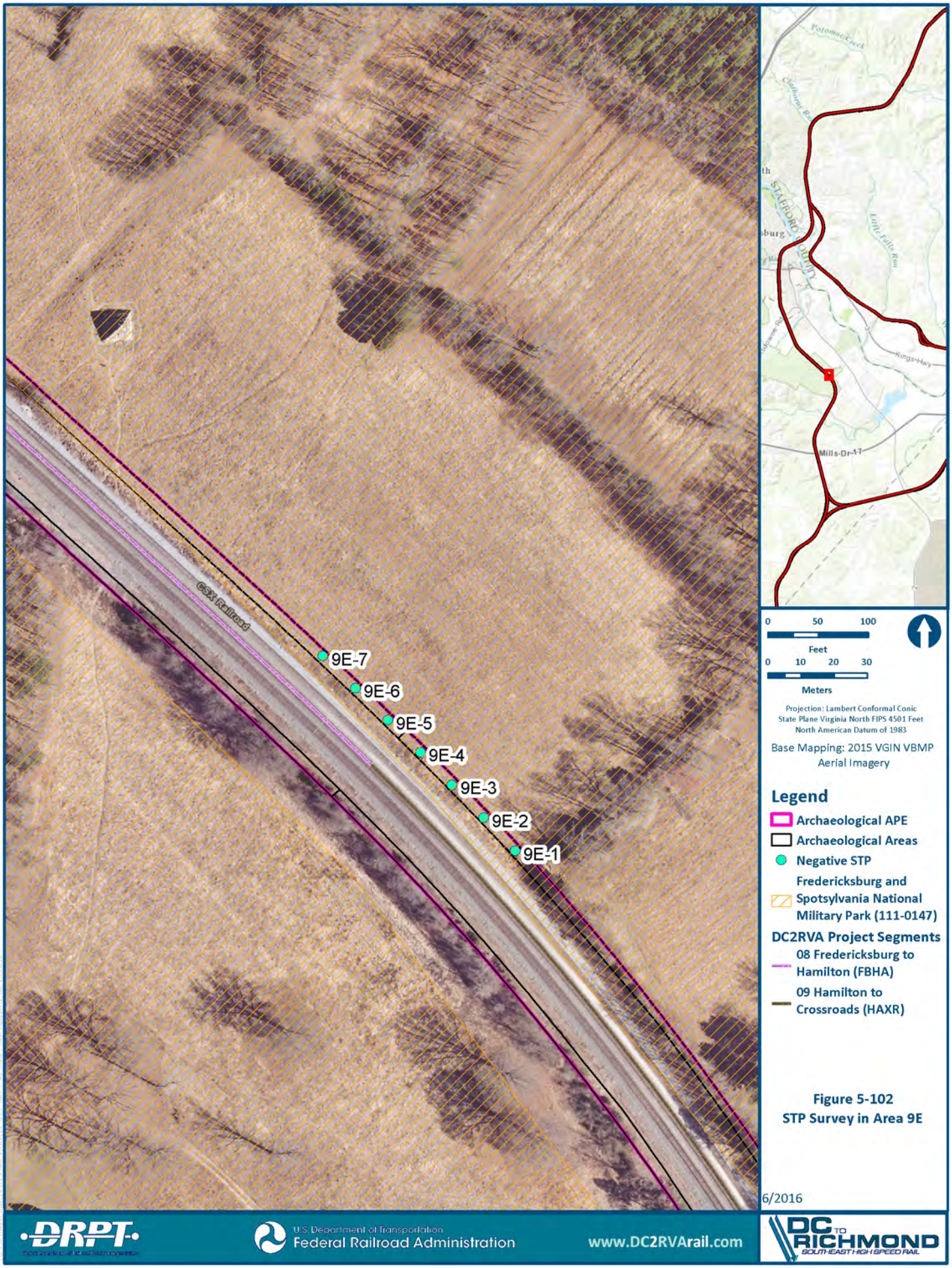


Figure 5-102
STP Survey in Area 9E

6/2016

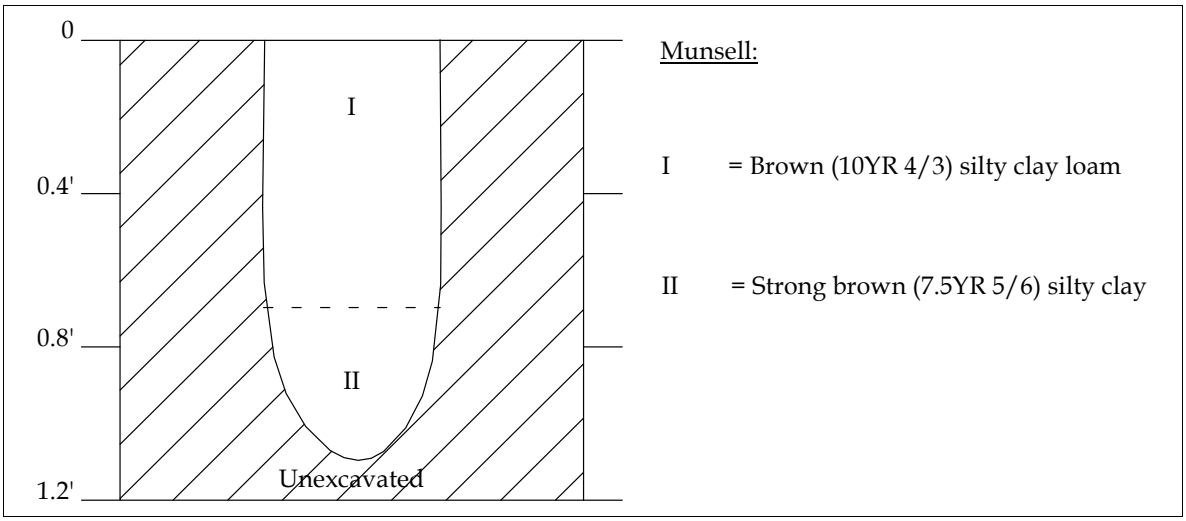


FIGURE 5-103: STB 9E-3 PROFILE

5.9.4 Archaeological Area 9F

Area 9F is located on the northeastern side of the existing railroad, on the outside of the southerly curve as the rail travels through the Fredericksburg and Spotsylvania National Military Park (111-0147). Area 9F begins just 15 feet (4.6 m) southeast of the end of Area 9E. Area 9F extends for 560 feet (170.7 m), running through a wooded area lying between the existing railroad and the houses on Benchmark Road to the East. Predictive modeling indicated that the entirety of Area 9F had high probability to contain archaeological sites. The majority of this area is untestable due to the presence of buried utilities, standing water, and grading associated with the existing railroad (Figure 5-104), but a single judgmental shovel test was placed to investigate the soils in the area in a small spot that appeared potentially undisturbed (Figure 5-105 and see Figure 5-92). The profile of this STP indicated that even here the soils had been substantially disturbed (Figure 5-106). Metal Detector survey was undertaken in any areas of 9F in which subsurface testing was shown to be practicable during the STP survey, no artifacts were found as a result of metal detection. No artifacts were found and no sites were identified in area 9F.

5.9.5 Archaeological Area 9G

Area 9G is located on the eastern side of the existing rail line near the end of the long curve to the south within a small wedge shaped area of woods within the Park, between Benchmark Road and the existing rail. This area begins approximately 380 feet (115.8 m) south of the northern end of Area 9F and continues for 1,100 feet (335.3 m) ending as the rail converges on Benchmark Road. All of Area 9G was indicated as having high probability for archaeological sites by predictive modeling. These woods are relatively flat and low lying and parts of the area were untestable due to standing water (Figure 5-107). As with Areas 9E and 9F the petroleum pipeline paralleling the existing road continues through Area 9G; however, there was a testable strip just inside the Park at the boundary between CSX and NPS property that appeared undisturbed and was tested via shovel testing and metal detector survey (Figure 5-108). Fifteen STPs were excavated along a single transect (see Figure 5-98). Metal detector survey was conducted along this STP transect, but did not locate any historic materials.

FIGURE 5-104: SOUTHERN PORTION OF AREA 9F, WITH PETROLEUM PIPELINE MARKER, LOOKING NORTHWEST.

FIGURE 5-105: NORTHERN END OF AREA 9F, NEAR STP 9F-1, LOOKING SOUTHEAST.

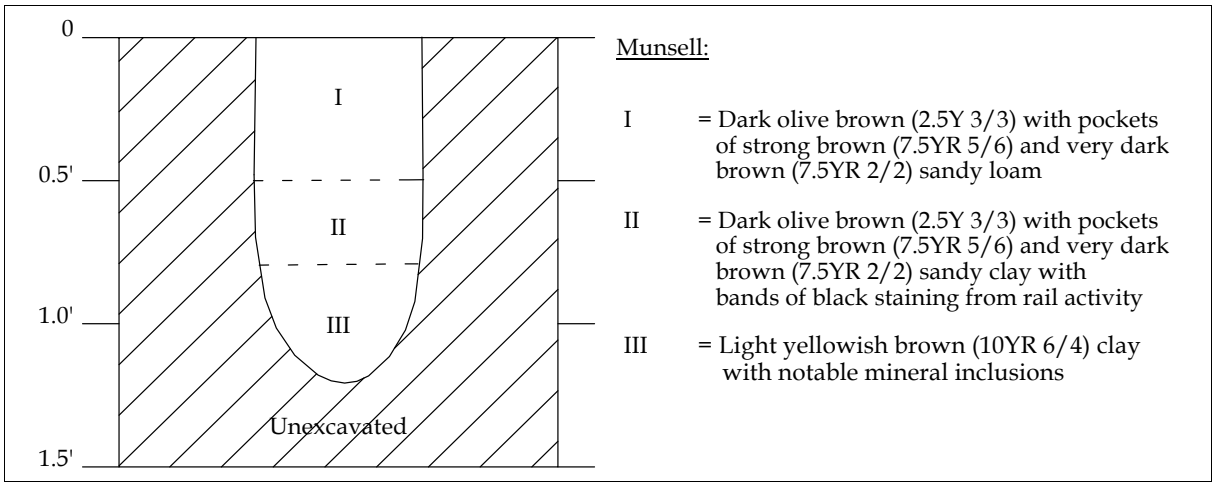


FIGURE 5-106: STP 9F-1 PROFILE

The soil profiles in the STPs excavated within Area 9G tended to contain very shallow topsoil on top of what appear to be hydric soils, a typical example being black (2.5Y 2.5/1) sandy clay loam extending to less than 0.2 feet (0.6 cm) and overlying light gray (2.5Y 7/2) clay mottled with brownish yellow (10YR 6/6) clay (Figure 5-109 and Figure 5-110). Where STP survey was practicable, Metal Detector survey was also performed. No artifacts were found during shovel testing and metal detector efforts, and no sites were identified in Area 9G; however, a well preserved section of Civil War earthworks, site 44SP0468, was observed and recorded immediately outside of, and quite possibly abutting the APE and is discussed below.

FIGURE 5-107: INUNDATION AT SOUTHERN END OF AREA 9G, LOOKING SOUTH

FIGURE 5-108: OVERVIEW OF TESTED AREA IN 9G, WITH EARTHWORK SECTION IN BACKGROUND, LOOKING NORTH

FIGURE 5-109: STP 9G-8, SHOWING HYDRIC SOILS

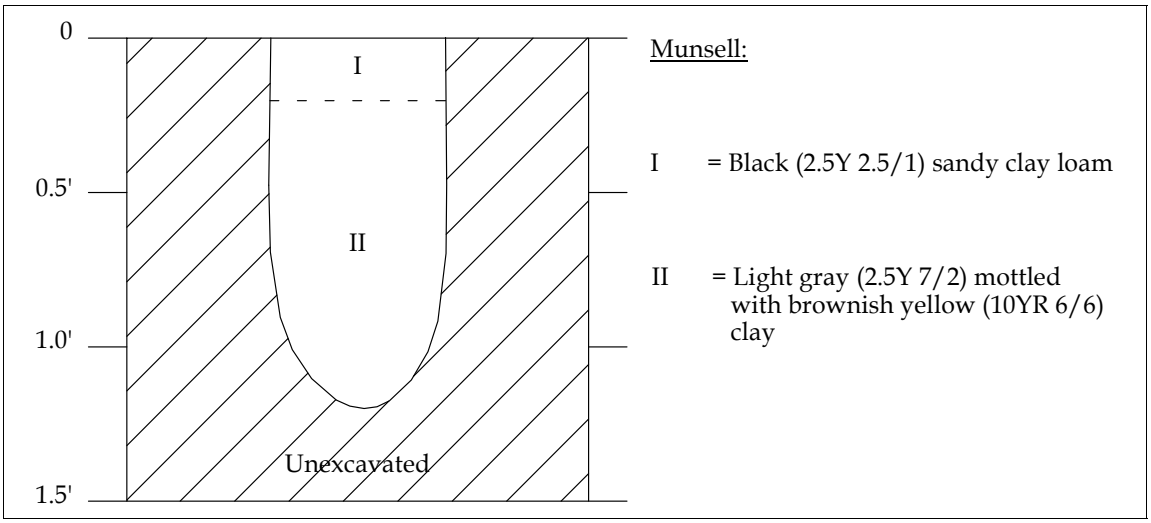


FIGURE 5-110: STP 9G-8 PROFILE

5.9.6 Previously Recorded Site 44SP0468

Site 44SP0468, Jackson's Earthworks-Encampment site, is a large complex of earthworks and other encampment features associated with the Civil War Battle of Fredericksburg. Site 44SP0468 is currently not evaluated for listing on the NRHP and is mapped to the east of the corridor, near archaeological survey Areas 9A and 9B. During the survey of Area 9G a well preserved section of earthwork was observed approaching the existing rail line and adjacent utility corridor at an oblique angle from the southeast (Figure 5-111). Portions of Area 9G lie within the PotNR boundaries of the Fredericksburg I Battlefield (111-5295) and Fredericksburg and Spotsylvania National Military Park (111-0147), and the earthwork here appears to be a continuation of earthworks on the other side of the tracks within the Park. The newly identified portion of the earthwork fell within the STP transect within Area 9G, and tests were placed both north and south of it. Additionally, metal detector survey was performed along the same STP transect. Both STP and metal detector surveys yielded no artifacts or evidence of additional cultural features.

This newly recorded section of earthwork lies in a narrow parcel which is part of the larger CSXT right-of-way, but beyond the limits of the CSXT property that constitutes the DC2RVA corridor. The earthwork section terminates along the eastern margin of the current APE and given its close proximity to the APE, it is considered to intersect the APE. This resource is recommended to be potentially eligible for the NRHP under Criterion A for its associated with Civil War activity in the area and under Criterion D for its archaeological potential pending additional studies. As such, Dovetail **recommends that further delineation and evaluation of site 44SP0468 should be undertaken if project design plans call for rail upgrades in this location.** DHR concurred with this recommendation in a letter dated October 11, 2016.

5.10 CROSSROADS TO GUINEA (XRGU/10)

The XRGU segment of the DC2RVA corridor is located in Spotsylvania and Caroline Counties. The Northern end of XRGU segment begins near the new Olive VRE station, approximately 1,860 feet (566.9 m) south of Mills Road (U.S. Highway 17). From there XRGU continues on a

Figure 5-111: Site 44SP0468 (with expanded boundaries). Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

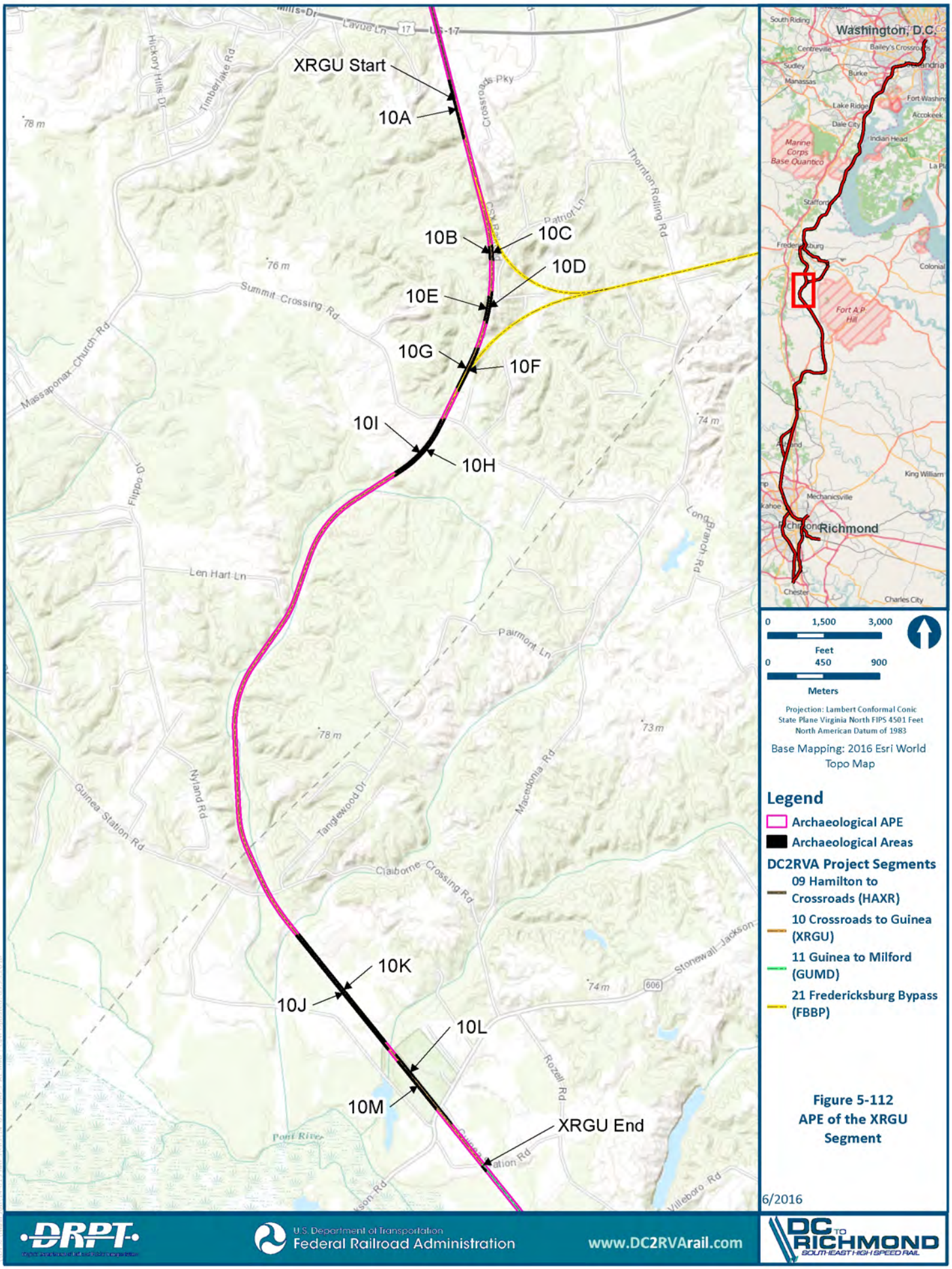


Figure 5-112
APE of the XRGU Segment

6/2016

generally southward path ending in Guinea, 1,880 feet (573 m) south of the existing rail's intersection with Stonewall Jackson Road (Figure 5-112). The XRGU segment covers a total distance of approximately 6.2 miles (10.0 km), with the tested portions of the APE extending 4.4 miles (7.1 km), encompassing a total area of 75.3 acres (30.5 ha). Based on the prior predictive modeling, high probability areas cover 8.0 acres (3.2 ha), moderate probability areas cover 1.1 acres (0.4 ha), and low probability areas cover 0.1 acres (404.7 sq. m). Approximately, 66.1 acres (26.7 ha) were classified as having no measurable potential for intact archaeological sites. The XRGU segment consists of 13 archaeological areas, given alphanumeric designations 10A through 10M. Of these, only two, Areas 10B and 10C, had intact portions that required subsurface testing.

Like much of the DC2RVA project corridor as a whole, substantial portions of the XRGU segment are untestable due to existing disturbances, mainly consisting of the grading and embankments required by the existing railroad, but other localized disturbances were encountered as well (Figure 5-113). The XRGU segment was likely the hilliest section within the DC2RVA corridor, at least within those portions of the APE identified for archaeological testing, and the grading necessary to negotiate the path of the existing rail through this hilly setting was the primary cause of disturbance within this segment. The overwhelming majority of every area within XRGU was untestable due to the grading between the natural surfaces and the existing rail, generally the steep embankments leading down to the existing rail where it was cut into much higher natural terrain.

FIGURE 5-113: TYPICAL SETTING IN XRGU, LOOKING NORTH

The APE within the XRGU segment lies almost entirely in wooded areas on the sparse suburban outskirts of Fredericksburg, with the southern end entering into more agricultural settings near Guinea. These areas contain rolling or hilly terrain. Of the thirteen areas making up XRGU

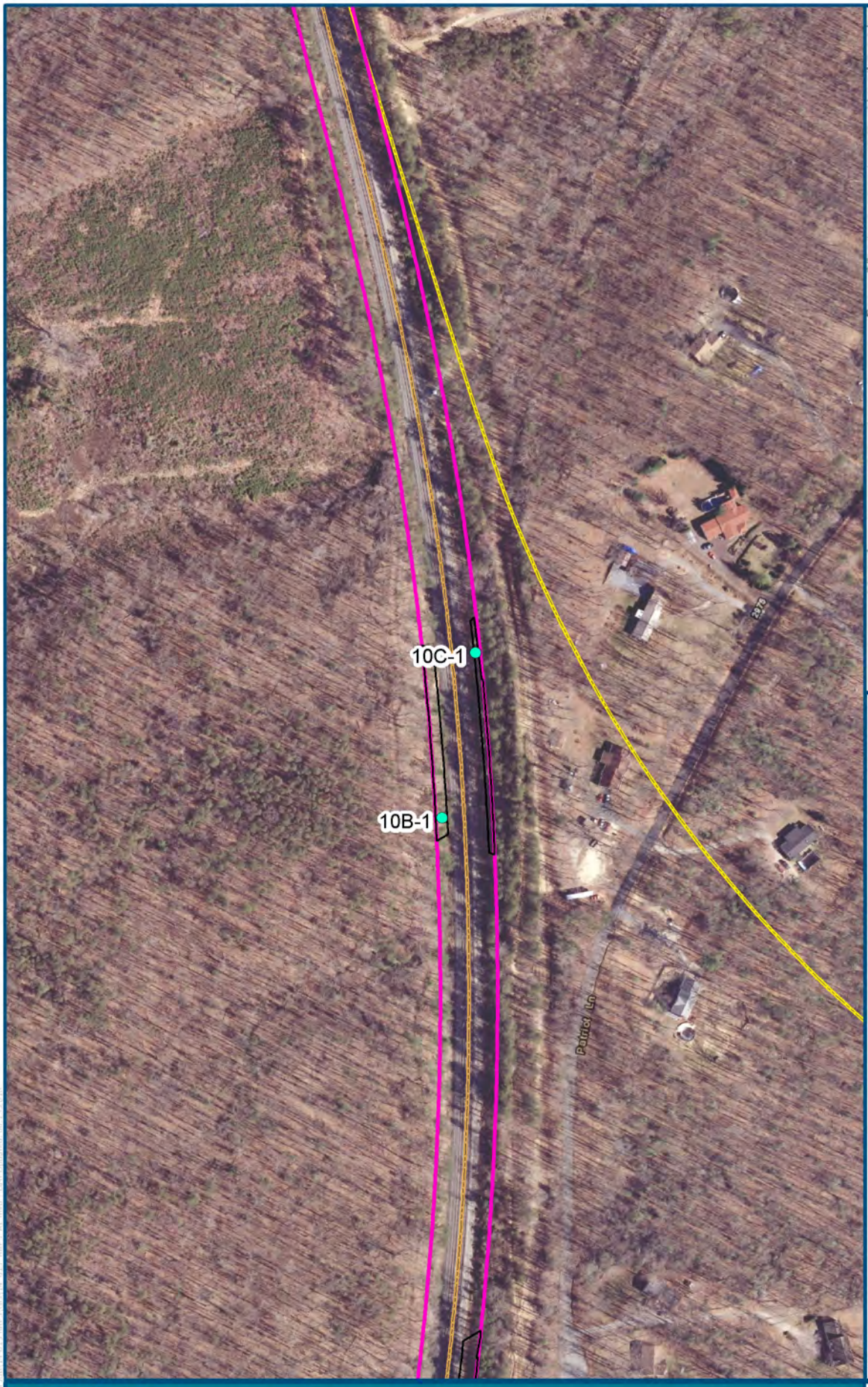
segment only two of them, Areas 10B and 10C contained testable, undisturbed areas large enough for subsurface testing to be practicable. And even those two areas contained only a single judgmental STP each. The settings for these two areas was typical for the setting of the segment as a whole, with the existing rail laid through substantial hills, in generally thickly forested areas.

A total of two shovel tests was excavated in XRGU portion of the APE. The average STP depth in the APE was 1.2 feet (36.6 cm) with a maximum depth of 1.3 feet (39.6 cm). A horizon depths ranged from 0.7 feet (21.3 cm) to 0.9 feet (27.4 cm) with an average depth of 0.8 feet (9.1 cm). No artifacts were recovered from the XRGU segment and no new sites were identified. One previously recorded site, 44CE0106, was revisited.

5.10.1 Archaeological Area 10B

Area 10B is a north-south oriented area on the east side of the existing rail line, between a no-longer-publicly-maintained section of Benchmark Road and the existing rail. Predictive modeling indicated this area is roughly evenly divided between high and low probability for archaeological sites. Area 10B is 1,240 feet (378.0 m) long. The majority of this area is untestable as the natural terrain here lies far above the existing rail and the corridor width lies almost entirely within the steep embankment leading down to the rail (Figure 5-114). However, a single judgmental STP was placed in a relatively level spot within the corridor (Figure 5-115). Soils within this STP were disturbed (Figure 5-116) No artifacts were found and sites were identified in area 10B.

FIGURE 5-114: AREA 10B, WITH CREW LOCATED AT STP 10B-1, LOOKING SOUTH



0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 10 Crossroads to Guinea (XRGU)
- 21 Fredericksburg Bypass (FBBP)

Figure 5-115
STP Survey in Areas 10B and 10C

6/2016

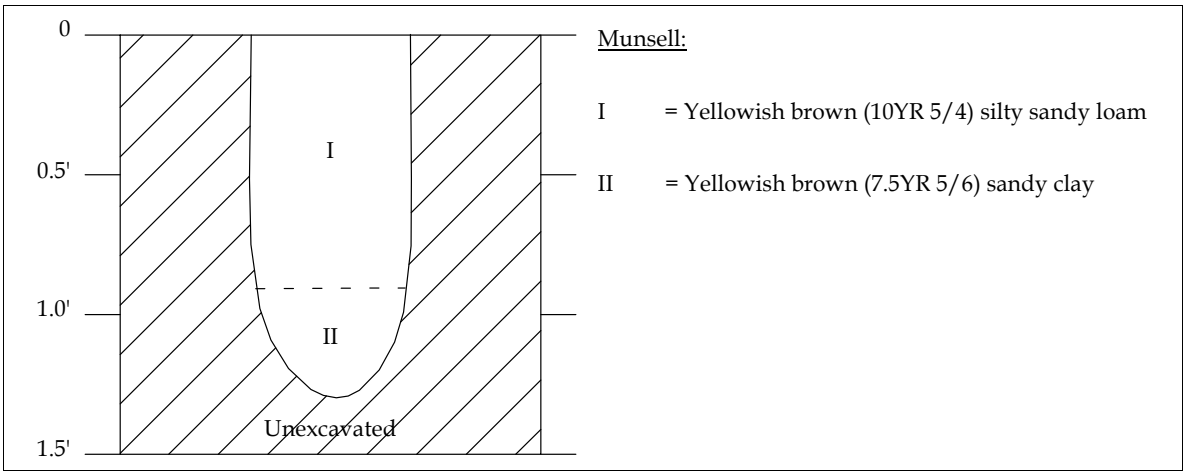


FIGURE 5-116: PROFILE OF STP 10B-1

5.10.2 Archaeological Area 10C

Area 10C is located directly across from 10B, on the western side of the existing rail. Area 10C lies in a relatively remote wooded area, without direct road access. Prior predictive modeling indicated that all of Area 10C had a high probability of containing archaeological sites. However, because of the substantial difference in elevation between the natural surfaces in the vicinity and the existing rail, the entire width of the APE in Area 10C is, throughout most of the area, located on the steep artificial embankment down to the existing rail, just as in Area 10B (Figure 5-117). A single judgmental STP was placed in Area 10C in a relatively level spot in order to investigate the soils (see Figure 5-115). The soils in this STP also showed evidence of disturbance (Figure 5-118). No artifacts were found and no sites were discovered.

FIGURE 5-117: AREA 10C, LOOKING SOUTH

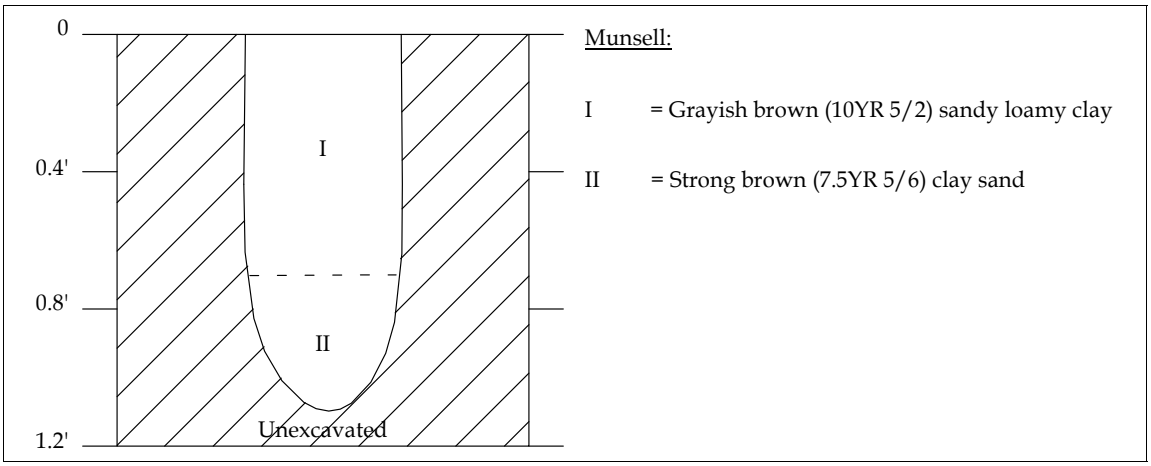


FIGURE 5-118: PROFILE OF STP 10C-1

5.10.3 Previously Recorded Site 44CE0106

Site 44CE0106 is the site of a shrine for Confederate General Thomas J. "Stonewall" Jackson, also located within the Fredericksburg and Spotsylvania National Military Park (but not within the DHR mapped architectural resource boundaries of that resource). DHR site files show that it is not evaluated for the NRHP. It is located northwest of the intersection of the existing rail corridor with Stonewall Jackson Road (State Road 606). The end of Area 10L intersects the southwestern edge of this site, running through a narrow strip of disturbed ground between the driveway/access road to the shrine visitor center and the existing rail line, which also contains a number buried utilities (Figure 5-119 and Figure 5-120). Given the location and disturbed nature of the area in which the APE passes through the site, the portion of the site within APE lacks subsurface integrity and does not contribute to the overall characteristics of the site as whole. As such, **the portion of site 44CE0106 within the APE does not contribute the site's overall NRHP eligibility.** DHR concurred with this recommendation in a letter dated October 11, 2016.

FIGURE 5-119: APE WITHIN 44CE0106, LOOKING NORTH

Figure 5-120: Site 44CE0106.
Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

5.11 GUINEA TO MILFORD (GUMD/11)

The GUMD segment of the DC2RVA corridor is located in the central, western half of Caroline County. The northern end of the GUMD segment is at the end of Guinea Drive, in a residential neighborhood in Guinea. The southern end of the segment is located approximately 9.70 miles (15.61 km) northeast of the Hanover County line and is located at the end of Nelson Hill Road, in Milford. The GUMD segment of the DC2RVA corridor is approximately 9 miles (14.6 km) in length. The GUMD segment contains 22 archaeological areas, labeled 11A−11V as depicted on Figure 5-121. The GUMD archaeological APE encompasses 110.1 acres (44.56 ha). Based on the prior predictive modeling, high probability areas cover 16.7 acres (6.76 ha), moderate probability 11.8 acres (4.78 ha), and low probability 1.3 acres (0.53 ha). Approximately, 80.3 acres (32.5 ha) were classified as having no measurable potential for intact archaeological sites.

Like much of the DC2RVA project corridor as a whole, substantial portions of GUMD segment 11 are untestable due to existing disturbances, mainly consisting of the grading and embankments and ballast required by the existing railroad. Additionally, substantial buried utility transmission lines, including fiber optic and petroleum lines, artificial ditches, inundated areas, and extreme slope precluded subsurface testing in many locations throughout the segment. Inundated areas include rivers, streams, creeks, drainages, ponds and swamps. Archaeological areas not shovel tested include: 11A, 11B, 11C, 11G, 11H, 11K, 11N, 11P, 11R, 11S, and 11U. Slope prevented shovel testing in Areas 11N, 11P, 11R, and 11S. Drainage ditches negated testing in 11N, 11P, and 11R. The existing rail ballast and buried utilities precluded subsurface investigation in 11A, 11C, 11G, 11K, 11N, 11P, 11R, 11S and 11U (Figure 5-122 and Figure 5-123). Areas 11B and 11H were found to be less than 2 feet (0.6 m) in width upon field inspection and thus it was determined that survey in these areas was outside the parameters for investigation of this study.

Following the pedestrian inspection of all areas identified from predictive modeling it was determined that 11 of the archaeological areas contained testable, undisturbed portions large enough for subsurface testing to be practical. These areas subjected to subsurface testing included 11D, 11E, 11F, 11I, 11J, 11L, 11M, 11O, 11Q, 11T, and 11V. A total of 207 STPs were excavated in the GUMD segment, resulting in the identification of one newly identified archaeological site (44CE0836) and one isolated find (ISF 11-1). In addition to these newly identified resources, one previously recorded archaeological resource, 44CE0626/000-9800-0054, is located within the GUMD segment. The results of subsurface testing in each archaeological area is described in detail in the following sections, these descriptions are followed by summaries of the newly identified site and isolated find, and a brief discussion of the previously recorded archaeological site.

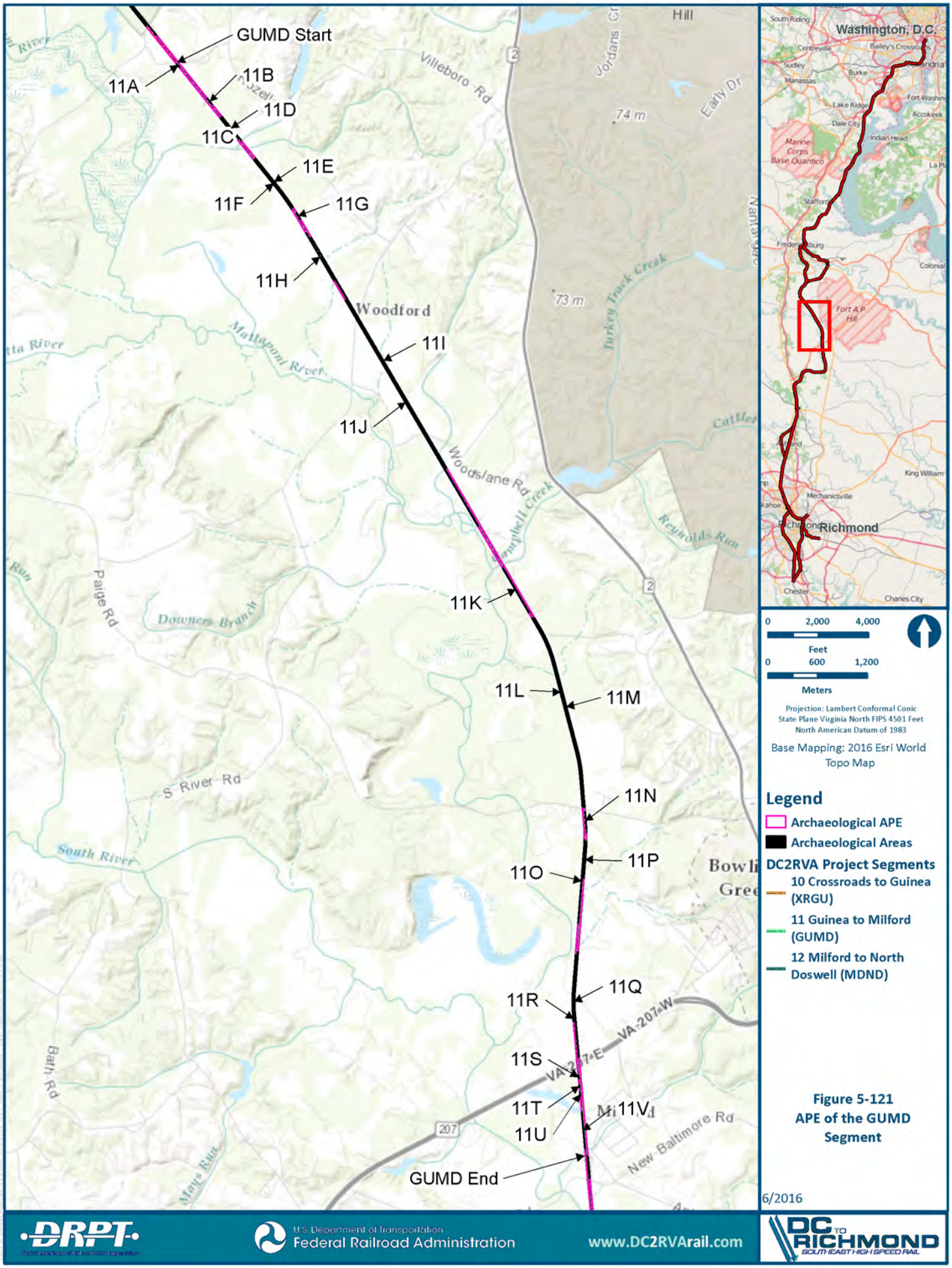


Figure 5-121
APE of the GUMD Segment

6/2016

FIGURE 5-122: DISTURBANCE IN THE GUMD APE: AREA 11A, LOOKING NORTHEAST; AREA 11C, LOOKING SOUTH; AREA 11G, LOOKING NORTH; AND AREA 11K, LOOKING NORTHEAST

FIGURE 5-123: DISTURBANCE IN THE GUMD APE: AREA 11N, LOOKING SOUTH; AREA 11P, LOOKING SOUTHWEST; AREA 11R, LOOKING SOUTH; AREA 11S, LOOKING NORTHEAST; AND AREA 11U, LOOKING SOUTHEAST

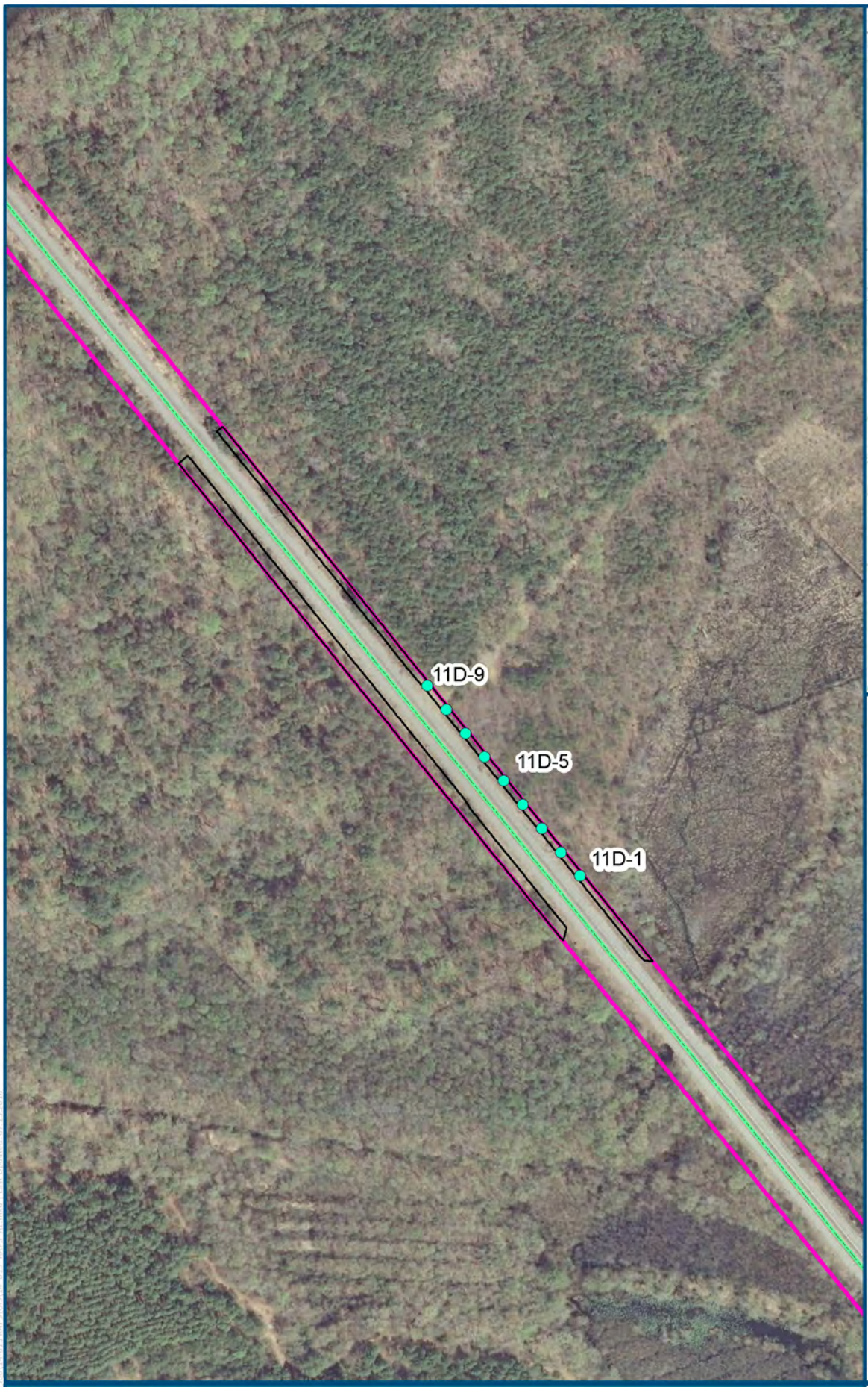
5.11.1 Archaeological Area 11D

Located south of 11B by 631.9 feet (192.6 m), Area 11D is located on the east side of the existing rail, across from Area 11C. Predictive modeling identified this area as a high probability location. Area 11D measures 1,196.9 feet (364.8 m), in length. A forested area, 11D is located southeast of Guinea and northwest of Woodford. The area gradually slopes to the south, into an inundated area. Pedestrian survey identified the northern portion of this area for subsurface testing, while the southern end of this section was deemed untestable. Nine STPs were excavated in this portion of the GUMD segment (Figure 5-124 and Figure 5-125). The average STP depth in 11D was 0.9 feet (27.43 cm) with a maximum depth of 1.7 feet (51.8 cm). A horizon depth averaged 0.3 feet (9.14 cm), and was predominantly defined as a brown (10TYR 4/3) sandy loam. No artifacts were found and no sites were discovered.

Figure 5-124: TESTABLE LOCATION IN AREA 11D, LOOKING SOUTH

5.11.2 Archaeological Area 11E

Located on the east side of the existing rail, Area 11E lies south of Area 11D by 910.67 feet (277.57 m). It is situated across from 11F and was designated as a high probability area via predictive modeling. Area 11E extends 2,454.21 feet (748.04 m), southeast of Guinea and northwest of Woodford. The landscape surrounding 11E is agricultural fields, mixed pine and deciduous forest, and inundated areas. Much of this portion of the corridor was disturbed from the existing rail and artificial berms or landforms; however, 21 STPs were excavated within 11E (Figure 5-126). The average STP depth in this area was 1.2 feet (36.58 cm) with a maximum depth of 1.6 feet (48.77 cm). A horizon depth averaged 0.7 feet (21.34 cm). Soils varied greatly across Area 11E; however, Figure 5-127 shows a representative example. STPs were excavated paralleling the agricultural field. No artifacts were found and no sites were discovered (Figure 5-128).



0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 11 Guinea to Milford (GUMD)

Figure 5-125
STP Survey in Area 11D

6/2016

Figure 5-126: TESTABLE LOCATION IN AREA 11E, LOOKING NORTH

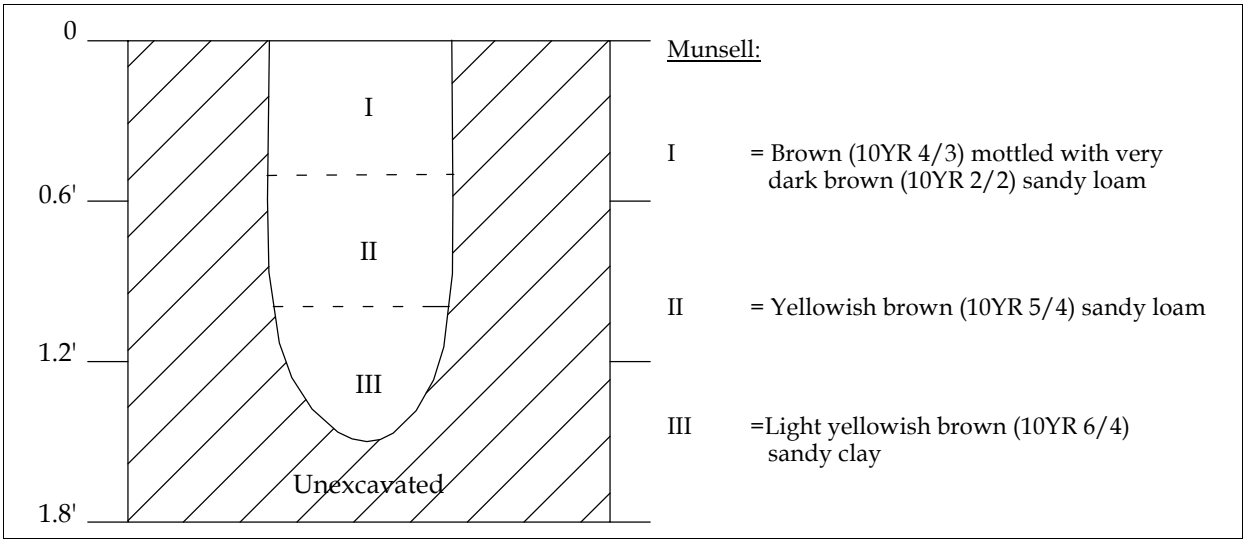


FIGURE 5-127: REPRESENTATIVE SOIL PROFILE FROM AREA 11E, STP 11E-13

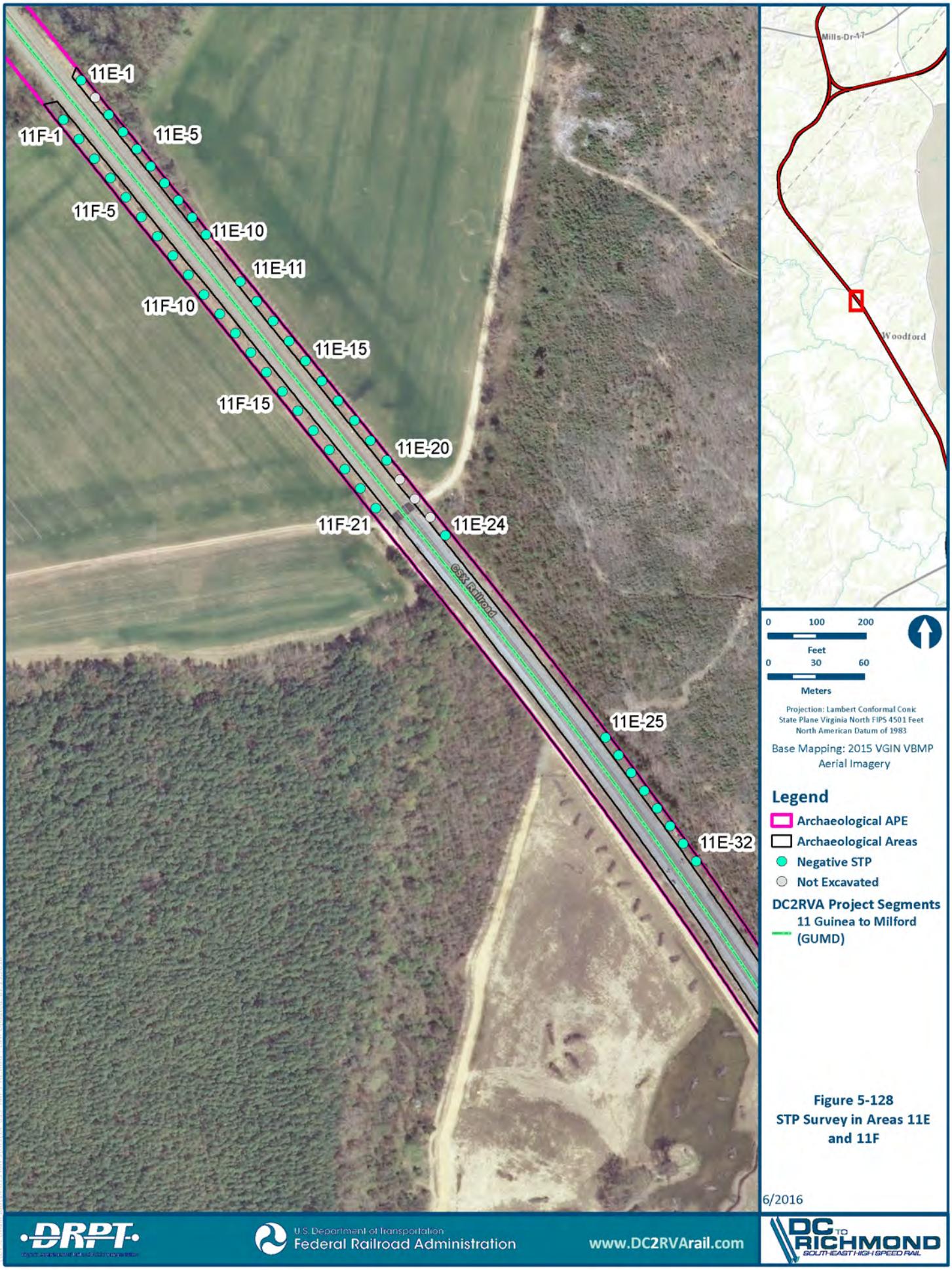


Figure 5-128
STP Survey in Areas 11E and 11F

6/2016

5.11.3 Archaeological Area 11F

Located approximately 1,072 feet (362 m) south of Area 11C, Area 11F is located on the west side of the existing rail, across from Area 11E. This is a high probability area, according to the predictive model. Area 11F measures 2,468 feet (752 m) long. Located north of Woodford, 11F is bordered in the northern stretch by an agricultural field. Forest parallels the corridor along the middle section and various drainages appear in the southern extent of 11F. Twenty-one STPs were excavated in 11F (Figure 5-129) and the average STP depth in this area was 1.3 feet (39.6 cm) with a maximum depth of 1.8 feet (54.9 cm). A horizon depth averaged 0.4 feet (12.19 cm). Soils varied greatly across the area; however, soil profiles from STPs 11F-3 and 11F-14 are included below to show examples of the average profiles within this portion of the corridor (Figure 5-130). No artifacts were found and no sites were discovered (see Figure 5-128).

Figure 5-129: TESTABLE LOCATION IN AREA 11F, LOOKING NORTH

5.11.4 Archaeological Area 11I

Area 11I is located on the east side of the existing rail, approximately 848.07 feet (258.49 m) south, of Area 11G and across from Area 11J. Measuring 9,064.66 feet (2,762.9 m) in length, this area was predicted to have portions of high, moderate, and low archaeological potential. This area goes through Woodford. Agricultural fields, forest and two private residences, border the area. Railroad construction, a two-track and buried utilities constitute disturbances that precluded subsurface investigations. However, 55 STPs and two radial STPs were excavated (Figure 5-131 through Figure 5-133). The average STP depth in this area was 1.3 feet (39.62 cm) with a maximum depth of 2.7 feet (82.3 cm). A horizon depth averaged 0.5 feet (15.24 cm). Subsurface testing resulted in the collection of eight artifacts from one newly recorded archaeological site, designated as site 44CE0836.

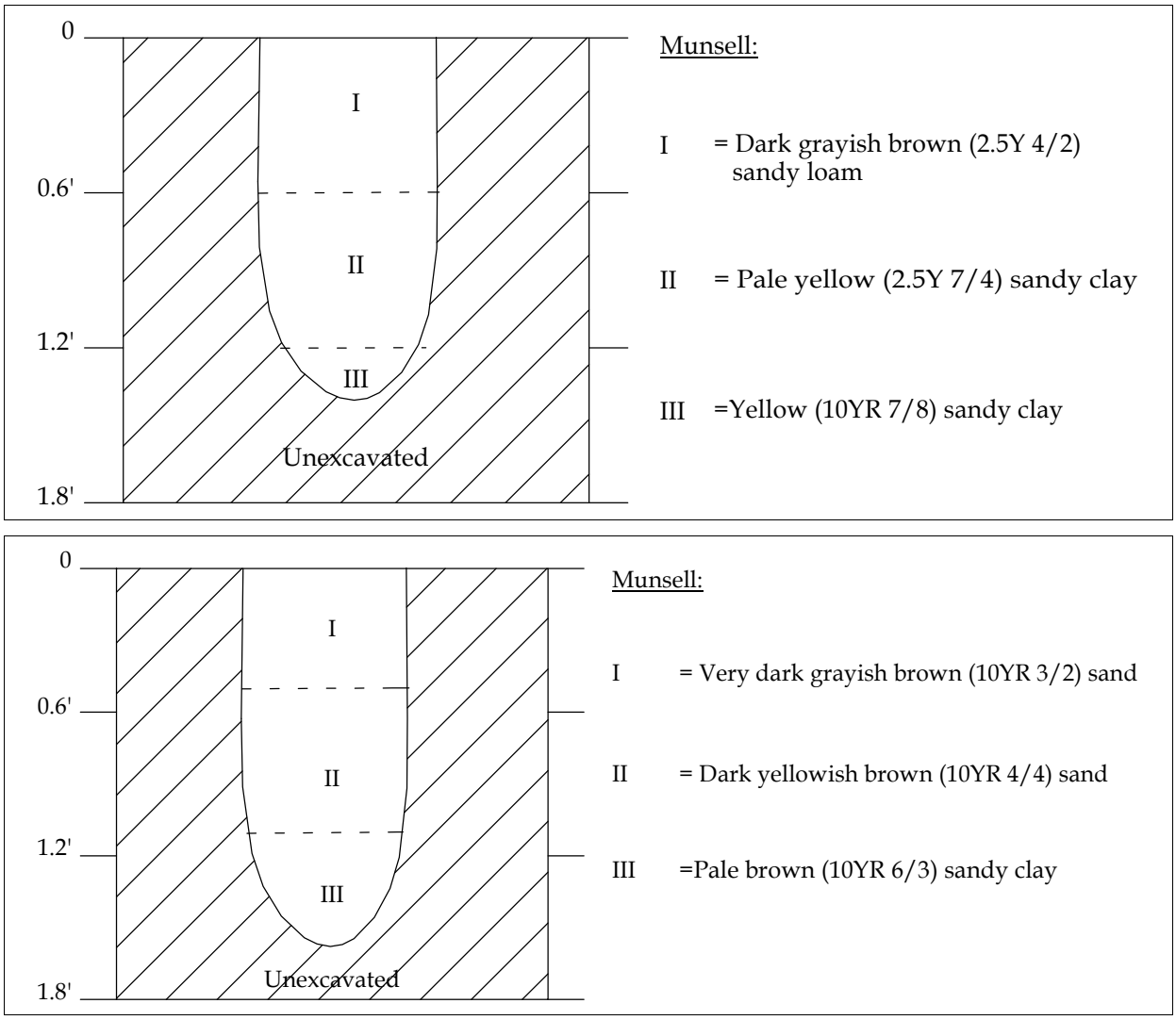


FIGURE 5-130: REPRESENTATIVE SOIL PROFILES FROM AREA 11F (TOP:STP 11F-3, BOTTOM: STP 11F-14)

5.11.5 Archaeological Area 11J

Located 4,230 feet (1289.30 m) south of Area 11F, Area 11J is located on the west side of the tracks, across from Area 11I. Area 11J measures approximately 10,387.79 feet (3,166.2 m) long and traverses the town of Woodford. Forests, wetlands, agricultural fields and four private residences, border the area.

The existing rail is elevated approximately 6 feet (1.83 m) above ground surface throughout much of the area and a ballast has been built up to support the track. Much of the ground surface reflects heavy disturbance from rail line installation as well as the utilities paralleling the existing line. A two-track road paralleling a section of the area and inundated areas comprise other disturbances. Thirty-seven STPs were excavated, all placed parallel to the existing rail corridor (Figure 5-134). The average STP depth in this area was 1.3 feet (39.6 cm) with a

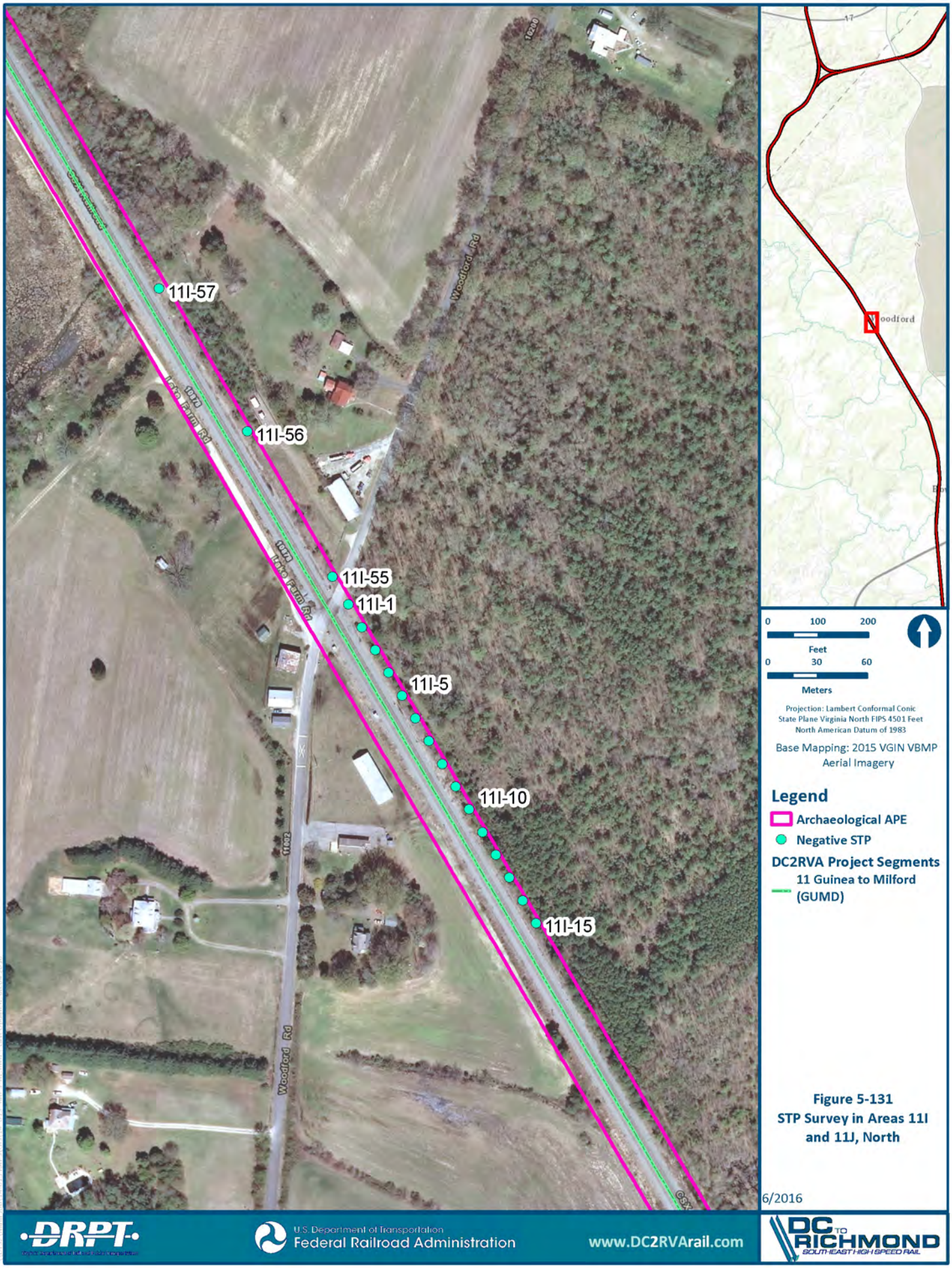


Figure 5-131
STP Survey in Areas 11I and 11J, North

6/2016

DRPT

U.S. Department of Transportation
Federal Railroad Administration

www.DC2RVArail.com

DC TO RICHMOND
SOUTHEAST HIGH SPEED RAIL

Figure 5-132: STP Survey in Areas 11I and 11J, South. Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

Figure 5-133: TESTABLE LOCATION IN AREA 11I, LOOKING NORTH

Figure 5-134: TESTABLE LOCATION IN AREA 11J, LOOKING EAST

maximum depth of 1.7 feet (51.8 cm). A horizon depth averaged 0.9 feet (27.4 cm). Most STPs in this area had two stratigraphic levels, predominantly consisting of a very dark grayish brown (2.5Y 3/2) sandy loam A horizon, over a light olive brown (10YR 5/4) silty clay subsoil (Figure 5-134). No artifacts were found and no sites were discovered (see Figure 5-132).

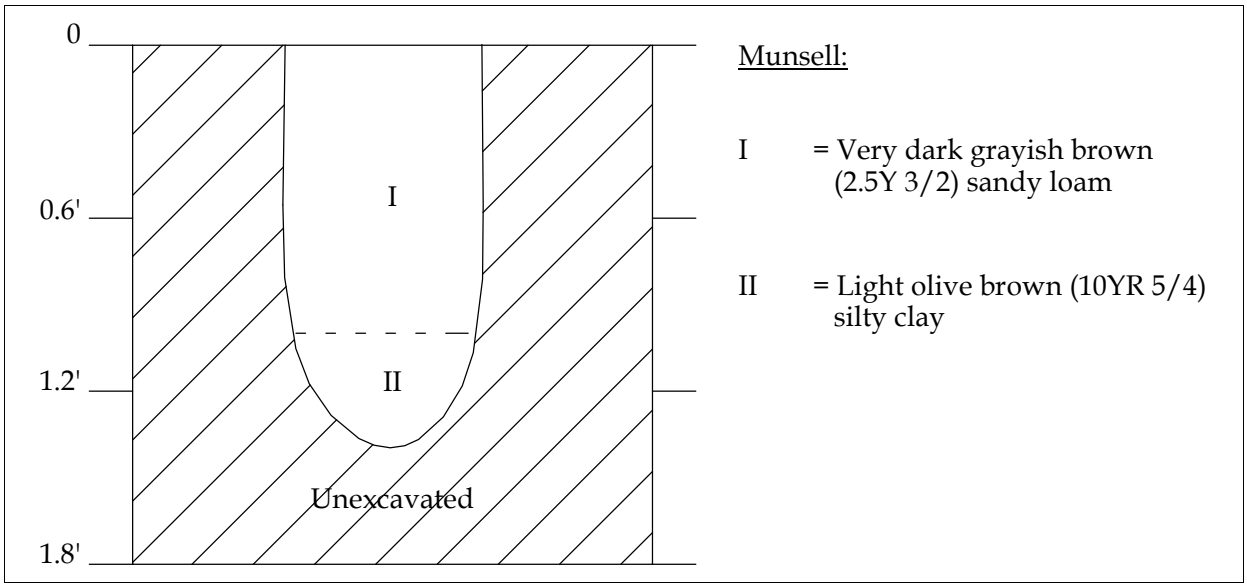


FIGURE 5-135: REPRESENTATIVE SOIL PROFILE FROM AREA 11J, STP 11J-10

5.11.6 Archaeological Area 11L

Located approximately 260.58 feet (79.43 m) south of Area 11K, Area 11L is 7,829.34 feet (2,386.38 m) long and located on the west side of the existing rail, across from Area 11M. Area 11L is to the east of Paige, west of Loving Fork, and northwest of Bowling Green. Private residences and agricultural fields border the area along the northern end. Planted forests dictate the remaining environment of the area.

Based on previous predictive modeling this area had portions of high and moderate archaeological probability. The high probability portion was defined by the northern 1,272 feet (387 m), of the segment, while the remainder to the south was consider moderate probability. Six STPs were excavated in the area, while the reminder was defined by disturbance that precluded subsurface testing (Figure 5-136 and Figure 5-137). The average STP depth in this area was 0.5 feet (15.2 cm) with a maximum depth of 1.0 foot (30.5 cm). A horizon depth averaged 0.3 feet (9.14 cm). Most STPs excavated across this portion of the corridor contained two stratigraphic levels, almost all demonstrating that soils were disturbed and potentially redeposited. Solid asphalt created an impasse within half of the STPs excavated, further highlighting the subsurface disturbance to the area. No artifacts were found and no sites were discovered.

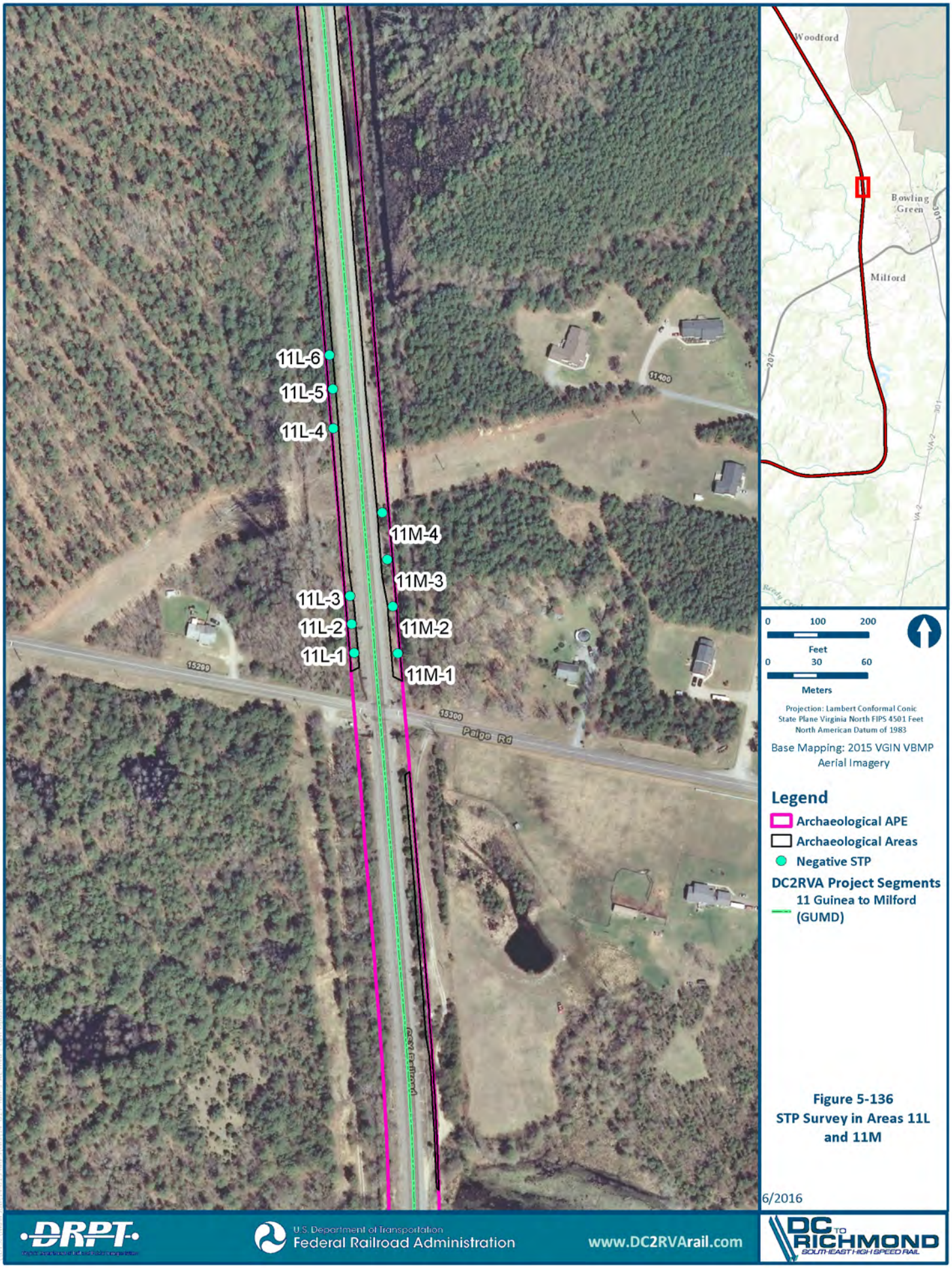


Figure 5-136
STP Survey in Areas 11L and 11M

6/2016

Figure 5-137: TESTABLE LOCATION IN AREA 11L, LOOKING SOUTH

5.11.7 Archaeological Area 11M

Area 11M is south of Area 11I by 6, 938 feet (2,114.7 m). Area 11M is on the east side of the existing rail, across from Area 11L. The area encompasses 4,846.13 feet (1,477.10 m) in length and is east of Paige, west of Loving Fork, and northwest of Bowling Green. Forests and inundated locations define 11M.

Predictive modeling found that Area 11M contained both high and moderate probability areas. During the pedestrian survey notable disturbances to the area included logging/lumber activities, a two-track road, railroad construction and multiple buried utilities. Nonetheless, 25 STPs were excavated in areas deemed suitable for intact subsurface deposition (see Figure 5-136, Figure 5-138, and Figure 5-139). The average STP depth in this area was 1.1 feet (33.5 cm) with a maximum depth of 1.9 feet (57.9 cm). A horizon depth averaged 0.7 feet (21.3 cm). Soils were found to be largely disturbed and hydric. No artifacts were found and no sites were discovered.

5.11.8 Archaeological Area 11O

Located south of Area 11L by 1,335.17 feet (406.96 m), Area 11O is on the west side of the existing rail. Area 11P lies opposite the tracks and Area 11O stretches 3,273.3 feet (997.7 m) long. Agricultural fields border the area along the northern margins, while mixed pine and deciduous forests comprise the remainder of the surrounding environment. Predictive modeling defined high probability in the northern half of the area and low probability in the southern half. Disturbance to the area included a road and drainage ditch immediately west of the existing rail corridor, as well as buried utilities. The utilities and artificial landforms precluded subsurface testing throughout much of the area. Sixteen STPs were excavated in areas which contained testable, undisturbed portions large enough for subsurface testing to be practical (Figure 5-140 and Figure 5-141).

FIGURE 5-138: STP SURVEY IN AREA 11M

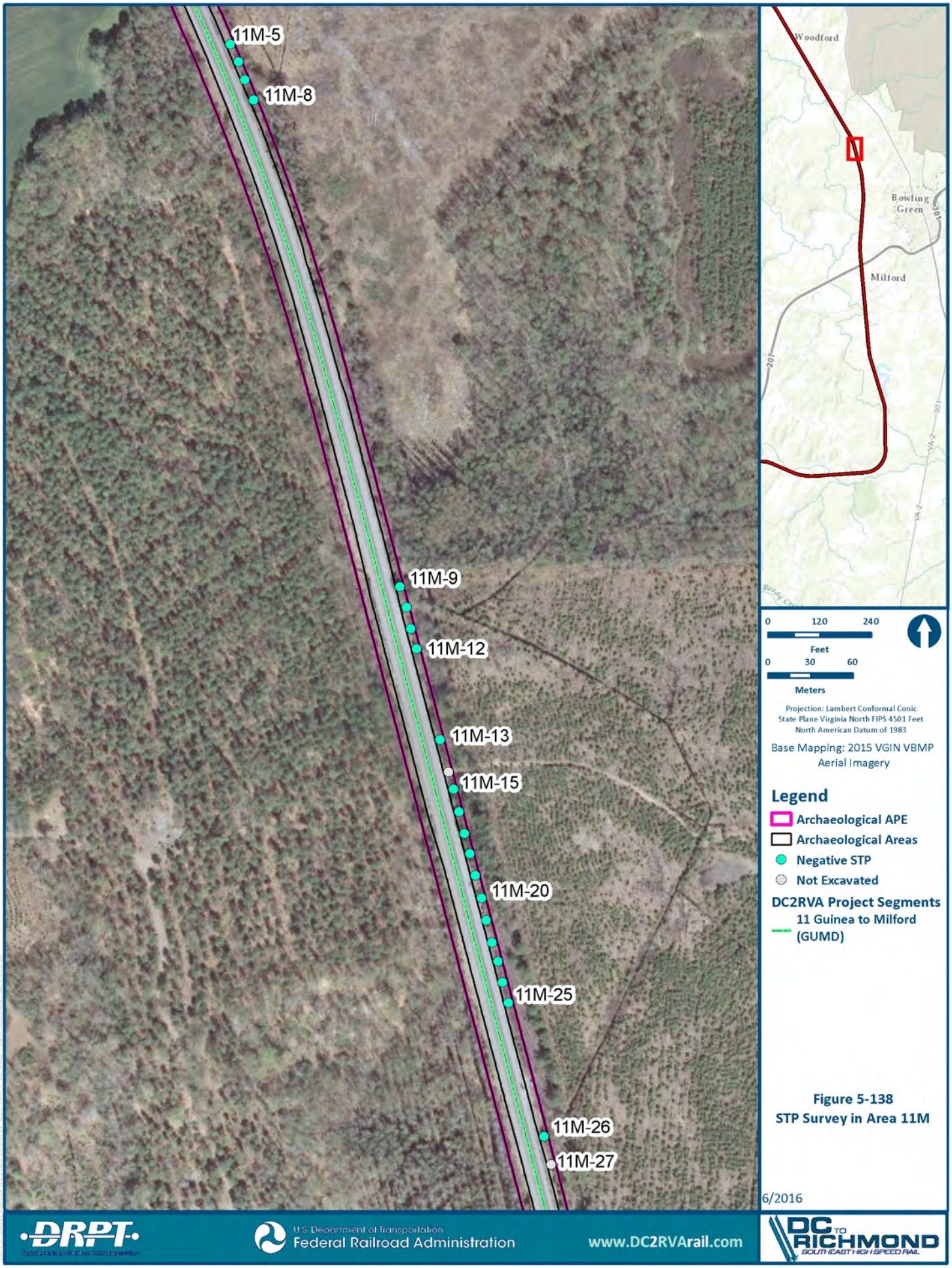


Figure 5-138
STP Survey in Area 11M

6/2016

Figure 5-139: TESTABLE LOCATION IN AREA 11M, LOOKING NORTH

Figure 5-140: TESTABLE LOCATION IN AREA 11O, LOOKING SOUTHEAST

0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP
- Not Excavated

DC2RVA Project Segments

- 11 Guinea to Milford (GUMD)

Figure 5-141
STP Survey in Area 11O

6/2016

The average STP depth in this area was 2.2 feet (67.1 cm) with a maximum depth of 3.2 feet (97.5 cm). A horizon soil depth averaged 0.5 feet (15.24 cm). Most of these STPs were terminated at a depth of 3.3 feet (1 m), rather than at subsoil interface. A horizon soils typically consisted of a brown (10YR 4/3) sandy loam, over a dark yellowish brown (10YR 4/4) sandy loam, beneath which was a light yellowish brown (10YR 6/4) sand which capped a brown (10YR 5/6) sand (Figure 5-142).

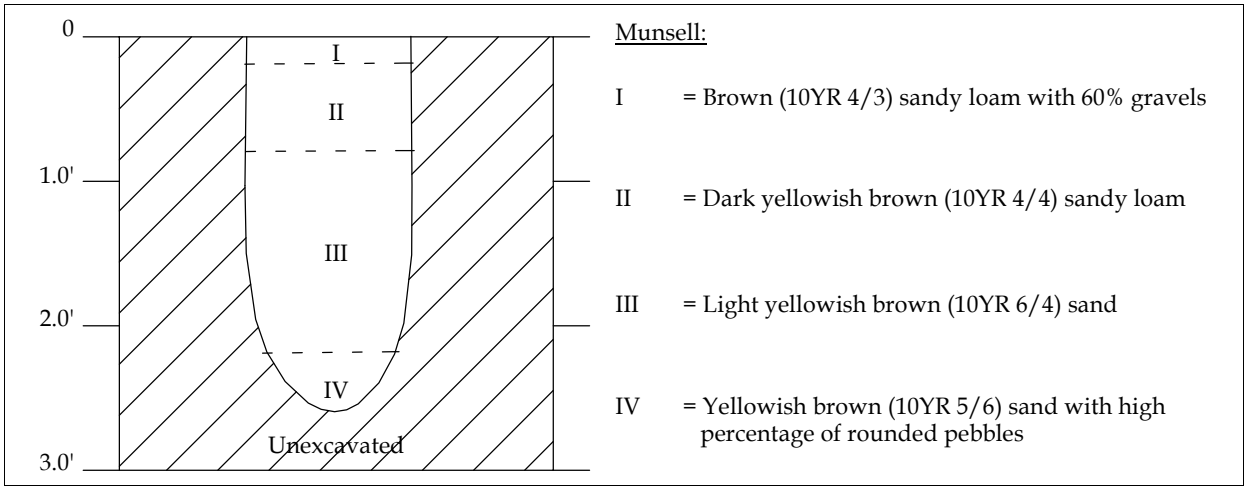


FIGURE 5-142: REPRESENTATIVE SOIL PROFILE FROM AREA 11O, STP 11O-16

5.11.9 Archaeological Area 11Q

South of Area 11P by approximately 3,000 feet (914.4 m), Area 11Q is on the east side of the existing rail, across from Area 11R. Area 11Q measures 4,172 feet (1,271 m) long and is west of Bowling Green and bordered by a line of trees separating the railroad from the adjacent private parcel. Predictive modeling identified the northern half of 11Q as high probability and the moderate probability in the southern portion. A gravel road and excessive slope precluded subsurface testing in much of 11Q; however, three STPs were excavated (Figure 5-143 and Figure 5-144). The average STP depth in this area was 1.1 feet (33.5 cm) with a maximum depth of 2 feet (61 cm). A horizon depth averaged 0.8 feet (24.4 cm). No artifacts were found and no sites were discovered.

5.11.10 Archaeological Area 11T

Area 11T is situated west of the existing rail corridor and measures 109.6 feet (33.4 m) in length. It is located north of Milford and deciduous forest defines the west margin of the area. Predictive modeling defined half of this area as high probability and half as low probability, with the high probability of archaeological resources encompassing the northern stretch. Only two STPs were excavated within the area, the remainder of the area was disturbed by the presence of buried utility corridors and artificial/graded landforms (Figure 5-145 and Figure 5-146). The average STP depth in this area was 0.6 feet (18.29 cm) with a maximum depth of 1 foot (30.5 cm). A-horizon depth averaged 0.3 feet (9.14 cm). No artifacts were found and no sites were discovered.

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

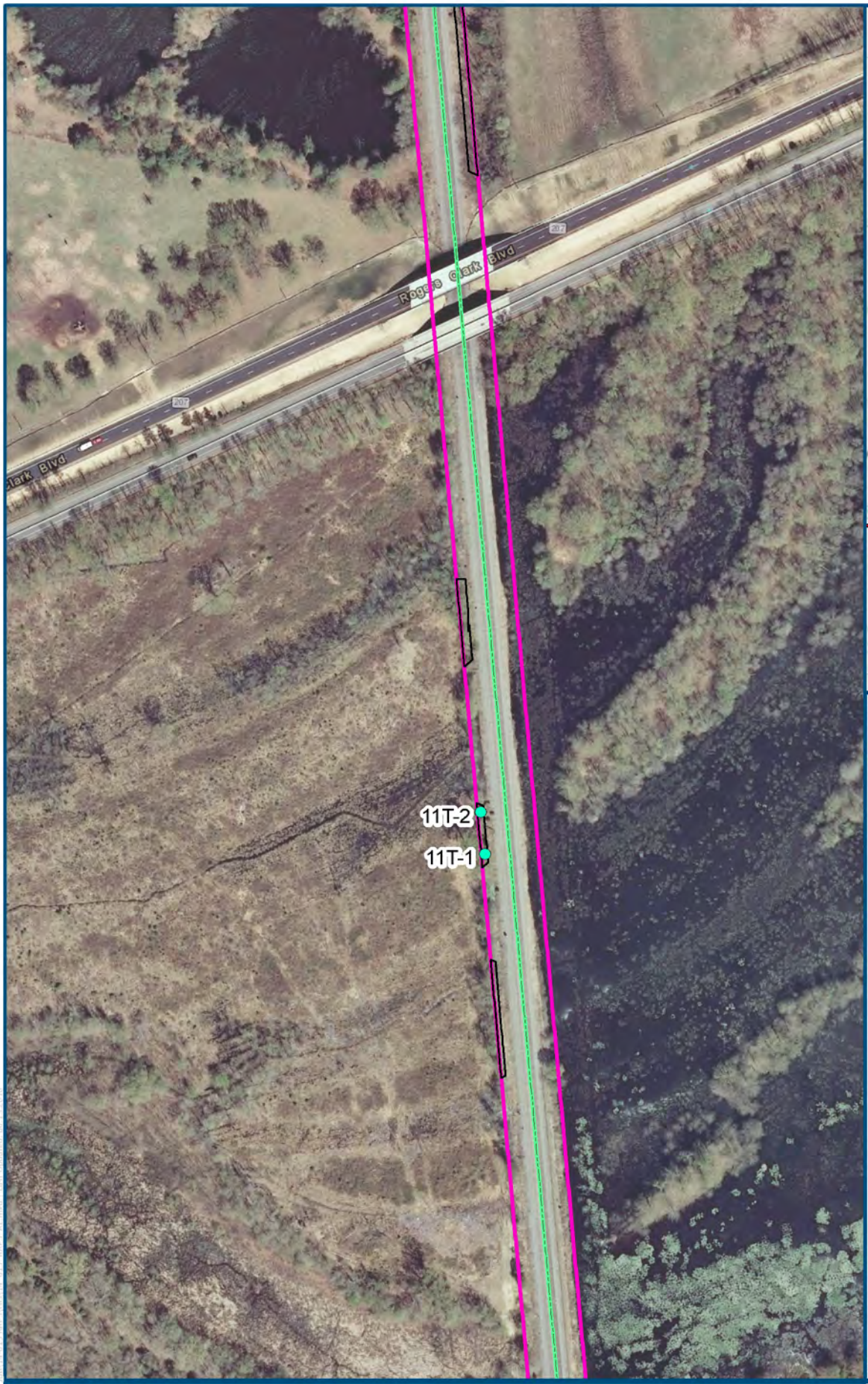
- 11 Guinea to Milford (GUMD)

Figure 5-143
STP Survey in Area 11Q

6/2016

Figure 5-144: TESTABLE LOCATION IN AREA 11Q, LOOKING WEST-NORTHWEST

Figure 5-145: TESTABLE LOCATION IN AREA 11T, LOOKING SOUTH



0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 11 Guinea to Milford (GUMD)

Figure 5-146
STP Survey in Area 11T

6/2016

5.11.11 Archaeological Area 11V

Area 11V is the end of the GUMD segment of the DC2RVA corridor. It is located at the end of Nelson Hill Road, in Milford. This particular stretch of the APE occupies the west side of the existing rail. The area is bordered by cleared lands, potentially agricultural fields. Area 11V measures 1,459.9 feet (445 m) long. This is a low probability area, as defined by the model. Seven STPs and two radials were excavated in the area, while the remainder was untestable as a result of the APE falling within the steep graded embankment from the natural surface down to the existing rail which precluded subsurface investigation (Figure 5-147 and Figure 5-148). The average STP depth in this area was 1.0 foot (30.5 cm) with a maximum depth of 1.2 feet (36.6 cm). A horizon depth averaged 0.5 feet (15.24 cm). Shovel testing results in the recovery of a single artifact, designated at ISF 11-1 from STP 11V-4.

Figure 5-147: TESTABLE LOCATION IN AREA 11V, LOOKING SOUTH

5.11.12 Site 44CE0836

5.11.12.1 Site Description

Site 44CE0836 is a very small historic site identified in two positive STPs in Area 11I of the GUMD segment of the DC2RVA corridor (Figure 5-149). These STPs were fairly deep, averaging 2.0 feet (61 cm) with the deepest at 2.7 feet (82.3 cm). The A-horizon, likely a developing topsoil, averaged 0.55 feet (16.8 cm) deep with the deepest at 0.7 feet (21.3 cm). Although only 25 feet (7.6 m) apart, the soil profiles of the two STPs were completely different, suggesting significant local disturbance. One profile had a black (10YR 2/1) silty sand, over a brownish yellow (10YR 6/6) sand, covering a pale yellow (5Y 8/4) sandy clay (Figure 5-150). The other profile had a very dark grayish brown (10YR 3/2) sandy loam, over a black (10YR 2/1) sandy loam with 20 percent gravels, covering a olive yellow (2.5 Y 6/6) sandy clay (Figure 5-151).

Figure 5-148: STP Survey in Area 11V. Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

Figure 5-149: Sites 44CE0836 and 44CE0626. Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

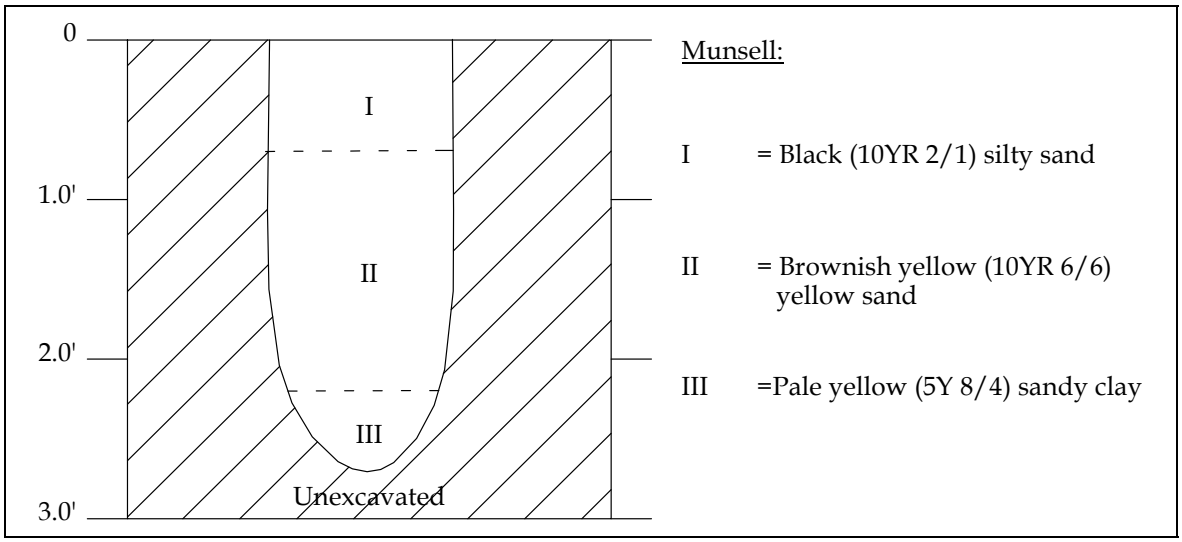


FIGURE 5-150: FIRST REPRESENTATIVE SOIL PROFILE FROM SITE 44CE0836, STP 11I-36

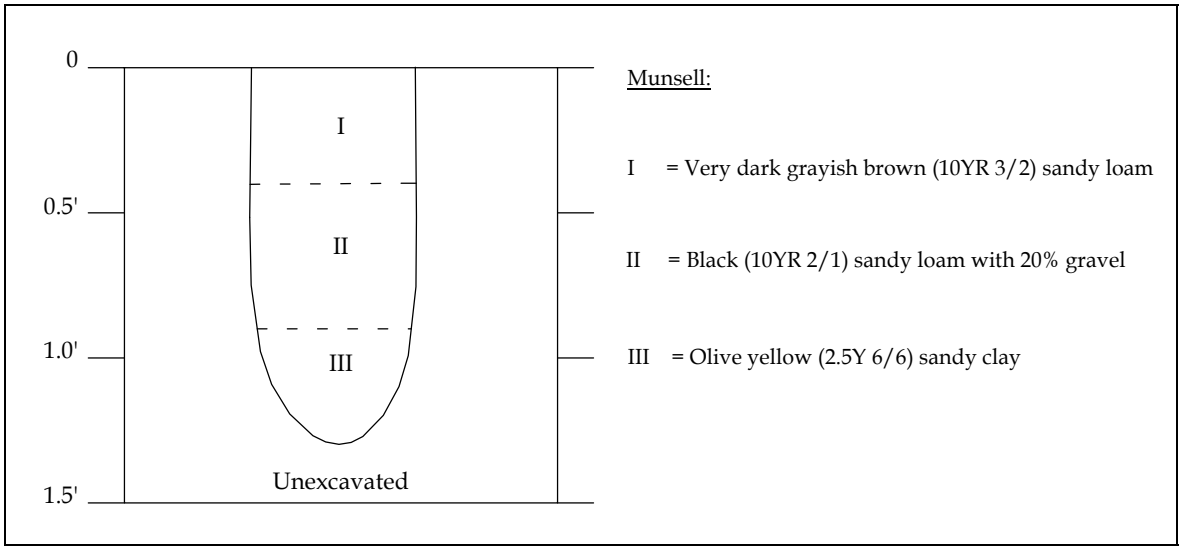


FIGURE 5-151: SECOND REPRESENTATIVE SOIL PROFILE FROM SITE 44CE0836, STP 11I-36 SOUTH

Current site boundaries were defined by negative STPs to the north and south, and by the corridor boundary to the north and east. The site measures approximately 25 feet (7.6 m) north to south by 20 feet (6.1 m) west to east, the equivalent of approximately 0.01 acres (0.004 ha). The site is located on the east side of the existing railroad grade on level ground at the same elevation as the existing grade (Figure 5-152). This portion of the GUMD segment was identified as having high probability for the presence of archaeological sites during the predictive model study. The site is amongst grass, brush, and the treeline of a wooded area. A slope exceeding 15 percent rises upwards from the site elevation approximately 50 feet (15.2 m) to the east in the wooded area. A winter wheat field is located on the other side of the existing grade.

FIGURE 5-152: SITE 44CE0836, LOOKING NORTHEAST

Eight artifacts were recovered from the two STPs, six from the second soil layer of one STP and two from the first layer of the other STP. The artifact assemblage includes four ceramic fragments, two pieces of aqua window glass, and two hand-made brick fragments. The ceramic fragments include one whiteware, one plain creamware, one whieldon creamware, and one stoneware.

5.11.12.2 Evaluation and Significance

The artifact assemblage for site 44CE0836 contains four architectural artifacts and four ceramic fragments, suggesting the site represents a dwelling associated with a domestic occupation. However, the artifact assemblage is extremely small for a house site. Additionally, soil profiles strongly indicate significant local disturbance. The site center is likely located on the top of the slope to the east and washed down that slope to this location, as well as being moved around by ground disturbing activities associated with the existing railroad.

The very low artifact density, the evidence for significant disturbance and the absence of surface or subsurface features indicate that the site does not exhibit the potential to yield significant information on settlement patterns or domestic life during the historic period in Caroline County Virginia (Criterion D). There are also no significant associations between these deposits and a significant historical event or patterns of events (Criterion A). There are no associations with significant persons (Criterion B), and the deposits do not illustrate the distinctive characteristics of a type, period, or method of construction (Criterion C). As such, site 44CE0836 is **recommended not eligible for listing on the NRHP.** DHR concurred with this recommendation in a letter dated October 11, 2016.

5.11.13 ISF 11-1

Subsurface testing in Area 11V resulted in the collection of a single artifact from STP 11V-4, all subsequent radial testing was negative for additional cultural materials. The A horizon, identified as Stratum I, contained an ironstone earthenware rim fragment. In general, isolated finds are not an indication of cultural activity and, thus, are not assigned site numbers and not consider eligible for the NRHP.

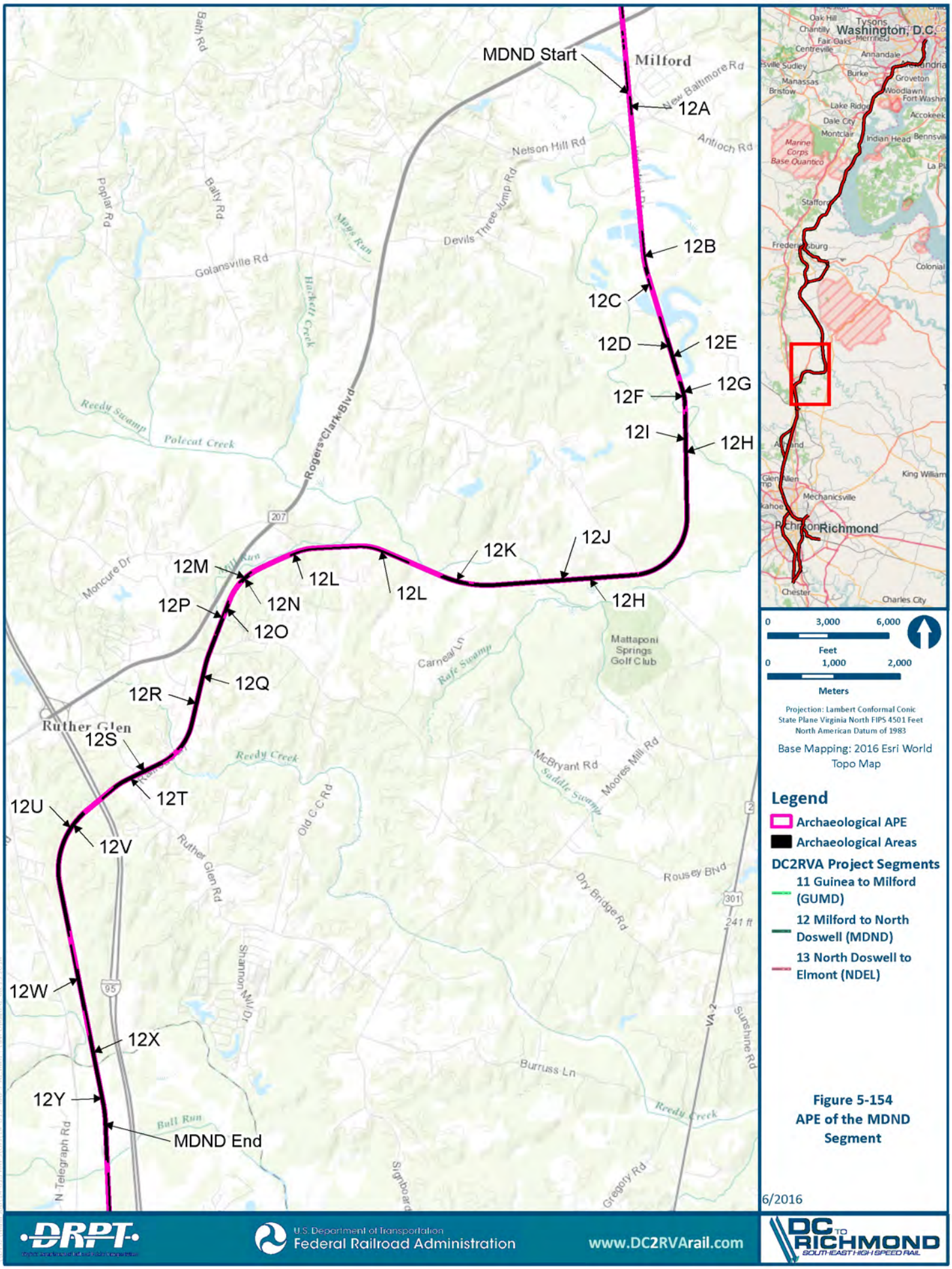
5.11.14 Previously Recorded Site 44CE0626

Site 44CE0626/000-9800-0054, the Wagon Train Camp, Number 6 at Downer's Bridge, was previously recorded and located within Area 11J (see Figure 5-149 and Figure 5-153). The site was created via a historic map inspection and has not been field verified, an arbitrary 200 x 200 foot (61 x 61 m) boundary was assigned for the dimensions. The Wagon Train Camp site has not been evaluated by the DHR for eligibility. The portion of the site within the APE was found to be significantly disturbed by grading associated with the railroad. As such, **the portion of the site 44CE0626 within the APE lacks integrity and is therefore does contribute the site's overall NRHP eligibility.**

FIGURE 5-153: PREVIOUSLY RECORDED SITE 44CE0626 WITHIN THE APE, LOOKING WEST

5.12 MILFORD TO NORTH DOSWELL (MDND/12)

The MDND segment of the DC2RVA corridor is located mainly in the southern part of Caroline County, but a small section at the southern end of the segment crosses the North Anna River into Hanover County (Figure 5-154). The MDND segment begins in the town of Milford,



Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2016 Esri World Topo Map

Legend

- Archaeological APE
- Archaeological Areas

DC2RVA Project Segments

- 11 Guinea to Milford (GUMD)
- 12 Milford to North Doswell (MDND)
- 13 North Doswell to Elmont (NDEL)

Figure 5-154
APE of the MDND Segment

6/2016

approximately 1,000 feet (304.8 m) north of Industrial Drive. It follows the path of the existing rail south from there, before turning sharply to the west and then curves southward again to run through Ruther Glen, after which it crosses the North Anna River, where it continues for another 2,800 feet (853.4 m), terminating in the northern outskirts of Doswell. The MDND segment extends across a total length of 14.5 miles (23.3 km). The tested areas within MDND, which run along both sides of the existing rail, actually cover a total length of approximately 21 miles (33.8 km). The MDND segment includes a total of 176 acres (71.2 ha), with the portions included within this Phase IB survey covering 49.4 acres (20.0 ha). Based on prior predictive modeling, areas with high probability for archaeological sites cover 25.4 acres (10.3 ha) of the MDND segment, while moderate and low probability areas cover 15.8 and 8.2 acres (6.4 and 3.3 ha), respectively. A total of 126.6 acres (51.2 ha) was designated as having measurable potential to contain intact archaeological sites. The MDND segment consists of 25 archaeological survey areas, designated 12A through 12Y. Eleven of these areas required subsurface testing.

Much of MDND was, like the rest of the DC2RVA corridor, untestable due to disturbances encroaching on the archaeological survey areas. Fourteen areas of the 25 total archaeological testing areas within the MDND segment were entirely untestable. In areas 12A, 12B and 12T testing was precluded mainly by the presence of access roads, or other graded and heavily graveled areas (Figure 5-155). Areas 12F, 12P, 12Q, and 12R were disturbed primarily by grading leading up to the existing rail from lower lying natural surrounding land (Figure 5-156). Areas 12D, 12E, 12K, 12N and 12O, were rendered untestable by a combination of grading and inundation due to the presence of ditches, streams, or undrained low-lying areas (Figure 5-157). Area 12C was not tested as it was extremely narrow, with a maximum width of less than 4 feet (1.2m) and thus did not meet survey criteria for testing. The general setting within the MDND segment is rural and/or wooded, with gently rolling topographic relief, a number of streams approach or cross the APE within the MDND segment, notably the Mattaponi River, Polecat Creek, Mill Run, Reedy Creek, Long Creek and the North Anna River.

The 11 archaeological areas within the MDND segment that required testing were designated Areas 12H, 12I, 12J, 12L, 12M, 12Q, 12S, 12U, 12V, 12X, and 12Y. These areas roughly group into two clusters, one near the central portion of the MDND segment and one toward its southern end. A total of 76 shovel tests was excavated in the MDND segment. No part of this segment was wide enough to require more than a single transect of STPs, which were placed following the contours of the APE. Area 12X is intersected by the PotNR boundaries of the North Anna Battlefield (042-0123). The average STP depth in this area was 1.2 feet (36.6 cm) with a maximum depth of 2.4 feet (73.2 cm). A horizon depths ranged from 0.1 feet (3.0 cm) to 1.6 feet (48.8 cm) with an average depth of 0.6 feet (18.3 cm). Stratigraphy varied greatly across this area, as might be expected from such a small testable sample over such a large geographic area. Typical profiles for each tested area are discussed below. Archaeological survey in the MDND segment resulted in the identification of two newly recorded sites, 44CE0837 and 44CE0838, and one isolated find, designated as ISF 12-1.

FIGURE 5-155:GRAVEL ROAD AND UTILITY DISTURBANCE IN THE MDND APE: AREA 12A, LOOKING SOUTH; AREA 12B, LOOKING SOUTH; AND AREA 12T, LOOKING SOUTHWEST

FIGURE 5-156:AREAS 12F, 12P, 12Q, AND 12R, SHOWING APE LYING ENTIRELY IN STEEP EMBANKMENTS OR BERMS, LOOKING NORTH, SOUTH, SOUTH, AND NORTH RESPECTIVELY

FIGURE 5-157: DISTURBANCE IN THE MDND APE: AREA 12D ARTIFICIAL GRADING, LOOKING NORTH; AREA 12E INUNDATION, GRADING, AND BURIED UTILITIES, LOOKING WEST; AREA 12G GRADING AND INUNDATION, LOOKING WEST; AREA 12K INUNDATION, LOOKING EAST; AREA 12N SLOPE AND ARTIFICIAL GRADING, LOOKING EAST; AND AREA 12O SLOPE AND ARTIFICIAL GRADING, LOOKING SOUTHEAST

5.12.1 Archaeological Area 12H

Area 12H is located on the eastern and southern side of the existing rail line beginning just south of the Mattaponi River near the Luck Stone quarry in Milford, and extending from there to the south before curving to the west and crossing Penola Road, after which it continues to the west. Area 12H is extremely long, extending across a total distance of 3.6 miles (5.8 km). Prior predictive modeling indicated that area 12H contained areas of high, moderate, and low probability for containing intact archaeological deposits, with a slight predominance of moderate probability over high and low. Because this area is so long, settings vary noticeably across its length. It includes both farm fields, woods, and low lying inundated areas. Two-track road or gravel access roads paralleling the existing rail occupy the APE through much of 12H and preclude testing (Figure 5-158). Elsewhere in the area disturbances include standing water and grading up to or down from the existing rail to the natural surface surrounding it.

STPs were placed in the small portions of 12H where these disturbances did not occupy the entire width of the APE, in sum 19 STPs were excavated in this portion of the APE (Figure 5-159 through Figure 5-161). Even in those areas that were tested soils tended to be disturbed, and almost half of the STPs (n=9) in 12H had to be terminated at surfaces that did not permit further digging with a shovel. Within those STPs that were not as obviously disturbed a typical profile consisted of dark gray (10YR 4/1) silty loam topsoil atop light olive brown (2.5Y 5/6) silty loam, under which was Olive Yellow (2.5Y 6/6) silty loam sterile subsoil. A total of 19 STPs was excavated in area 12H, and a single artifact, a nail, was found near the crossing of Penola Road. This artifact was designated as an isolated find (ISF 12-1). Isolated finds are by definition not eligible for NRPH listing. No features or sites were identified in area 12H.

FIGURE 5-158: TYPICAL SETTING IN AREA 12H, LOOKING WEST

0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 12 Milford to North Doswell (MDND)

Figure 5-159
STP Survey in Area 12H, North

6/2016

Figure 5-160: STP Survey in Areas 12H, 12I, and 12J. Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

FIGURE 5-161: DENSELY WOODED AREA CONTAINING POSITIVE STP 12H-1, LOOKING WEST

5.12.2 Archaeological Area 12I

Area 12I is located on the western and northern side of the existing rail, beginning just south of the Mattaponi River near Milford and ending as the rail curves to the west, at the crossing of Penola Road. As such, it essentially mirrors the northern portion of Area 12H. Area 12I extends across a distance of 1.7 miles (2.7 km). According to predictive modeling Area 12I contained a mixture of sections of high, moderate, and low probability for containing intact archaeological deposits. Area 12I lies mainly in a wooded area, although a few small clearings were encountered.

A total of 28 STPs was excavated within area 12I (see Figure 5-160, Figure 5-162 and Figure 5-163). Even within the areas that were tested, a number of the STP profiles showed evidence of substantial disturbance. Within areas that were not apparently disturbed, a typical STP profile consisted of dark yellowish brown (10YR 3/6) silty loam topsoil overlying brownish yellow (10YR 6/8) clay mottled with white (N 8/1) and gray (10YR 5/1) clay sterile subsoil (Figure 5-164). Two positive STPs containing three artifacts were identified as site 44CE0838 (discussed below).

Figure 5-162: STP Survey in Area 12I.
Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

FIGURE 5-163: TESTED PORTION OF AREA 12I, LOOKING WEST

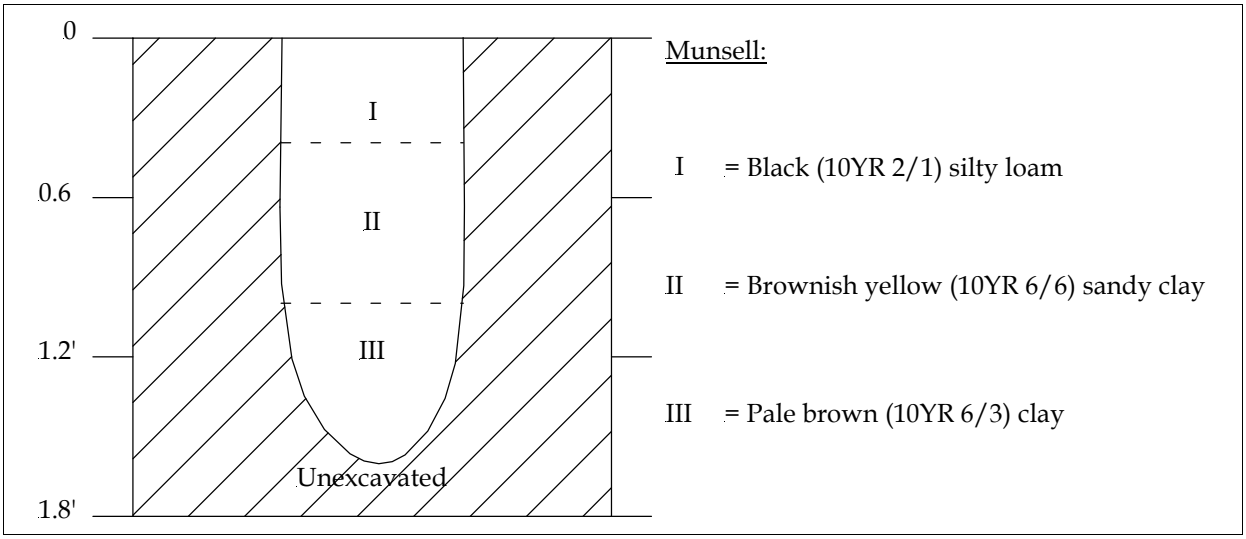


FIGURE 5-164: REPRESENTATIVE SOIL PROFILE FROM AREA 12I, STP 12I-2

5.12.3 Archaeological Area 12J

Area 12J is located on the north side of the existing rail line starting on the west side of Penola Road, across from the end of Area 12I. It continues west from there, covering a total distance of 1.5 miles (2.4 km). Predictive modeling undertaken prior to field work indicated that this area included portions mapped as having high, medium, and low probability to contain intact archaeological deposits. Area 12J lies in a mostly low lying area of woods and swampland with a small portion of agricultural land at its western end. As a result of its low lying location most of Area 12J was untestable, either because of inundation or because of grading between the existing rail line and the surrounding surface. However, a section of shovel tests was placed in the woods west of Penola road, just west of an agricultural field (see Figure 5-160 and Figure 6-165). A total of nine STPs, including radials, was excavated on a single transect. A number of these STPs

showed signs of disturbance, likely related to the presence of the railroad, but a typical undisturbed profile included very dark grayish brown (2.5Y 3/2) sandy loam topsoil, under which was light olive brown (2.5Y 5/3) sandy loam which, in turn, overlay a sterile subsoil consisting of olive yellow silty clay (2.5Y 6/6) mottled with yellow (10YR 7/8) silty clay (Figure 5-166). Four artifacts from three positive STPs and an additional surface-collected artifact were found and designated as site 44CE0837 (discussed below).

FIGURE 5-165: TESTABLE LOCATION IN AREA 12J, LOOKING NORTHWEST

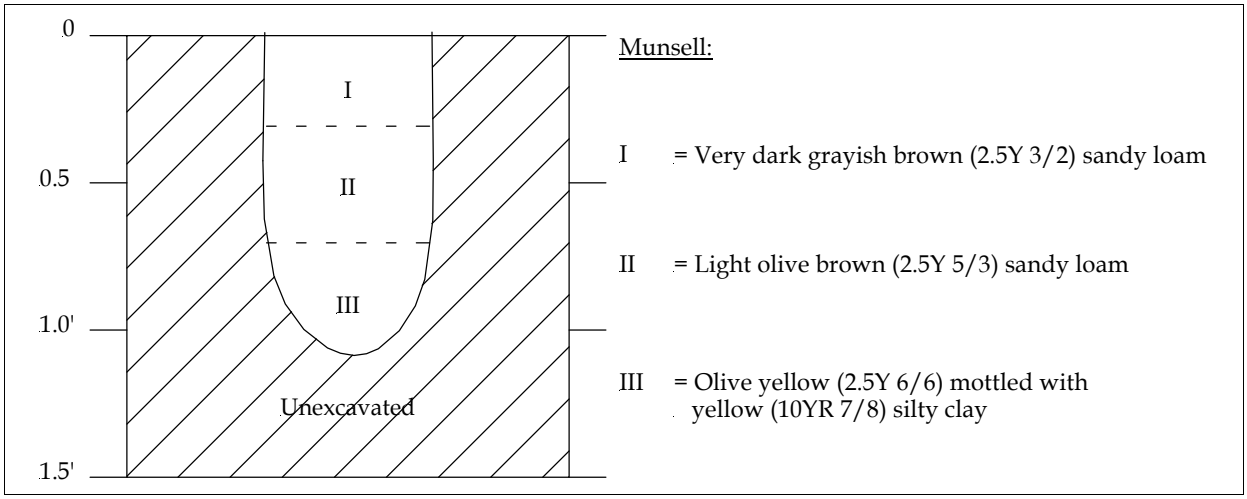


FIGURE 5-166: REPRESENTATIVE SOIL PROFILES FROM AREA 12J, STP 12J-3

5.12.4 Archaeological Area 12L

Area 12L lies on the south side of the existing rail, near Coleman's Mill Crossing, northeast of Ruther Glen. Extending across 6,070 feet (1,850 m), Area 12L lies within a gradual curve of the existing rail line from northwest to southwest. The general setting for Area 12L is almost entirely wooded, with the exception of those sections that cross Coleman's Mill Road, and an electric transmission corridor. The majority of Area 12L is untestable, as the entire width of the APE through most of the area lies within grading between the existing rail line and the surrounding natural surfaces (Figure 5-167). Where this grading does not preclude STP survey, access roads and buried utilities often do. A single location was found to place a judgmental STP and even this STP appeared to be substantially disturbed (Figure 5-168). The STP profile consisted of brown (7.5YR 4/2) clay loam topsoil under which was a layer of strong brown (7.5YR 5/6) clay loam that appeared to be redeposited subsoil. Below this was a thin level of brown (7.5YR 5/2) sandy clay that may have been a buried, deflated A horizon, or may have been further redeposit, which sat atop a strong brown (7.5YR 5/6) sandy clay intact sterile subsoil (Figure 5-169). No artifacts were recovered and no features were identified in Area 12L.

FIGURE 5-167: TESTED PORTION OF AREA 12L, LOOKING EAST

0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 12 Milford to North Doswell (MDND)

Figure 5-168
STP Survey in Area 12L

6/2016

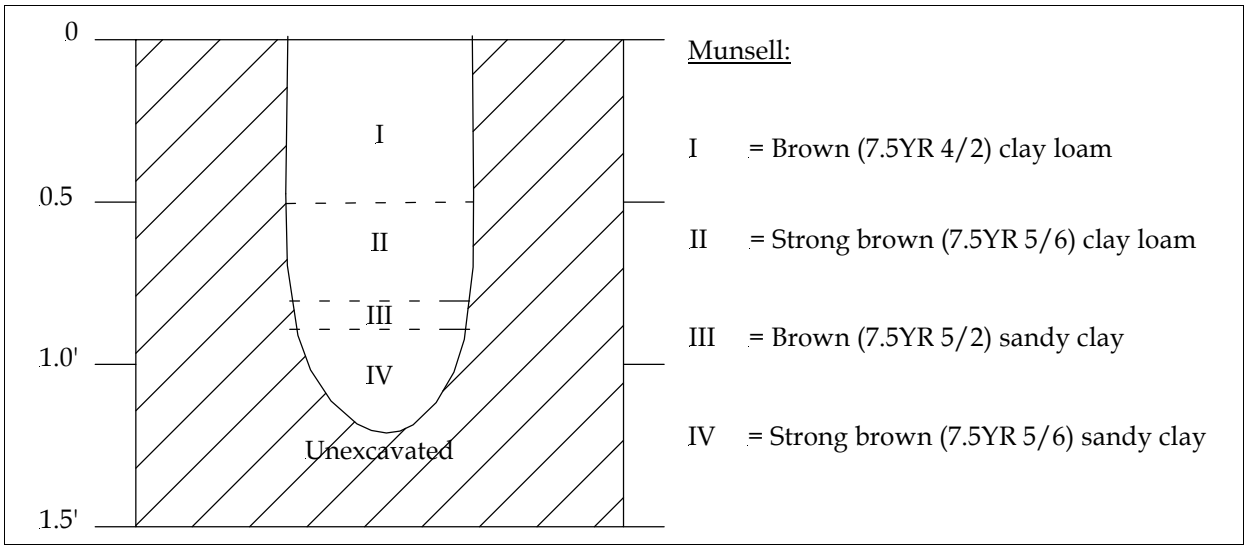


FIGURE 5-169: REPRESENTATIVE SOIL PROFILE FROM AREA 12L, STP 12L-1

5.12.5 Archaeological Area 12M

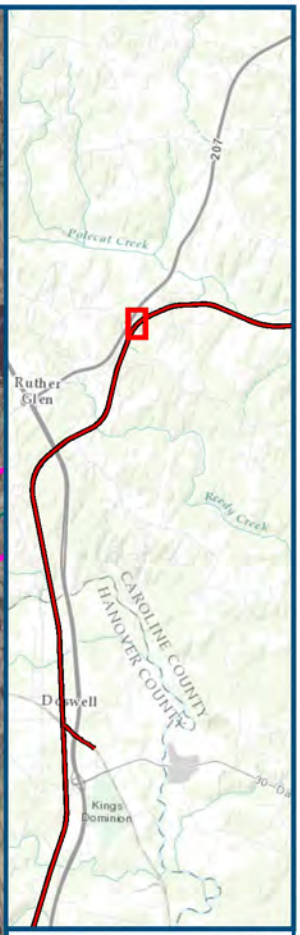
Located north of Ruther Glen on the western side of the existing rail, Area 12M is a small north to south oriented area, measuring 792 feet (241.4 m) in length. Area 12M lies within a wooded location between an access area running through the woods and the existing rail. With the exception of a small portion of low probability at its northern end, the entirety of Area 12M was determined by prior predictive modeling to have a moderate potential for archaeological deposits. Through most of the area the entire width of the APE lies within the grade from the higher surrounding land down to the existing rail (Figure 5-170). A small relatively level area was found in which a single judgmental STP was placed (Figure 5-171 and Figure 5-172). Soils in this STP were extremely disturbed, consisting of multiple layers of redeposited soil, and the black gritty deposits seen in many of the locations near the rail line, which extended all the way to the sterile subsoil below (Figure 5-173 and Figure 5-174). No artifacts or features were found, and no sites were identified in area 12M.

5.12.6 Archaeological Area 12Q

Area 12Q is a long area that begins approximately 1,800 feet (548.6 m) north of Dry Bridge Road in Ruther Glen, from there it travels to the south, crossing Dry Bridge Road and covering a total distance of 6,700 feet (2,042.2 m). With the exception of the crossing of Dry Bridge, Area 12Q is located in a wooded area, primarily in the narrow strip between an access road/pipeline corridor and the existing rail. Prior predictive modeling indicated that Area 12Q contained a roughly even distribution of sections of high, moderate, and low probability to contain intact archaeological deposits, which alternate throughout the area.

FIGURE 5-170: TYPICAL SETTING AREA 12M, WITH GRADE OCCUPYING ENTIRETY OF APE, LOOKING NORTHEAST

FIGURE 5-171: LOCATION OF STP 12M-1, LOOKING NORTHEAST



0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 12 Milford to North Doswell (MDND)

Figure 5-172
STP Survey in Area 12M

6/2016

FIGURE 5-173: STP 12M-1

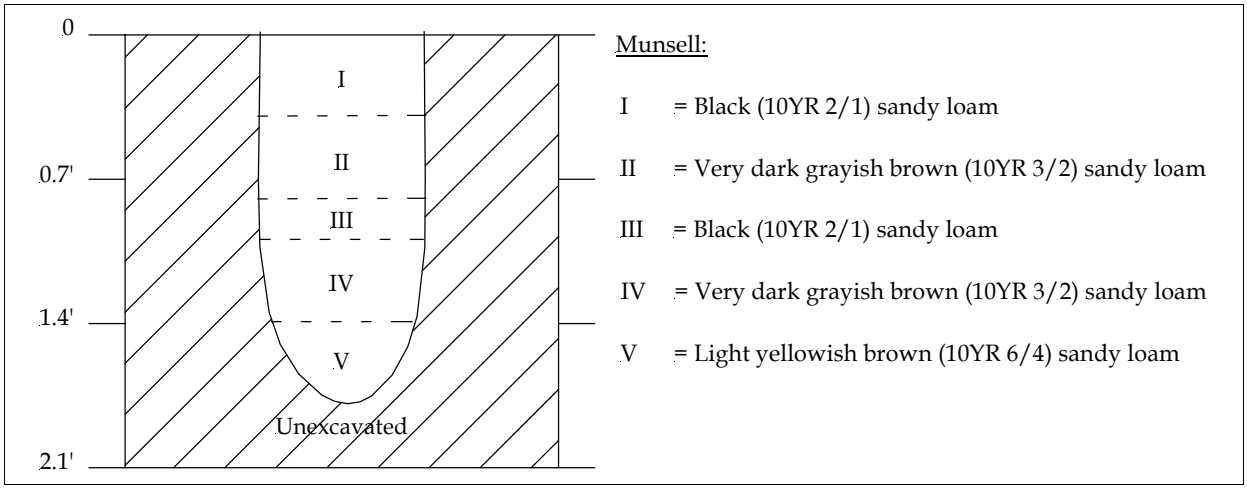


FIGURE 5-174: STP 12M-1 PROFILE

Area 12Q runs through a relatively hilly portion of Caroline county, and the path of the existing rail through this area necessitates grading that, along with the presence of buried fiber optic and petroleum pipelines precluded testing through most of Area 12Q (Figure 5-175). Small relatively level areas within Area 12Q were tested via STPs (Figure 5-176 and Figure 5-177) Five STPs on a single transect were excavated in Area 12Q. A number of these STPs were highly disturbed, but a typical undisturbed profile within the area contained dark grayish brown (10YR 4/2) silty loam topsoil overlying pale yellow (2.5Y 7/3) sandy loam, which overlay a culturally sterile subsoil consisting of brownish yellow (10YR 6/6) sandy clay (Figure 5-178). No artifacts or features were found and no sites were identified in Area 12Q.

FIFURE 5-175: TYPICAL SETTING IN AREA 12Q, LOOKING WEST

FIGURE 5-176: SMALL TESTED AREA IN AREA 12Q, LOOKING SOUTHWEST

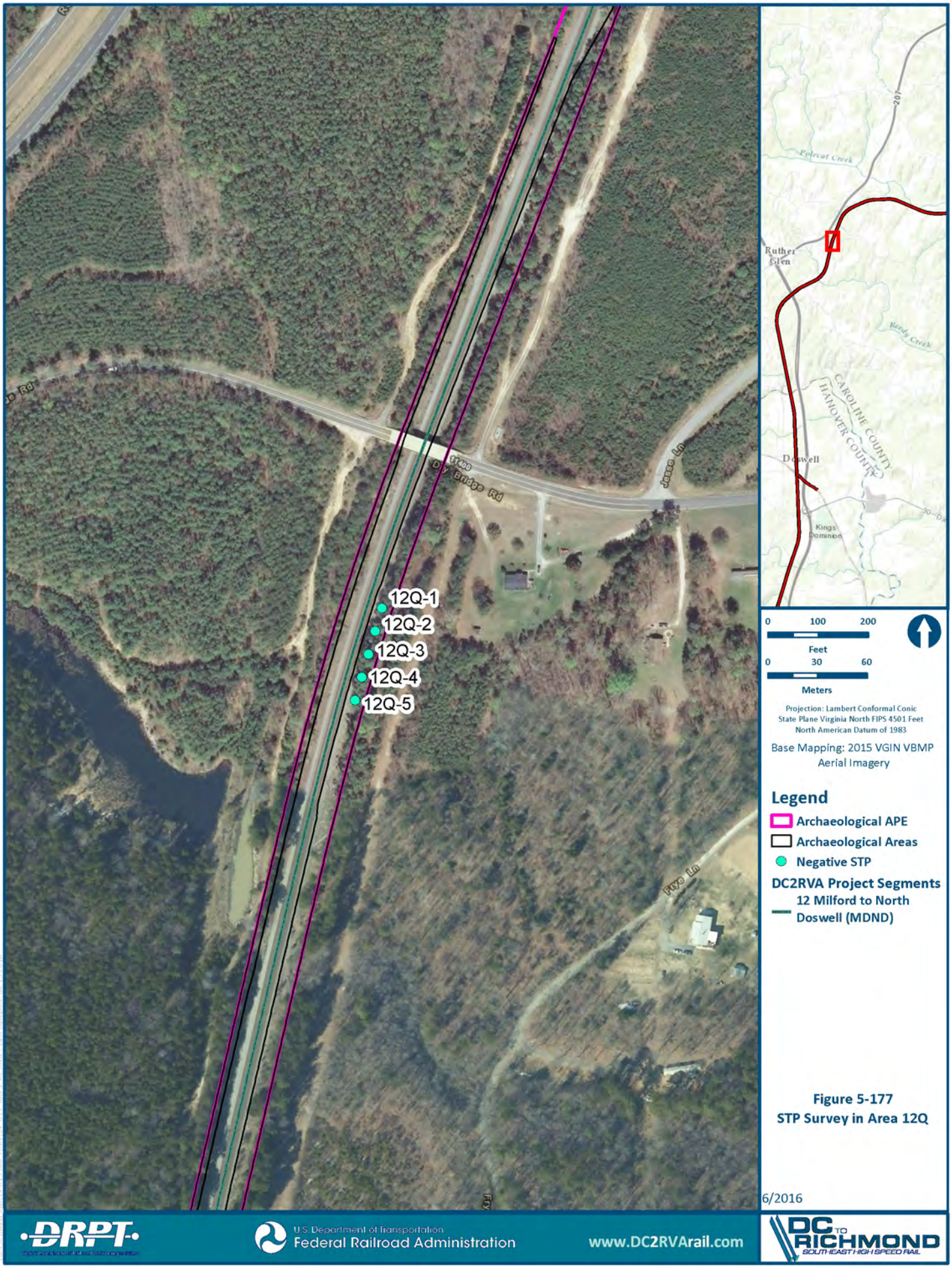


Figure 5-177
STP Survey in Area 12Q

6/2016

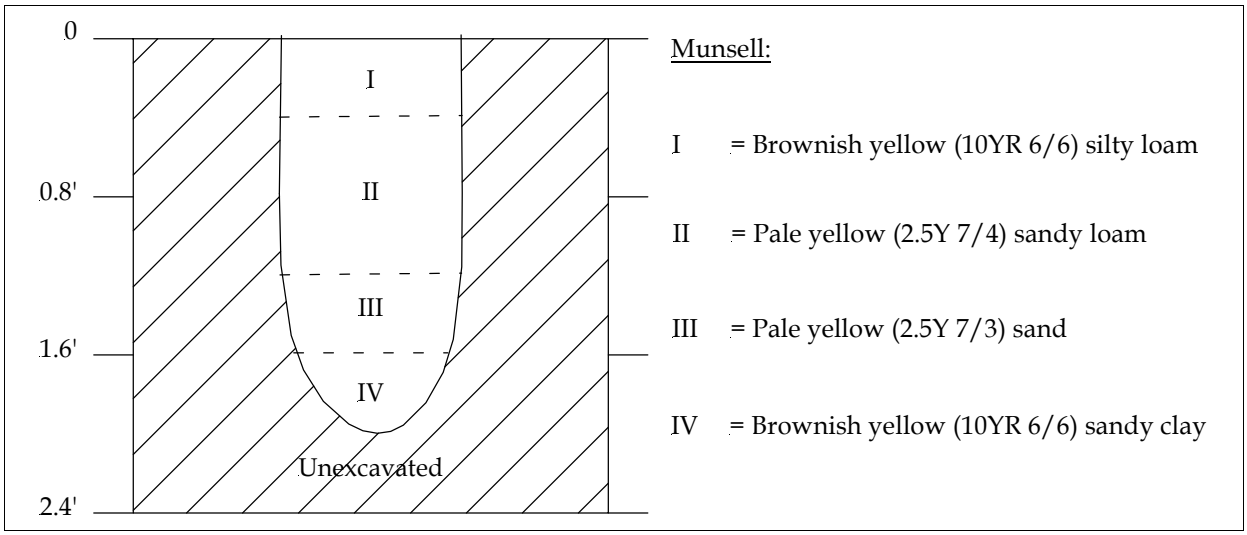


FIGURE 5-178: TYPICAL AREA 12Q SOIL PROFILE

5.12.7 Archaeological Area 12S

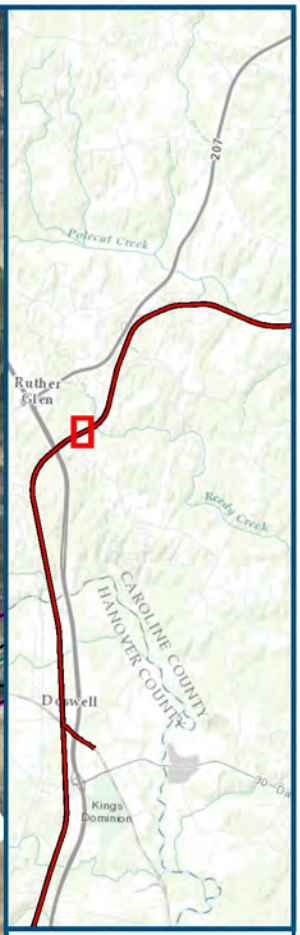
Area 12S straddles Ruther Glen Road in Ruther Glen, just west of I-95. Extending across a length of 0.6 miles (1.0 km), Area 12S is located in the wooded areas near the cluster of small farms that make up Ruther Glen proper. The largest portion of Area 12S was indicated by prior modeling to be of a high probability to contain intact archaeological sites. A slightly smaller portion of the area was mapped as moderate probability while only a small portion was mapped as low probability. Most of the landscape surrounding the APE in Area 12S is much higher than the existing rail, and as such the APE through most of 12S lies within the steep artificial grade down to the rail (Figure 5-179). However, a small lower area is level enough with the existing rail to allow a short transect of STPs to be excavated (Figure 5-180 and Figure 5-181). A total of three STPs was excavated on a single transect. A typical STP profile in Area 12S consisted of very dark grayish brown (10YR 3/2) silty loam topsoil overlying dark yellowish brown (10YR 4/6) silty loam, which overlay a yellowish brown (10YR 5/6) sandy loam subsoil (Figure 5-182).

5.12.8 Archaeological Area 12U

Area 12U, along with Area 12V is located along the existing rail as it curves from its more westward path southwest of Ruther Glen to a north-south path paralleling US Highway 1. Area 12U is on the north and west side of the rail through this curve and continuing south from there covering a distance of 1.2 miles (2.0 km). Throughout this area the natural topographic relief varies in elevation but is almost always either substantially above or substantially below the level of the existing rail, and as such the APE generally lies within the artificial berm or embankment necessary to level the railroad through this area (Figure 5-183). However, a number of small areas where the APE leveled out more with the existing rail were tested with judgmental STPs, all of which contained soils that were either substantially disturbed or eroded (Figure 5-184 through Figure 5-186). This lack of intact soils was the only commonality between the STPs which varied otherwise, but an indicative STP consisted of a thin brown (10YR 5/3) sandy loam topsoil, under which lay strong brown (7.5YR 5/6) sandy clay which because of its less homogenous texture appeared to be redeposited, and which, in turn, overlay a sterile subsoil of reddish yellow (7.5YR 6/8) sandy clay mottled with gray (10YR 6/1) sandy clay (Figure 5-187).

FIGURE 5-179: TYPICAL SETTING IN AREA 12S, LOOKING NORTHEAST

FIGURE 5-180: LOCATION OF STPS IN AREA 12S, LOOKING SOUTHWEST



0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 12 Milford to North Doswell (MDND)

Figure 5-181
STP Survey in Area 12S

6/2016

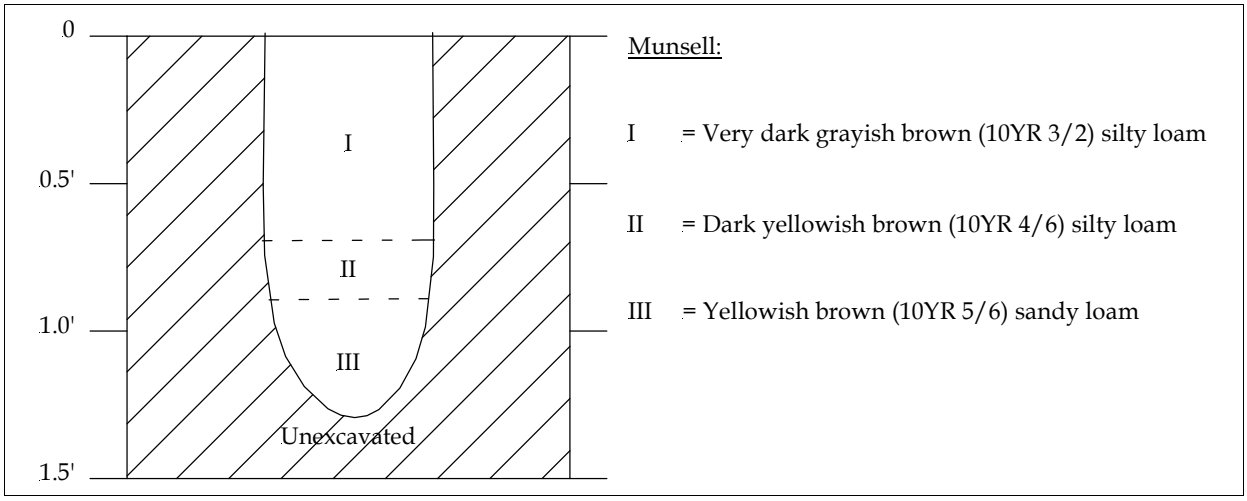


FIGURE 5-182: REPRESENTATIVE SOIL PROFILE FROM AREA 12S, STP 12S-1

FIGURE 5-183: AREA 12U ACCESS ROAD AND EMBANKMENT DOWN TO EXISTING RAIL, LOOKING NORTH

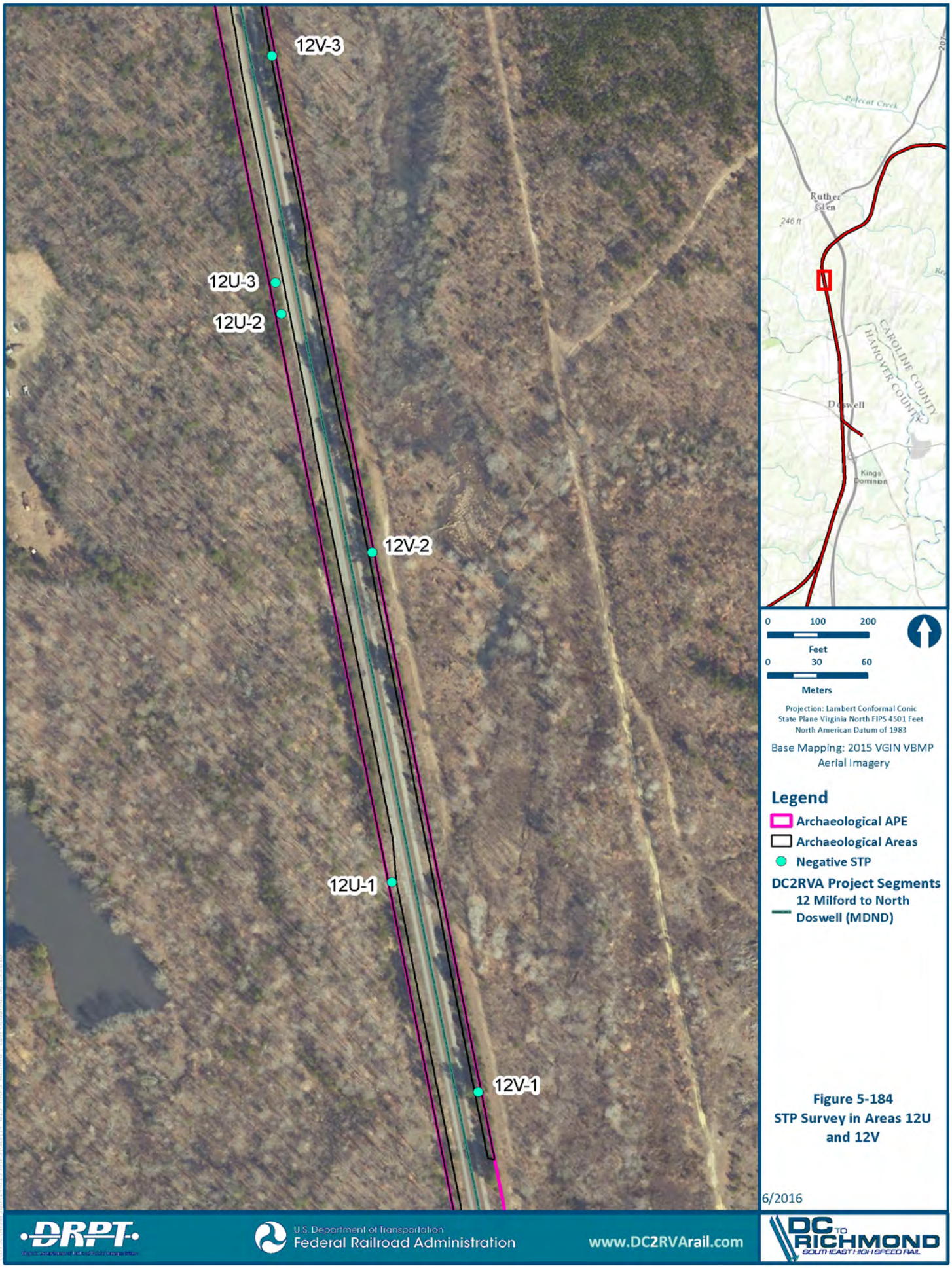
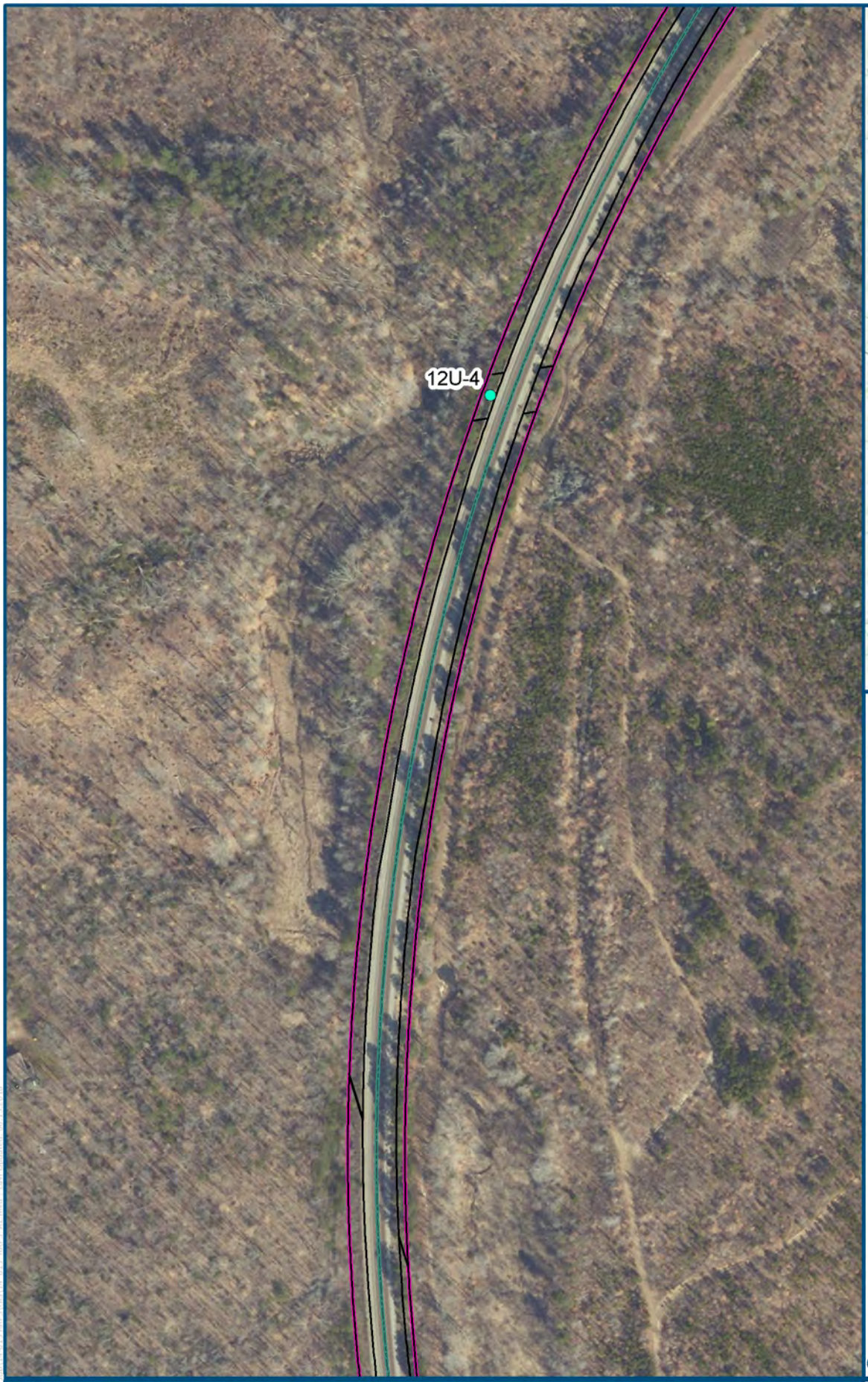


Figure 5-184
STP Survey in Areas 12U and 12V

6/2016



0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 12 Milford to North Doswell (MDND)

Figure 5-185
STP Survey in Area 12U

6/2016

FIGURE 5-186: LEVEL PORTION WITHIN AREA 12U SUBJECTED TO STP SURVEY, LOOKING NORTH

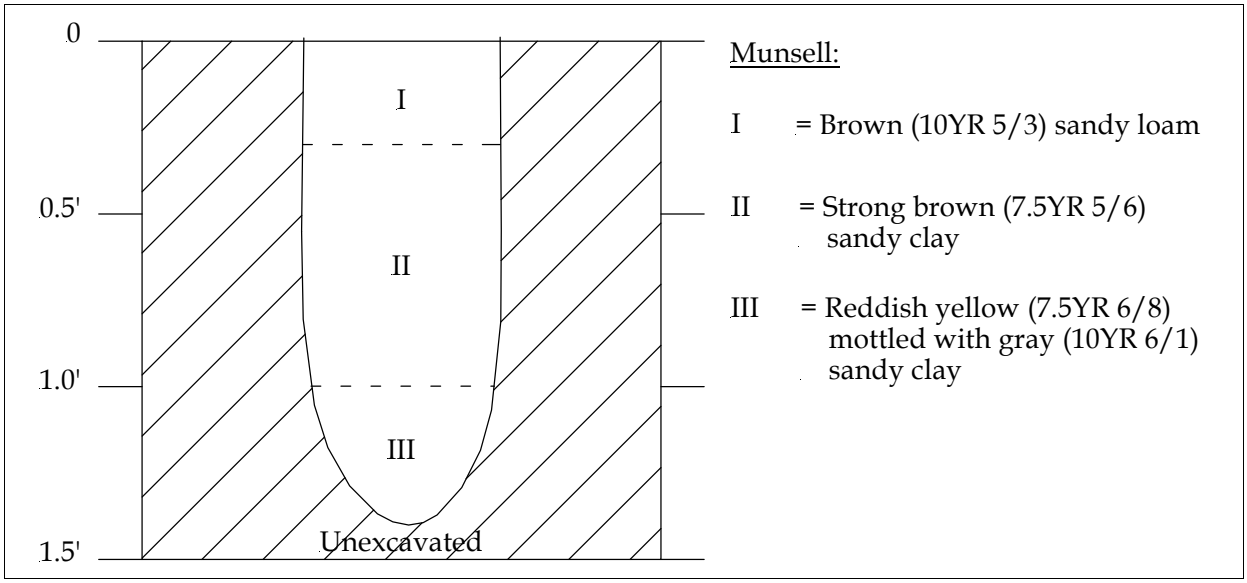


FIGURE 5-187: REPRESENTATIVE SOIL PROFILE FROM AREA 12U, STP 12U-2

5.12.9 Archaeological Area 12V

Area 12V is located on the opposite side of the rail from Area 12U, on the interior, eastern side of the west to south curve near Ruther Glen. Area 12V extends across a length of 1.1 miles (1.8 km). Area 12V is similar in setting to Area 12U, lying mainly in a wooded area, and differs mainly in that it is downhill from Area 12U and as such the APE is often even more drastically graded up to the existing rail, and in that it contains a substantial utility corridor (Figure 5-188). Because of these disturbances STP survey within Area 12V was limited to a few small areas where there was a level area within the APE, even though it appeared likely that these level areas were artificially graded (Figure 5-189). A total of three STPs was excavated in a single transect in Area 12V (see Figure 5-184). The STPs varied in the details of their profiles, but all contained extremely shallow A/O horizons overlying dense clays, indicating that the area had been stripped, probably as a result of activity relating to the existing railroad (Figure 5-190 and Figure 5-191). No artifacts or features were found, and no sites were identified in Area 12V.

FIGURE 5-188: STEEP GRADE UP TO EXISTING RAIL LINE IN AREA 12V AND ADJACENT FIBER OPTIC PIPELINE MARKER, LOOKING WEST

FIGURE 5-189: NARROW LEVEL SPOT CONTAINING STP 12V-2 IN AREA 12V, NOTE LOWLYING ACCESS ROAD AND FIBER OPTIC PIPELINE PYLONS, LOOKING NORTH

FIGURE 5-190: DISTURBANCE NOTED IN STP 12V-2

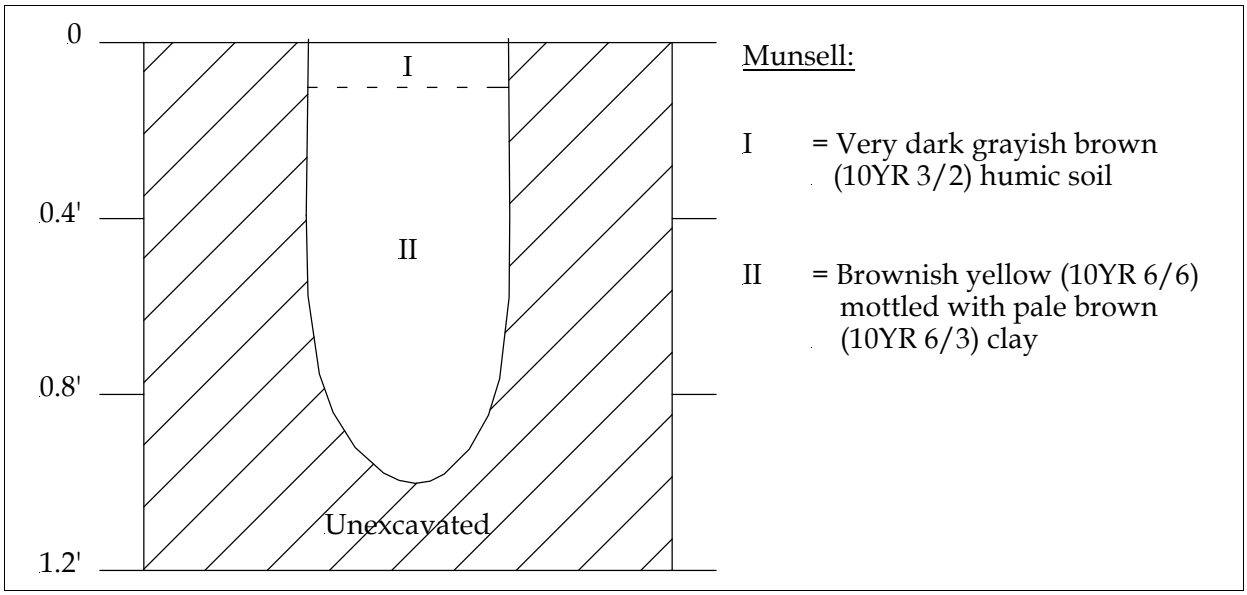


FIGURE 5-191: REPRESENTATIVE SOIL PROFILE FROM AREA 12V, STP 12V-2

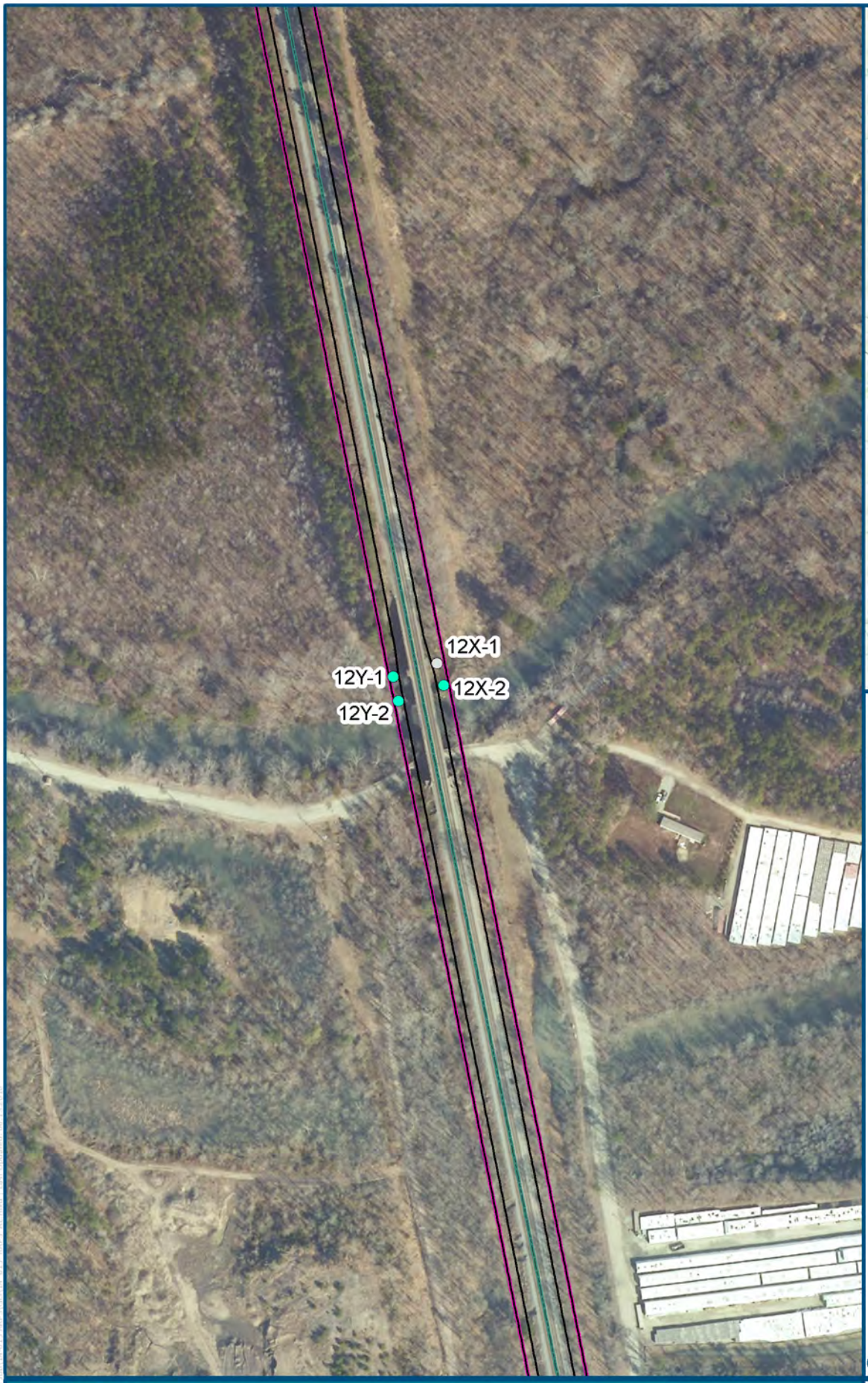
5.12.10 Archaeological Area 12X

Area 12X is located in southern Caroline County and northern Hanover County running north to south along the east side of the existing rail line as it approaches and then crosses the North Anna River between I-95 and US Highway 1. It measures 1.8 miles (3.0 km) in length. North of the North Anna River, Area 12X is in a generally wooded setting, but south of the river it runs through a large mulching facility. The entirety of Area 12X was indicated by prior predictive modeling to contain a high probability for containing intact archaeological deposits, and it is located near and partially within the PotNR boundaries for the Civil War Battle of North Anna (042-0123). Several Civil War maps show earthworks near the location of Area 12X, but upon visual inspection of the corridor no trace was found of any such earthworks, which have likely been destroyed as a result of, for example, the construction and paving around the mulching facility just south of the river (Figure 5-192).

Because Area 12X lies partially within the potential battlefield area, those areas of it that were subjected to STP survey were also subjected to metal detector survey. Almost the entirety of Area 12X is disturbed, lying either in steep grade leading up to the existing rail, or in disturbance related to the mulching facility it crosses. There, the existing rail crosses the North Anna on a bridge, and is therefore not on a wide berm, the small flood plain to the north of the river was the only section were STP survey was performed (Figure 5-193 and Figure 5-194). However even here, one of the two potential STP locations was untestable due to disturbance related to the rail berm and bridge, and the single STP that was excavated contained soils that were clearly disturbed (Figure 5-195). Metal detector survey was also undertaken in this small area and produced no artifacts. No artifacts were found and no sites were identified in Area 12X.

FIGURE 5-192: APE IN AREA 12X AT APPROXIMATE LOCATION OF A HISTORICALLY MAPPED CIVIL WAR EARTHWORK, LOOKING SOUTHWEST

FIGURE 5-193: FLOOD PLAIN CONTAINING STPS IN AREAS 12X AND 12Y



0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP
- Not Excavated

DC2RVA Project Segments

- 12 Milford to North Doswell (MDND)

Figure 5-194
STP Survey in Areas 12X and 12Y

6/2016

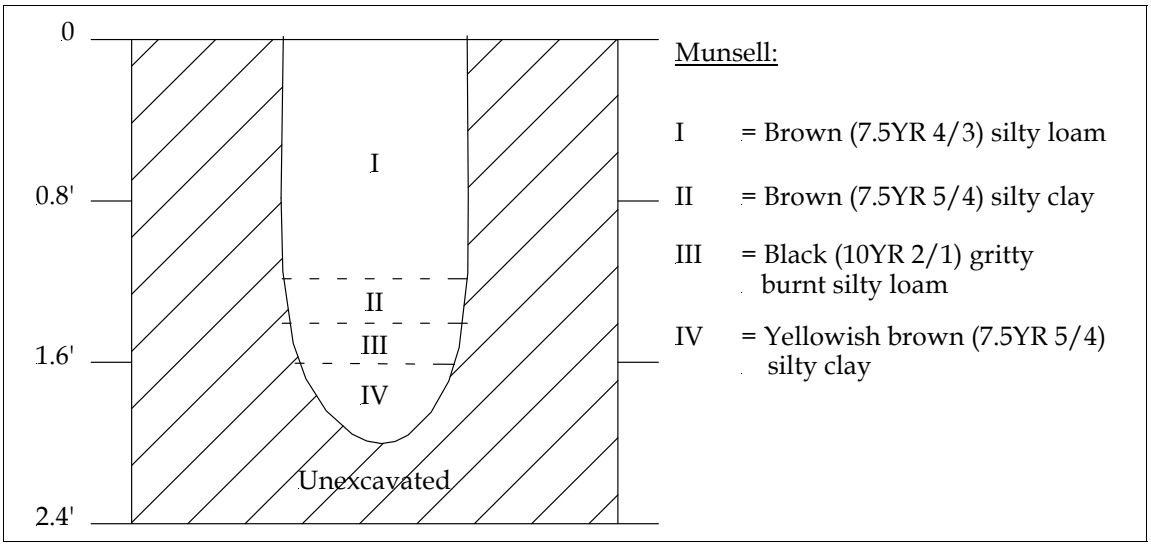


FIGURE 5-195: SOIL PROFILE FROM STP 12X-2

5.12.11 Archaeological Area 12Y

Area 12Y is located on the western side of the existing rail line, across from Area 12X, but it is shorter than, and has a more southerly beginning than Area 12X does. Like Area 12X, 12Y crosses the North Anna River, and therefore is partially in Caroline and partially in Hanover County. Area 12Y is 1.2 miles (1.9 km) long. North of the North Anna River, Area 12Y lies in a largely wooded area, where the existing rail sits high above Long Creek, in an access road, built into the side of the tall artificial berm carrying the existing rail line (Figure 5-196).

FIGURE 5-196: ACCESS ROAD BUILT INTO SIDE OF RAIL-BERM IN AREA 12Y, LOOKING SOUTH

To the south of the North Anna River, Area 12Y lies in the access roads and ditches related to a series of industrial facilities. Because of these disturbances Area 12Y, like Area 12X, is testable only in the small flood plain on the north side of the North Anna River (see Figure 5-193). Also as in Area 12X, 12Y lies near and partially in the PotNR boundaries for Battle of North Anna Battlefield (041-0123), and so any area where STP survey was performed was also surveyed by metal detector. Two STPs on a single transect were excavated in Area 12Y (see Figure 5-194). The two STPs contained different profiles, but both contained the deep soils that would normally be associated with both a flood plain, and with drainage coming down off the tall rail berm (Figure 5-197). No artifacts or features were found, nor were any sites identified in Area 12Y.

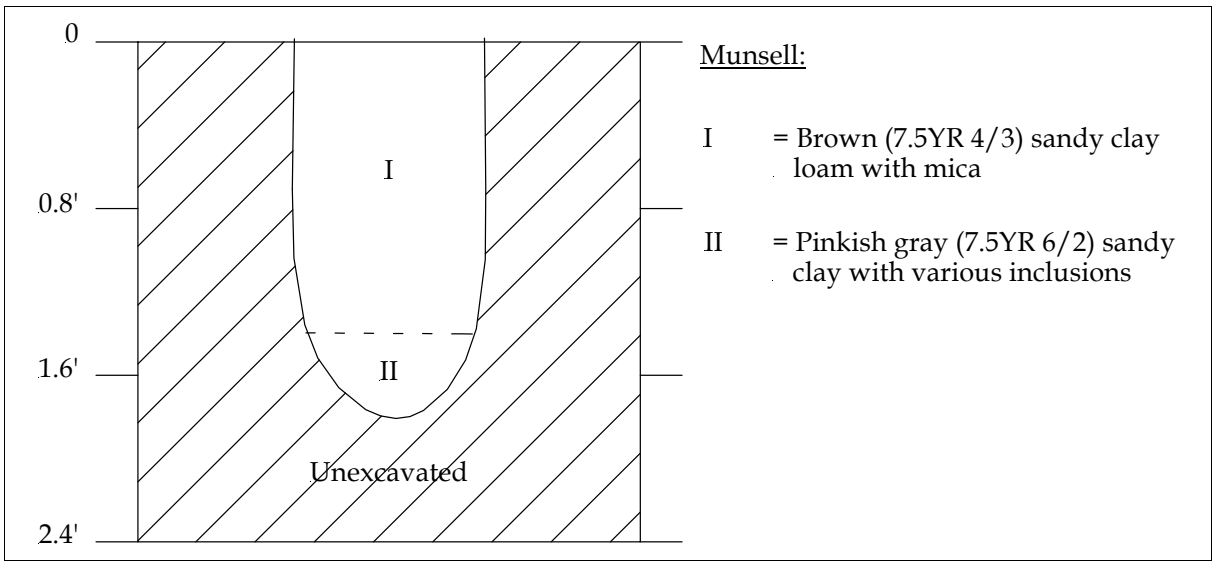


FIGURE 5-197: SOIL PROFILE FROM STP 12Y-2

5.12.12 Site 44CE0837

5.12.12.1 Site Description

Site 44CE0837 is a small scatter of historic artifacts (n=5) recovered from three positive STPs and a single surface collection. Located just west of Penola Road on the north side of the existing rail line within archaeological survey Area 12J, the positive STPs and surface collection comprising site 44CE0837 are located between the existing rail line and a set of dilapidated buildings, just outside the archaeological APE, but within the architectural APE. These buildings, an industrial site (016-5119), were recorded during the accompanying architectural reconnaissance survey of the MDND segment (Manning and Salvato 2016).

The archaeological site and the architectural resource lie within a larger wooded area, containing a mix of evergreen and deciduous trees, with relatively dense undergrowth and brambles. Seven STPs were excavated within the boundaries of site 44CE0837, within the APE (see Figure 5-160 and Figure 5-198). STP profiles varied slightly throughout the site, but a typical STP consisted of very dark grayish brown (2.5Y 3/2) sandy loam topsoil overlying light

Figure 5-198: Sites 44CE0837 and 44CE0838. Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

olive brown (2.5Y 5/3) sandy loam which overlay a culturally sterile subsoil consisting of olive yellow (2.5Y 6/6) silty clay mottled with yellow (10YR 7/8) silty clay. All artifacts within the site were found within the topsoil or on the surface (Figure 5-199). A number of STPs within the site showed considerable disturbance, containing inclusions of the black gritty deposits that were found in many disturbed contexts near the existing rail.

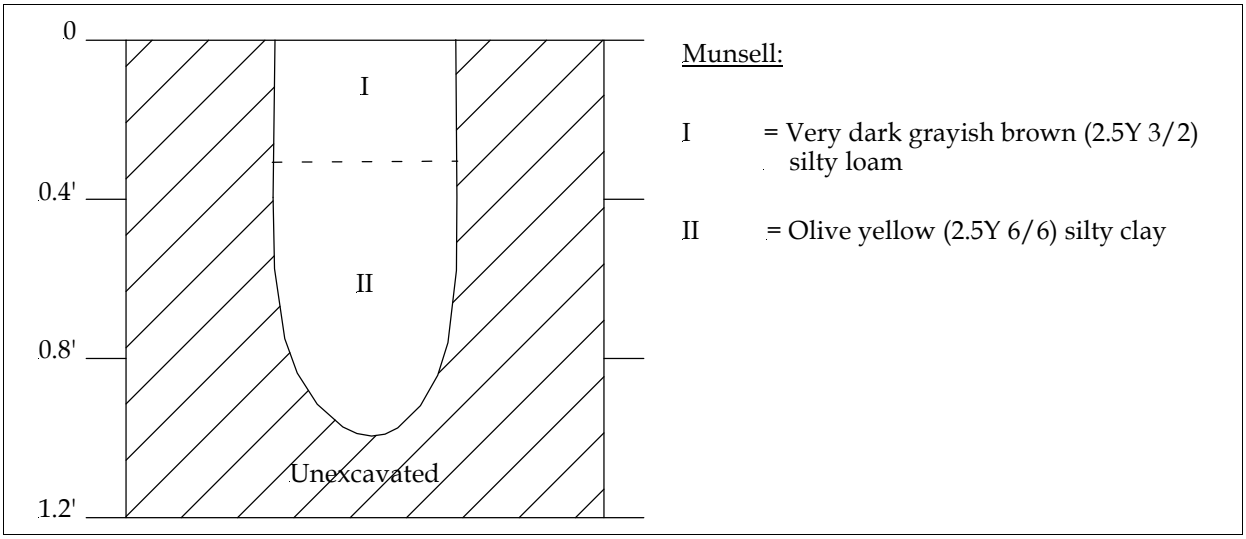


FIGURE 5-199: REPRESENTATIVE SOIL PROFILE FROM SITE 44CE0837, STP 12J-1

Current archaeological site boundaries were defined by an untestable portion of the corridor to the east, where the APE lies entirely within the grade between the surrounding natural surfaces and the existing rail, or within disturbance related to modern farm equipment, and by negative shovel tests to the west (Figure 5-200). To the south the site is bounded by the APE and by the disturbance related to the existing railroad (and the railroad itself). To the north, the archaeological site, as identified by this survey, is bounded by the APE boundary, but the site presumably is related to and continues into the series of buildings comprising architectural resource 016-5119 (Figure 5-201). Because of the presence of this architectural resource, with a similar temporal affiliation, spanning the distance between them, the STPs in the area were mapped as a single site, in spite of the negative STPs between them. The site measures 200 feet (60.9 m) east-west by 25 feet (7.6 m) north-south and lies on generally level ground. The site is located within a portion of Area 12J mapped as containing a moderate probability for containing archaeological deposits during prior predictive modeling.

The artifact assemblage consists of five artifacts, and includes nails (n=2), a porcelain fragment (n=1), an unidentifiable iron alloy fragment, and a solarized glass bottle (n=1) (Figure 5-202). The majority of the artifacts are not useful as specific temporal diagnostics, but the bottle, from Richmond Company "E.A. Saunders and Sons" who sold whiskey, among other things, likely dates from between 1895 and 1905, dates which are roughly consistent with the nearby buildings which are shown on the first available historical topographical map of the area in 1918.

FIGURE 5-200: SITE 44CE0837, LOOKING WEST

FIGURE 5-201: STEAM ENGINE OR BOILER ATTACHED TO BUILDING ADJACENT TO SITE 44CE0837

FIGURE 5-202: E.A. SAUNDERS & SONS BOTTLE FROM SITE 44CE0837

5.12.12.2 Evaluation and Significance

The artifact assemblage from site 44CE0837 has little diagnostic value as to the use of the site, as the artifacts would be consistent with almost any type of historic occupation, and only the glass bottle has a narrow temporal diagnostic range. Given the proximity to the industrial buildings, a mill or similar business it appears, and the consistent temporal affiliation between the artifacts and the buildings, it is reasonable to conclude that they are related to the same occupation, and that therefore site 44CE0837 is related to the commercial/industrial use of architectural resource 016-5119. Given the extremely small number of artifacts and the number of negative STPs within the site, and the presence of the buildings just outside the archaeological APE, it is likely that the STPs in site 44CE0837 are on the outside edge of the site and that the site center is likely located within the area containing the buildings, which themselves have been recommended not eligible for NRHP listing (see Manning and Salvato 2016). A number of STP profiles within the site also appeared to be substantially disturbed, likely from activity related to the existing railroad.

The very low artifact density, the evidence for significant disturbance and the absence of surface or subsurface features indicate that the site does not exhibit the potential to yield significant information on settlement patterns or domestic life during the historic period in Caroline County Virginia (Criterion D). There are also no significant associations between these deposits and a significant historical event or patterns of events (Criterion A). There are no associations with significant persons (Criterion B), and the deposits do not illustrate the distinctive characteristics of a type, period, or method of construction (Criterion C). As such, the portion of site 44CE0837 within the APE is **recommended not eligible for listing on the NRHP.** DHR concurred with this recommendation in a letter dated October 11, 2016.

5.12.13 Site 44CE0838

5.12.13.1 Site Description

Site 44CE0838 is a small scatter of historic artifacts (n=4) recovered from two positive STPs, located east of Penola Road on the north side of the existing rail line within Area 12I. Site 44CE0838 is located in a small clearing in an otherwise wooded section of Area 12I approximately

1,300 feet (396.2 m) northeast of Penola Road. Two STPs were excavated within site 44CE0838 (see Figure 5-162 and Figure 5-198). Profiles within both STPs indicated that the soils were disturbed. A typical profile indicative of this disturbance consisted of black (10YR 2/1) silty loam sitting atop a sharply bounded level of grayish brown (10YR 5/2) sandy clay, under which was a band of brownish yellow (10YR 6/6) sandy clay, which sat atop yellow (10YR 7/6) clay subsoil (Figure 5-203 and Figure 5-204).

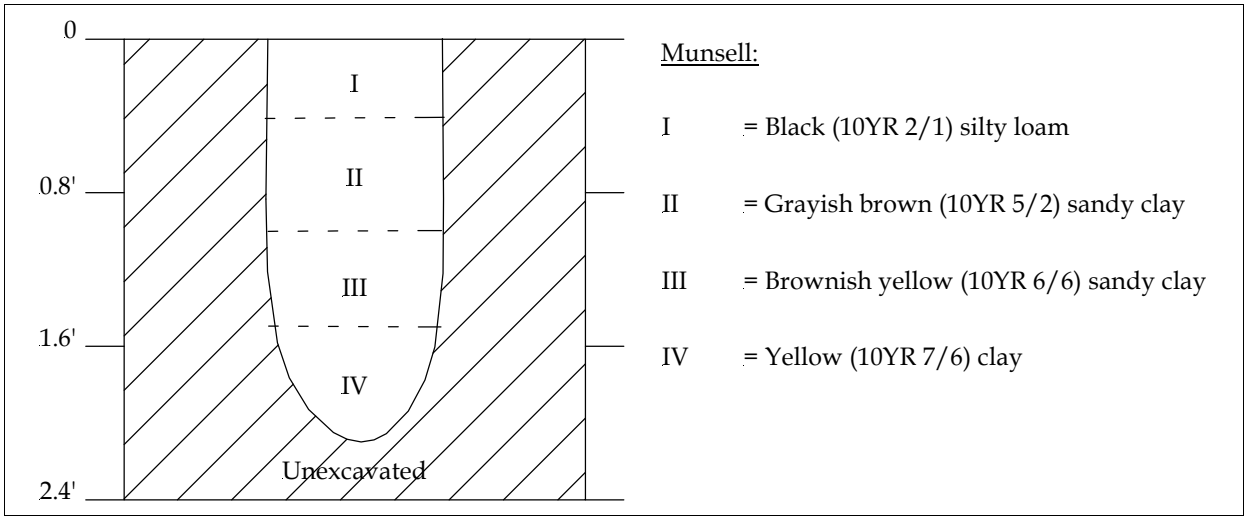


FIGURE 5-203: SOIL PROFILE FROM SITE 44CE0838, STP 121-4

FIGURE 5-204: EXCAVATED SHOVEL TEST FROM SITE 44CE0838 (STP 121-4) SHOWING SUBSURFACE DISTURBANCE

Site 44CE0838 was bounded to the east and west by negative STPs, and to the north and south by the boundaries of the APE. The site, which measures 50 feet (15.2 m) east to west by 25 feet (7.6 m) north-south and lies on generally level ground in an area where the level of the rail is raised only minimally above the level of the surrounding land (Figure 5-205). The site is located within a location mapped as containing a moderate probability for containing archaeological deposits during predictive modeling.

FIGURE 5-205: SITE 44CE0838, LOOKING WEST

The artifact assemblage consists of four artifacts, and includes ceramics (n=2) (one terra cotta fragment and one burnt whiteware fragment), a cut nail (n=1) and an unidentifiable metal object (n=1). Given that even the most plentiful artifact type included only two artifacts, this assemblage is insufficient to draw any inferences as to the nature or temporal association of the occupation(s) represented by the assemblage.

5.12.13.2 Evaluation and Significance

As with nearby site 44CE0837, the artifact assemblage for site 44CE0838 has little diagnostic value as to the use of the site, as the artifacts would be consistent with almost any type of historic occupation. Furthermore, the two temporally diagnostic artifacts both represent a very broad period of history and taken together can only indicate that there was some occupation in the site after the early nineteenth century. Particularly when the disturbed soils and the proximity to the railroad are considered, nothing more can be said about this ephemeral artifact scatter than that it represents some nearby historic occupation, likely dating to the last three quarters of the nineteenth century.

The very low artifact density, the evidence for significant disturbance and the absence of surface or subsurface features indicate that the site does not exhibit the potential to yield significant

information on settlement patterns or domestic life during the historic period in Caroline County Virginia (Criterion D). There are also no significant associations between these deposits and a significant historical event or patterns of events (Criterion A). There are no associations with significant persons (Criterion B), and the deposits do not illustrate the distinctive characteristics of a type, period, or method of construction (Criterion C). As such, site 44CE0838 is **recommended not eligible for listing on the NRHP.** DHR concurred with this recommendation in a letter dated October 11, 2016.

5.12.14 ISF 12-1

Subsurface testing in Area 12H resulted in the collection of a single artifact from STP 12H-1, a nail of indeterminate manufacture. All subsequent radial testing was negative for additional cultural materials. In general, isolated finds are not an indication of cultural activity and, thus, are not assigned site numbers and not considered eligible for the NRHP.

5.13 NORTH DOSWELL TO ELMONT (NDEL/13)

The NDEL segment of the DC2RVA corridor is located entirely in Hanover County. Its northern end is located on the northern outskirts of Doswell, approximately 0.5 miles (0.9 km) south of the North Anna River. From there it continues to the south, following the existing rail line, and making only one substantial turn, toward the southwest as it passes Doswell, continuing from there towards Elmont, ending approximately 0.5 miles (0.9 km) north of the Hanover-Henrico County border. The NDEL segment extends across a total distance of 12.2 miles (19.6 km), encompassing a total of 156.1 acres (63.2 ha). Based on the prior predictive modeling, high probability areas cover 10.2 acres (4.1 ha), moderate probability 2.1 acres (0.8 ha), and low probability areas cover 0.5 acres (0.2ha). Approximately 143.3 acres (58.0 ha) were classified as having no potential for intact archaeological sites. The NDEL segment consists of 20 archaeological areas, given alphanumeric designations 13A through 13T (Figure 5-206 and Figure 5-207). Of these, only six, Areas 13I, 13J, 13P, 13R, 13S and 13T, warranted subsurface testing.

Like much of the DC2RVA APE as a whole, substantial portions of the NDEL segment were untestable due to existing disturbances, mainly consisting of the grading and embankments required by the existing railroad, but other localized disturbances were encountered as well. Areas 13A, 13B, 13E, 13F, 13G, and 13K were untestable primarily because the entirety of the APE's width through the majority of these areas lay entirely within the embankments leading from the existing rail, to the different elevation of the surrounding land (Figure 5-208). Areas 13C, 13L, 13M, and 13N were disturbed almost entirely by gravel roads paralleling the existing railroad (Figure 5-209). Areas 13H and 13Q were largely inundated (Figure 5-210). Area 13O lay in a narrow strip of front lawns in Ashland which contained buried utilities (Figure 5-211). Area 13D was not tested as it was prohibitively narrow at a maximum width of 4.0 feet (1.2 m) and thus did not meet survey criteria.

Of the twenty areas making up the NDEL segment, six areas, 13I, 13J, 13P, 13R, 13S, and 13T contained testable undisturbed areas large enough to allow for subsurface testing. The NDEL segment, as a whole, moves from the still mainly rural environs of Doswell, through the town of Ashland and into Elmont which lies in the northern suburbs of Richmond. Even those areas within the NDEL segment which were tested were, for the most part, disturbed. The NDEL segment crosses or approaches a number of streams, notably the South Anna River (Figure 5-212).

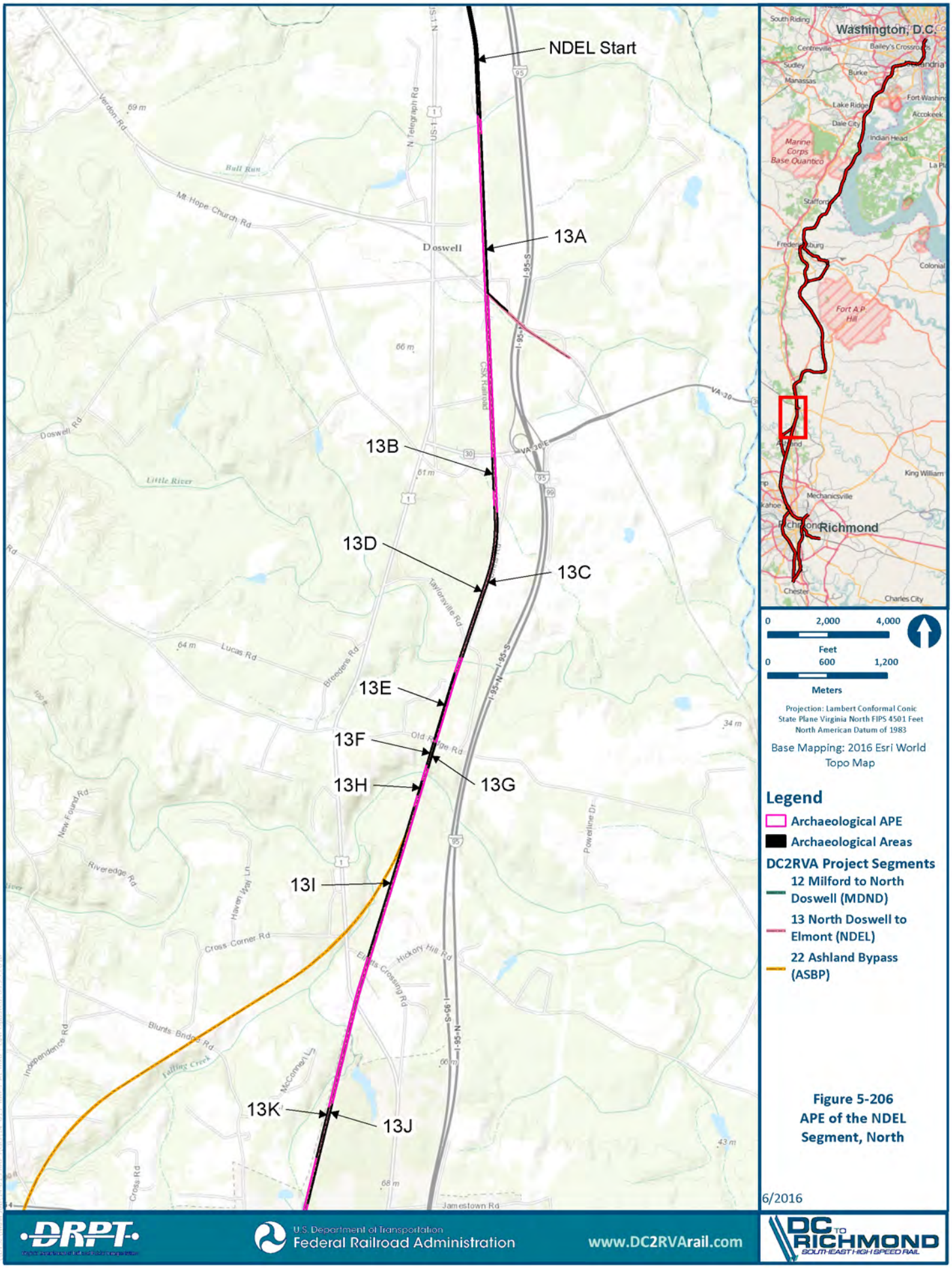


Figure 5-206
APE of the NDEL Segment, North

6/2016

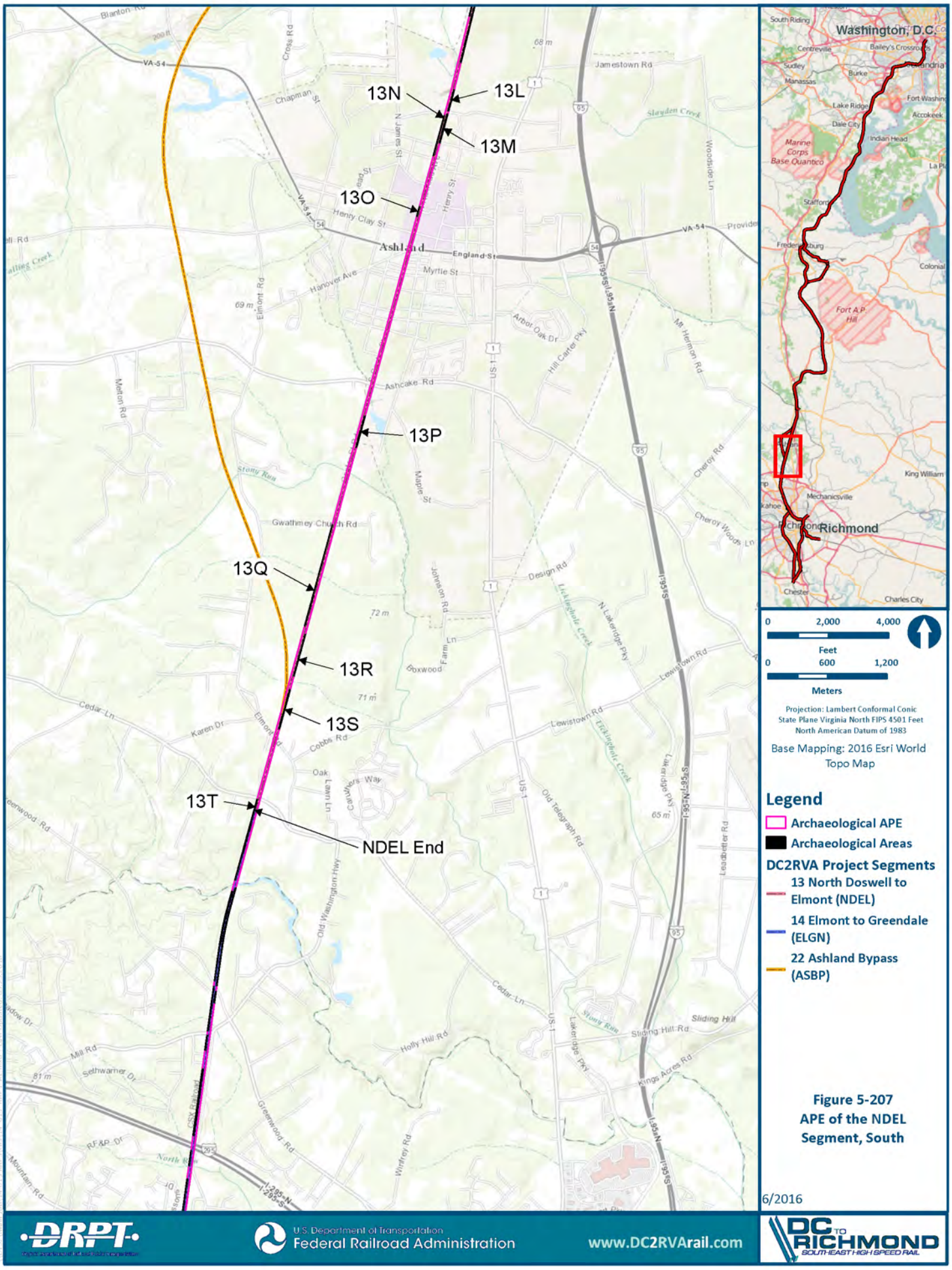


Figure 5-207
APE of the NDEL Segment, South

6/2016

FIGURE 5-208: SLOPE DISTURBANCE IN THE NDEL APE: AREA 13A, LOOKING SOUTHWEST; AREA 13B, LOOKING SOUTH; AREA 13E, LOOKING SOUTH; AREA 13F, LOOKING SOUTH; AREA 13G, LOOKING SOUTH; AND AREA 13K, LOOKING NORTH

FIGURE 5-209: GRAVEL ROAD DISTURBANCE IN THE NDEL APE: AREA 13C, LOOKING SOUTH; AREA 13L LOOKING NORTH; AREA 13M, LOOKING SOUTH; AND AREA 13N, LOOKING SOUTH

FIGURE 5-210: INUNDATION IN THE NDEL APE: AREA 13H, LOOKING NORTH; AND AREA 13Q, LOOKING SOUTH

FIGURE 5-211: APE IN ASHLAND IN AREA 13O, LOOKING NORTH

FIGURE 5-212: RAILROAD BRIDGE OVER SOUTH ANNA RIVER FROM AREA 13G, LOOKING SOUTHWEST

A total of 22 shovel tests was excavated in the NDEL segment. No portion of the segment was wide enough to require more than a single transect of STPs, which were placed following the contours of the existing rail corridor. The average STP depth in this area was 1.4 feet (42.6 cm) deep, with a maximum depth of 2.6 feet (79.2 cm). A horizon depths ranged from 0.1 feet (3.0 cm) to 2.2 feet (67.1 cm) with an average depth of 0.8 feet (24.4 cm). Stratigraphy varied greatly across this area, as might be expected from such a small testable sample over such a large geographic area. No artifacts were recovered from the NDEL segment and no sites were identified.

5.13.1 Archaeological Area 13I

Area 13I is a long, relatively straight, north-south oriented area on the western side of the existing rail line, in a wooded area between Elletts Crossing Road and the South Anna River. The northern end of Area 13I is approximately 1,100 feet (335.3 m) south of the South Anna River, and its southern end is approximately 100 feet (30.5 m) north of Elletts Crossing Road. Predictive modeling indicated this area is roughly evenly divided between high and moderate probability for archaeological sites. Area 13I is 0.98 miles (1.6 km) long. Most of Area 13I was untestable as its entire width (never more than 12 feet [3.7 m] wide) lay in the graded berm carrying the existing railroad line (Figure 5-213); however, in a small area enough of the APE width lay outside this berm as to permit the excavation of a single STP (Figure 5-214 and Figure 5-215). The soils in this STP appeared to be disturbed, as it consisted of a thin very dark grayish brown (10YR 3/2) sand topsoil overlying a layer of mixed pockets of brown (7.5YR 5/4) and strong brown (7.5YR 5/6) sandy clay, with coal inclusions. Beneath this lay strong brown (7.5YR 5/8) sandy clay that appeared to be intact subsoil (Figure 5-216). No artifacts or features were found and no sites were identified in Area 13I.

FIGURE 5-213: BERM CONTAINING APE WIDTH IN AREA 13I, LOOKING EAST

0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 13 North Doswell to Elmont (NDEL)
- 22 Ashland Bypass (ASBP)

Figure 5-214
STP Survey in Area 13I

6/2016

FIGURE 5-215: AREA CONTAINING STP 131-1, LOOKING NORTHEAST

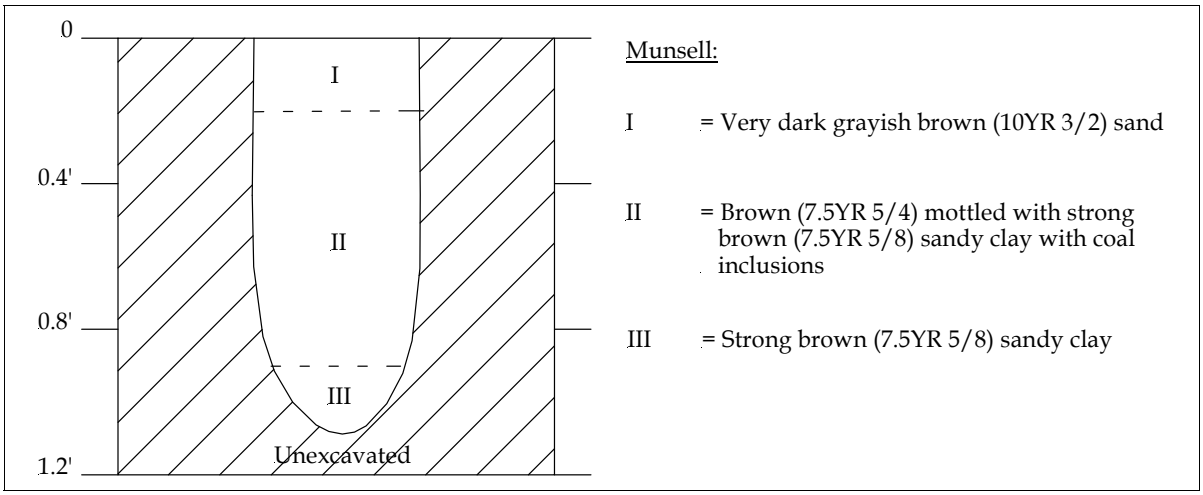


FIGURE 5-216: SOIL PROFILE FROM AREA 131

5.13.2 Archaeological Area 13J

Area 13J is located on the east side of the existing rail in a wooded area just north of Ashland. The northern end of Area 13J is approximately 0.64 miles (1036.3m) south of U.S. Highway 1's crossing of the existing rail line, and the southern end of Area 13J is approximately 1,300 feet (396.2 m) north of Henry Street. Area 13J extends across a length of 3,377 feet (1,029.3 m) which, according to prior predictive modeling, is roughly evenly divided between portions of high, moderate, and low probability for containing intact archaeological deposits. The overall character of Area 13J, a large wedge of land between the existing rail, U.S Highway 1, and Henry street, is mainly an area

of mixed woods, with some agricultural fields, but this small area is surrounded by suburban development. Almost the entirety of Area 13J was untestable as the narrow width of the APE in Area 13J lies almost entirely within the steep embankment leading from the surrounding land down to the existing rail line (Figure 5-217). However, a small relatively level area was found in which to place an STP, though even here soils, once excavated, were clearly substantially disturbed (Figure 5-218 and Figure 5-219). The profile of the single STP excavated within Area 13J consisted of a layer of very dark gray (10YR 3/1) sandy loam, containing a high percentage of gravel, which extended over 1 foot (30.5 cm) and under which lay yellowish brown (10YR 5/6) sandy clay subsoil. No artifacts or features were found and no sites were identified in Area 13J.

FIGURE 5-217: TYPICAL VIEW OF UNTESTABLE PORTIONS OF AREA 13J, WITH ENTIRE APE WIDTH LYING IN EMBANKMENT, LOOKING NORTH

5.13.3 Archaeological Area 13P

Area 13P is located on the eastern side of the existing rail line, just south of downtown Ashland. Set in a small agricultural field just north of a small industrial facility, Area 13P is 1,052 feet (320.6 m) long. Area 13P lies mainly between an access road running along the edge of that field and the existing railroad (Figure 5-220). Prior predictive modeling indicated that the entirety of Area 13P contained a high probability for intact archaeological deposits. Most of this area is extensively disturbed, presumably from activity related to either the existing railroad or the industrial facility, as well as from buried utility lines. A small area in the northern end of Area 13P appeared to be less disturbed and STP survey was performed in this location (Figure 5-221 and Figure 5-222). Two STPs were excavated on a single transect. Both of these STPs had to be terminated at very shallow depths as the thin, apparently undisturbed topsoil, actually overlay extremely compacted disturbed soils and gravel. No artifacts or features were found and no sites were identified in area 13P.

0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 13 North Doswell to Elmont (NDEL)

Figure 5-218
STP Survey in Area 13J

6/2016

FIGURE 5-219: SMALL LEVEL AREA CONTAINING STP 13J1, LOOKING NORTH

FIGURE 5-220: TYPICAL SETTING IN AREA 13P, LOOKING WEST

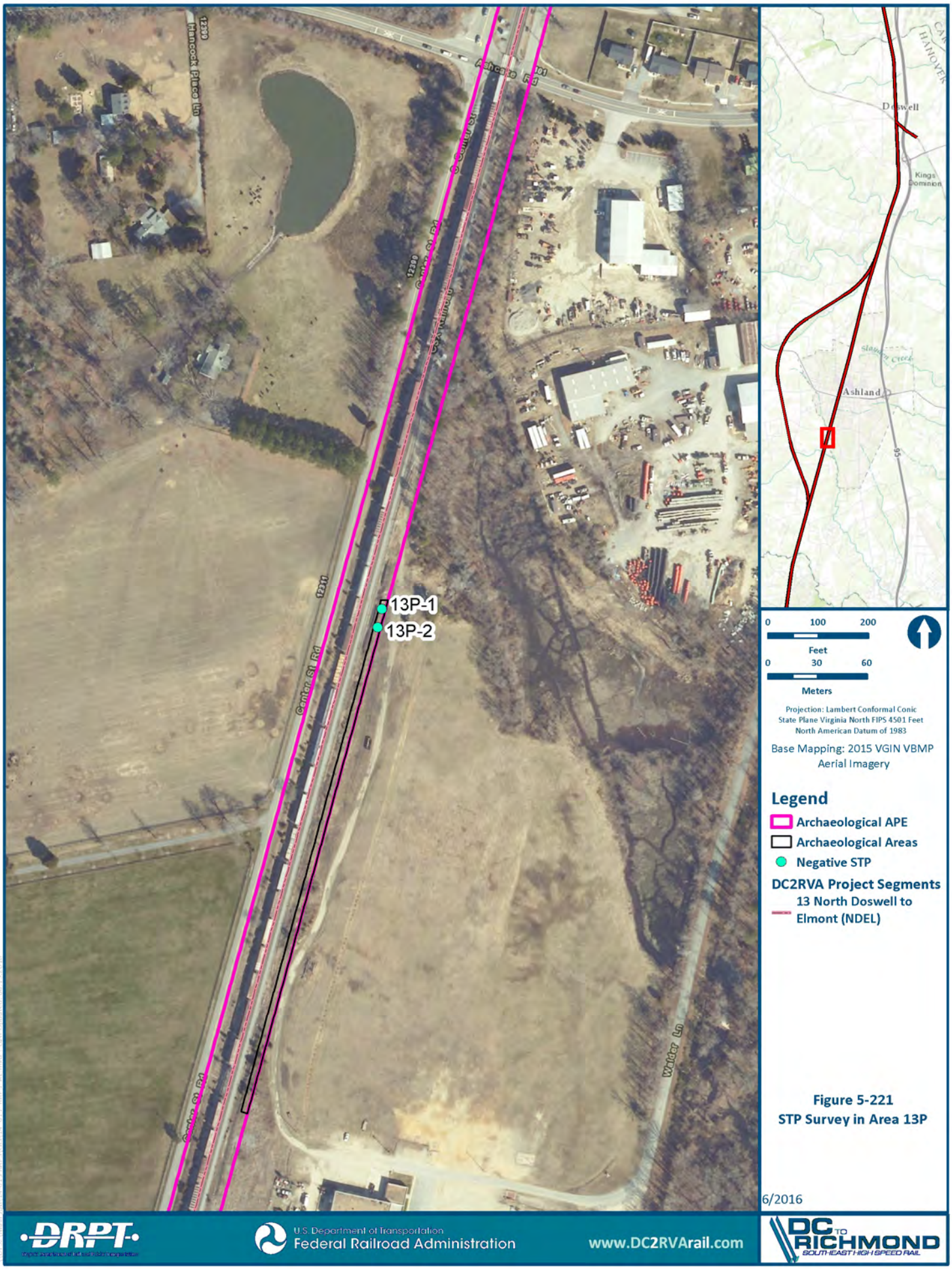


Figure 5-221
STP Survey in Area 13P

6/2016

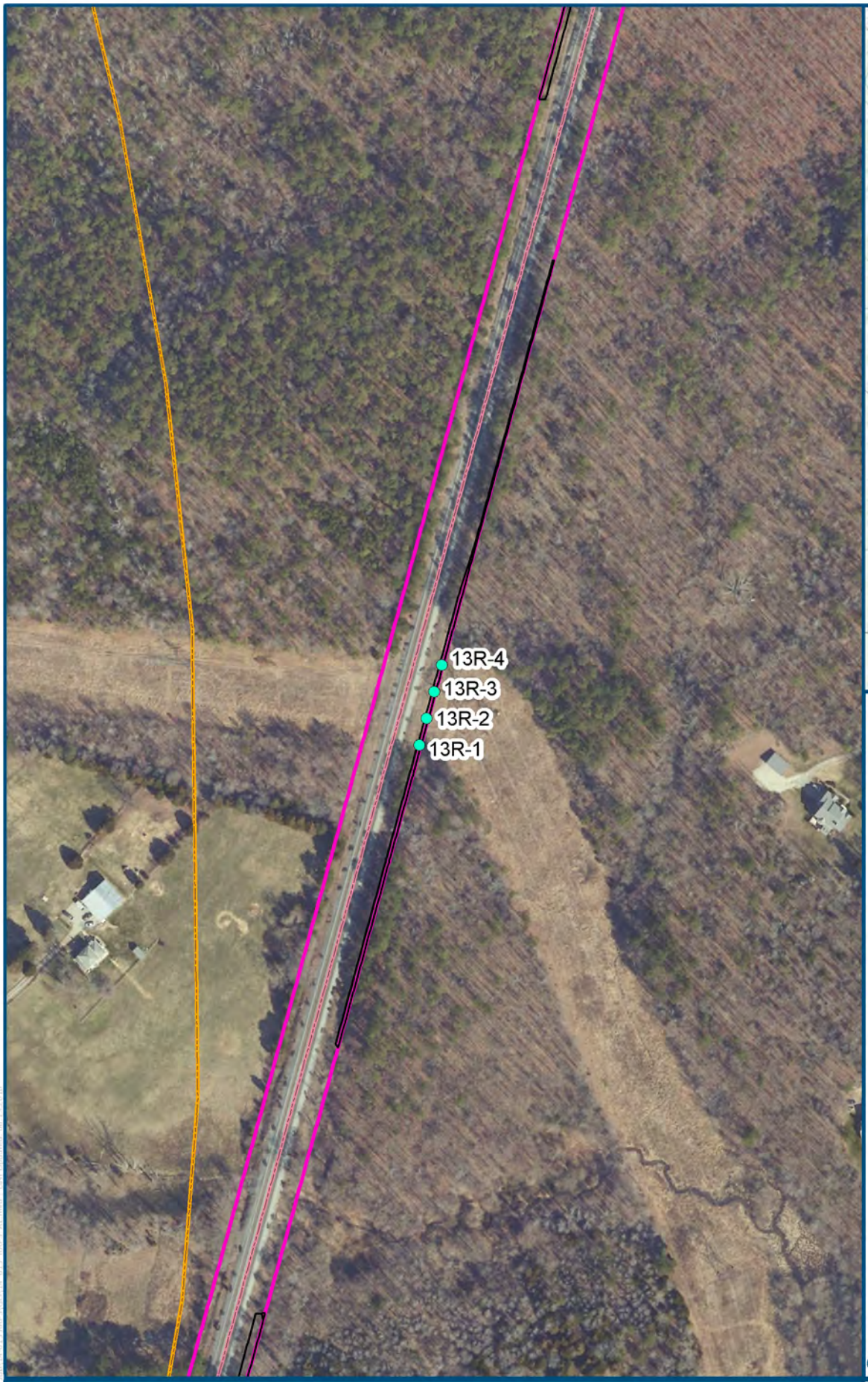
FIGURE 5-222: TESTED PORTION OF AREA 13P, LOOKING SOUTH

5.13.4 Archaeological Area 13R

Area 13R is a north to south oriented area located on the east side of the existing rail line as it runs through a relatively large wooded area just north of Elmont. Area 13R begins approximately 3,600 feet (1,097.3 m) north of Elmont Road, and ends approximately 2,200 feet (670.6 m) north of Elmont Road, covering a total length of 1,427 feet (435.0 m). Predictive modeling indicated that most of Area 13R had a high probability to contain intact archaeological deposits, with a small section of moderate probability at its southern end. With the exception of a small portion that crosses an area that has been cleared to accommodate a power transmission line, the entirety of Area 13R is in a wooded setting. Throughout most of this area, which at approximately 6 feet (1.8 m) wide was only just wide enough to meet the threshold for testing, the APE's width lies within disturbances and grading related to the existing railroad line (Figure 5-223). A small area where the APE traverses a relatively level and not so obviously disturbed setting was tested with STPs, but the majority of these were substantially disturbed. Four STPs were excavated on a single transect (Figure 5-224 and Figure 5-225). A typical STP demonstrating the level of disturbance in the area consisted of black (10YR 2/1) sand with 50 percent gravels, lying atop a heavily disturbed layer containing a mix of varied pockets of sands and clays (Figure 5-226 and Figure 5-227). No artifacts or features were found and no sites were discovered in area 13R.

FIGURE 5-223: TYPICAL SETTING IN AREA 13R WITH APE WIDTH LYING IN GRADE OR UTILITY CORRIDOR, LOOKING NORTH

FIGURE 5-224: TESTED PORTION OF AREA 13R, LOOKING NORTH



0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 13 North Doswell to Elmont (NDEL)
- 22 Ashland Bypass (ASBP)

Figure 5-225
STP Survey in Area 13R

6/2016

FIGURE 5-226: DETAIL OF DISTURBED PROFILE OF STP 13R-2

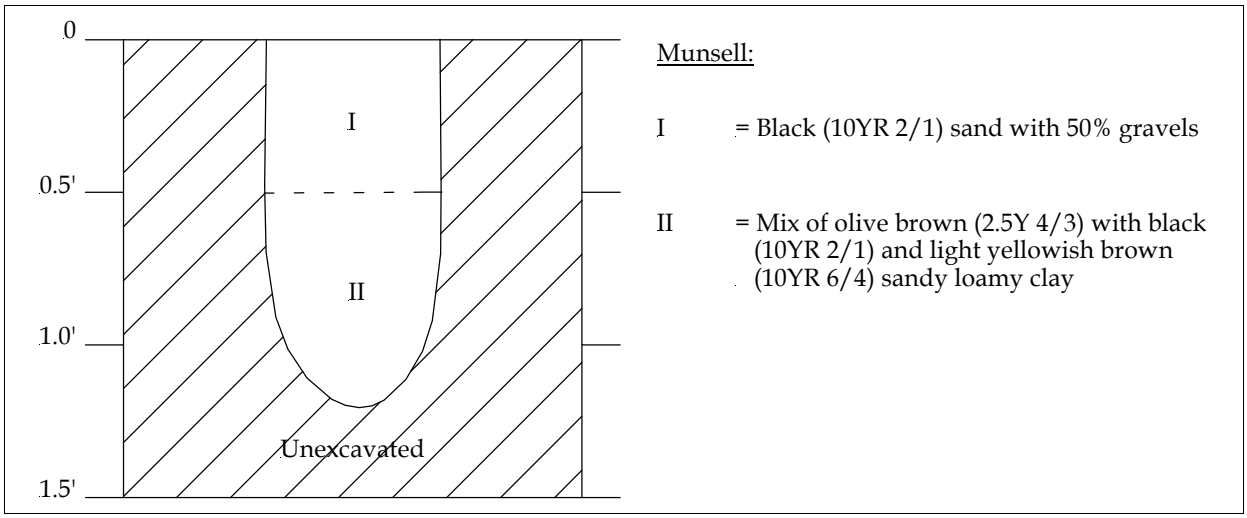


FIGURE 5-227: SOIL PROFILE FROM STP 13R-2

5.13.5 Archaeological Area 13S

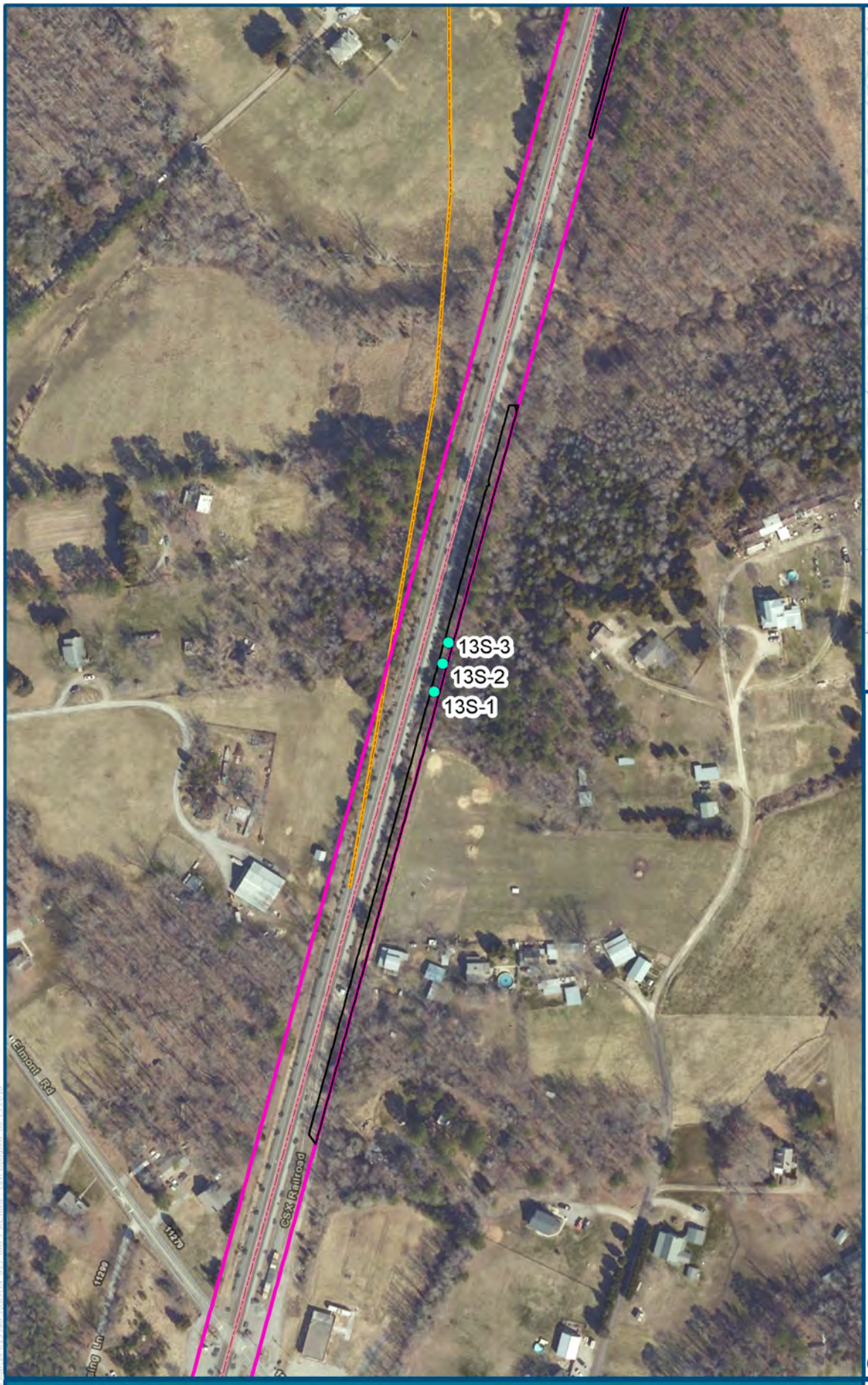
Area 13S is located on the east side of the existing rail, beginning approximately 500 feet (152.4 m) south of the end of Area 13R, and continuing to the south, ending approximately 370 feet (112.8 m) north of Elmont Road, covering a total distance of 1,335 feet (407.0 m). Area 13S is located at a transition from the more wooded/rural settings between Ashland and Elmont, and the Richmond suburbs which become denser moving south from this point onward. Prior predictive modeling indicated that Area 13S included portions that had both high and moderate

probability of containing intact archaeological deposits. The majority of this area is disturbed and, as a result untestable, with graveled access roads, and grading associated with the existing railroad preventing STP survey (Figure 5-228). A number of STPs were placed in areas that were not as obviously disturbed (Figure 5-229 and Figure 5-230). Excavation of these STPs indicated that these areas were also likely disturbed, most likely as a result of the same railroad-paralleling access road that is more obvious in the southern portion of the area. A notable profile demonstrating this consisted of a very dark gray (10YR 3/1) sandy loam overlying a charcoal lens which overlay a yellowish brown (10YR 5/8) sandy clay subsoil that was encountered at a depth of only 0.4 feet (12 cm) (Figure 5-231). Three STPs were excavated on a single transect in Area 13S, yielding no artifacts. No features were found, and no sites were identified in Area 13S.

FIGURE 5-228: UNTESTED SOUTHERN PORTION OF AREA 13S, TYPICAL OF MOST OF AREA, LOOKING SOUTH

5.13.6 Archaeological Area 13T

Area 13T, the southernmost archaeological area in the NDEL segment, is located on the west side of the existing rail line, beginning just south of Cedar Lane, and ending at the beginning the ELGN segment, where Area 13T is contiguous with Area 14A. Area 13T has a total length of 361 feet (110.0 m) and was mapped during predictive modeling as having a mix of high and moderate probability for containing archaeological sites, with a slight predominance of moderate probability.



Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 13 North Doswell to Elmont (NDEL)
- 22 Ashland Bypass (ASBP)

Figure 5-229
STP Survey in Area 13S

6/2016

FIGURE 5-230: SMALL TESTED STRIP IN AREA 13S, LOOKING NORTH

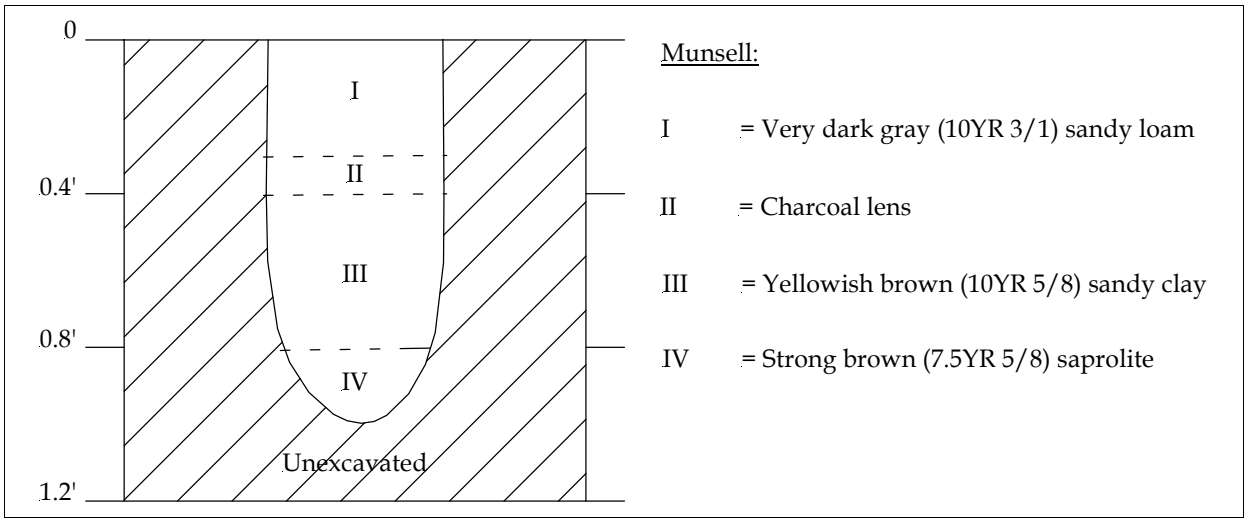
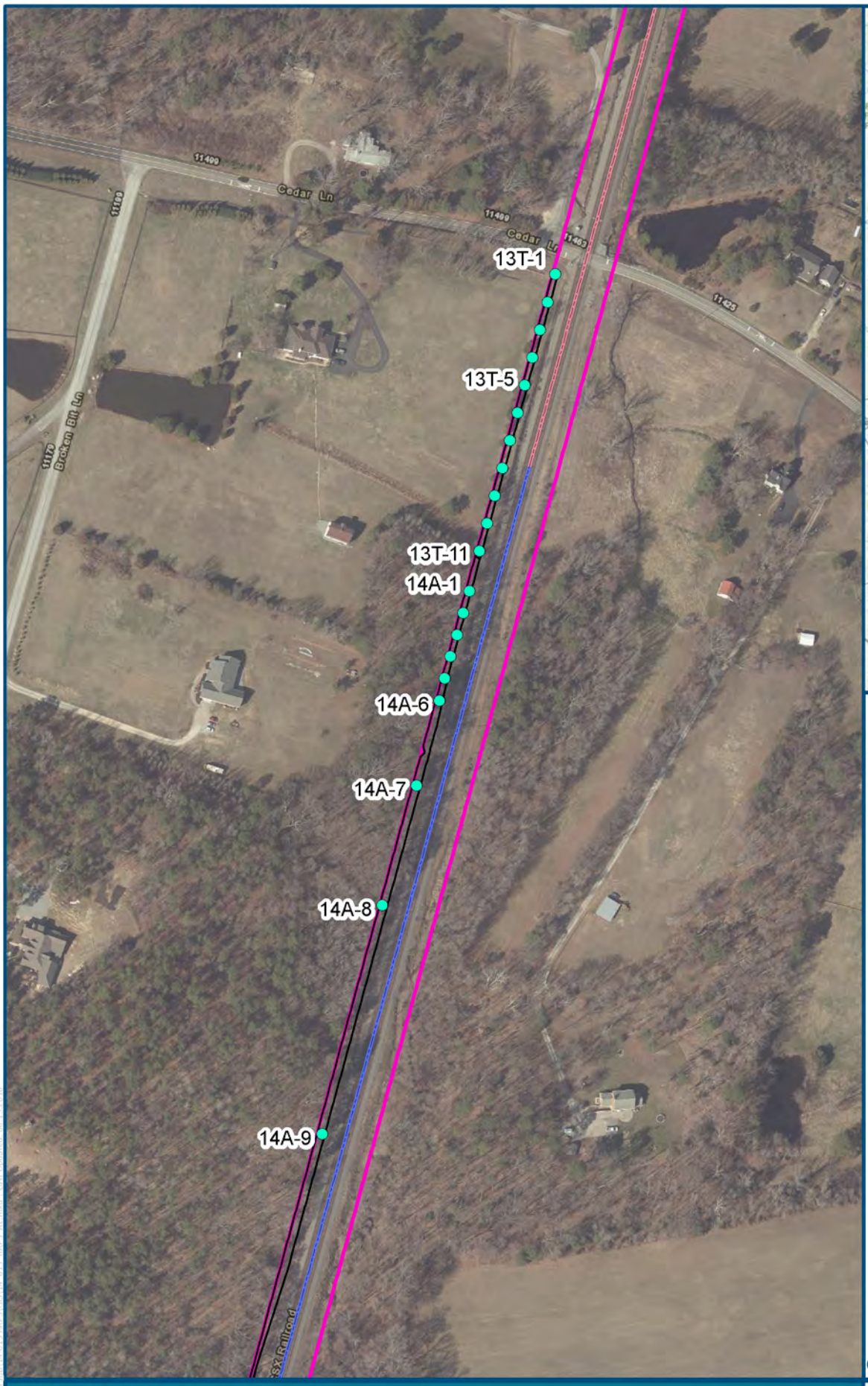


FIGURE 5-231: REPRESENTATIVE SOIL PROFILE FROM AREA 13S , STP 13S-1

Area 13T is separated from the large grassy field belonging to a residence by a small tree line, and is itself located in a primarily grassy area (Figure 5-232 and Figure 5-233). The entirety of area 13T was tested via shovel test survey, as it appeared to be largely undisturbed. A total of 11 STPs was excavated in area 13T on a single transect. A number of these STPs, while not containing obvious evidence of disturbance, contained extremely deep topsoil layers, which indicated that the area may have been filled in with soil in order to maintain the level of the surrounding field, other STPs contained more direct evidence of disturbance (Figure 5-234). No artifacts or features were found and no sites were identified in Area 13T.



Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 13 North Doswell to Elmont (NDEL)
- 14 Elmont to Greendale (ELGN)

Figure 5-232
STP Survey in Areas 13T and 14A

6/2016

FIGURE 5-233: AREA 13T, LOOKING SOUTH

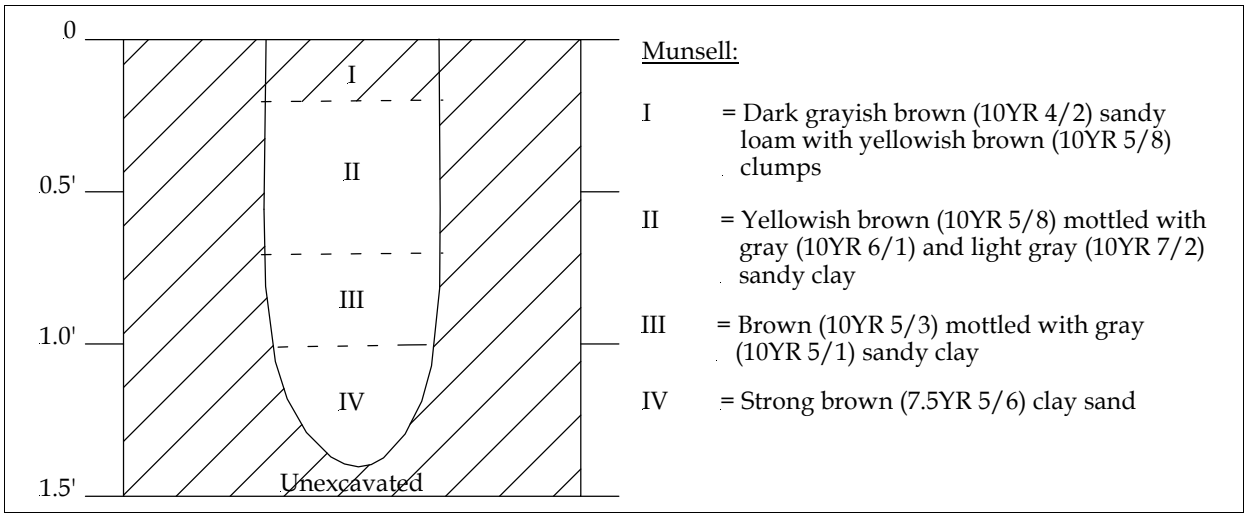


FIGURE 5-234: REPRESENTATIVE SOIL PROFILE FROM AREA 13T, STP 13T-10

5.14 ELMONT TO GREENDALE (ELGN/14)

The ELGN segment of the DC2RVA corridor is located almost entirely in Henrico County, with a small portion located at the far southern end of Hanover County (Figure 5-235). The northern end of the ELGN segment is located in Elmont, approximately 2,500 feet (883.9 m) north of the Hanover-Henrico County border. From there it meanders south, along the existing rail corridor, ending in Glen Allen approximately 1,100 feet (335.3 m) south of Hungary Road. The ELGN

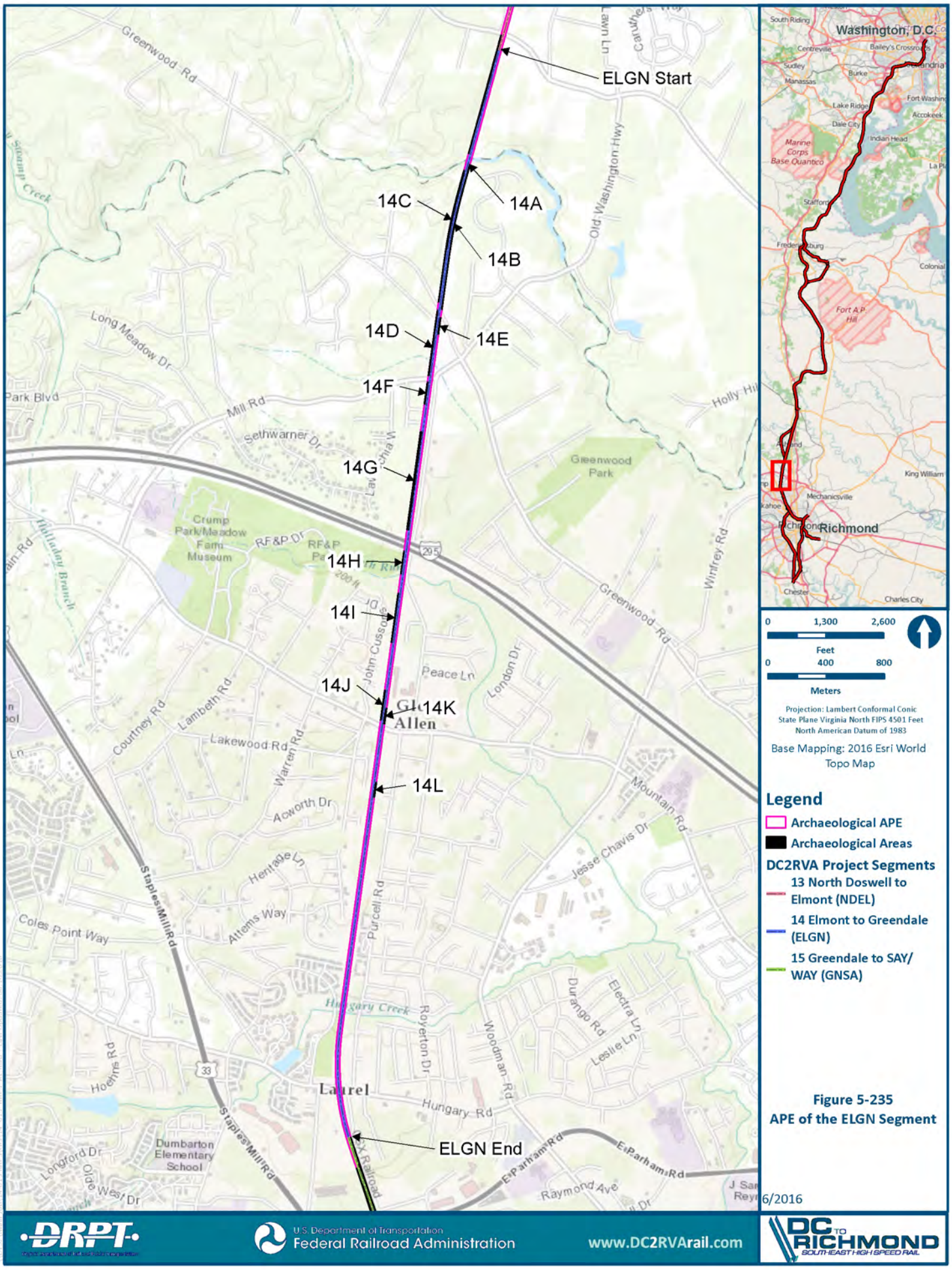


Figure 5-235
APE of the ELGN Segment

6/2016

segment extends across a total distance of 4.9 miles (7.9 km) and encompassed a total of 56.9 acres (22.7 ha). Based on the prior predictive modeling, high probability areas cover 1.6 acres (0.6ha), moderate probability areas cover 2.7 acres (1.1 ha) and low probability areas cover 0.3 acres (0.1 ha). A total of 52.3 acres (21.2 ha) was classified as having no potential for containing archaeological sites. The ELGN segment consists of 12 archaeological areas, given alphanumeric designations Areas 14A through 14L. Of these, only three, Areas 14A, 14G, and 14I required subsurface testing.

Like much of the DC2RVA project corridor as a whole, substantial portions of the ELGN segment were untestable due to existing disturbances, mainly consisting of the grading and embankments required by the existing railroad, but other localized disturbances were encountered as well. Areas 14B, 14C, 14D, 14H, and 14J were disturbed mainly by the APE width lying in grading from the existing rail line and in standing water (Figure 5-236). Areas 14F, 14K, and 14L were also largely disturbed by grading up to or down to the existing railroad and contained sections of buried utilities (Figure 5-237). Areas 14J and 14K are located partially within the Yellow Tavern Battlefield (043-5320). Following DHR guidance, when possible, the PotNR boundaries for battlefields established by the ABPP were used as resource boundaries; however, there are no ABPP-defined PotNR boundaries on file for the Yellow Tavern Battlefield. As such, the boundaries on file with DHR were used for this resource. Because these areas within the battlefield exhibited significant disturbance no shovel testing or metal detector survey was undertaken in these locations. Area 14H was not tested as it was prohibitively narrow and thus did not meet survey criteria.

Of the twelve areas making up ELGN, three areas, 14A, 14G, and 14I, contained undisturbed areas large enough to allow for subsurface testing. The setting of Area 14 is mainly suburban, often lying in small wooded areas separating housing developments from the existing rail line. A number of streams cross or approach the APE within the ELGN segment, notably the Chickahominy River, which forms the boundary between Henrico and Hanover Counties.

A total of 14 shovel tests was excavated in the ELGN segment. No portion of the segment was wide enough to require more than a single transect of STPs, which were placed following the contours of the rail corridor. The average STP depth in this area was 1.2 feet (36.6 cm) with a maximum depth of 1.7 feet (51.8 cm). A horizon depths ranged from 0.1 feet (3.0 cm) to 0.8 feet (24.4 cm) with an average depth of 0.3 feet (9.1 cm). Stratigraphy varied greatly across this area, as might be expected from such a small testable sample over such a large geographic area. No artifacts were recovered from the ELGN segment and no sites were identified.

FIGURE 5-236: GRADING AND STANDING WATER DISTURBANCE IN THE ELGN APE: AREA 14B, LOOKING SOUTHWEST; AREA 14C, LOOKING SOUTH; AREA 14D, LOOKING NORTHEAST; AREA 14E, LOOKING SOUTH; AREA 14H, LOOKING NORTH; AND AREA 14J, LOOKING EAST

FIGURE 5-237: GRADING AND UTILITY DISTURBANCE IN THE ELGN APE: AREA 14F, LOOKING NORTHEAST AND SOUTHEAST; AREA 14K, LOOKING SOUTHEAST; AND AREA 14L, LOOKING NORTH

5.14.1 Archaeological Area 14A

Area 14A is the northernmost area in the ELGN segment, and is contiguous with Area 13T (discussed above). Area 14A begins in a wooded area approximately 400 feet (121.9 m) south of Elmont Road, and runs south from there extending 2,411 feet, ending approximately 150 feet (45.7 m) north of the Chickahominy River. This area was largely untestable, with the APE falling in the artificial grading between the natural surrounding land and the existing rail line (Figure 5-238). Where the surrounding natural ground surface was more level with the existing rail line, allowing the APE to fall into more level ground, STPs were excavated (Figure 5-239). Nine STPs were excavated on a single transect (see Figure 5-232). Soils differed notably from STP to STP within Area 14A, but almost all showed evidence of disturbance, and the surface appeared to be either the remains of an access road or of another graded area related to the existing rail (Figure 5-240). An STP indicative of this disturbance contained a shallow topsoil of very dark grayish brown (10YR 3.2) sandy loam, overlying a dense layer of mixed pockets of clearly redeposited hydric clays and sands, primarily light yellowish brown (10YR 6/4) sandy clay and gray (10YR 6/1) sandy clay (Figure 5-241). No artifacts or features were found and no sites were identified in 14A.

FIGURE 5-238: GRADE CONTAINING APE WIDTH IN AREA 14A, LOOKING SOUTHEAST

FIGURE 5-239: LEVEL AREA SUBJECTED TO STP SURVEY IN AREA 14A, LOOKING NORTH

FIGURE 5-240: DISTRUBANCE EVIDENT IN STP 14A-7

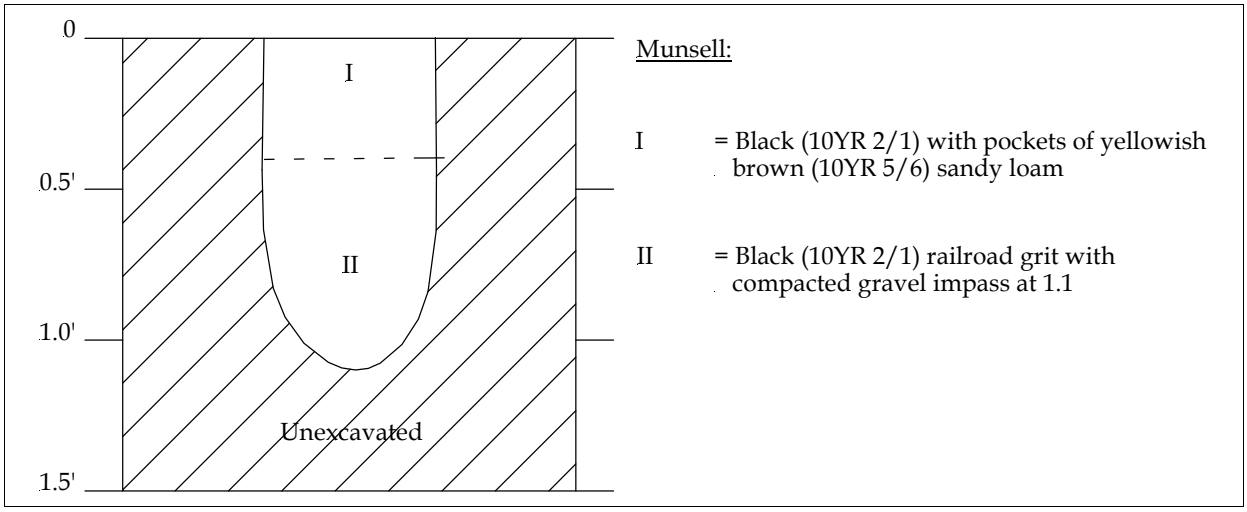


FIGURE 5-241: REPRESENTATIVE SOIL PROFILE FROM AREA 14A, STP 14-7

5.14.2 Archaeological Area 14G

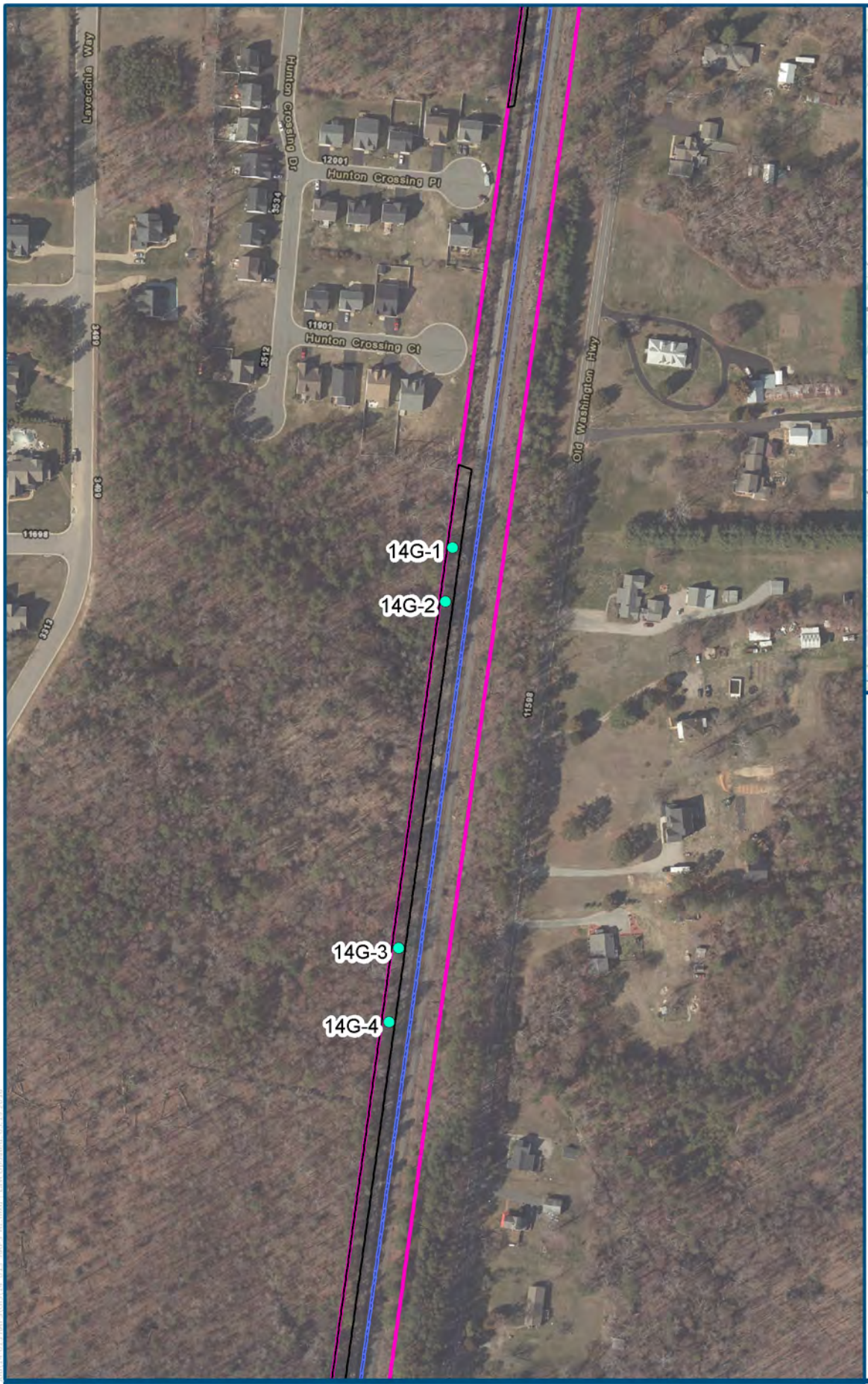
Area 14G is located on the west side of the existing rail in a wooded area, lying between a newer subdivision and the existing rail, just north of I-295 in Glen Allen. The northern end of Area 14G is approximately 1,200 feet (365.8 m) south of Mill Road's crossing of the existing rail line, and the southern end of Area 14G is approximately 240 feet (73.2 m) north of I-295. Area 14G extends across a length of 2,217 feet (675.7 m) which, according to predictive modeling, includes areas of high, moderate, and low probability for containing intact archaeological deposits, though high probability areas predominate. Area 14G lies in a relatively level area of evergreen woods. Large portions of Area 14G were untestable as they lay in either grading between the existing rail line and the surrounding natural surface or under standing water (Figure 5-242). In a small portion of

Area 14G these disturbances did not occupy the entire APE, and STP survey was undertaken (Figure 5-243 and Figure 5-244). Four STPs were excavated on a single transect. The soil profiles varied in each STP, but all appeared to be disturbed (Figure 5-245). An STP profile exemplifying this disturbance consisted of repeated layers of mixed disturbed soils, overlying a dense layer of the black gritty strata that was found throughout the DC2RVA corridor APE (Figure 5-246). No artifacts or features were found and no sites were identified in Area 14G.

FIGURE 5-242: TYPICAL VIEW OF DISTURBED SECTIONS WITHIN AREA 14G, LOOKING SOUTH

5.14.3 Archaeological Area 14I

Area 14I is located on the eastern side of the existing rail line, south of I-295 in Glen Allen. Area 14I is set in a wooded area between a series of residential cul-de-sacs and the existing rail line. Area 14I is 1,110 feet (338.3 m) long, and was mapped during prior predicting modeling as being almost equally divided between sections mapped as high and moderate probability to contain intact archaeological sites. Area 14I is very narrow, less than 8 feet (2.4 m) wide and the majority of the area lies in either the ditch adjacent to the railroad grade, or in the grading back up out of that ditch (Figure 5-247). In a small part of Area 14I, the grading narrows enough that some of the APE lies in the level ground outside of the grading, and STP survey was undertaken in this small area (Figure 5-248 and Figure 5-249). Two STPs were excavated on a single transect. Both STPs were disturbed (Figure 5-250). No artifacts or features were found and no sites were identified in Area 14I.



0 100 200

Feet

0 30 60

Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

2015 VGIN VBMP Aerial Imagery

Legend

- Archaeoloical APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 14 Elmont to Greendale (ELGN)

Figure 5-243
STP Survey in Area 14G

5/2016

FIGURE 5-244: TESTABLE PORTION IN AREA 14G, LOOKING SOUTH

FIGURE 5-245: DISTURBANCE EVIDENT WITHIN THE SOIL PROFILE OF STP 14G-1

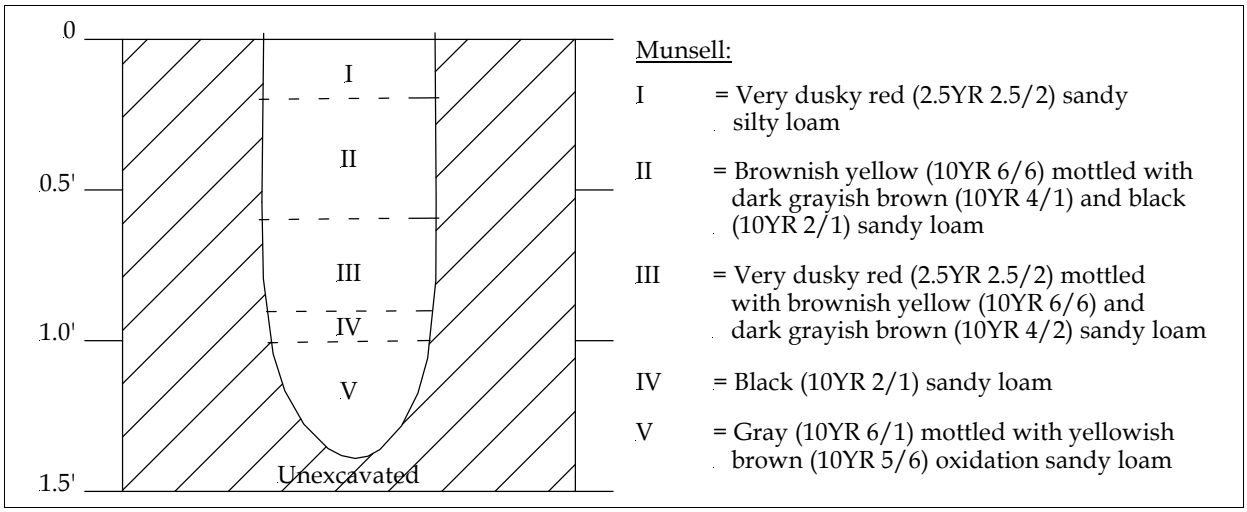
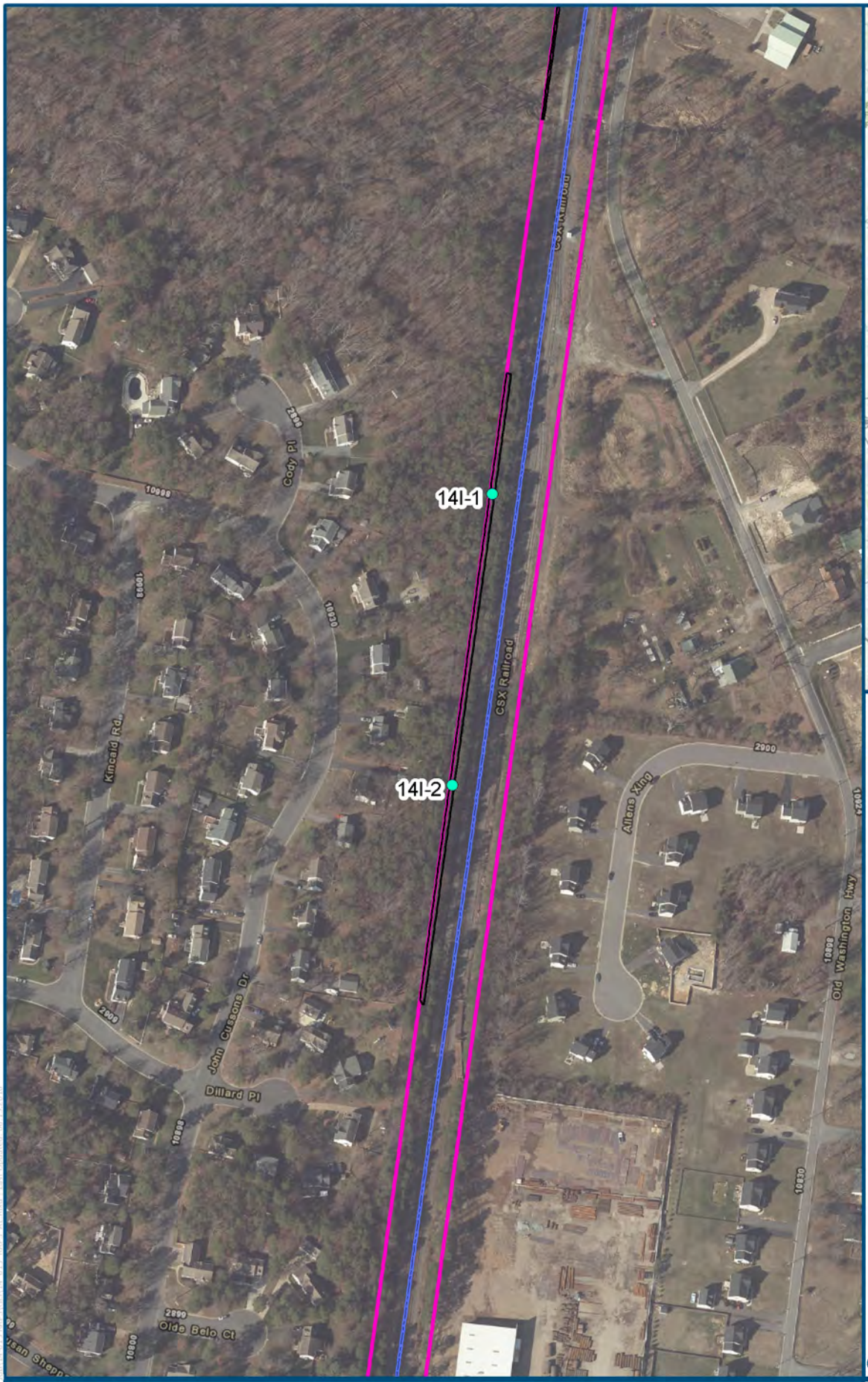


FIGURE 5-246: REPRESENTATIVE SOIL PROFILE FROM AREA 14G, STP 14G-1

FIGURE 5-247: ACCESS ROAD AND DITCH IN AREA 14I, LOOKING SOUTH



0 100 200

Feet

0 30 60

Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 14 Elmont to Greendale (ELGN)

Figure 5-248
STP Survey in Area 14I

6/2016

FIGURE 5-249: SHOVEL TESTED PORTION OF AREA 14I, LOOKING NORTH

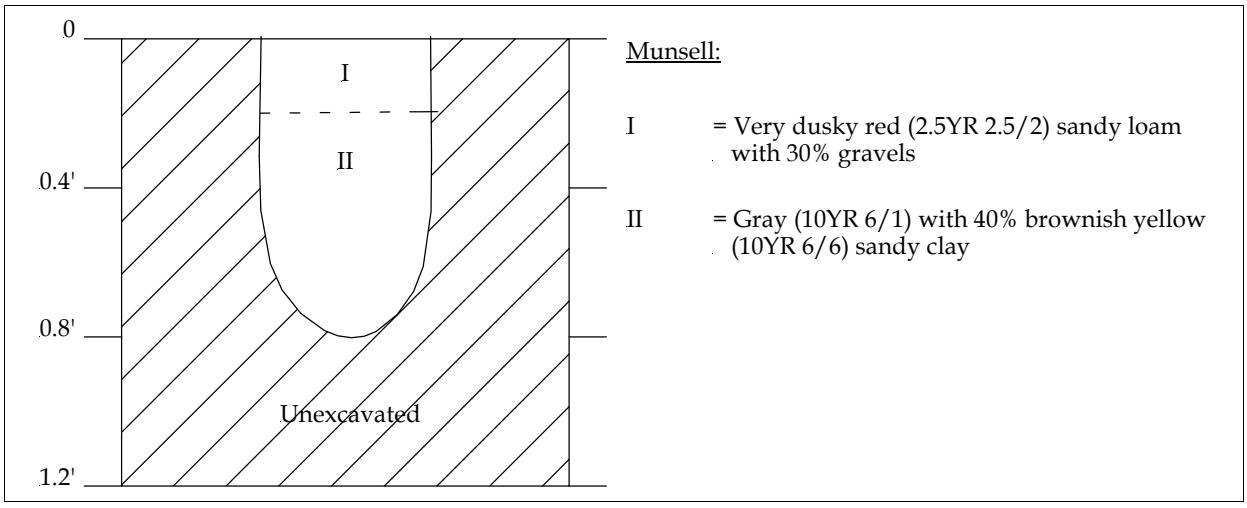


FIGURE 5-250: REPRESENTATIVE SOIL PROFILE FROM AREA 14I, STP 14I-1

5.15 GREENDALE TO SAY/WAY (GNSA/15)

The GNSA segment of the DC2RVA corridor is located in Henrico County and Richmond, although the archaeological testing areas within the GNSA segment are all located in Henrico County (Figure 5-251). The northern end of the GNSA segment is located in Glen Allen approximately 1,100 feet (335.3 m) south of Hungary Road. The southern end is located in Richmond, near the interchange of I-64 and Boulevard. The GNSA segment extends across a

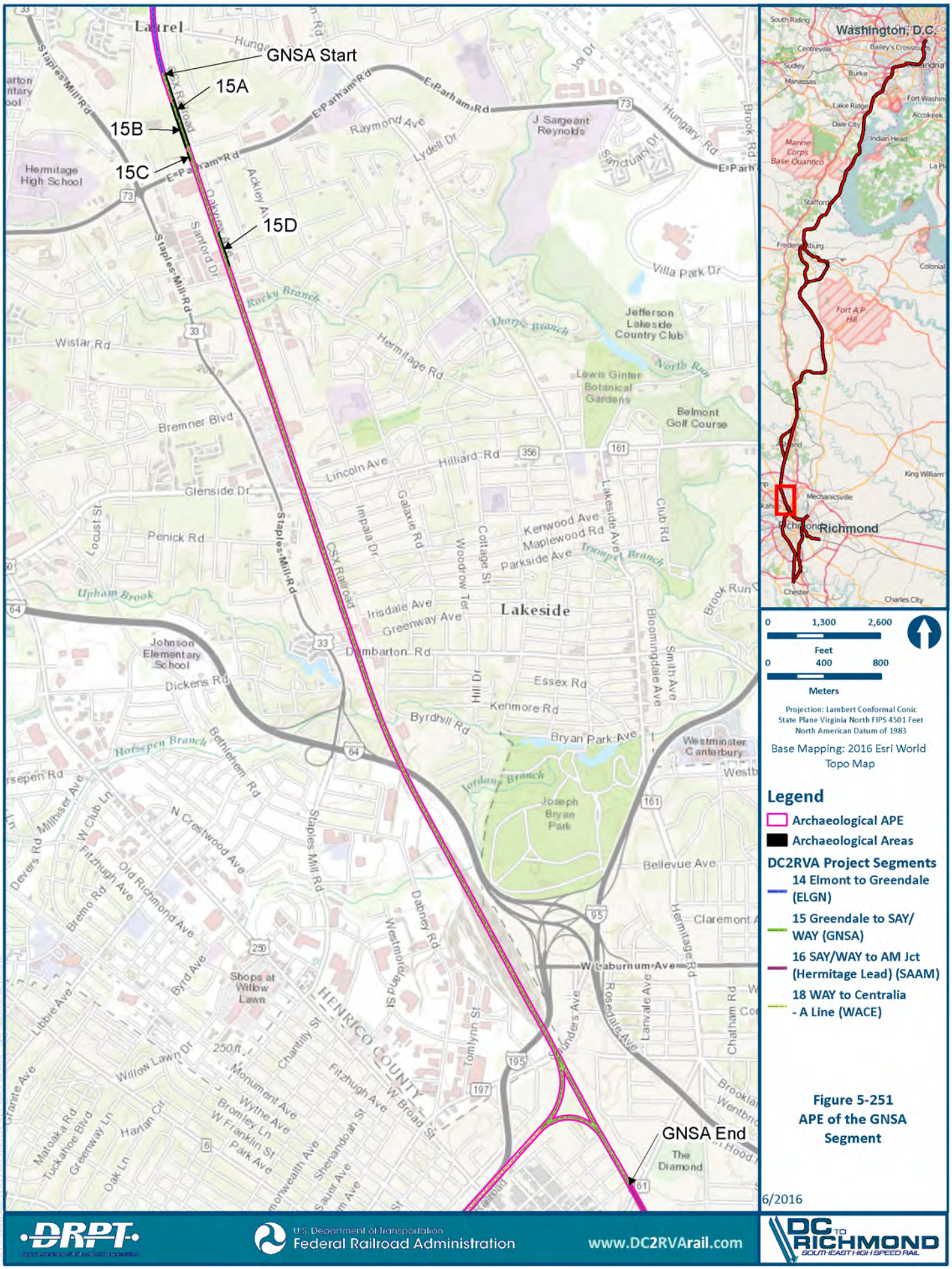


Figure 5-251
APE of the GNSA Segment

6/2016

total distance of 5.6 miles (9.0 km), with the tested segments of it totaling 0.92 miles (1.5 km), encompassing a total of 0.6 acres (0.2 ha). Based on the prior predictive modeling, high probability areas for intact archaeological deposits cover 0.2 acres (0.61 ha) and moderate probability areas cover 0.4 acres (0.2 ha). A total of 66.4 acres (26.9 ha) was classified as having no potential for containing archaeological sites. The GNSA segment APE consists of four archaeological areas, given alphanumeric designations Areas 15A through 15D. Of these, only one, Area 15B, required subsurface testing.

Like much of the DC2RVA project corridor as a whole, substantial portions of the GNSA segment are untestable due to existing disturbances, mainly consisting of the grading and embankments required by the existing railroad, but other localized disturbances were encountered as well. The setting of the GNSA segment as the suburbs north of Richmond transition into the urban areas within Richmond, was almost entirely disturbed, to such an extent that only a single STP was excavated in the entire area. Area 15A was disturbed mainly by the presence of a gravel access road, paralleling the existing rail and by the ditch lying between that road and the existing rail (Figure 5-252). Area 15C was located within a small artificial berm surrounded by standing water, and area 15D was located in a disturbed area between Oakview Avenue and the existing rail line (Figure 5-253 and Figure 5-254).

FIGURE 5-252: TYPICAL SETTING IN AREA 15A, LOOKING SOUTH

FIGURE 5-253: AREA 15C, LOOKING SOUTH

FIGURE 5-254: AREA 15D, LOOKING SOUTH

5.15.1 Archaeological Area 15B

Area 15B was the only area within the GNSA segment that required subsurface testing. Area 15B is located on the western side of the existing rail line north of East Parham Road in Richmond. The northern end of Area 15B is located approximately 1,500 feet (457.2 m) north of Parham Road, and from there the area extends across a distance of 1,081 feet (329.5 m), ending approximately 450 feet (137.2 m) north of Parham Road. The majority of Area 15B was indicated by predictive modeling to have a moderate probability to contain intact archaeological deposits, while a small section at the southern end of the area was mapped as high probability.

Area 15B is located in a small wooded area in a section of Henrico County otherwise dominated by industrial and commercial development. The northern end of Area 15B is so narrow as to not meet the threshold for testing, and the southern portion of the area lies mainly on what appears to be an artificial berm surrounded by water-filled ditches (Figure 5-255). Although this berm appeared to be disturbed, a judgmental STP was placed in order to examine the soils and verify that appearance (Figure 5-256 and Figure 5-257). A single STP was excavated in Area 15B, and was also the only STP in the entirety of the GNSA segment. The soils within the STP were clearly disturbed containing a mixture of very dark grayish brown (2.5Y 3/2) sandy loam mottled with black (10YR 2/1) sandy loam that contained 60% gravel and extended to a depth of 1 foot (30.5cm), at which point the gravel content made further excavation impracticable (Figure 5-258). No artifacts or features were found and no sites were identified in Area 15B.

FIGURE 5-255: TYPICAL VIEW IN AREA 15B, LOOKING NORTH

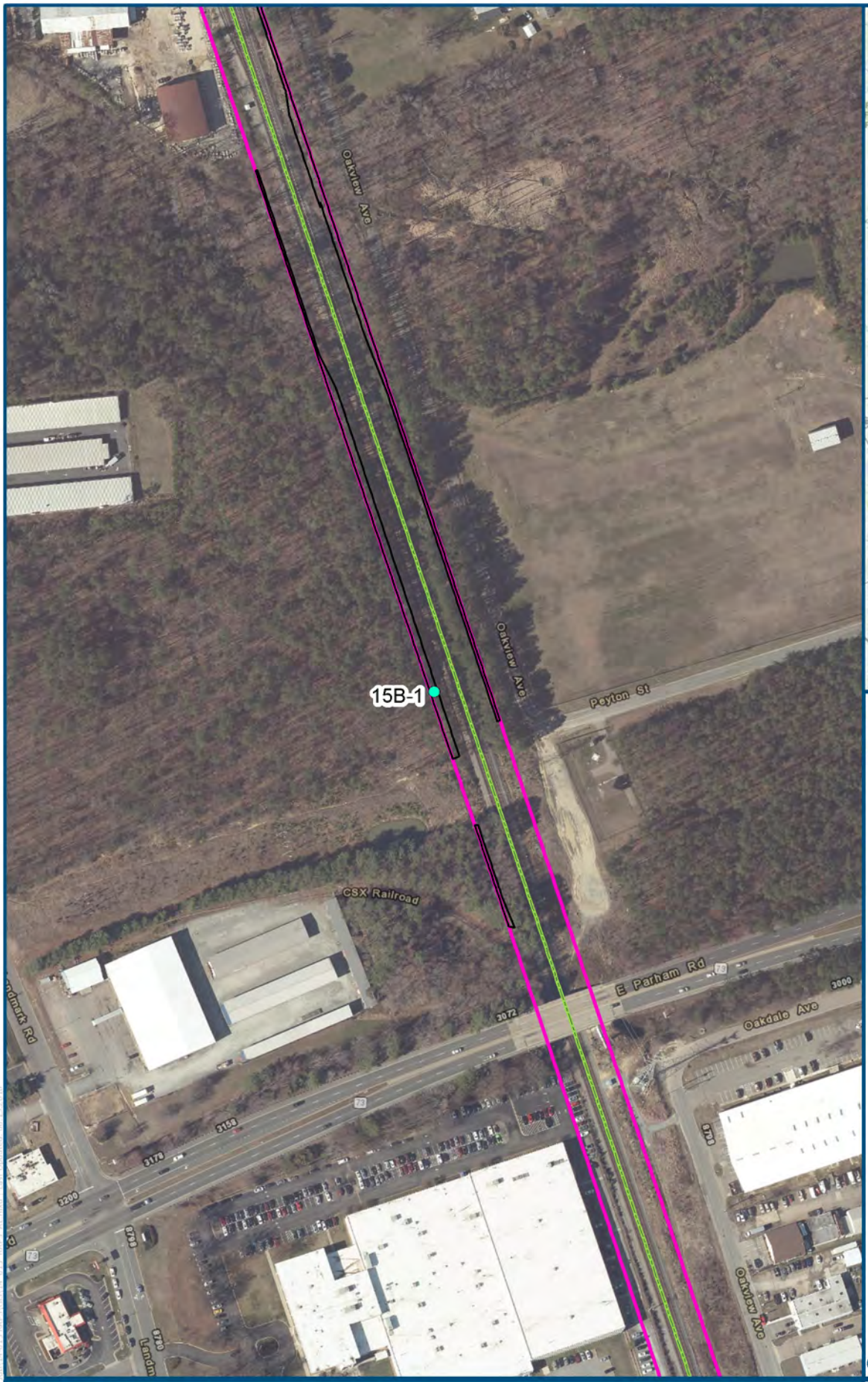


Figure 5-256
STP Survey in Area 15B

6/2016

FIGURE 5-257: LOCATION CONTAINING STP 15B-1, LOOKING NORTH

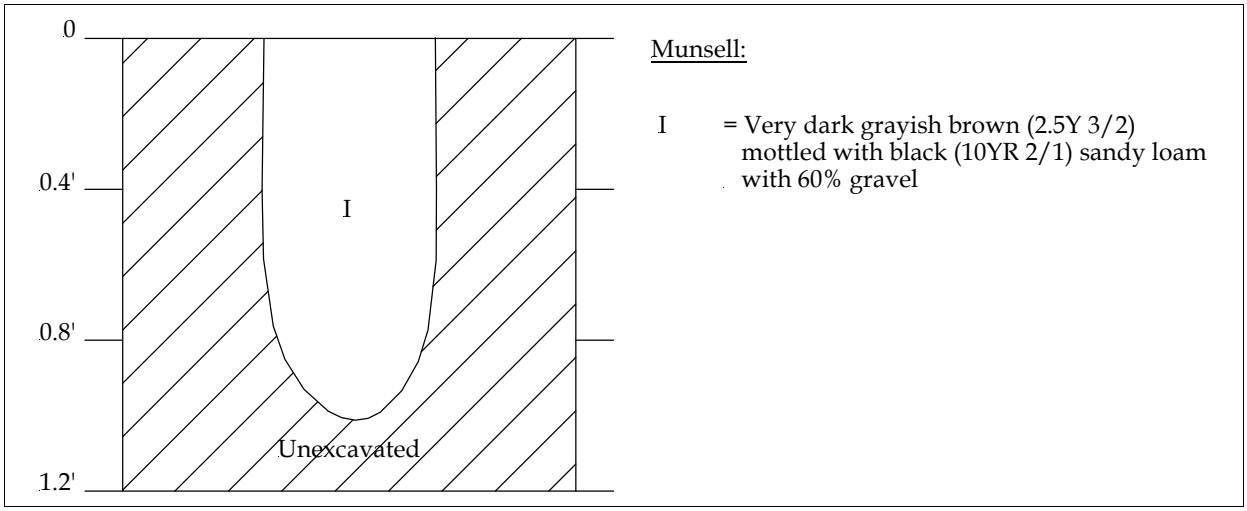


FIGURE 5-258: REPRESENTATIVE SOIL PROFILE FROM AREA 15B, STP 15B-1

5.16 SAY/WAY TO AM JCT (SAAM/16)

The northwestern end of the SAAM segment of the DC2RVA corridor begins at the south end of the GNSA segment, east of I-195 and immediately east of Roseneath Road in Richmond. The southeastern end is east of North 7th Street and south of Hospital Street, also in Richmond (Figure 5-259). The setting of the SAAM segment of the APE is urban, with a thin buffer of varying vegetation lining both sides of the existing railroad grade. This segment covers a total distance of approximately 3 miles (4.8 km) and the APE encompasses 40.2 acres (16.3 ha). Based

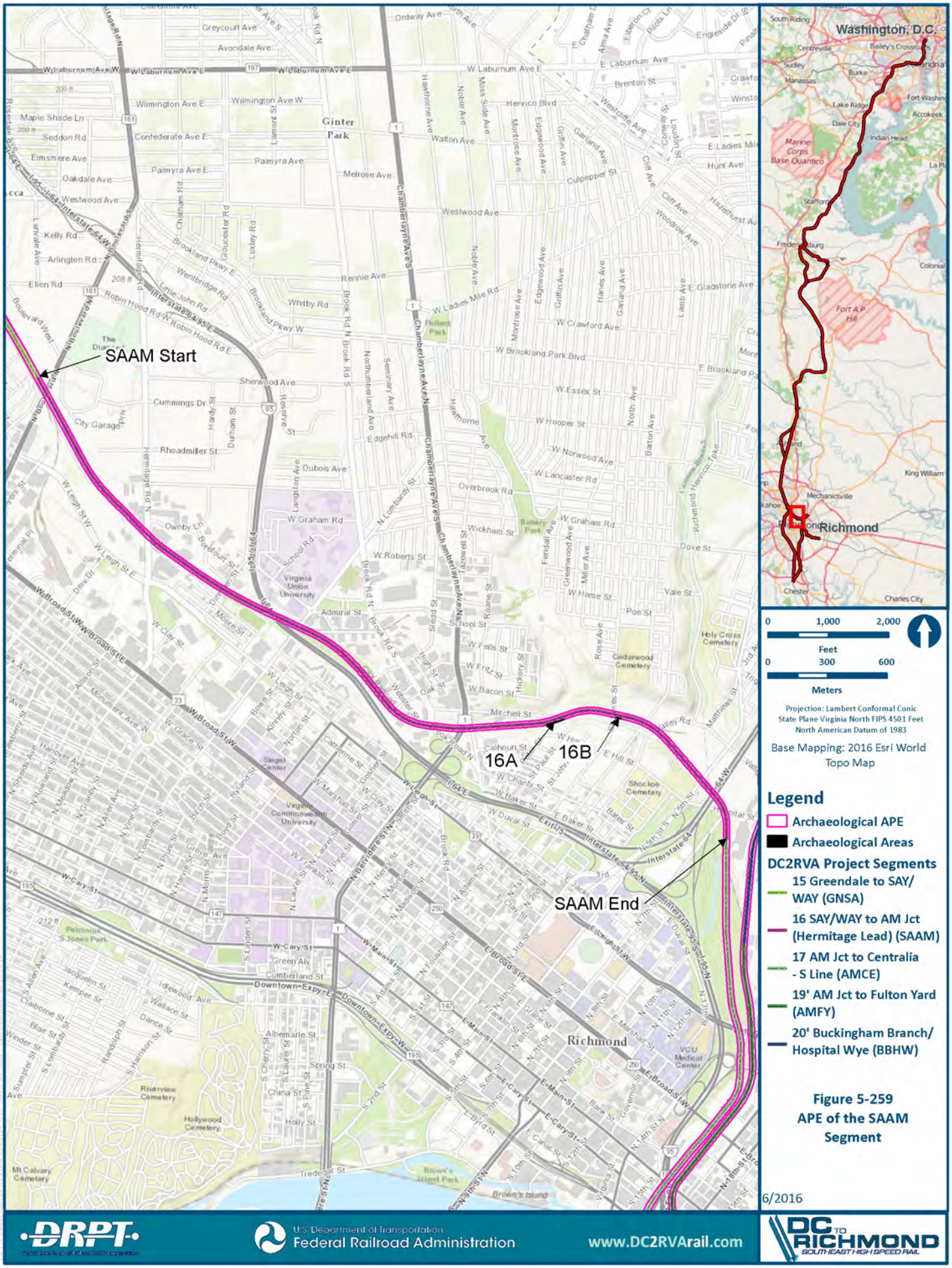


Figure 5-259
APE of the SAAM Segment

6/2016

on predictive modeling, high probability areas cover 0.02 acres (0.008 ha), there were no identified medium probability areas, and low probability areas cover 0.03 acres (0.01 ha). The remaining 40.1 acres (16.2 ha) were classified as having no potential for intact archaeological sites. As such, the SAAM segment consists of two archaeological areas, lettered 16A and 16B. Neither of the archaeological areas required subsurface testing based on the presence of various surface disturbances. No artifacts were recovered and no new sites were identified.

Like much of the DC2RVA project corridor as a whole, all of SAAM segment was not subjected to subsurface testing due to existing disturbances, mainly consisting of the grading and embankments required by the existing railroad, but also substantial rubble piles likely associated with nearby demolition. The APE in Area 16A was located completely on the side slope of the existing railroad grade (Figure 5-260). In Area 16B, the APE fell on a substantial rubble pile (Figure 5-261).

FIGURE 5-260: AREA 16A CORRIDOR COMPLETELY ON THE STEEP SIDE SLOPE OF THE EXISTING RAILROAD GRADE, LOOKING SOUTHWEST

FIGURE 5-261: AREA 16B RUBBLE PILE, LOOKING EAST

5.17 WAY TO CENTRALIA- A LINE (WACE/18)

The WACE segment of the DC2RVA corridor is located in the City of Richmond and Chesterfield County. The northern end of the WACE segment is located in Richmond, near the interchange of I-64 and Boulevard. From there the segment meanders to the south, crossing the James River, and moving into Chesterfield County ending approximately 100 feet (30.5 m) north of Centralia Road in Chester. The WACE segment extends across a total distance of 14.5 miles (23.3 km) and encompassing a total of 175.5 acres (71 ha). Based on the predictive modeling, high probability areas for intact archaeological deposits cover 9.3 acres (3.8 ha) and moderate probability areas cover 1.5 acres (0.6 ha). A total of 91.7 acres (37.1 ha) was classified as having no potential for containing archaeological sites. The WACE segment APE consists of forty-two archaeological areas, given alphanumeric designations 18A through 18AP (Figure 5-262 and Figure 5-263). Of these, only four, Areas 18C, 18AD, 18AH and 18AK, required subsurface testing.

Because of the setting of the WACE segment within the urban center of Richmond, and the rapidly expanding Chesterfield Suburbs, almost the entirety of the archaeological APE within WACE was disturbed. Every area within the APE of this segment was at least partially disturbed and the substantial majority were entirely disturbed. The primary disturbance in almost every area was a combination of grading between the existing rail line and the surrounding land, and the access roads or similar gravel areas connecting the areas around the existing rail to the many roads crossing the rail within the WACE segment. In numerous areas standing water also occupied some part of the APE width (Figure 5-264 through Figure 5-269). Areas 18AL, 18AM, 18AN, 18AO, and 18AP are located partially within the PotNR boundaries of Proctor's Creek Battlefield (020-5320). Because these areas within the battlefield exhibited

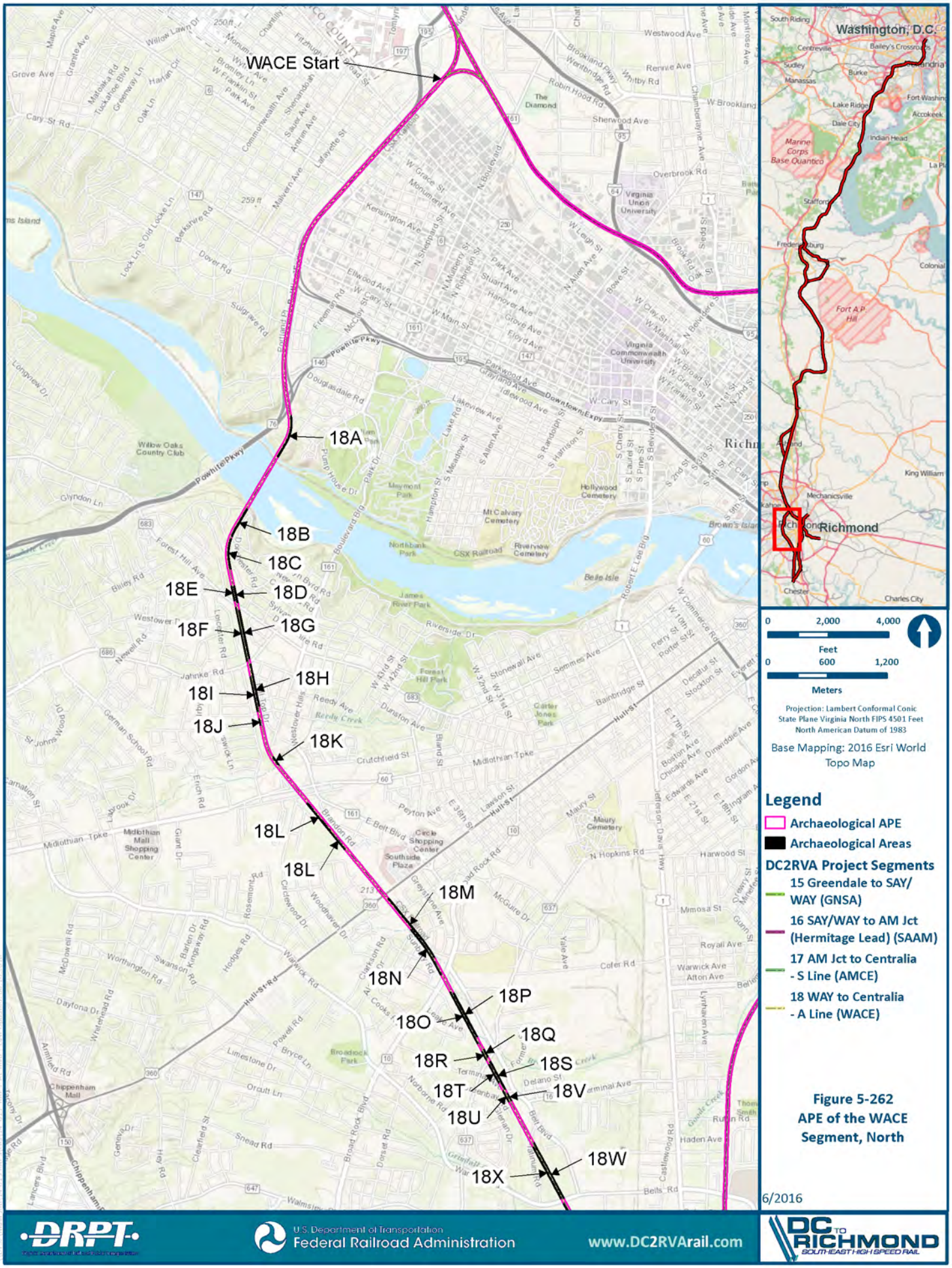


Figure 5-262
APE of the WACE Segment, North

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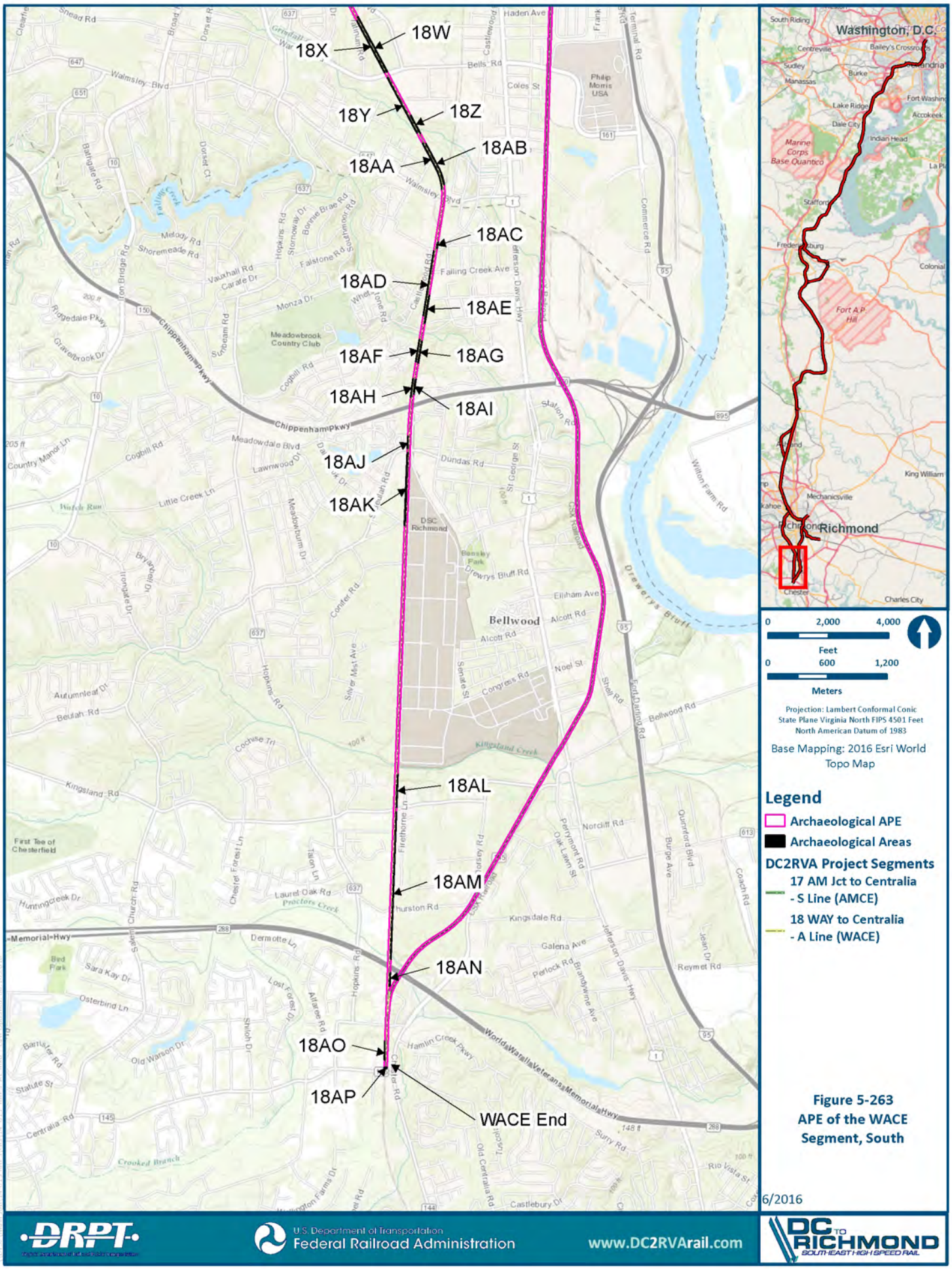

Figure 5-263
APE of the WACE Segment, South

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significant disturbance no shovel testing or metal detector survey was undertaking in these locations.

FIGURE 5-264: DISTURBANCE IN THE WACE APE: AREA 18A, LOOKING SOUTH; AREA 18B, LOOKING NORTH; AREA 18D, LOOKING NORTHWEST; AREA 18E, LOOKING NORTHEAST; AREA 18F, LOOKING NORTH; AND AREA 18G, LOOKING NORTH

FIGURE 5-265: DISTURBANCE IN THE WACE APE: AREA 18H, LOOKING SOUTH; AREA 18I, LOOKING SOUTH; AREA 18J, LOOKING SOUTH; AREA 18K, LOOING SOUTHWEST; AREA 18L, LOOKING SOUTH; AND AREA 18M, LOOING NORTHWEST

FIGURE 5-266: DISTURBANCE IN THE WACE APE: AREA 18N, LOOKING NORTH; AREA 18O, LOOKING EAST; AREA 18P, LOOKING NORTH; AREA 18Q, LOOKING NORTHWEST; AREA 18R, LOOKING NORTH; AND AREA 18S, LOOKING SOUTH

FIGURE 5-267: DISTURBANCE IN THE WACE APE: AREA 18T, LOOKING NORTH; AREA 18U, LOOKING NORTH; AREA 18V, LOOKING SOUTH; AREA 18X, LOOKING NORTHWEST, AREA 18Y, LOOKING SOUTHEAST; AND AREA 18Z, LOOING WEST

FIGURE 5-268: DISTURBANCE IN THE WACE APE: AREA 18AA, LOOKING NORTHWEST; AREA 18AB, LOOKING NORTHWEST; AREA 18AC, LOOKING SOUTH; AREA 18AE, LOOKING NORTH; AREA 18AF, LOOKING NORTH; AND AREA 18AG, LOOKING NORTH

FIGURE 5-269: DISTURBANCE IN THE WACE APE: AREA AI, LOOKING SOUTH; AREA 18AL, LOOKING SOUTH; AREA 18AM, LOOKING NORTHEAST; AREA 18AN, LOOKING NORTHEAST; AREA 18AO, LOOKING SOUTH; AND AREA 18AP, LOOKING EAST

The setting within the WACE segment APE varied but generally included urban environs characterized by a variety of subsurface disturbances. A total of 10 STPs was excavated within the WACE segment, within Areas 18C, 18AD, 18AH, and 18AK. STPs reached an average depth of 0.8 feet (24.4 cm), with a maximum depth of 1.3 feet (39.6 cm). A horizon soils in the WACE segment had an average depth of 0.5 feet (15.2 cm) and ranged in depth from 0.1 to 0.8 feet (3 to

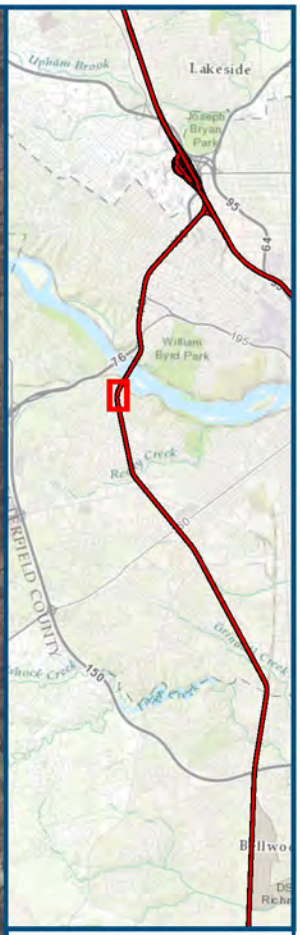
24.4 cm). Profiles varied greatly across the segment and are discussed within the context of each area below.

5.17.1 Archaeological Area 18C

Area 18C is located on the east side of the existing railroad grade, south of Area 18B and New Kent Road in Richmond. Predictive modeling indicated this as a high probability area for archaeological deposits. Area 18C measures approximately 975 feet (297.2 m) in length, and is a wooded area buffering the adjacent residential neighborhood to the east from the existing railroad grade. Much of Area 18C falls in locations disturbed by pushpiles associated with the existing grade, in an artificial ditch, or on the steep artificial slope up to the existing railroad grade and is untestable. A small location in the northern portion of the area and another location in the center of the area were testable (Figure 5-270). Three total STPs were judgmentally placed and excavated between these two locations (Figure 5-271). No artifacts were found and no sites were discovered.

FIGURE 5-270: TESTABLE LOCATION IN THE AREA 18C, LOOKING NORTH

STPs were shallow and the average STP depth in Area 18C was 1 foot (30.5 cm) with a maximum depth of 1.3 feet (39.6 cm). A horizons had an average depth of 0.6 feet (18.3 cm) with a maximum depth of 0.8 feet (24.4 cm). A representative profile has a very dark grayish brown (10YR 3/2) clay loam organic A horizon covering yellowish brown (10YR 5/6) sandy clay (Figure 5-272).



0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 18 WAY to Centralia
- A Line (WACE)

Figure 5-271
STP Survey in Area 18C

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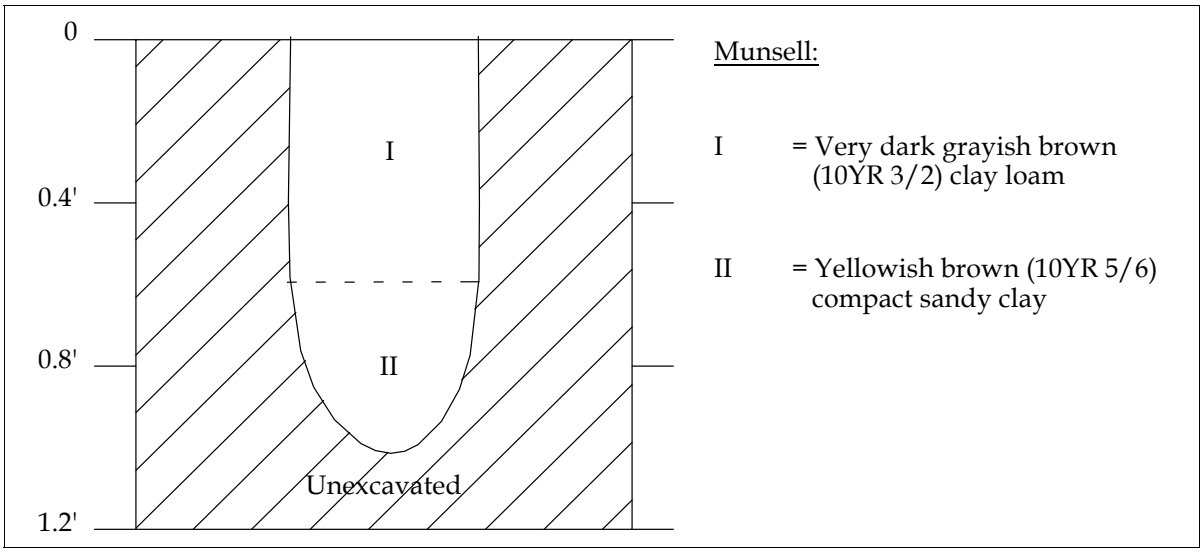


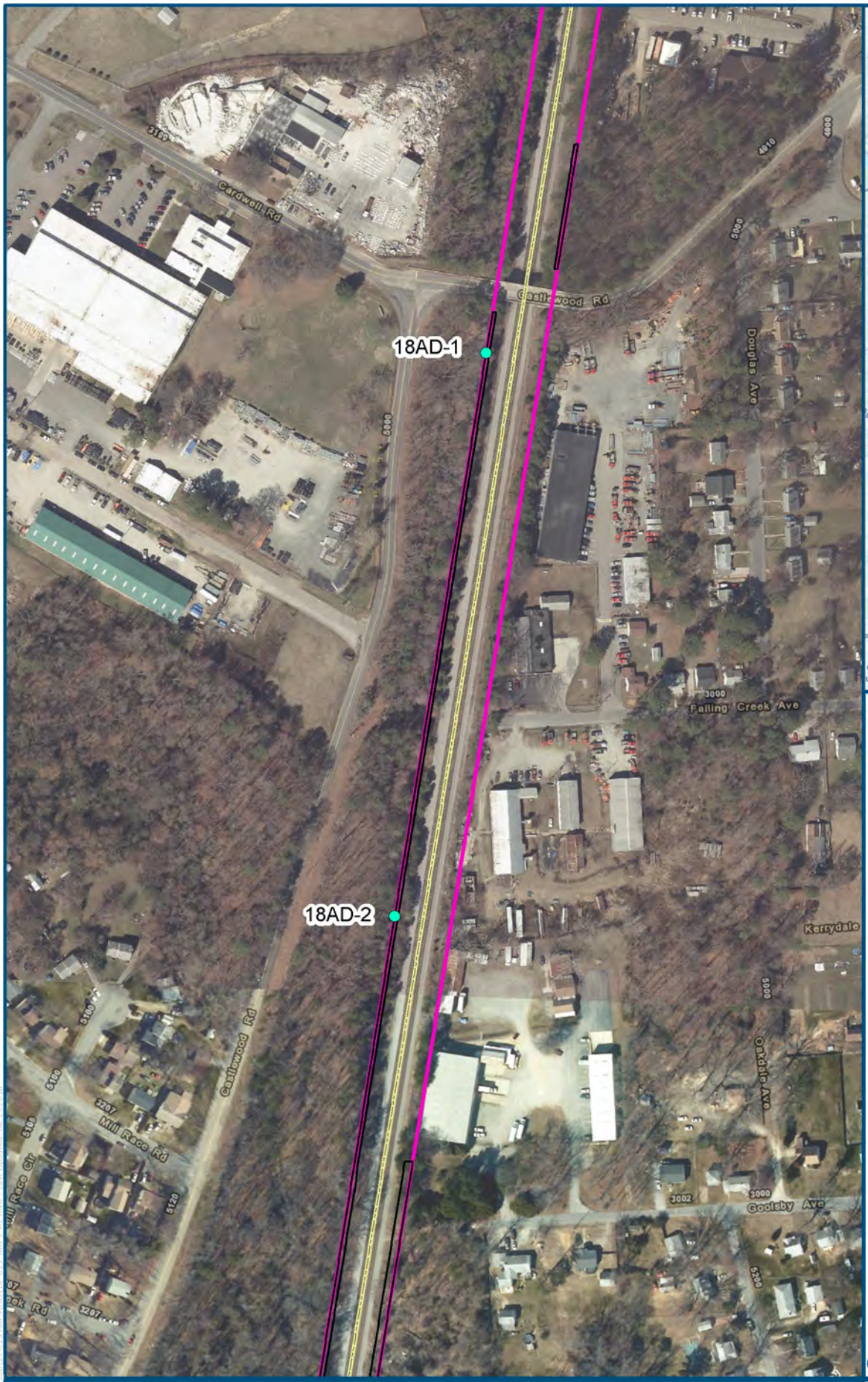
FIGURE 5-272: REPRESENTATIVE SOIL PROFILE FROM AREA 18C, STP 18C-2

5.17.2 Archaeological Area 18AD

Area 18AD is located on the west side of the existing railroad grade, south of Castlewood Road and north of Cogbill Road in Chesterfield County, Virginia. Predictive modeling indicated this as a high probability area for archaeological deposits. Area 18AD measures approximately 2,400 feet (731.5 m) in length, and is in a wooded area. Much of Area 18AD falls in locations disturbed by grading and filling needed to build the corridor up slightly above surrounding inundated areas or on the steep artificial slope up to the existing railroad grade. Two STPs were judgmentally placed and excavated to verify the grading and filling disturbance (Figure 5-273 and Figure 5-274). The STPs were excavated to depths of 0.3 feet and 0.1 feet, respectively, before hitting impassable angular gravel. The soil matrix around the gravel is black (10YR 2/1) clay loam. No artifacts were found and no sites were discovered.

5.17.3 Archaeological Area 18AH

Area 18AH is located on the west side of the existing railroad grade, north of the Chippenham Parkway in Chesterfield County. Predictive modeling indicated this as a high probability area for archaeological deposits. Area 18AH measures approximately 675 feet (205.7 m) in length, and is a wooded area. Much of Area 18AH falls in locations on the steep artificial slope up to the existing railroad grade. A high bluff finger overlooking an unnamed tributary of Falling Creek at the same elevation as the existing railroad grade in the central portion of the area was testable (Figure 5-275). Three STPs were excavated at 50-foot (15.2-m) intervals along a single transect on this landform (Figure 5-276). No artifacts were found and no sites were discovered.



0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 18 WAY to Centralia
- A Line (WACE)

Figure 5-273
STP Survey in Area 18AD

6/2016

FIGURE 5-274: TESTABLE LOCATION IN AREA 18AD, LOOKING NORTH

FIGURE 5-275: TESTABLE LOCATION IN AREA 18AH, LOOKING SOUTH

0 100 200
Feet
0 30 60
Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 18 WAY to Centralia
- A Line (WACE)

Figure 5-276
STP Survey in Area 18AH

6/2016

STPs were shallow and the average STP depth in Area 18AH was 1 foot (30.5 cm), with a maximum depth of 1.3 feet (39.6 cm). The A horizons encountered all had a depth of 0.5 feet (15.2 cm). A representative profile has a dark yellowish brown (10YR 3/4) sandy loam organic A horizon, over a strong brown (7.5YR 5/6) loamy sand mottled with very pale brown (10YR 7/3) loamy sand, covering light gray (2.5Y 7/2) compact sand (Figure 5-277).

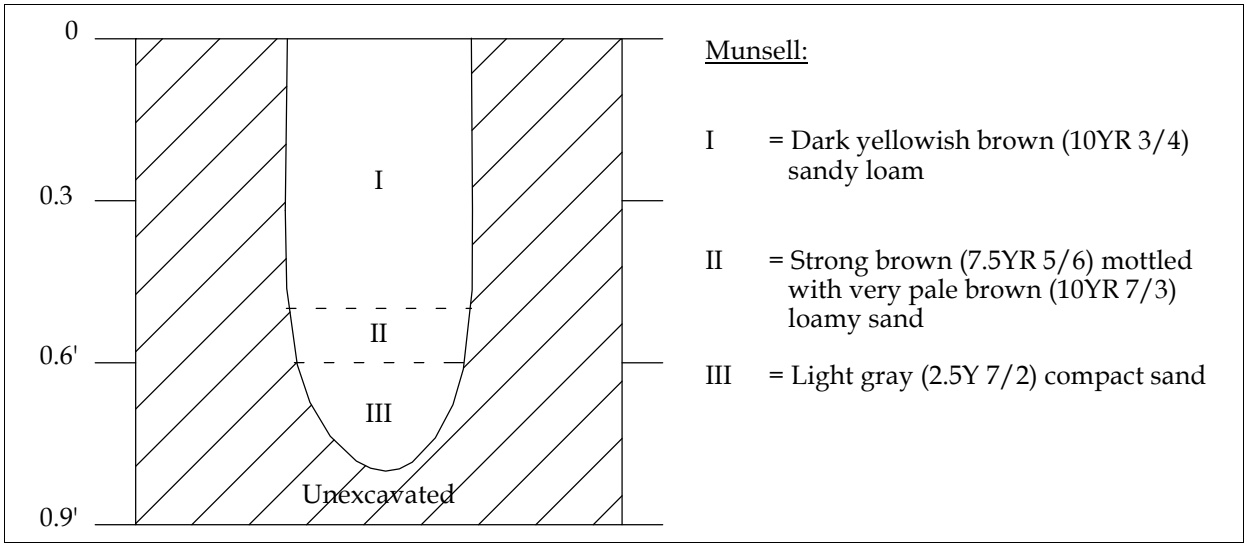
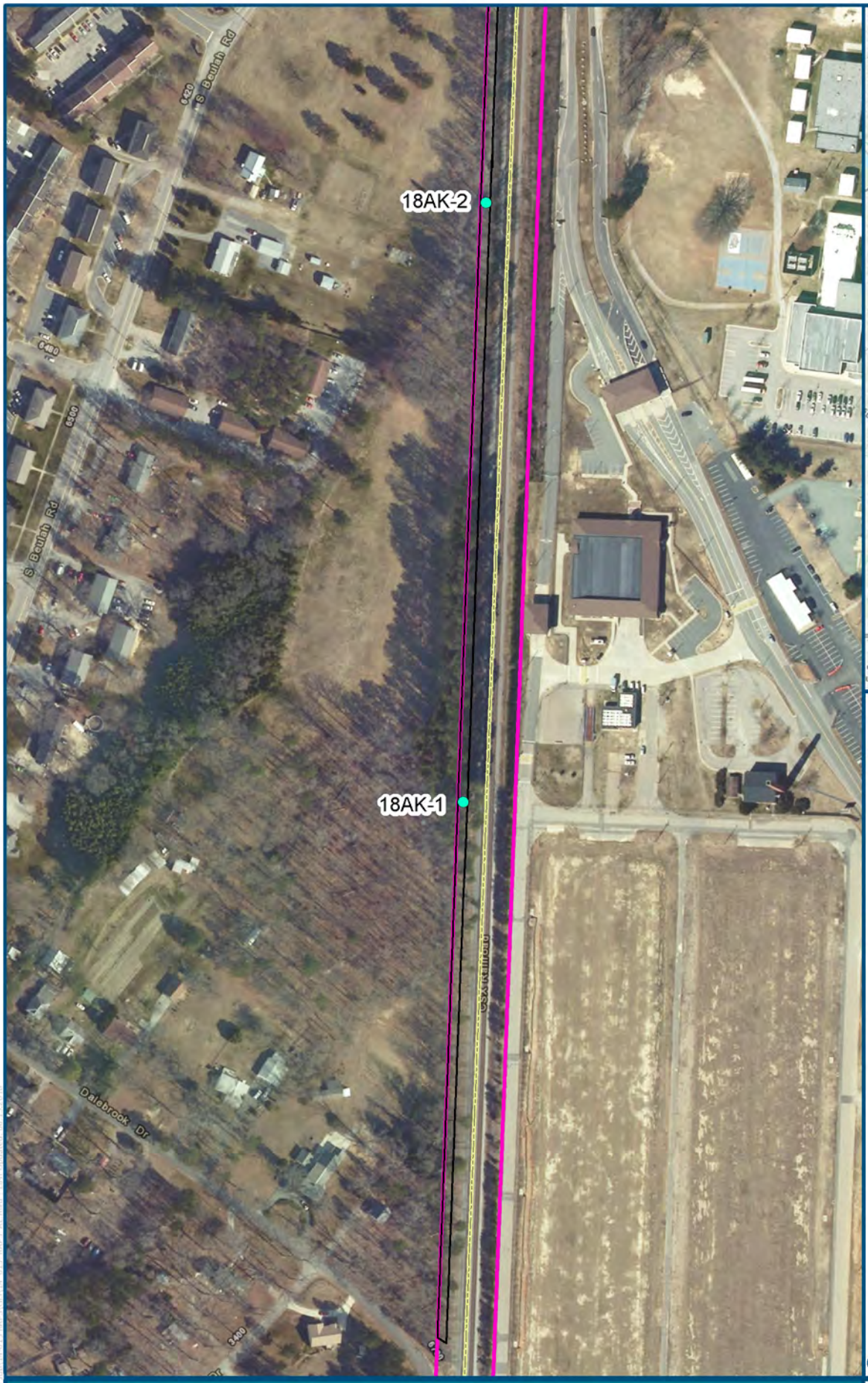


FIGURE 5-277: REPRESENTATIVE SOIL PROFILE FROM AREA 18AH, STP 18AH-1

5.17.4 Archaeological Area 18AK

Area 18AK is located on the west side of the existing railroad grade, south of south Beulah Road and north of Dalebrook Drive and New Kent Road in Chesterfield County. Predictive modeling indicated this as a high probability area for archaeological deposits. Area 18AK measures approximately 2,325 feet (708.7 m) in length, and is a wooded area buffering the adjacent residential neighborhood to the west from the existing railroad grade. Much of Area 18AK falls in locations disturbed by artificial linear berms, or where the corridor is entirely in a stream channel and is untestable. A small location in the northern portion of the area and another location in the center of the area were testable (Figure 5-278 and Figure 5-279). Two STPs, one in each location, were judgmentally placed and excavated. No artifacts were found and no sites were discovered.

STPs were shallow and both STPs were 1 foot (30.5 cm) deep. A-horizons had an average depth of 0.35 feet (10.7 cm) with a maximum depth of 0.5 feet (15.2 cm). A representative profile has a dark brown (7.5YR 3/2) silty loam organic A horizon, over yellowish red (5YR 5/6) clayey loam, covering yellowish red (5YR 5/6) mottled with pinkish gray (7.5YR 7/2) compact silty clay (Figure 5-280).



0 100 200

Feet

0 30 60

Meters

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983

Base Mapping: 2015 VGIN VBMP Aerial Imagery

Legend

- Archaeological APE
- Archaeological Areas
- Negative STP

DC2RVA Project Segments

- 18 WAY to Centralia
- A Line (WACE)

Figure 5-278
STP Survey in Area 18AK

6/2016

FIGURE 5-279: TESTABLE LOCATION IN AREA 18AK, LOOKING EAST

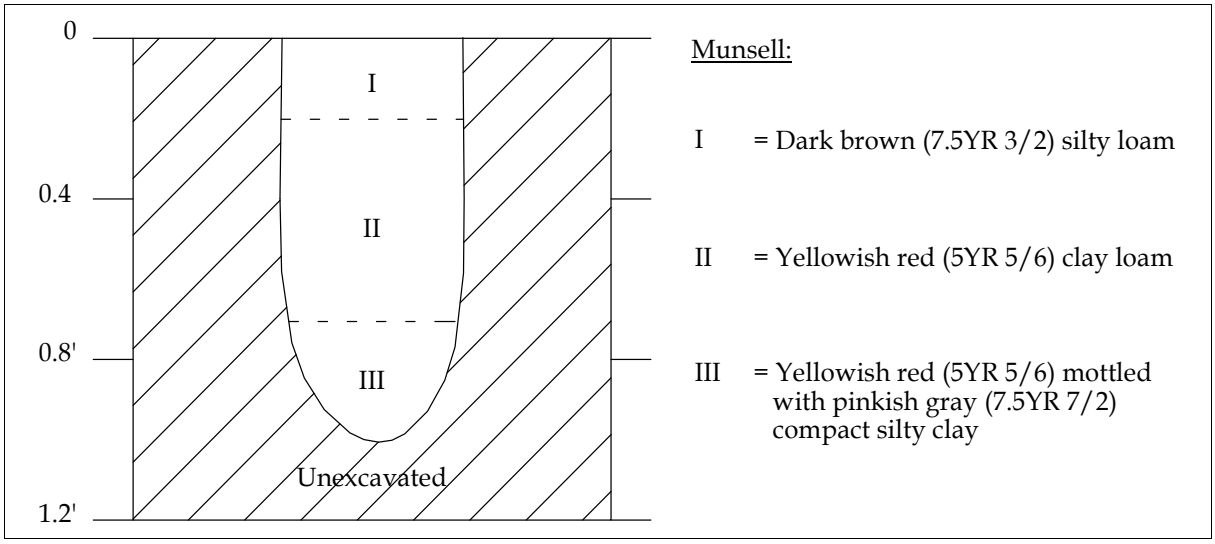


FIGURE 5-280: REPRESENTATIVE SOIL PROFILE FROM AREA 18AK, STP 18AK-1

5.17.5 Previously Recorded Site 44CF0680

Site 44CF0680, Fort Darling or Centralia Earthworks, intersects the AMCE and WACE segment APE in multiple locations. DHR has determined this site to be eligible for the NRHP under Criteria A and C, and it is associated with architectural resource 020-0022. This site was examined in association with Richmond to Raleigh segment of the SEHSR (Barile and Dollins 2012) in relation to the AMCE segment APE, therefore only the WACE segment will be addressed. As

mapped by DHR, portions of the Centralia Earthworks intersect the WACE segment APE (notably in Areas 18AL, 18AM, and 18AN). However, field inspection found that no portions of these features remain intact within the APE, likely destroyed by the construction of the railroad and adjacent roads/development (Figure 5-281 and Figure 5-282). Additionally, no evidence of the earthworks in these locations were visible outside the APE. Based on the field inspection it appears that these earthworks have been destroyed in the in WACE segment APE. Because of its notable association with the Civil War and preservation in other locations, **it is recommended that site 44CF0680 remains eligible for the NRHP. The subsurface integrity of the segment of the site overlapping the APE, however, has been compromised by the railroad construction, as such any portion of this site within the APE does not contribute to overall site eligibility.** DHR concurred with this recommendation in a letter dated October 11, 2016.

FIGURE 5-281: SITE 44CF0680 WITHIN AREA 18AL, LOOKING NORTHWEST

5.17.6 Previously Recorded Site 44HE0840

Site 44HE0840, located in the James River within the WACE segment APE consists of the location of an older, nineteenth century railroad bridge adjacent to the location of the existing Atlantic Coast Railroad Bridge, recorded in 1990 by W.E. Trout of the American Canal Society (Figure 5-283). All that remains visible above the surface of the river are a series of piers paralleling the existing bridge. Although previously recorded as an archaeological site, these bridge remains represent an above-ground resource that will be surveyed, and if possible evaluated, in conjunction with a forthcoming architectural reconnaissance survey of all structures within the DC2RVA architectural APE.

Figure 5-282: Site 44CF0680.
Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

Figure 5-283: Sites 44HE0840 and 44HE0841. Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

5.17.7 Previously Recorded Site 44HE0841

Site 44HE0841, is a segment of canal remains related to the James River and Kanawah Canal and is also located in the James River, within the WACE segment, crossing through the above site, 44HE0840 (see Figure 5-283). This canal section was surveyed by W.E Trout of the American Canal Society in 1986, at which time some portions of the canal structure were visible above the surface. At the time of the present survey, no portion of this site was visible from the right of ways available to the survey team. Although previously recorded as an archaeological site, these canal remains represent an above-ground resource that will be surveyed, and if possible evaluated, in conjunction with a forthcoming architectural reconnaissance survey of all structures within the DC2RVA architectural APE.

5.18 AM JCT TO FULTON YARD (AMFY/19)

The AMFY segment of the DC2RVA corridor is located within the City of Richmond and Henrico County, east of I-95 (Figure 5-284). The northern end joins the southern end of the BBWH segment and the southern end is located in Henrico County, just west of the Richmond International Airport. The setting of the AMFY segment APE is primarily urban (Figure 5-285). It covers a total distance of approximately 4.4 miles (7 km). Initial predictive modeling of the AMFY segment indicated some areas with a probability for containing intact archaeological deposits. However, subsequent to modeling the DC2RVA corridor was altered and this segment was reduced. Additionally, while the current fieldwork was underway, project plans were altered to include only upgrades to existing above-ground railroad signaling along the AMFY segment, as such no subsurface disturbance is proposed within this portion of the corridor. In light of these changes to the project scope no archaeological testing was undertaken beyond a brief visual reconnaissance to discern the general setting of the segment and of any previously recorded sites located therein. No artifacts were recovered, and no new sites were identified.

5.18.1 Previously Recorded Site 44HE1095

Site 44HE1095, known as the Hawes site, was recorded as a nineteenth-century storage facility, possibly for coal, identified by Tim Thompson and sponsored by the Army Corp of Engineers in 1990 during the Richmond Floodwall Project. The site was the location of a structure which was demolished during surface preparation for the floodwall project and was identified through surface collection following the demolition. Late-nineteenth-century ceramics and container glass were recovered. Site 44HE1095 has not been evaluated by the DHR. Nothing remains of the site today as the site area is now covered by the existing railroad grade, an Enterprise Rent-A-Car, and a pizza restaurant (Figure 5-286 and Figure 5-287). It is therefore **recommended that the portion of site 44HE1095 within the APE lacks subsurface integrity and therefore cannot contribute the site's overall NRHP eligibility.** However, it is **recommended that the site as a whole remain unevaluated for the NRHP.** DHR concurred with this recommendation in a letter dated October 11, 2016.

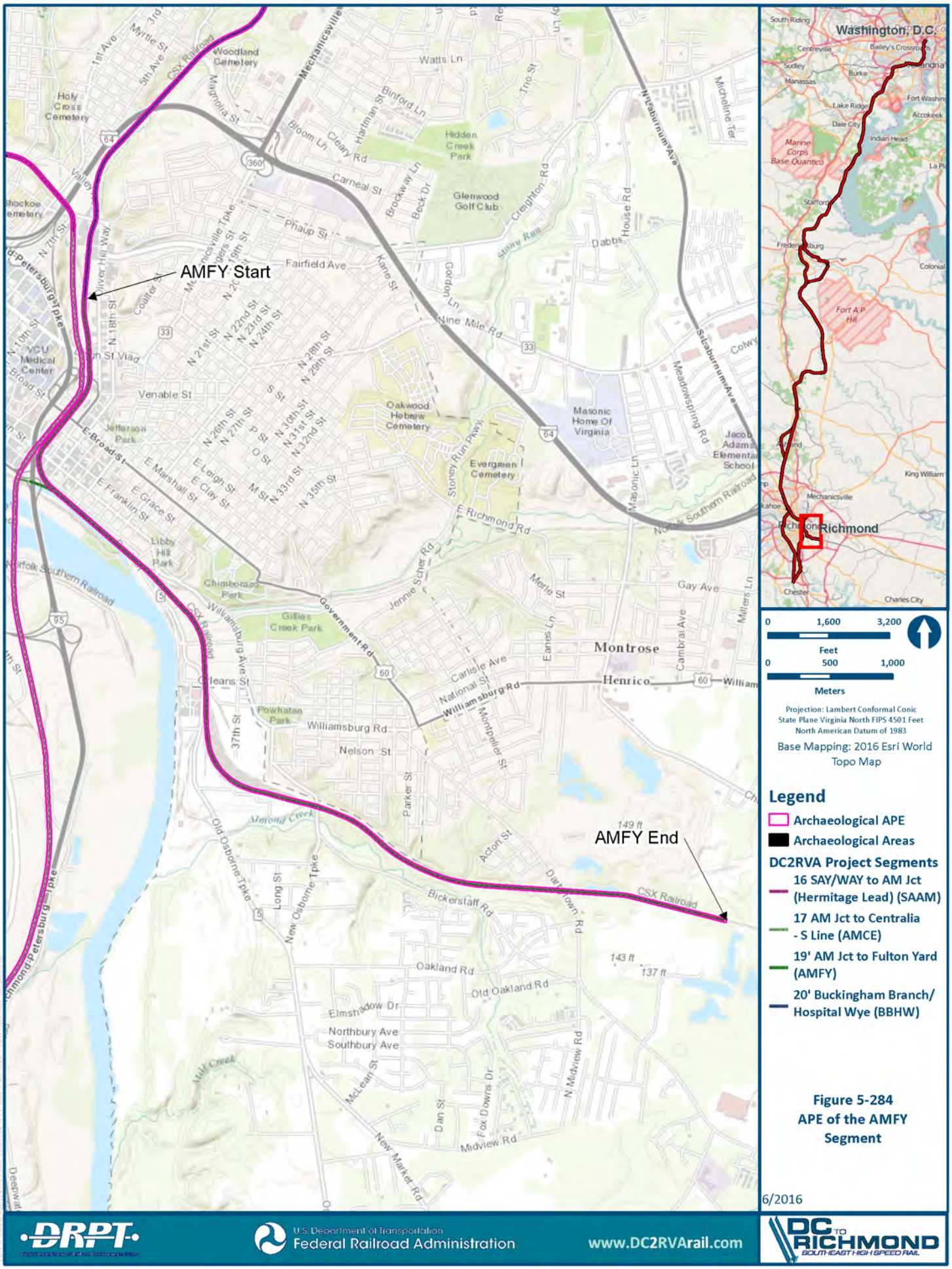


Figure 5-284
APE of the AMFY Segment

6/2016

FIGURE 5-285: TYPICAL SETTING IN AMFY, LOOKING SOUTHEAST

FIGURE 5-286: SITE 44HE1095 LOCATION FROM BENEATH EXISTING RAIL AT INTERSECTION OF EAST CARY AND SOUTH 17TH STREETS,LOOKING SOUTHEAST

Figure 5-287: Site 44HE1095.
Per guidelines set forth in the Archaeological Resources Protection Act of 1979 and other applicable legislation, the locations of recorded archaeological sites have been redacted from this report. Please contact DRPT to request this data.

5.19 BUCKINGHAM BRANCH/HOSPITAL WYE (BBHW/20)

The BBWH segment of the DC2RVA corridor is entirely in the City of Richmond, east of I-95 in the south and traverses I-64. The southern end joins the northern end of the AMFY segment and the northern end terminates just north of Magnolia Street. The setting of Segment 20 is predominantly urban, interspersed with pockets of vegetation (Figure 5-288). This segment covers a total distance of approximately 1.8 miles (2.9 km) (Figure 5-289). Initial predictive modeling of the BBHW segment indicated areas with a probability for containing intact archaeological deposits. However, subsequent to modeling, the DC2RVA corridor was altered and this segment was drastically reduced. The current span of the segment does not include any areas identified for archaeological survey via predictive modeling and no previously recorded archaeological sites are located within the current limits of the APE. In light of these changes to the project scope, no archaeological testing was undertaken beyond a brief visual reconnaissance to discern the general setting of the segment.

FIGURE 5-288: TYPICAL SETTING IN BBHW SEGMENT, LOOKING WEST

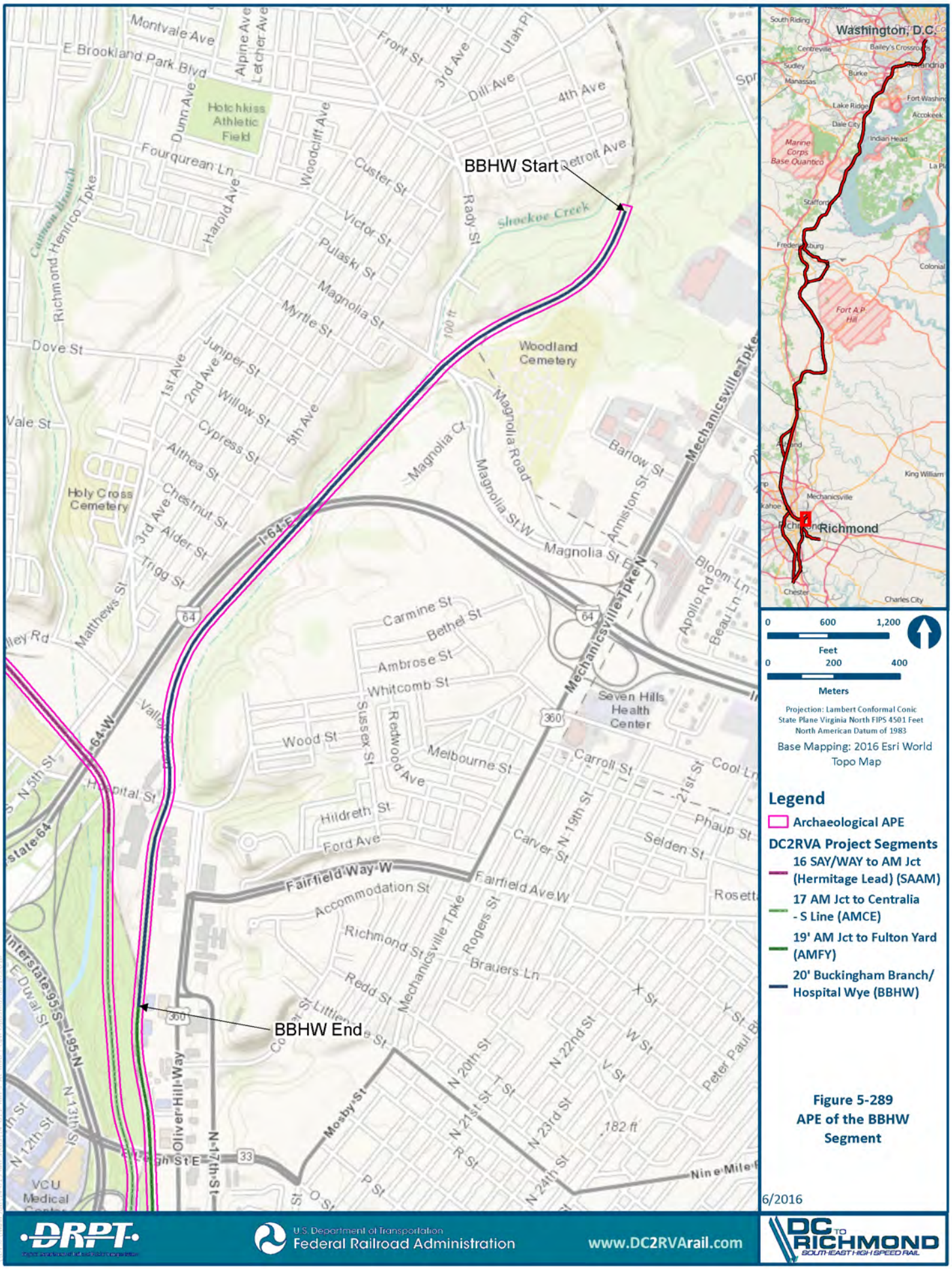


Figure 5-289
APE of the BBHW Segment

6/2016

6 SUMMARY AND RECOMMENDATIONS

The proposed DC2RVA segment of the Southeast High Speed Rail project was examined through a Phase IB archaeological survey. The proposed project is being completed under the auspices of the FRA in conjunction with the DRPT. Because of the FRA's involvement, the undertaking is required to comply with the National Environmental Policy Act of 1969 (NEPA) and Section 106 of the National Historic Preservation Act of 1966, as amended. The project is being completed as DHR File Review #2014-0666.

The current archaeological study included a Phase IB survey of the 20 main line segments (ROAF to BBHW) of the DC2RVA corridor based on the results of the previously completed archaeological background review and archaeological predictive model (Klein at al. 2015). The archaeological APE for the DC2RVA project includes the footprint of physical improvements associated with the project, inclusive of both the rail modifications and any associated roadwork. Engineering and design work has not yet been completed for the corridor, as such the APE for this study was limited to proposed improvement to the existing CSXT rail right-of-way and was specifically defined as an area encompassing 2,109.5 acres (853.7 ha), extending 50 feet (15.2 m) on either side of the railroad centerline, an existing 123-mile (198-km) corridor. Subsequent reports will reflect the study of any areas within the APE but not discussed in this report, such as road modifications and station locations. The goal of the Phase IB survey was to identify archaeological sites greater than 50 years in age and to provide an initial assessment of the integrity and research potential of any archaeological sites discovered within the APE in relation to potential NRHP eligibility.

Previously completed survey in the PCAR and AMCE segments of the DC2RVA corridor, in association with accompanying DHR effect determinations for these portions of the project, precluded the need for further Phase IB investigations within these segments. Additionally, no above-ground resources, namely the multiple battlefields traversed by the archaeological APE, were evaluated within the scope of this archaeological survey. Instead, descriptions and evaluations (when possible) of these resources are addressed in ongoing architectural studies of the corridor.

The archaeological survey consisted of pedestrian survey and subsurface testing, supplemented by metal detector survey in selected archaeological areas identified by predictive modeling. All previously recorded sites within the APE determined to be eligible or potentially eligible for listing on the NRHP and those previously recorded sites that had not been evaluated by the DHR were examined regardless of their probability ranking or location within the probability model. Based on the pedestrian survey, subsurface testing (and if necessary metal detection) was carried out in locations deemed to have potential for intact subsurface deposits. The archaeological areas subjected to Phase IB survey encompassed 156.1 acres (63.2 ha).

A total of 424 STPs was excavated within 51 discrete archaeological areas along the 123-mile-long (198-km) APE. The excavation of the shovel tests resulted in the recovery of 19 artifacts that date entirely to the historic period and include ceramics, glass, metal, and architectural debris.

Phase IB survey resulted in the identification of 21 archaeological sites and 2 isolated finds within the surveyed portions of the APE (Table 6-1). Of these 21 archaeological sites, 18 were previously identified archaeological sites and 3 were newly recorded. It is recommended that 2 sites (44CF0680 and 44FX2542) remain potentially eligible or eligible for listing on the NRHP, but that the portion of these sites within the APE does not contribute to their overall site eligibility. Two of these sites (44SP0187 and 44SP0468) are recommended potentially eligible for listing on the NRHP. Two sites (44HE0840 and 44HE0841) are unevaluated for the NRHP. Twelve sites remain unevaluated, but the portion of these sites within the APE have been destroyed or severely compromised and as such they do not contribute to their respective site's overall eligibility. Finally, the three newly recorded sites and the two isolated finds are recommended not eligible for NRHP listing.

TABLE 6-1: SUMMARY OF IDENTIFIED ARCHAEOLOGICAL SITES

DC2RVA Project Segment	DHR Number	Type	Recommendation
1	44AR0037	Multiple Dwelling/Hotel; Late Nineteenth-century	Unevaluated; Portion in APE does not contribute to Eligibility
1	44AX0028	Canal; Nineteenth Century	Unevaluated; Portion in APE does not contribute to Eligibility
1	44AX0207/ 000-9800-0045	Camp; Late Eighteenth Century	Unevaluated; Portion in APE does not contribute to Eligibility
3	44FX0453	Domestic Scatter; Twentieth Century	Unevaluated; Portion in APE does not contribute to Eligibility
3	44FX0561	Lithic Scatter; Indeterminate Prehistoric	Unevaluated; Portion in APE does not contribute to Eligibility
3	44FX0562	Lithic Scatter; Indeterminate Prehistoric	Unevaluated; Portion in APE does not contribute to Eligibility
4	44FX2455	Lithics Scatter, Domestic Scatter; Indeterminate Prehistoric, Twentieth Century	Unevaluated; Portion in APE does not contribute to Eligibility
4	44FX2542	King's House Hill; Lithics Scatter, Domestic Scatter; Indeterminate Prehistoric, Eighteenth Century	DHR Determined Potentially Eligible under Criterion D; Portion in APE does not contribute to Eligibility
4	44PW1843/ 000-9800-0079	Camp; Late Eighteenth Century	Unevaluated; Portion in APE does not contribute to Eligibility
6	44ST0296	Civil War Camp; Nineteenth Century	Unevaluated; Portion in APE does not contribute to Eligibility
7	44SP0187	Bridge/Possible Mill; Nineteenth Century	Potentially Eligible under Criteria A and D
9	44SP0468	Jackson's Earthwork-Encampment; Nineteenth Century	Potentially Eligible under Criteria A and D

TABLE 6-1: SUMMARY OF IDENTIFIED ARCHAEOLOGICAL SITES

DC2RVA Project Segment	DHR Number	Type	Recommendation
10	44CE0106	Dwelling/Domestic Scatter; Mid-Eighteenth Century through Twentieth Century	Unevaluated; Portion in APE does not contribute to Eligibility
11	44CE0626/ 000-9800-0054	Camp; Late Eighteenth Century	Unevaluated; Portion in APE does not contribute to Eligibility
11	44CE0836	Artifact Scatter, Late-Nineteenth Through Early-Twentieth Century	Not Eligible
12	44CE0837	Artifact Scatter, Late-Nineteenth Through Early-Twentieth Century	Not Eligible
12	44CE0838	Artifact Scatter, Late-Nineteenth Through Early-Twentieth Century	Not Eligible
18	44CF0680	Fort Darling/Centralia Earthworks; Battlefield, Earthworks, Fort. 19th Century: 2nd/3rd quarter (1825−1874), 19th Century: 3rd quarter (1850−1874), Prehistoric/Unknown	Eligible under Criteria A and C; Portion in APE does not contribute to Eligibility
18	44HE0840	Bridge; Nineteenth Century	Unevaluated, see forthcoming DC2RVA Structures Report
18	44HE0841	Canal; Nineteenth Century	Unevaluated, see forthcoming DC2RVA Structures Report
19	44HE1095	Storage Facility; Nineteenth Century	Unevaluated; Portion in APE does not contribute to Eligibility

Source: Dovetail 2016

Sites 44CF0680 Fort Darling or Centralia Earthworks, intersects the AMCE and WACE segment APE in multiple locations. DHR has determined this site to be eligible for the NRHP under Criteria A and C and it is associated with architectural resource 020-0022. This site was examined in association with Richmond to Raleigh segment of the SEHSR (Barile and Dollins 2012) in relation to the AMCE segment APE. Field inspection of the WACE segment APE found that no portions of these features remain intact within the APE, likely destroyed by the construction of the railroad and adjacent roads/development. Because of its notable association with the Civil War and preservation in other locations, **it is recommended that site 44CF0680 remains eligible for the NRHP under Criteria A and C. The subsurface integrity of the segment of the site overlapping the APE, however, has been compromised by the railroad construction, as such any portion of this site within the APE does not contribute to overall site eligibility.**

Site 44FX2542, King's House Hill, is a multi-component site determined potentially eligible for the NRHP by the DHR under Criterion D. The prehistoric component dates to the Paleoindian through Late Woodland. However, King's House Hill is thought to be the location of Tauxenent, the political center of the Dogue (Moyumpse) mentioned by John Smith in 1612. The historic component dates to the eighteenth century. Site 44FX2542 was revisited during field

investigations, and the landform known as King's House Hill was located. However, the portion of King's House Hill in the APE has been truncated by grading associated with construction of the existing railroad grade, destroying any portion of 44FX2542 within the APE. As such, it is **recommended that the portion of site 44FX2542 within the corridor lacks subsurface integrity and therefore does not contribute to the site's potential NRHP eligibility**.

Site 44SP0187 was previously recorded as a stone bridge pier on the south bank of the Rappahannock River. It was revisited and the vicinity was photodocumented within the scope of the current study. The site area was not subjected to subsurface testing as it was not included in the locations the probability model identified for testing. Surface features observed during pedestrian survey suggest that the remains of several buildings and structures may be present in the site boundary. As such, Dovetail **recommends that the site is potentially eligible under Criteria A and D, and a Phase II archaeological evaluation should be undertaken to determine the nature and extent of the archaeological remains associated with site 44SP0187, if project design plans dictate rail upgrades in the vicinity.**

Site 44SP0468, Jackson's Earthworks-Encampment Site, is a previously recorded large complex of earthworks and other encampment features associated with the Civil War Battle of Fredericksburg. Prior to this Phase IB survey, site 44SP0468 was mapped on the east side of the rail corridor and outside the archaeological APE. During the survey of Area 9G a relatively well preserved section of earthwork was observed approaching the existing rail line and adjacent utility corridor at an oblique angle from the southwest. STP and metal detector surveys adjacent to the earthwork yielded no artifacts or evidence of additional cultural features. The newly identified earthwork section appears to terminate just outside the APE, and the APE itself does not appear to contain soils likely to contain subsurface deposits, but the earthwork is considered to abut the eastern margin of the APE. The site is recommended potentially eligible under Criteria A and D. As such, it is **recommended that further delineation and evaluation should be undertaken if project design plans call for rail upgrades in this location.**

Although previously recorded as archaeological resources, sites 44HE0840 and 44HE0841 represent above-ground resources that will be surveyed, and if possible evaluated, in conjunction with a forthcoming architectural reconnaissance survey of all structures within the DC2RVA architectural APE. As such, **sites 44HE0840 and 44HE0841 remain unevaluated for the NRHP** as they are outside the scope of the current Phase IB archaeological study.

Twelve previously recorded sites remain unevaluated for the NRHP, however, all portions of these sites within the APE have been impacted by subsurface disturbance that has compromised their integrity. As such, it is **recommended that all portions of sites 44AR0037, 44AX0028, 44AX0207/000-9800-0045, 44CE0106, 44CE0626/000-9800-054, 44FX0453, 44FX0561, 44FX0562, 44FX2455, 44HE1095, 44PW1843/000-9800-0079, and 44ST0296 within the APE do not contribute to their respective site's overall potential eligibility for the NRHP.**

The three newly recorded sites (44CE0836, 44CE0837 and 44CE0838) and the two isolated finds are recommended not eligible for NRHP listing.

DHR concurred with all recommendations outlined in this report in a letter dated October 11, 2016.

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