ABSTRACT

Archeological investigations were conducted within a portion of the Potomac Yard property located within the City of Alexandria, Virginia. The work was carried out in July and October of 2007 by Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Gainesville, Virginia, for Potomac Yard Development of Alexandria, Virginia. Initial test boring, along a ±2300 foot section of the proposed path of Potomac Avenue, resulted in the discovery of a buried ground surface along the southernmost section of the study area. Subsequent Phase I investigations of the buried ground surface in a 500 foot section of this road, resulted in the identification of one new multi-component archeological site, 44AX0204. The prehistoric component of the site likely represents temporary use of the terraces and upland settings above a small stream that eventually emptied into the Potomac River. The historic component dates to the 19th century and is suggestive of a nearby structure.

Additional archeological work was necessitated in April of 2009 by the construction of a sanitary sewer through site 44AX0204. Shovel test pits were hand excavated in the northern end of the site, revealing that the entire site had been plowed. Additionally, the plow zone was stripped in the southern end of the site and the subsoil was examined for the presence of historic features related to a possibly nearby dwelling or structure. No historic or prehistoric features were located.

Site 44AX0204 measures 500 feet in length and, although the eastern and western site limits have not been determined, an estimated 50 feet in width. The placement of a 72-inch storm sewer has likely destroyed the eastern portion of the site and the western portion of the site has likely been disturbed or destroyed by the construction of the Avis parking lot. Additional archeological work may be required to determine the western extent of the site, should impacts be planned beneath the Avis facility.

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INTRODUCTION

A Resource Management Plan for the Potomac Yard property in Alexandria, Virginia, was prepared by Thunderbird Archeology, a division of Wetland Studies and Solutions Inc. of Gainesville, Virginia for Potomac Yard Development, L.L.C., of Alexandria, Virginia (Mullen and Breckenridge 2007). The purpose of the resource management plan was to evaluate the potential for significant archeological resources within the former rail yard (Exhibit 1). The potential for significant archeological resources was based upon an assessment of the degree of disturbance, the historic topography and the results of archival investigations. This portion of Potomac Avenue was deemed to have a moderate to high probability for the occurrence of archeological resources. Because planned construction would impact potential archeological resources within the proposed path of Potomac Avenue and its associated East/West Roads, archeological work was recommended.

This report presents the results of archeological investigations within a portion of the proposed path of Potomac Avenue, located within the Potomac Yard property in the City of Alexandria (see Exhibit 1). The results of additional archeological investigations of site 44AX0204 are also included within the report. Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Gainesville, Virginia, conducted the studies described in this report for Potomac Yard Development of Alexandria, Virginia. John P. Mullen, M.A., RPA and William Barse, Ph.D., served as Principal Investigators for the project. All studies were in compliance with the City of Alexandria Archeological Protection Code and followed Scopes of Work provided by Alexandria Archeology (Appendix I).

The initial investigations (soil borings) were conducted in July of 2007 by Soil Consultants, Inc, of Manassas, Virginia under contract to Wetland Studies and Solutions, Inc. The purpose of the soil boring was to determine if any potential buried ground surface was present within the portion of the proposed Potomac Avenue that would be impacted by the utility construction. If a surface was located, a preliminary assessment would be made of the potential for the surface to contain archeological resources and the need for further archeological work.

The Phase I investigations were conducted in October of 2007 by William Barse, Ph.D. with the assistance of Archeologist Stephanie Sharpes. The purpose of the Phase I test trenching was to locate any cultural resources within the buried ground surface that were identified during the exploratory soil boring and to provide a preliminary assessment of their potential significance. These investigations resulted in the discovery of one archeological site, 44AX0204. Finally, additional testing was conducted in April of 2009 within site 44AX0204. John P. Mullen, M.A., Elizabeth Waters Johnson, M.A. and Edward Johnson conducted the additional archeological work.

The final repository for all research data and field data resulting from this project will be the Alexandria Archaeology Museum, Alexandria, Virginia.

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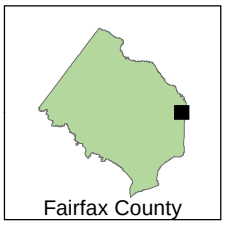
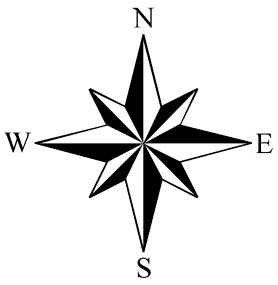
Vicinity Map
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = 2000'





Thunderbird Archeology
A Division of Wetland Studies and Solutions, Inc.

Exhibit 1

ENVIRONMENTAL SETTING

The project area lies within the Coastal Plain, which is underlain by sediments that have been carried from the eroding Appalachian Mountains to the west, and includes layers of Jurassic and Cretaceous clays, sands and gravels. These are overlain by fossiliferous marine deposits, and above these, sands, silts and clays continue to be deposited. The Coastal Plain is the youngest of Virginia's physiographic provinces and elevations range from 0 to 200/250 feet above sea level (a.s.l.). It is characterized by very low relief broken by several low terraces. The Province runs west to the Fall Line, a low escarpment at circa 200 feet a.s.l., which formed where the softer sedimentary rocks of the Coastal Plain abut the more resistant rocks of the Piedmont. Where rivers cross this juncture, rapids or falls have developed.

The larger Potomac Yard property is situated along low terraces overlooking the Potomac River to the east (Exhibit 2). Four Mile Run empties into the Potomac River along the northern boundary of the yard, although the course and flow of this tributary has been altered by development. A recent aerial photograph shows the property under development (Exhibit 3).

The 1861 Boschke map of the District of Columbia shows a drainage flowing northeast through the immediate study area. The drainage originated near the intersection of the AL&H RR and the Alexandria Canal and emptied into the marshy area behind Dangerfield Island (Exhibit 4). This stream would have flowed between the present-day Avis building and the GSA warehouse (now demolished). According to Jim Foley, who has conducted extensive research into the history of Potomac Yard, this "sloping land mass down to the back washes and tidal marshes of Dangerfield's Island" was filled during the construction of the rail yard (personal communication 2006).

Over the years, much of the original topography in the vicinity of the project area has been modified – cut and/or filled – by the development of the Potomac Yard. Based on his research and interviews, Foley (personal communication 2006) described how the establishment of the rail yard changed the pre-1906 landscape. The high ground directly east of Hume Avenue (where the Southbound Hump and Roundhouse were constructed) was excavated to create the Northbound Hump. The Northbound Classification Yard was similarly filled from the high ground "that extended east of Reed Ave all the way over to the river ending in a high (45 foot ASL) bluff known as Susan's Hill where the old Calvert Cemetery was located" (Foley, personal communication 2006).

A map generated using data provided by Christopher Consultants, Ltd., that depicts the areas that has been cut and filled during the construction of Potomac Yard, confirms Foley's description (Exhibit 5). The current study area is located within a "filled area", meaning that the current elevation is approximately five feet or more above the historic 1865 surface. This area thus was felt to have the potential for containing a pre-1906 ground surface with cultural resources that had been buried by fill deposits during the construction of the yard.

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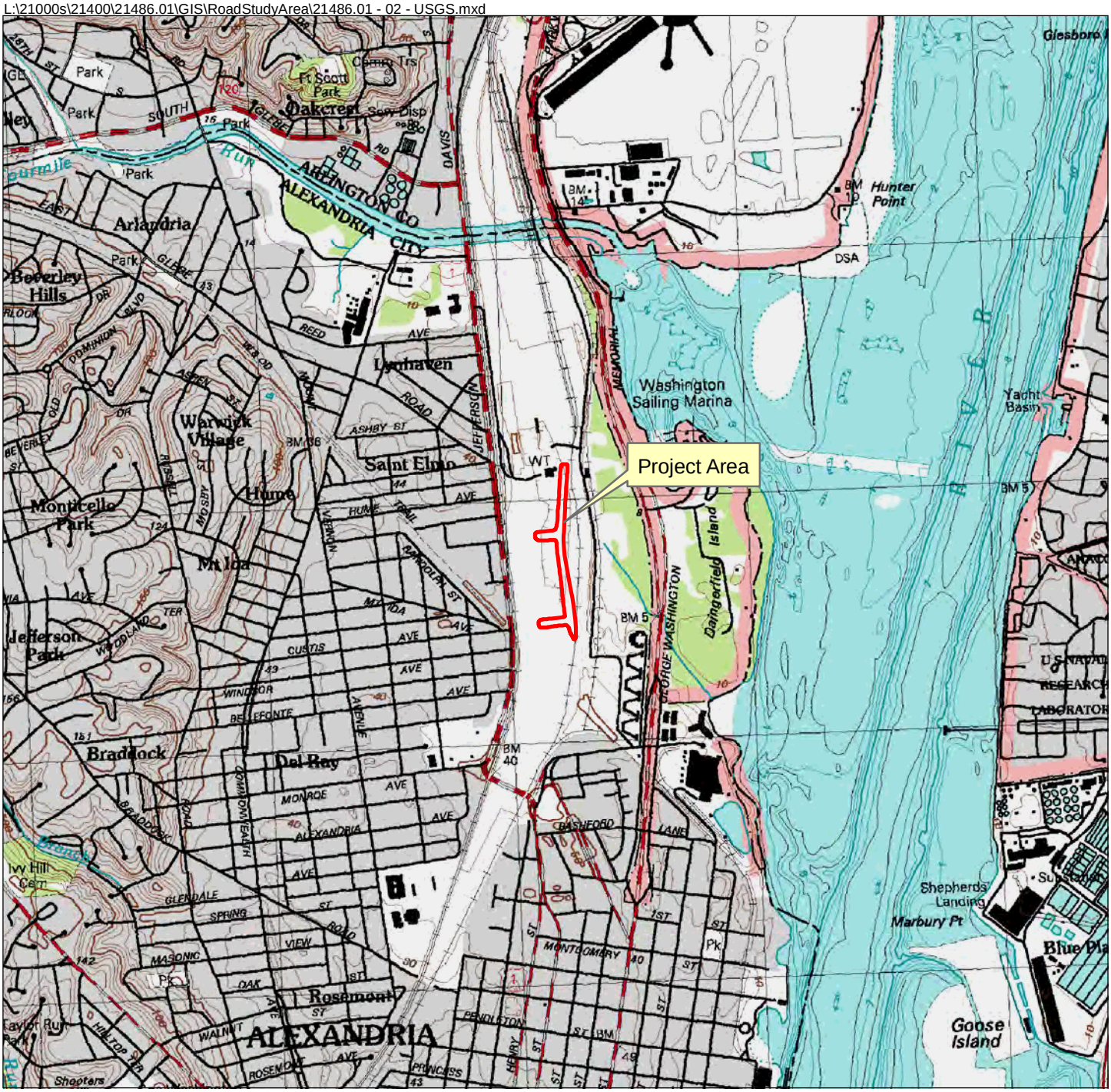

USGS Quad Map
Alexandria, VA-DC-MD 1994
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = 2000'

N
W E
S

Latitude: 38°49'42" N
Longitude: 77°02'52" W
Hydrologic Unit Code (HUC): 02070010
Stream Class: II
Name of Watershed: Potomac River

Thunderbird Archeology
A Division of Wetland Studies and Solutions, Inc.

Exhibit 2

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October 2007 Natural Color Imagery
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = 500'

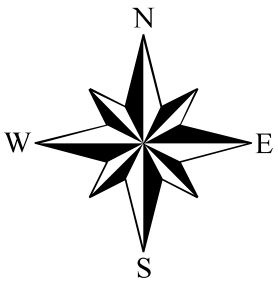

Photo Source: Aerials Express

Thunderbird Archeology
A Division of Wetland Studies and Solutions, Inc.

Exhibit 3

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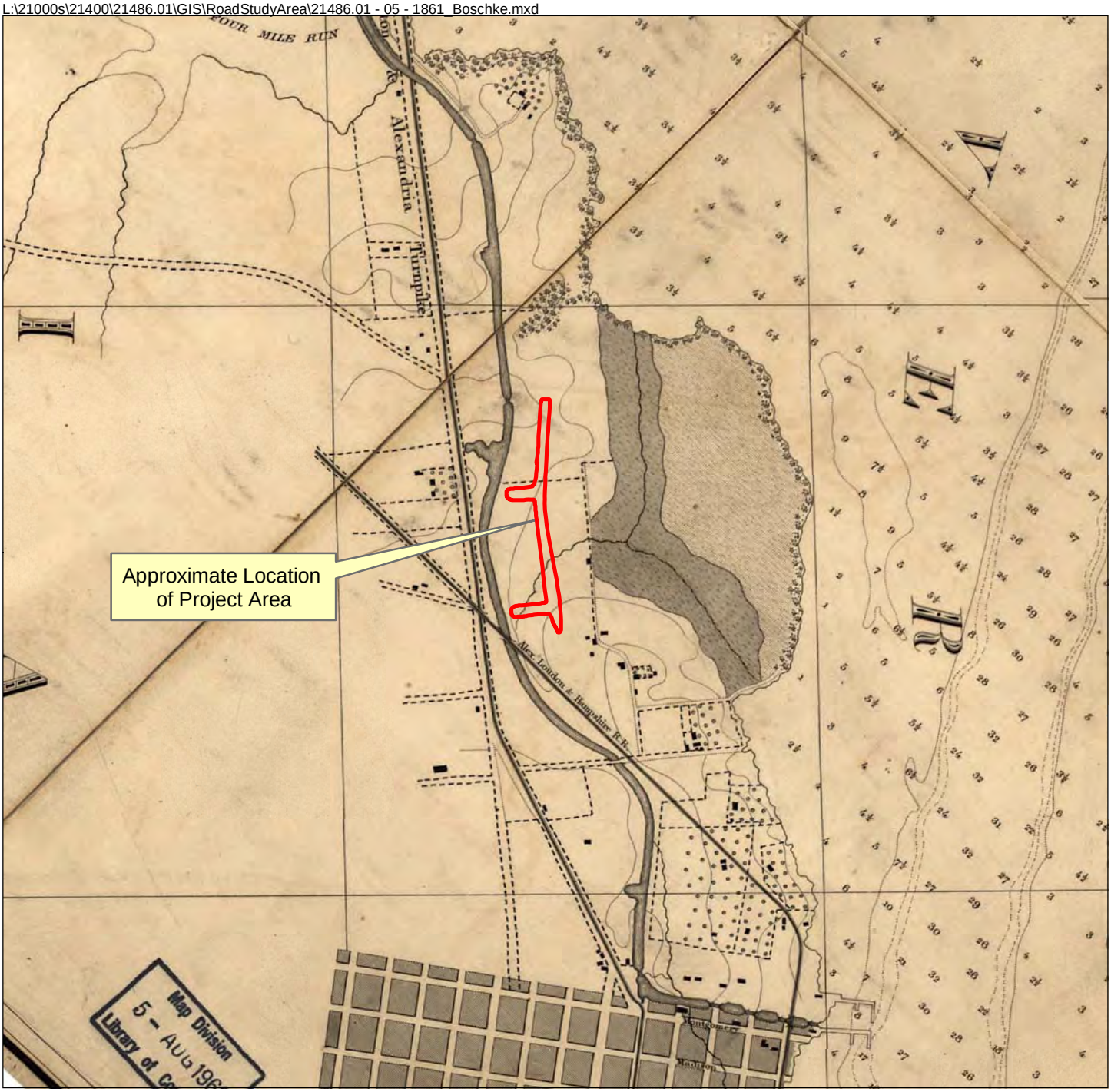

1861 A. Boschke Map
Washington, District of Columbia
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = 400'

N
W E
S

Map Source: "Topographical map of the District of Columbia. Surveyed in the years 1856 '57 '58 & '59 by A. Boschke". 1861. Library of Congress Geography and Map Division Washington, D.C. Original Scale: 1:15,840

Thunderbird Archeology
A Division of Wetland Studies and Solutions, Inc.

Exhibit 4

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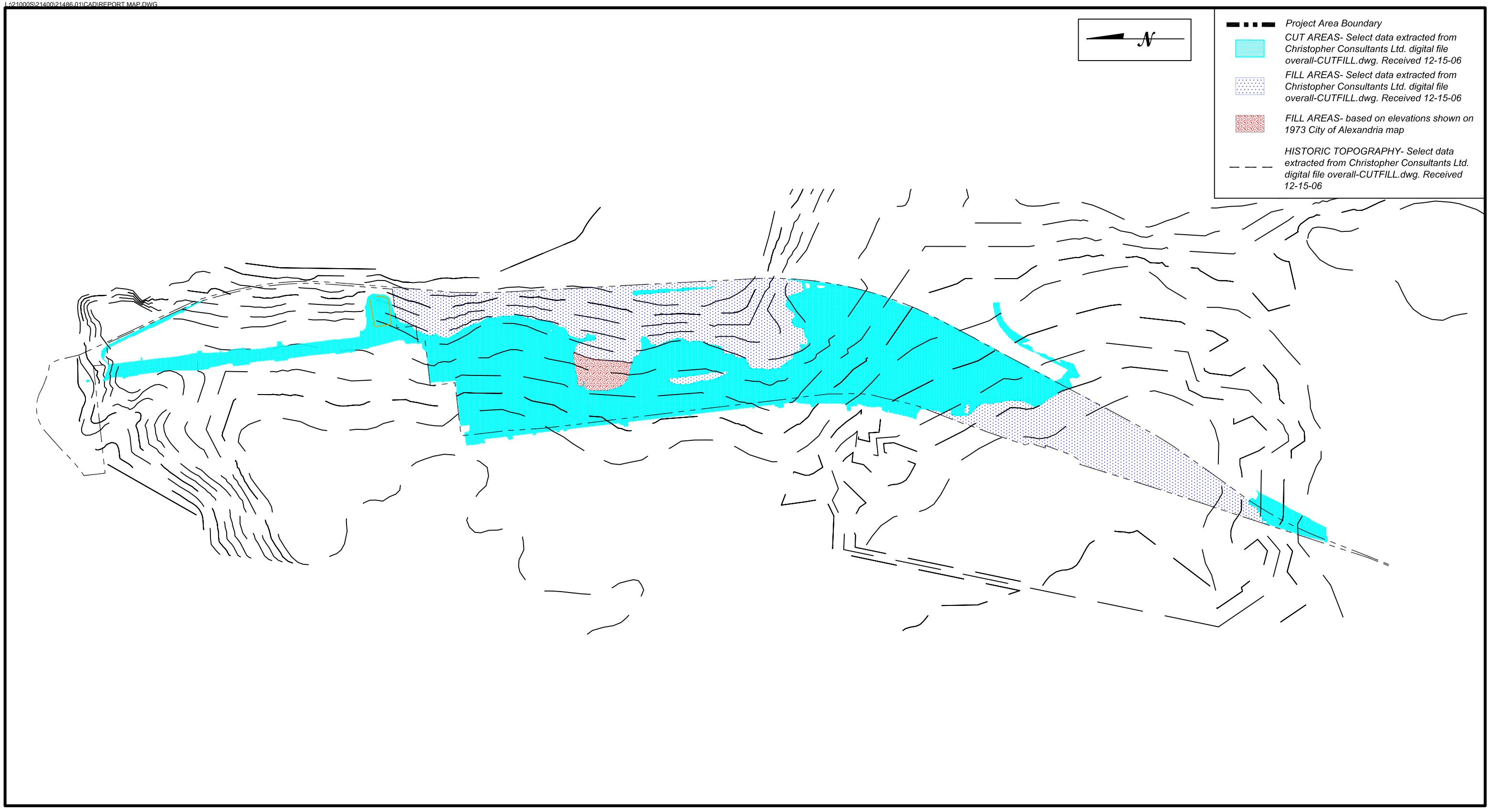

Project Map Showing Cut and Filled Areas
Potomac Yard - WSSI #21486.01
Scale: 1" = 700'

Thunderbird Archeology
A division of Wetland Studies and Solutions, Inc.

Exhibit 5

PALEOENVIRONMENTAL BACKGROUND

Little paleoenvironmental work has taken place in the project area vicinity. Generalizing from discussions by Carbone (1976), Gardner (1982, 1987) and Johnson (1986), although the project area was never directly affected by the Pleistocene glaciation, the climatic change was severe enough to alter the floral and faunal communities. At the time for which the first human artifacts can be documented for the region, circa 9500-9000 B.C., the floral communities were in a rapid state of transition, shifting from an open conifer dominated parkland dotted with mosaics of coniferous and deciduous communities to a deciduous domination accompanied by a reduction of open and edge areas. The continued warming during the Holocene led initially to a deciduous domination in the uplands, particularly that of an oak-hickory forest. By the hot and dry Xerothermic of circa 4000-2000 B.C., a mixed southern hardwood-conifer community had developed in the area. Following the return to cooler and wetter conditions (with various short term perturbations), the interfingering of the oak-hickory and southeastern oak-pine community became characteristic. In terms of the faunal communities, extinctions and extirpations marked the end of the Pleistocene, while changes in the structure and distribution of communities characterize the Holocene.

During the peak of the last Wisconsin maximum, the Potomac in front of Alexandria was a deeply incised fast flowing and non-tidal stream. Beginning circa 18,000 years before present, sea level began to rise rapidly with the influx of water from the melting glaciers. This rise continued to be rapid until circa 3000 B.C., resulting in the inundation of the Susquehanna River channel and the creation of the Chesapeake Bay as well as drowning the Potomac to Little Falls. Sea level rise continues to the present day with continuing drowning and erosion of the shoreline.

Euroamerican utilization of the area, which began in the first quarter to the middle of the 18th century, centered on widespread deforestation and cultivation, resulting in the subsequent erosion of the top soil, much of which would have worked its way into the streams as the uplands deflated. During the 19th century, the continued land abuse, with the on-going logging and cultivation practices, would have perpetuated this cycle. While erosion and deflation continues to varying degrees as modern-day construction projects proceed, large developments have provided a certain stability to the landscape as land use patterns have shifted from agricultural to residential.

CULTURAL HISTORICAL BACKGROUND

Prehistoric Overview

A number of summaries of the region's local archeology are available that are relevant for the project area as well as the greater Middle Atlantic region (cf. Gardner 1987; Johnson 1986; Walker 1981; other works of a more general nature include Stephenson et al. 1963, Potter 1993 and Dent 1995). The following section provides a brief overview of the general prehistory of the region and provides a context for the archeological components anticipated within the project area.

Paleoindian Period (9500-8000 B.C.)

The Paleoindian period corresponds to the end of the Late Pleistocene and beginning of the Early Holocene. This period was characterized by cooler and drier conditions with significantly less seasonal variation than is evident in the region today. The cooler conditions resulted in decreased evaporation and, in areas where drainage was restricted by topography, could have resulted in the development of wetlands in the Triassic Lowlands (Walker 1981; Johnson 1986:P1-8). Generally speaking, the nature of the vegetation was marked by open forests composed of a mix of coniferous and deciduous elements. The individual character of local floral communities would have depended on drainage, soils, and elevation, among other factors. The structure of the open environment would have been favorable for deer and, to a lesser degree, elk, which would have expanded rapidly into the environmental niches left available by the extinction of the herd animals and megafauna that existed during the Late Pleistocene. Evidence suggests that the last of these creatures (e.g. mastodons) would have been gone from the area around by about 11,000-11,500 years B.P., or just before humans first entered what is now Virginia.

The fluted projectile point is considered the hallmark lithic tool of the Paleoindian period. Based on his work at the Flint Run Complex, Gardner identified three distinct sub-phases within the larger fluted point phase (Gardner 1974). The oldest of the Paleoindian sub-phases is identified by the now classic Clovis point, a large, bifacially flaked tool with a channel or flute removed from both sides of its base. The Clovis sub-phase is followed in time by the Middle Paleo sub-phase, defined by smaller fluted points. The Dalton-Hardaway sub-phase is the final one of the period, and is characterized by the minimally fluted Dalton and Hardaway projectile points. This three-period subdivision is well supported by stratigraphy. Associated with these projectile points are various other tools that usually cannot be taken by themselves as definitive indicators of a Paleoindian occupation. Examples of such stone tools include end or side scrapers, bifaces, blades, and spokeshaves, which are all associated with the hunting and processing of game animals.

Paleoindian archeological assemblages rarely contain stone tools specifically designed for processing plant material such as manos, metates, hammerstones, or grinders. This general absence or rarity of such tool categories does not mean that use of plant resources was unimportant. It may suggest that a far greater emphasis was placed on hunting versus gathering, at least when viewed from the perspective of an assemblage of stone tools. For instance, carbonized plant materials have been found in Paleoindian contexts and plant remains have been recovered from some Paleoindian sites. The remains of acalypha, blackberry, hackberry, hawthorn plum, and grape were recovered from a hearth in the Paleoindian portion of the Shawnee-Minisink Site (Dent 1991). Although hard evidence is lacking for the immediate study area, the subsistence settlement base of Paleoindian groups in the immediate region likely focused on general foraging, drawing a comparison with the Shawnee-Minisink data, and certainly focused on hunting (Gardner 1989 and various).

Settlement patterns for the Paleoindian period have been described as quarry-centered, with larger base camps situated in close proximity to sources of high quality cryptocrystalline lithic raw materials. Smaller exploitative or hunting and/or gathering sites are found at varying distance from the quarry-centered base camp (Gardner 1980). This model, developed from Gardner's work at the Thunderbird site complex in the Shenandoah River Valley, has wide applicability throughout both the Middle Atlantic region and greater Eastern United States. The extreme curation (or conservation) and reworking of the blade element exhibited by many stray point finds recovered throughout the Middle Atlantic region, especially specimens from Coastal Plain localities, is a strong argument supporting the quarry-base camp settlement model. Gardner has argued that once a tool kit has been curated to its usable limit, a return to the quarry-tied base camp would be made in order to replenish raw materials (Gardner 1974).

Sporadic Paleoindian finds are reported in the Potomac Valley, but, overall, these distinctive projectile points are not too common in the local area (cf. Gardner 1985; Brown 1979). Paleoindian fluted points have been found as isolated finds in the region; no intact sites have yet been documented (Johnson 1986). One such point was found at Freedman's Cemetery within the City of Alexandria.

Early Archaic Period (8500-6500 B.C.)

The Early Archaic period coincides with the transition from the end of the Late Pleistocene to the beginnings of the Holocene climatic period. This geologic period encompasses the decline of open grasslands and the rise of closed boreal forests throughout the Middle Atlantic region. It can be argued that the reduction of these open grasslands led to the decline and extinction of Pleistocene megafauna. Sea level throughout the region rose with the retreat of glacial ice, a process that led to an increase in the number of poorly drained and swampy biomes. These water-rich areas became the gathering places of large modern mammals, such as white-tailed deer, elk, and moose. Again, as in the Paleoindian period, humans were drawn to these wet biomes because the concentration of game animals made for excellent hunting.

The switch from fluting to notching is generally considered to mark the end of the Paleoindian period and the beginning of the Archaic period. Examples of Early Archaic point types include Amos Corner Notched, Kirk and Palmer Corner Notched, Warren Side Notched and Kirk Stemmed varieties. Serration can be found on both the Kirk and Palmer notched varieties. Gardner has demonstrated that while corner notched and side notched points show a stylistic change from the earlier fluted varieties, they all occurred within a single cultural tradition (Gardner 1974). The transition from fluting to notching is not a radical change, but the gradual replacement of one attribute at a time. The fluting, which was nearly absent during the Dalton-Hardaway sub-phase, is replaced by corner notching, which is then gradually replaced by side notching in the Archaic sequence. Serration of the blade element may be present on many, but not all, of these forms. The favored material (cryptocrystalline jasper), overall triangular shape of the blade element, and the manufacturing technique remained unchanged throughout the period. The initial reason for the change in hafting and related modifications of the basal elements of Early Archaic points is probably related to the introduction of the spear-thrower or atlatl. The fluted forms may have been utilized mainly as thrusting tools, while the earlier notched forms may have been mounted onto a smaller lance with a detachable shaft and powered by the atlatl. Because this does not detract from the influence/importance of hunting within the Flint Run Complex, they are all considered members of the same cultural tradition (Gardner 1974). As in the earlier Paleoindian period, stone tools designed for the processing of plant materials are rare.

Towards the close of the Early Archaic period, trends away from a settlement model comparable to the earlier Paleoindian quarry focused pattern are evident beginning at about 7500 B.C. and later. A major shift is one to a reliance on a greater range of lithic raw material for manufacture of stone tools rather than a narrow focus on high quality cryptocrystalline materials. Lithic use was a matter of propinquity; stone available was stone used. Extensive curation of projectile points, however, is still evident up until the bifurcate phases of the subsequent Middle Archaic period. It may be that while a reliance on high quality lithic materials continued, other kinds of raw material were used as needed.

This pattern is not readily documented during the earlier Paleoindian period. Johnson argues that the shift to a wider range of materials occurs in the gradual shift from the Palmer/Kirk Corner Notched phases of the Early Archaic to the later Kirk Side Notched/Stemmed or closing phases of the period (Johnson 1983; 1986:P2-6). Changes in lithic raw material selection are likely related to movement into a wider range of habitats coincident with the expansion of deciduous forest elements. Early Archaic period sites begin to show up in areas previously not occupied to any great extent, if at all. Additionally, the greater number of sites can be taken as a rough indicator of a gradual population increase through time.

Middle Archaic (6500-3000/2500 B.C.)

The chronological period known as the Middle Archaic coincides with the appearance of full Holocene environments. Climatic trends in the Holocene at this time are marked by the further growth of deciduous forests, continuing rise sea levels, and warm and moist conditions. This change led to the spread of modern temperate floral assemblages (such as mesic hemlock and oak forests), modern faunal assemblages, and seasonal continental climates. The advent of such climates and related vegetation patterns allowed for the development of seasonally available subsistence resources, which led to base camps no longer being situated near specific lithic sources, but closer to these seasonal resources. This shift also led to an increase in the number of exploited environmental zones. The moist conditions favored the spread of swamps and bogs throughout poorly drained areas like floodplains, bays, or basins. Rising sea level and overall moist conditions helped form these swamps and basins; sea level had risen too rapidly to allow the growth of large, stable concentrations of shellfish. Estuarine resources were scarce and the inhabitants relied on varied animal resources for sustenance. Essentially modern faunal species were spread throughout the various biomes, but their distributions would have been somewhat different than that known for today. The prevalent species included deer, turkey, and smaller mammals. As far as the inhabitants of the Middle Archaic are concerned, there is a noticeable increase in population, which can be seen in the sheer number of sites (as represented by the diagnostic point types) throughout the Middle Atlantic region.

The initial technological shift between the Early and Middle Archaic periods is generally considered to be marked by the introduction of bifurcate base projectile points, such as St. Albans, LeCroy, and Kanawha types (Broyles 1971; Chapman 1975; Gardner 1982). Several other marked changes occurred along with the onset of the bifurcate points. Ground stone tools, such as axes, gouges, grinding stones, and plant processing tools, were introduced along with bifurcate points (Chapman 1975, Walker 1981). These new tools are evidence for the implementation of a new technology designed to exploit vegetable/plant resources. Also, a shift to the use of locally available lithic raw material, which began during the closing phases of the Early Archaic, is clearly manifested by the advent of the bifurcate phases. The bifurcate points do not occur throughout the entire Middle Archaic; they appear to be constrained to the earlier portion of the period and disappeared somewhere between 8000–7000 years B.P. (Chapman 1975, Dent 1995). For instance, a Middle Archaic horizon at the Sandts Eddy Site (36NM12) in Northampton County, Pennsylvania, furnished a bifurcate point and a radiocarbon date of around 7330 B.P. (Bergman et al. 1994).

The major stemmed varieties of projectile point that follow the earlier bifurcate forms and typify the middle portion of the Middle Archaic period include the Stanly, Morrow Mountain I and Morrow Mountain II varieties. Coe (1964) documented a Stanly-Morrow Mountain sequence at the Doerschuk Site in the North Carolina Piedmont, and similar results were recorded at the Neville Site in New Hampshire (Dincauze 1976) and the Slade Site in Virginia (Dent 1995). The Neville Site furnished three new point types

(Neville, Stark, and Merrimack) that were similar to those recovered from the Doerschuk Site. It also provided similar radiocarbon dates for these point types. Interestingly, the projectile point sequence from the Slade Site essentially duplicated that of the Doerschuk Site. Excavations at the Clifton Site located in Charles County, Maryland, also demonstrated that an identical sequence is present in the Middle Atlantic Coastal Plain (Barse 1994). This data seems to indicate that a similar Middle Archaic point chronology exists in the Virginia-Maryland area. Dincauze (1976) has suggested such a chronology, characterizing it as an Archaic "Atlantic Slope" culture area.

The projectile points marking the latter portion of the Middle Archaic period are the lanceolate shaped Guilford type and various side notched varieties (Coe 1964; Dent 1995). Guilford points were stratified above Morrow Mountain and Stanly points at the Doerschuk Site (Coe 1964:54) and Halifax side notched points were found above Guilford types at the Gaston Site (Coe 1964:118–119). This sequence was also duplicated at the Slade Site (Dent 1995). Vernon points, common at the Accokeek Creek Site in Prince George's County, Maryland, are considered to be local variants of Halifax points (McNett and Gardner 1975:9). These points have been found stratified below Savannah River/Holmes points at the Fraser Site along the Potomac River in Virginia (McNett and Gardner 1975:10), essentially duplicating Coe's Halifax-Savannah River sequence (1964). Additionally, a single example of this type was found stratified below levels containing Savannah River points at the above noted Clifton Site (Barse 1994).

With the increasing diversity in natural resources came a subsistence pattern that was predicated on the seasonal harvest of various nut species and other plant resources; those species characteristic of deciduous forest environments. Base camps were located in high biomass habitats or areas where a great variety of food resources could be found (Walker 1981). These base camp locations varied according to the season and were located on floodplains, interior fluvial swamp settings, and in some cases, within interior upland swamp settings. The size and duration of the base camps appear to have depended on the size, abundance, and diversity of the immediately local and nearby resource zones.

As noted above, Early Archaic components show a slight increase in numbers over sites documented for the Paleoindian period, but it is during the Middle Archaic (Morrow Mountain periods and later) that prehistoric human presence becomes relatively widespread in a wide range of environmental settings (Gardner 1985, 1987; Johnson 1986; Weiss-Bromberg 1987). Clearly, Middle Archaic populations expanded into a variety of habitats for exploitation of a relatively wide range of both plant and animal resources. Diagnostic artifacts from upland surveys along and near the Potomac show a significant jump during the terminal Middle Archaic (e.g. Halifax) and beginning Late Archaic (Savannah River). Johnson noted in his overview of Fairfax County archeology a major increase in the number of sites (as measured by diagnostic point types) during the bifurcate phase and the later phases such as Halifax (Johnson 1986:P2-14).

Late Archaic (2500-1000 B.C.)

Throughout the Eastern United States, distinctive patterns of Native-American landscape become evident by about 5000 years B.P. (3000 B.C.), marking a significant shift with earlier Middle Archaic components. This reorganization, for lack of a more suitable term, has been termed the Late Archaic period (cf. Griffin 1967). The Late Archaic period is characterized by an increase in population over that documented for the Middle Archaic period (again, an inference based on an increase both in sites and in site size and distribution of diagnostic point types), a foraging pattern linked to dense forests and their seasonally available plant resources (a continuation from earlier patterns), and the development of an adaptation based on the exploitation of riverine and estuarine resources. Climatic events approached those of modern times during the Late Archaic period.

The continued rise in sea level eventually pushed the salinity cline further upstream, creating tidal environments; a corresponding movement of various riverine and estuarine species took place with the development of tidal conditions in the embayed section of the Potomac and its main tributary streams. Freshwater spawning fish had to travel farther upstream to spawn, fostering extensive seasonal fish runs. The development of brackish water estuaries as a result of an increase in sea level in the Hudson, Delaware, and Chesapeake Bay regions led to the spread of various shell species, such as oysters and crabs (Gardner 1976; Gardner 1982). In parts of the Middle Atlantic region, settlement during the Late Archaic period shifted from the interior stream settings favored during earlier periods to the newly embayed stream mouths and similar settings (Gardner 1976). Interior sites became minimally exploited, though not abandoned, sustaining smaller hunting camps and specialized exploitative stations; all exhibited varying emphasis on procurement of locally available cobble or tabular lithic sources, such as chert, quartz, and quartzite, as well as a variety of plant species.

The Late Archaic technological assemblage continued an emphasis on ground stone tools first noted in the Middle Archaic period. Steatite net weights and carved steatite bowls with lug handles first appeared during this period and are common throughout the Eastern United States from Maine to Florida. The most easily recognizable diagnostic projectile point in the Middle Atlantic is the parallel stemmed, broad bladed Savannah River point, which has a number of related cognate types. Defined by Coe based on work in the Carolina Piedmont (Coe 1964), the Savannah River point represents what could be, arguably, a typological horizon throughout the Eastern United States east of the Appalachians, dating from about 4600 to perhaps as late as 3500 B.P. (2600 to 1500 B.C.). Chronological markers are excellent for this period in the Delaware Valley. The definition of the Broadspear point types and the period is based on Witthoft's classic 1953 paper, wherein he suggested the period name "Transitional" to accommodate this particular riverine adaptation.

Intense utilization of the region begins around 1800 B.C. with the advent of the Transitional Period and the Savannah River Broadspear derivatives (noted above) which include the Holmes and other related points. In settlement-subsistence models presented by Gardner, this is linked with the development of large seasonal runs of anadromous fish. These sites tend to be concentrated along the shorelines near accessible fishing areas. The adjacent interior and upland zones become rather extensively utilized as adjuncts to these fishing base camps. The pattern of using seasonal camps continues though the sites are larger, exhibiting greater hearth density and hearth size. Although hunting camps and other more specialized sites may occur in the Triassic Lowlands, the larger base camps are usually found in floodplain settings close to tributary streams or along the low lying floodplains of Potomac estuaries (Walker 1981). Use of the inter-fluvial Piedmont settings diminished during the Late Archaic. Sites from this period are less frequent and more widely scattered in such settings.

Early Woodland (1000-500 B.C.)

Chronological frameworks developed for the Eastern United States and the Middle Atlantic area begin the Early Woodland period with the inception of ceramic technology. This period corresponds generally to the Sub-Atlantic episode, when relatively stable and moister conditions prevailed. At this point in time, climatic conditions approached those of the modern era (Walker 1981). In the middle to lower Potomac River Valley, as well as most of the surrounding Middle Atlantic region, the earliest known ceramics begin with a ware known as Marcey Creek. This ware is a flat bottomed vessel tempered with crushed steatite or, in the Eastern Shore region, other kinds of crushed rock temper. It was defined based on excavations at a site along the Potomac River just north of Washington, D.C. by Carl Manson (Manson 1948). Based on vessel shape, this distinctive ware is interpreted as a direct evolution or development from the flat bottomed stone bowls of the Late Archaic period. Vessels of this ware frequently exhibits the same lugs on the side walls as seen on Late Archaic steatite bowls.

As a ware group, Marcey Creek is a short lived in terms of its position in the chronological record. The earliest dates for this ware are 1200 B.C. in the Northern Neck (Waselkov 1982) and 950 B.C. at the Monocacy site in the Potomac Piedmont (Gardner and McNett 1971). Shortly after about 800 B.C., conoidal and somewhat barrel shaped vessels with cord marked surfaces enter the record in the Middle Atlantic region and greater Northeast. Whether these evolved from the flat bottomed Marcey Creek vessels or simply replaced them is unknown. Locally, such a ware has been designated Accokeek Cord Marked, first described from the Accokeek Creek Site in Prince George's County, Maryland (Stephenson et al. 1963). Some chronological frameworks for the Middle Atlantic region, particularly in Maryland, suggest a transitional ware, such as Selden Island (cf. Slattery 1946), between Marcey Creek and Accokeek and its cognate

wares. While this concept of a transitional ware has logical merit, it cannot be demonstrated conclusively with the evidence currently available. In many cases, the excavated sites show depositional contexts from this period with little vertical separation between Late Archaic and Early Woodland deposits. A more refined chronology that clarifies such issues of ceramic change still needs to be developed.

Accokeek ceramics (and the many regional ware variants) postdate Marcey Creek in all local sequences that have been described. Accokeek is the Early Woodland ware group from the southern part of North Carolina found northward into the middle Delaware River area, forming an Early Woodland ceramic horizon. North of Trenton, New Jersey, this ware and its cognates apparently give way to interior cord marked wares such as Vinette I (cf. descriptions of the Early Woodland interior cord marked wares from the Trenton Complex described in Stewart 1990). Accokeek ware was tempered with both sand and crushed quartz, although any suitable stone may have been used for the grit source, including steatite. In many cases, temper selected for use by Accokeek potters appears to have been based on propinquity to specific resources. In the Coastal Plain settings of the Maryland and Virginia, Accokeek typically has a "sandier" paste and could be said to have sand as a tempering agent. However, when large enough sherds are analyzed, crushed quartz tempering is invariably found in this ware. Whether or not the paste of the vessel is sandy or more clayey in texture (or "feel") depends on the clay source, either Piedmont or Coastal Plain. Clay sources from Coastal Plain settings usually contain greater amounts of sand.

In chronological terms, Marcey Creek and Accokeek span approximately 500 to 600 years. Marcey Creek likely falls within the first 200 years of the final millennium B.C., or roughly 1000 to 800 B.C. Radiocarbon dates for Accokeek place it between 750 B.C. and approximately 300 to 400 B.C., when it is superseded by net impressed varieties, including Popes Creek and related wares (Gardner and McNett 1971; Mouer et al. 1980; Mounier and Cresson 1988. McClearen (1991) reports a suite of comparable early dates for Accokeek from the 522 Bridge Site in Warren County, Virginia.

Other material categories associated with the Accokeek (and cognate) ware horizon are not yet well defined. However, the lobate based Piscataway point is definitely associated with Accokeek pottery at a number of sites in the Middle Atlantic region. To the north, this point type was found in excellent association at two Gloucester County sites in New Jersey, the Woodbury Annex Site and Site 28GL209 (cf. Mounier and Cresson 1988; Barse 1991). In Maryland, this point type was also recovered from contexts associated with Accokeek ceramics at the West Shore Site in Anne Arundel County (Barse 1978). In Virginia, several sites in the James River Valley (Mouer et al. 1981) and at the 522 Bridge Site in Warren County along the Shenandoah River (McClearen 1991) have excellent contexts with Piscataway points and Accokeek pottery. Locally these points have been termed "Teardrop" points by Mounier and other investigators (cf. Mounier and Cresson 1988). These points continue into the early phases of the Middle Woodland period and have been found in contexts containing Popes Creek, Albemarle, and early variants of Mockley ceramics at the Fletchers Boathouse Site (51NW13) along the Potomac River (Barse 2002).

Early Woodland period settlement patterns show a continuation from those described for the Late Archaic. Base camps have been recorded in riverine settings as large settlements, especially at the junction of freshwater-brackish water streams in Coastal Plain localities. Nearby sites that exemplify this Early Woodland settlement pattern are also found in the Potomac Valley, such as at site 18PR142, excavated by the Department of Anthropology of Catholic University in 1976 (Gardner 1976). Here, a substantial Late Archaic Savannah River occupation and an Early Woodland occupation defined by Accokeek ceramics were found in overlapping contexts. This site was interpreted as a series of seasonal occupations situated to exploit spring-summer annual fish runs, as well as a range of other brackish water resources (Gardner 1976). As with the earlier Late Archaic period, smaller sites, although not well defined, were located in non-riverine settings for exploitation of diverse resources.

Middle Woodland (500 B.C.-1000 A.D.)

This period is best interpreted as a gradual development from the Early Woodland and, despite clear continuity, is marked by innovations in the ceramic realm. One notable addition to ceramic technology, and one clearly widespread throughout the Middle Atlantic region, is the inception of vessels exhibiting net impressed surface treatments. A wider range of vessel forms and sizes also can be documented compared to earlier vessel assemblages. The net impressed surfaces and greater variation in vessel size and shape represent a significant change used for defining the Middle Woodland period in the Middle Atlantic region from areas south of the James River through the Chesapeake region and into the lower Susquehanna and Delaware River drainages. Currently, it has been best documented (in terms of stratigraphy) from excavated sites in the Potomac River Valley, though a discussion of these is beyond the scope of this chapter. It should be noted that while net impressed surfaces appear in the archeological record throughout the region at about 500 B.C. to A.D. 1, cord marking (as represented by Accokeek and its cognates) continued as a surface treatment. Accokeek and related wares gradually develop into what has become known as the Albemarle ware group, commonly found in the Piedmont of Virginia and, perhaps, Pennsylvania and Maryland. It does not appear to be present in the Delaware Valley area.

Based on work in the lower Potomac River Valley and the upper Delaware River Valley, net impressed ceramics enter the chronological record around 500 B.C., a date produced by excavations at the lower Potomac River Loyola Retreat Site in Maryland (Gardner and McNett 1971). The latter estimate is supported by the date of 510 B.C. (2460 +/-100 B.P.) from the Piscataway Site in Maryland (18PR7). More recently, AMS dating on carbon taken from a Popes Creek sherd recovered from the Chapel Point Site in Charles County, Maryland returned a slightly younger date of 2235 +/-100 B.P., or 285 +/-100 B.C. (Curry and Kavanagh 1994). In the upper Delaware River area, Broadhead net impressed falls into a similar time range. This ware, considered herein as a northern Popes Creek cognate, has been dated to 480 +/-80 B.C. at the Miller Field Site in New Jersey (Kinsey 1972:456). Other similar wares include the net impressed varieties of Wolf Neck and Colbourn ceramics from the Eastern Shore of Maryland and Delaware.

Comparisons could also be extended to the Prince George Net Impressed ceramics from southern Virginia and the Culpepper ware in the Triassic Lowlands of the Piedmont. These wares or ware groups are circum-Chesapeake Bay in their geographic distribution, pointing to close interrelationships between the societies making these wares. All of these groups were undoubtedly participating in a growing Middle Woodland interaction sphere widespread throughout the James, Potomac, lower Susquehanna, Delaware, and even lower Hudson River Valleys that resulted in a second major ceramic horizon that eventually culminated in the emergence of the later Mockley phase.

Between 100 B.C. and A.D. 100, Popes Creek ceramics developed into the shell tempered Mockley ceramics, a ware that has both net impressed and cord marked surfaces. Why the shift from sand to shell tempering occurred is unknown, although it was widespread in the Middle Atlantic region. In the lower Potomac Valley, Mockley may have been tied to the intensive exploitation of oyster beds, a phenomenon first manifested in the earlier Popes Creek phase of the Middle Woodland period. Mockley ware exhibits clear relationships with the earlier Popes Creek ceramics and its cognate wares in basic attributes such as rim form, vessel shapes, and the range of vessel sizes (Barse 1990).

Many, if not most, radiocarbon dates associated with Mockley ceramics bracket the ware between about A.D. 250 and 300 to approximately A.D. 800, after which it develops into the Late Woodland Townsend Ware. Thurman has termed the developmental trajectory of Mockley to Townsend "the Mockley continuum", a time span that saw gradual population growth and increasing village size leading up to the Late Woodland period (Thurman 1985). For the earlier end of this continuum, Potter (1993) has reported dates in the last 200 years of the final millennium B.C. for Mockley ceramics in the lower Potomac Valley in Virginia. The emergence of Mockley ware from Popes Creek was likely a gradual process, not a single historical event. It is also likely that, during this transition, both wares coexisted (as recognized archeologically), perhaps unevenly across the region. Both wares would have been contemporaneous at some point in this transition, as evidenced by their association in the large refuse pits excavated at the Fletchers Boathouse Site in Washington, D.C. (Barse 2002). At some point in the developmental trajectory, however, Mockley ware superseded the heavy, coarse, sand tempered Popes Creek ceramics and dominated the Middle Atlantic region.

With the emergence of Middle Woodland societies, an apparent settlement shift occurred compared to those seen in the intensive hunter-gatherer-fisher groups of the Late Archaic and Early Woodland periods. In brief, it appears that a selection to broader floodplain localities and the development of larger storage facilities at base camp localities dominated settlement patterns at this time. A classic example of this shift can be found in the Middle Woodland occupation tested by Cross at the Abbott Farm Site in the lower floodplain of the Delaware (Cross 1956). Smaller exploitative sites are also known and found as small shell middens in estuarine settings and interior or inter-riverine hunting stations along the drainage divides between the Delaware River and its tributaries.

Artifacts associated with Mockley ceramics frequently include side notched and parallel stemmed points manufactured from rhyolite, argillite, and Pennsylvania jasper. Such points are known as Fox Creek in the Delaware Valley and Selby Bay in the Chesapeake region.

Popes Creek and Mockley ware ceramics are not as common in Piedmont settings as they are in Coastal Plain settings where they are clearly prevalent. Albemarle ceramics, bearing mostly cord marked exterior surfaces that show clear continuity with the earlier Accokeek ware, are commonly found in Middle Woodland contexts in the Potomac Piedmont. This ware was found associated with Mockley ceramics at the Fletchers Boathouse site in pit contexts (cf. Barse 2002) along with small quantities of Mockley and Popes Creek ceramics. Radiocarbon dates from several of the large pits at this site fall between 100 B.C. and 100 A.D., suggesting that Popes Creek was in the process of being replaced by the shell tempered Mockley ceramics. Albemarle is considered to be contemporary with both, though more commonly found in the Piedmont; as a ware it continued up to and perhaps into the Late Woodland period. Gardner and Walker (1993:4) suggested that fabric impressed wares become more common towards the end of the Middle Woodland period. This surface treatment is restricted to Albemarle wares though, and does not really occur on Mockley ceramics. Fabric impressing on shell tempered ceramics by default is identified as Townsend ware.

Late Woodland (1000 A.D. to European Contact)

The Late Woodland period begins between A.D. 850 and 1000, the result of a culmination in trends concerning subsistence practices, settlement patterns, and ceramic technology. A trend toward sedentism, evident in earlier periods, and a subsistence system emphasizing horticulture eventually led to a settlement pattern of floodplain village communities and dispersed hamlets reliant on an economy of both hunting and the planting of native cultigens.

In the early part of the Late Woodland, the diagnostic ceramics in the Northern Virginia Piedmont region include Potomac Creek, Shepard, and, in the upper Coastal Plain, Townsend ware ceramics, a shell tempered ware that developed from Mockley as noted above. Shepard ceramics are likely an outgrowth of Albemarle, given the similar attributes of paste and surface treatment. The surfaces of the above noted wares are almost exclusively cord marked, with the exception of the fabric impressed Townsend series specimens. In most cases, the cord marked surfaces were smoothed prior to firing the vessel, in some cases nearly obliterating the surface treatment. This is a trend that seems to become more popular through the Late Woodland period.

In the Potomac Piedmont, the crushed rock wares are replaced by a shell tempered ware that spread out of the Shenandoah Valley to at least the mouth of the Monocacy at about A.D. 1350-1400. Shell tempered Keyser ceramics, a downstream variant of the Late Woodland Monongahela ware common in the Upper Ohio River Valley, extend nearly to the Fall Line, although they are not found in Coastal Plain settings. Triangular projectile points indicating the use of the bow and arrow are diagnostic of this period as well.

The Late Woodland period is also marked by a marked increase in ceramic decoration. Most of the motifs are triangular in shape and applied by incising with a blunt-tipped stylus. The marked increase of ceramic decoration and the various design motifs on Late Woodland pottery, compared to earlier periods, likely reflect the need to define ethnic boundaries and possibly smaller kin sets. Neighboring groups that may have been in low level competition for arable riverine floodplains may have used varied embellishments of basic design elements to set themselves apart from one another. Additionally, in a noncompetitive setting, ceramic designs simply may have served to distinguish between individual social groups, as the region now sustained the highest population level of the prehistoric sequence. As such, ceramic design elements functioned as a symbolic means of communication among groups, serving as badges of ethnic identity or, perhaps, smaller intra-group symbols of identity.

As noted above, Late Woodland societies were largely sedentary with an economy relying on the growth of a variety of native cultigens. Late Woodland settlement choice reflects this horticultural focus in the selection of broad floodplain areas for settlement. This pattern was characteristic of the Piedmont as well as the Coastal Plain to the east and the Shenandoah Valley to the west (Gardner 1982; Kavanagh 1983). The uplands and other areas were also utilized, for it was here that wild resources would have been gathered. Smaller, non-ceramic sites are found away from the major rivers (Hantman and Klein 1992; Stevens 1989).

Most of the functional categories of Late Woodland period sites away from major drainages are small base camps, transient, limited purpose camps, and quarries. Site frequency and size vary according to a number of factors, e.g. proximity to major rivers or streams, distribution of readily available surface water, and the presence of lithic raw material (Gardner 1987). Villages, hamlets, or any of the other more permanent categories of sites are rare to absent in the Piedmont inter-riverine uplands.

Perhaps after 1400 A.D., with the effects of the Little Ice Age, an increased emphasis on hunting and gathering and either a decreased emphasis on horticulture or the need for additional arable land required a larger territory per group, and population pressures resulted in a greater occupation of the Outer Piedmont and Fall Line regions (Gardner 1991; Fiedel 1999; Miller and Walker n.d.). The 15th and 16th centuries were a time of population movement and disruption from the Ridge and Valley to the Piedmont and Coastal Plain. There appear to have been shifting socio-economic alliances over competition for resources and places in local exchange networks. Factors leading to competition for resources may have led to the development of more centralized forms of social organization characterized by incipiently ranked societies. Small chiefdoms appeared along major rivers at the Fall Line and in the Inner Coastal Plain at about this time. A Fall Line location was especially advantageous for controlling access to critical seasonal resources as well as being points of topographic constriction that facilitated controlling trade arteries (Potter 1993; Jirikowic 1999; Miller and Walker n.d.).

General Historic Overview

Early English explorations to the American continent began in 1584 when Sir Walter Raleigh obtained a license from Queen Elizabeth of England to search for "remote heathen lands" in the New World, but all of his efforts to establish a colony failed. In 1606, King James I of England granted to Sir Thomas Gates and others of The Virginia Company of London the right to establish two colonies or plantations in the Chesapeake Bay region of North America in order to search "…. For all manner of mines of gold, silver, and copper" (Hening 1823, Volume I:57-75).

It was in the spring of 1607 that three English ships--the *Susan Constant,* the *Godspeed*, and the *Discovery*, under the command of Captains Newport, Gosnole, and John Smith--anchored at Cape Henry in the lower Chesapeake Bay. After receiving a hostile reception from native inhabitants, exploring parties were sent out to sail north of Cape Henry. Following explorations in the lower Chesapeake, an island 60 miles up the James River was selected for settlement (Kelso 1995:6, 7) and the colonists began building a palisaded fort which came to be called Jamestown. In 1608, Captain Smith surveyed and mapped the Potomac River, locating the various native villages on both sides of the Potomac River. Captain Smith's *Map of Virginia* supplies the first recorded names of the numerous native villages along both sides of the Potomac River. The extensive village network along the Potomac was described as the "trading place of the natives" (Gutheim 1986:22, 23, 28). After 1620, Indian trade with the lower Coastal Plain English became increasingly intense. Either in response to the increased trade, or to earlier Indian-Indian hostilities, confederations of former disparate aboriginal groups took place.

Reaffirmed by an "Ancient Charter" dated May 23, 1609, King James outlined the boundaries of the charter of The Virginia Company:

> "...in that part of America called Virginia, from the point of land, called Cape or Point Comfort, all along the sea coast, to the northward two hundred miles, and from the said point of Cape Comfort, all along the sea coast to the southward two hundred miles, and all that space and circuit of land, lying from the sea coast of the precinct aforesaid, up into the land, throughout from sea to sea, west and northwest; and also all the islands, lying within one hundred miles, along the coast of both seas..." (Hening 1823, Volume II:88)

In 1611, John Rolfe (who later married Pocahontas in 1614) began experimenting with the planting of "sweet scented" tobacco at his Bermuda Hundred plantation, located at the confluence of the James and Appomattox Rivers. Rolfe's experiments with tobacco altered the economic future of the Virginia colony by establishing tobacco as the primary crop of the colony; this situation lasted until the Revolutionary War (O'Dell 1983:1; Lutz 1954:27). Tobacco was used as a stable medium of exchange; promissory notes, used as

money, were issued for the quantity and quality of tobacco received (Bradshaw 1955:80, 81). Landed Virginia estates, bound to the tobacco economy, became independent, self-sufficient plantations, and few towns of any size were established in Virginia prior to the industrialization in the south following the Civil War.

A number of early English entrepreneurs were trading along the Potomac River in the early 1600s for provisions and furs. By 1621, the numbers of fur trappers had increased to the point that their fur trade activities became regulated. Henry Fleet, among the better known of the early Potomac River traders, was trading in 1625 along the Potomac River as far north as the Falls, with English colonies in New England, settlements in the West Indies; and across the Atlantic to London (Gutheim 1986:28, 29, 35, 39).

The first Virginia Assembly, convened by Sir (Governor) George Yeardley at James City in June of 1619, increased the number of corporations or boroughs in the colony from seven to eleven. In 1623, the first laws were made by the Virginia Assembly establishing the Church of England in the colony. These regulated the colonial settlements in relationship to Church rule, established land rights, provided some directions on tobacco and corn planting, and included other miscellaneous items such as the provision "…That every dwelling house shall be pallizaded in for defence against the Indians" (Hening 1823, Volume I:119-129).

In 1617, four parishes--James City, Charles City, Henrico and Kikotan--were established in the Virginia colony. By 1630, the colony had expanded, now comprised of a population of about 5,000 persons; this necessitated the creation of new shires, or counties, to compensate for the courts which had become inadequate (Hiden 1980:3, 6). In 1634, that part of Virginia located south of the Rappahannock River was divided into eight shires called James City, Henrico, Charles City, Elizabeth Citty [sic], Warwick River, Warrosquyoake, Charles River, and Accawmack, all to be "…governed as the shires in England" (Hening 1823, Volume I:224). Ten years later, in 1645, Northumberland County, located on the north side of the Rappahannock River, was established "…for the reduceing of the inhabitants of Chickcouan [district] and other parts of the neck of land between Rappahanock River and Potomack River", thus enabling European settlement north of the Rappahannock River and Northern Virginia (Hening 1823, Volume I:352-353).

In 1634, when the Virginia colony was divided by the Virginia House of Burgess into eight shires, there were approximately 4,914 men, women, and children in the colony (Greene 1932:136). Fairfax County was in the shire, or Indian District, of Chicacoan in northern Virginia. With further population growth and expansion of settlement, these shires were later divided and subdivided into counties. The parent counties of Fairfax were Northumberland, created in 1643, Westmoreland (1653-1664), Stafford (1664-1730) and lastly, Prince William, created in 1730 (Hiden 1980:11-15; Sweig 1995:2). Fairfax County, named for the 6th Lord Fairfax, grandson of Lord Culpeper, was created from the northern part of Prince William County by an Act of the Virginia Assembly in 1742 (Hening 1819, Volume V:207-208).

Prior to 1692, most lands in the Virginia Colony were granted by the Governor of the colony and were issued as Virginia Land Grants. In 1618, a provision of 100 acres of land had been made for "Ancient Planters", or those adventurers and planters who had established themselves as permanent settlers prior to 1618. Thereafter, Virginia Land Grants were issued by the "headright" system by which "any person who paid his own way to Virginia should be assigned 50 acres of land...and if he transported at his owne cost one or more persons he should...be awarded 50 acres of land" for each" (Nugent 1983:XXIV).

King Charles I was beheaded in January 1648/9 during the mid-17th century Civil Wars in England. His son, Prince Charles II, was crowned King of England by seven loyal supporters, including two Culpeper brothers, during his exile near France in September 1649. For their support, King Charles granted his loyal followers the Northern Neck, or all that land lying between the Rappahannock and Potomac Rivers in the Virginia colony. King Charles II was subsequently restored to the English throne in 1660.

In 1677, Thomas, Second Lord Culpeper became successor to Governor Berkley in Virginia, and by 1681, he had purchased the six Northern Neck interests of the other proprietors. The Northern Neck grant (due to expire in 1690) was reaffirmed by England in perpetuity to Lord Culpeper in 1688. Lord Culpeper died in 1689, and four-fifths of the Northern Neck interest passed in 1690 to his daughter, Katherine Culpeper, who married Thomas, the fifth Lord Fairfax.

The Northern Neck became vested and was affirmed to Thomas, Lord Fairfax, in 1692 (Kilmer and Sweig 1975:5-9). In 1702, Lord Fairfax appointed an agent, Robert Carter of Lancaster County, Virginia, to rent the Northern Neck lands for nominal quit rents, usually two shillings sterling per acre (Hening 1820, Volume IV:514-523; Kilmer and Sweig 1975:1-2, 7, 9).

At the end of the 17th century, prior to the establishment of the town of Alexandria, the large tracts of land around the area situated on Great Hunting Creek had been patented. The creek, which extended far inland from the Potomac, provided transportation for local planters. What later became the City of Alexandria was located on a portion of a 6,000 acre Virginia Land Grant patented by Robert Howson (Howsin/Housing) in 1669 for the transportation of 120 persons into the colony (Mitchell 1990:21). The extent and boundaries of the Northern Neck were not established until two separate surveys of the Northern Neck were conducted. These were begun in 1736, and a final agreement was reached between 1745 and 1747 (Kilmer and Sweig 1975:13-14).

The town of Alexandria, named after John Alexander, was established in 1749 on 60 acres of land owned by descendants of John Alexander, who was the third patentee of a 6,000 acre tract originally patented in 1658. Alexandria was locally referred to as "Hunting Creek [tobacco] Warehouse" and later as "Belhaven". The 18th century tobacco town of Alexandria was located on an inlet adjacent to a large marshy area (Cressey 1978). In 1749, it was reported to the Virginia Assembly that a town at the Hunting Creek warehouse "…would be commodious for trade and navigation and tend greatly to

the Ease and Advantage of the Frontier Inhabitants" (Winfree 1971:443-445). By an Act of the Virginia Assembly in 1749, it was ordered that, within four months, 60 acres of land belonging to Philip Alexander, John Alexander, and Hugh West were to be surveyed beginning at the first branch above the tobacco warehouses and laid out in lots. The surrounding land was then separated into lots and sold; the early section of town was linearly oriented along the river between Four Mile Run and Hunting Creek, which emptied into the Potomac River. With the rapid mercantile expansion of the 18th century, Alexandria annexed two areas until the City extended to the interface between alluvium and river terrace (Cressey 1978).

In 1742, the Virginia Assembly ordered that the first Fairfax County Courthouse be established at Spring Field, a tract of 1,429 acres of land that included the sources of Accotink, Wolf Trap, Pimmet's and Scott's Runs and which extended between the eastern and middle ridges of Fairfax County. Fairfax County's first courthouse was located at Freedom Hill, near the current town of Vienna, and was moved to Alexandria in 1754. The town of Alexandria was incorporated in Fairfax County in 1779 and remained the second site of the Fairfax County Courthouse until it was ceded to the seat of the Federal Government in 1791. In 1791, the town became part of the newly established federal city of Washington, D.C. The Fairfax County Courthouse, however, remained in Alexandria until 1799 when a new site for the courthouse was selected in its current location, now within the City of Fairfax. Alexandria officially became part of the District of Columbia on February 27, 1801 (Smith and Miller 1989:51).

Alexandria developed into an important center for maritime trade and participated in the flour trade with Europe and the Caribbean as early as the 1770s. By 1775, there were "20 major mercantile firms in Alexandria, 12 of which were involved in the transshipment of wheat" (Smith and Miller 1989:14). Although Alexandria flour was not considered as fine as the flour from Philadelphia, New York and Baltimore, flour milling served as a chief industry during the early 1780s and again in the 1790s (Smith and Miller 1989:14). The international market for flour transformed local milling into a larger and more profitable enterprise. During the Colonial period, the water powered grist or custom mills had primarily served a landowner and a "small circle of neighbors", while later "merchant mills" ground a greater quantity of flour to be marketed "by the sackful or shipload" (Netherton et al. 1992:1).

Fairfax County historians state that:

> "Despite the fact that Alexandria was part of the Federal District in the first half of the nineteenth century, it remained a commercial and cultural center for Fairfax County...being a seaport, Alexandria depended considerably on the decline and rise of the country's agricultural circumstances...." (Netherton et al. 1992:172).

In 1803, the western boundary of Alexandria was West Street, the southern boundary was Hunting Creek, the wharves on the Potomac River east of Union Street marked the eastern boundary and Montgomery Street former the northern boundary. The three major roads leading into Alexandria were: the "Road from Leesburg" (Leesburg Turnpike), which entered Withe [Wythe] Street; the "Road From Leesburg and Western Country" (Little River Turnpike); and the "Road from Richmond" (Back Road/Telegraph Road), which intersected with the "Road from Leesburg and Western County" on the north side of Cameron Mills, west of Duke Street (Fairfax County, Virginia Deeds E2:269). In 1808, the Washington and Alexandria Turnpike Company initiated condemnation proceedings in order to construct the turnpike between Montgomery Street and the poor house, which is situated near present-day Monroe Street (personal communication, Evelyn Causey 2006).

The City of Alexandria began to suffer a long economic decline beginning about 1799; lasting through about 1842. Contributing agricultural factors were the depletion of soils and the division of plantations into smaller, supporting tracts of farmlands among planters' sons. Newly available lands in the west claimed by the United States after its victory over the British in the Revolutionary War, the Ordinance of 1787 establishing the Northwest Territory, and the circa 1800 Virginia Military Bounty establishing lands set aside for settlement by Virginians and Kentuckians all factored into the change in settlement patterns. All of these spurred a migration of third and fourth generations of Fairfax County (and Alexandria) residents during the post-Revolutionary War period. Other influences included international conflicts following the Revolutionary War and the effects of French privateer ships on Alexandria shipping, along with embargoes and the War of 1812 (Smith and Miller 1989:56).

At the end of the 18th century, the value of tobacco declined, and Virginia, particularly the eastern region, entered a period of economic depression. Plantation tobacco farming methods of cropping until the soil was unproductive then clearing new land had depleted the soil so that it no longer produced on the scale needed to maintain a steady crop (Netherton et al. 1992:252). As a consequence, tobacco farming faded out, while wheat and corn became the more profitable crops. The economic depression also forced social changes within the town of Alexandria (Netherton et al. 1992:185).

Until the end of the 18th century, almost all African Americans living within the boundaries of Alexandria were slaves. Though there were some free African Americans earlier, between 1790 and 1810, Alexandria's free population jumped more than 400 percent. Ironically, Alexandria was also home to one of the largest slave trading businesses in the nation. The business, located on Duke Street, began in 1828 and, by 1835, was one of the most successful enterprises from Maryland to New Orleans. However, by 1860, half of the town's population was free because of the influx of freed people migrating from rural areas. Many of them even purchased their own freedom (Cressey et al. 1984:17).

The African American population made up most of what would be considered the lower class at this time, and they either lived with white families or separately in the southern portion of the town. This area, toward the shore of Hunting Creek to the west of the Potomac, was referred to as "The Bottoms" and is the oldest African-American neighborhood in Alexandria (Cressey et al. 1984:17). Closer to the project area is the Parker-Gray Historic District, which is a post-Civil War African-American neighborhood.

In the 1830s and 1840s, large groups of Quakers migrated to Virginia primarily because of the availability of affordable land:

> "Northern farmers were confident in their ability to produce healthy crops on the depleted Virginia soil by employing better farming methods. Their migration into Virginia introduced a social and economic system which was dominated by middle class values and based on small, independent farms which did not rely on slave labor. Virginia's economy improved considerably during the 1840's as a result of diversified agriculture and scientific farming methods, fertilization, deep plowing and crop rotation" (Knepper and Pappas 1990:9).

During the 1840s and 1850s, there was a wave of immigration from countries such as Germany and Ireland. According to historian Gary C. Grassl, German immigrants, who lived as farmers outside the city of Alexandria "...directed their attention mainly to fruit culture, market gardens, and dairy farming" (Grassl 2000:6). By 1860, in Alexandria County, there were reportedly 1,245 foreign born residents living in the area, many of whom were Irish immigrants (Hurst 1991:34, 69).

On the night of December 26, 1860, Major Robert Anderson moved his troops from Fort Moultrie to Fort Sumter in the harbor of Charleston, South Carolina. Subsequently, on April 15, 1861, President Lincoln sent a reinforcement fleet of war vessels from New York to Fort Sumter to suppress the rebellion in the southern states. Two days later, the Commonwealth of Virginia seceded from the Union, adopting the Virginia Ordinance of Secession on April 17, 1861, and forming a provisional Confederate government (Gallagher 1989:29; Boatner 1991:729; Church and Reese 1965:134). The State formally seceded from the Union on May 23, 1861, by a vote of 97,000 to 32,000 (Bowman 1985:51, 55).

A public referendum was held on May 23, 1861 in which Alexandrians voted 958 for and only 106 against secession (Smith and Miller 1989:83). However, celebration was short lived; the next morning Federal troops entered the city as Confederate troops exited the city to the west. The federal soldiers began to build a ring of forts, designed to protect Washington, D.C., on the Alexandria-Fairfax line (Netherton et al 1992:321). Alexandria would remain an occupied city throughout the duration of the War.

No major Civil War battles were fought in the City of Alexandria, although its railroads, waterways and roadways figured in major troop movements into and out of the Washington, D.C., area. Private homes and businesses were taken over by the occupying army, and the city was used as a staging point for the various Virginia campaigns. Alexandria's resources were exploited, and its railroads, waterways and roads were expanded to provide for army needs. Northern businessmen entered the city and capitalized on the boom.

Railroads influenced the nature and timing of campaigns and affected the outcome of battles; thus, the Civil War has often been called "the first railroad war". The main impetus for occupation of Alexandria was its rail connections with the South as the city was the terminus of three lines: the Orange and Alexandria Railroad (O & A), the Alexandria, Loudoun and Hampshire (AL&HRR), and the Alexandria and Washington Railroad (A&WRR). All three were finally interconnected during the occupation, and the rail connection with the North was made complete when tracks were laid across Long Bridge to the Baltimore & Ohio Railroad.

The passage of the Railways and Telegraph Act of January 31, 1862, placed the Federal government in control of all Northern and captured Southern railroads. Daniel C. McCallum was appointed the Military Director and Superintendent of United States Railroads on February 11, 1862. McCallum reported both to the War Department and to the Office of the Quartermaster General. The Quartermaster Department (QMD) was essentially used as a procurement agency for McCallum's railroads (Risch 1962).

By this time, the Confederates had already moved the O & A engines and train cars, and a single line of tracks led from Wolfe and Henry Streets westward. Forage and other supplies ordered by General Pope, commander of the Union army, could not be transported by train across the Long Bridge because of fear that the weight of the train would collapse the bridge (Barber 1988:33-34).

In May of 1862, Herman Haupt was commissioned by Secretary of War Stanton to act as the director of rail operations for the military. Although authority overlapped in some cases, McCallum and Haupt were able to work together. Haupt was extremely efficient in the operations of moving troops and supplies over the rails and improvising new methods of repairing damaged track. Haupt organized the military railroads into the Construction Corps, which he supervised, and placed his assistant, John H. Devereux, in charge of the Transportation Corps. By the end of August, Haupt "... forwarded scores of cars filled with everything from bread and meat, to ammunition and forage". He also "...arranged for the transport of surgeons to the field… and for the recovery of the wounded" (Barber 1988:34).

The Civil War in Alexandria also affected the African American population, both freed and enslaved. At the beginning of the War, African Americans could not lawfully join the militia, and the Army prohibited their participation stating, "...any free white male person above the age of eighteen… might be enlisted". This meant that volunteer regiments could not allow African Americans (or Asians or Native Americans) to join. Yet, by the second year of the war, fewer qualified men were enlisting and the forces needed more manpower. In response, African American men were allowed to join the ranks. Large numbers of enslaved and freed African Americans signed up for service in the Union Army; however, the government mandated that the Army return all escaped slaves to their owners until it was decided that this could help the Confederate war effort by providing the South with more manpower. In response, Congress passed the first Confiscation Act on March 13, 1862, which prohibited officers or military personnel from using forces to return fugitives. Punishment for doing so, if found guilty by a court martial, was dismissal from the service. This ensured that the presence of African Americans willing to join the effort would aid the North and not the South. By the end of the war, there were over 250 African American men who had been killed and were interred in a corner of the Alexandria National Cemetery (Miller 1987:1-2).

Following the Civil War, refugee Alexandrians returned to find a different city. Population growth in the area caused an increased need for public services and other institutions such as schools. Residential development increased somewhat during the late 19th and early 20th centuries. The late 19th century also saw a rise in the importance of Washington, D.C., as the Nation's Capital.

Although still lying within the Alexandria County boundaries, in 1852, the City of Alexandria became a separate government entity, completely independent of the county and falling under Virginia laws (Macoll and Stansfield 1977: 9). Later, due to growing frustration at the confusion between the county and city having the same name, the city of Alexandria seceded in 1870 from Alexandria County.

A rapid increase in urban area settlement, including Washington D.C., in the 1870s and 1880s gave rise to a popular middle class sentiment that cities were unhealthy, dirty, noisy and rife with immoral activity (Smith and Causey 2005:21). In order to escape these many ills in the hot humid summers, the middle class residents of Washington, D.C. sought refuge in the surrounding, more rural suburbs. This escape was made possible by the improved transportation networks, including the railroads, trolleys and roads, as well as by paid vacation time (ibid). The escapes varied from short stays in rural hotels or resorts to summer residency in rural villages near the railroads. In the early 1900s, Fairfax County and other parts of Northern Virginia became such an escape and many of the communities, however small, promoted themselves as such (Smith and Causey 2005:22).

In 1915, the City of Alexandria annexed 866 acres of Arlington County and 450 acres of Fairfax County and, in 1921, Alexandria County was re-named Arlington County. During World War II and the years following, the area had begun to move into the orbit of Washington, D.C. During the 1950s and 1960s, the population of Alexandria grew at a rapid pace with the increase in Federal or Federal-related jobs in the Washington, D.C. region (Geddes 1967:28). By 1960, much of the growth of Virginia had occurred in the Hampton Roads and Arlington-Fairfax-Alexandria areas near large Federal installations (Church and Reese 1965:100). Development associated with the nation's capital during the past 45 years has continued to accelerate.

Potomac Yard Contextual History

Native American Occupation

The Potomac Yard property is situated along the relatively low-lying bluffs and terraces that once overlooked Potomac River to the east. Four Mile Run, a Potomac tributary stream just south of National Airport, empties into the river just north of the project area. Several minor tributary streams drained the central portion of the project area to flow east into the Potomac. The riverine and estuarine resources associated with the Potomac and the swampy areas behind Dangerfield Island would have been exploited by Native populations in the project area throughout most of the known prehistoric past.

Early Settlement, 1669-1808

In the late 17th and early 18th centuries, the land that later became Potomac Yard consisted of large landholdings owned by absentee landowners. The area was part of a 6,000-acre patent granted to Robert Howson. In 1669, the same year that Howson received the patent, he sold it to John Alexander, a prosperous landowner who resided in present-day King George County, Virginia. From the 1670s until the 1730s, John Alexander and his descendents likely leased much of the land south of Four Mile Run to tenant farmers (Walker and Harper 1989; Pippenger 1990; Stetson 1935; Alexandria Archaeology Museum 1999a). By the 1730s, several tenants lived on the property, but the location of these tenant farms remains unknown. One tenant, Edward Chubb, established a grist mill on Four Mile Run. Some portions of the property may have been worked by slaves of the Alexander family rather than leased to tenants, but no documentation has been found to confirm this.

Beginning in the 1730s, members of the Alexander family subdivided this land and began to establish plantations on it. After Robert Alexander's death in 1735, the land that would later become Potomac Yard was divided among his children. His oldest son John received the land on the south bank of Four Mile Run, and his two daughters, Parthenia Massey and Sarah Alexander, each received 400 acres of land located south of their brother John's land (Exhibit 6). Robert Alexander's will provided money for agricultural buildings to be constructed on the tracts that he bequeathed to his daughters, which suggests that these lands were largely uncultivated in 1735. Sarah Alexander, who died

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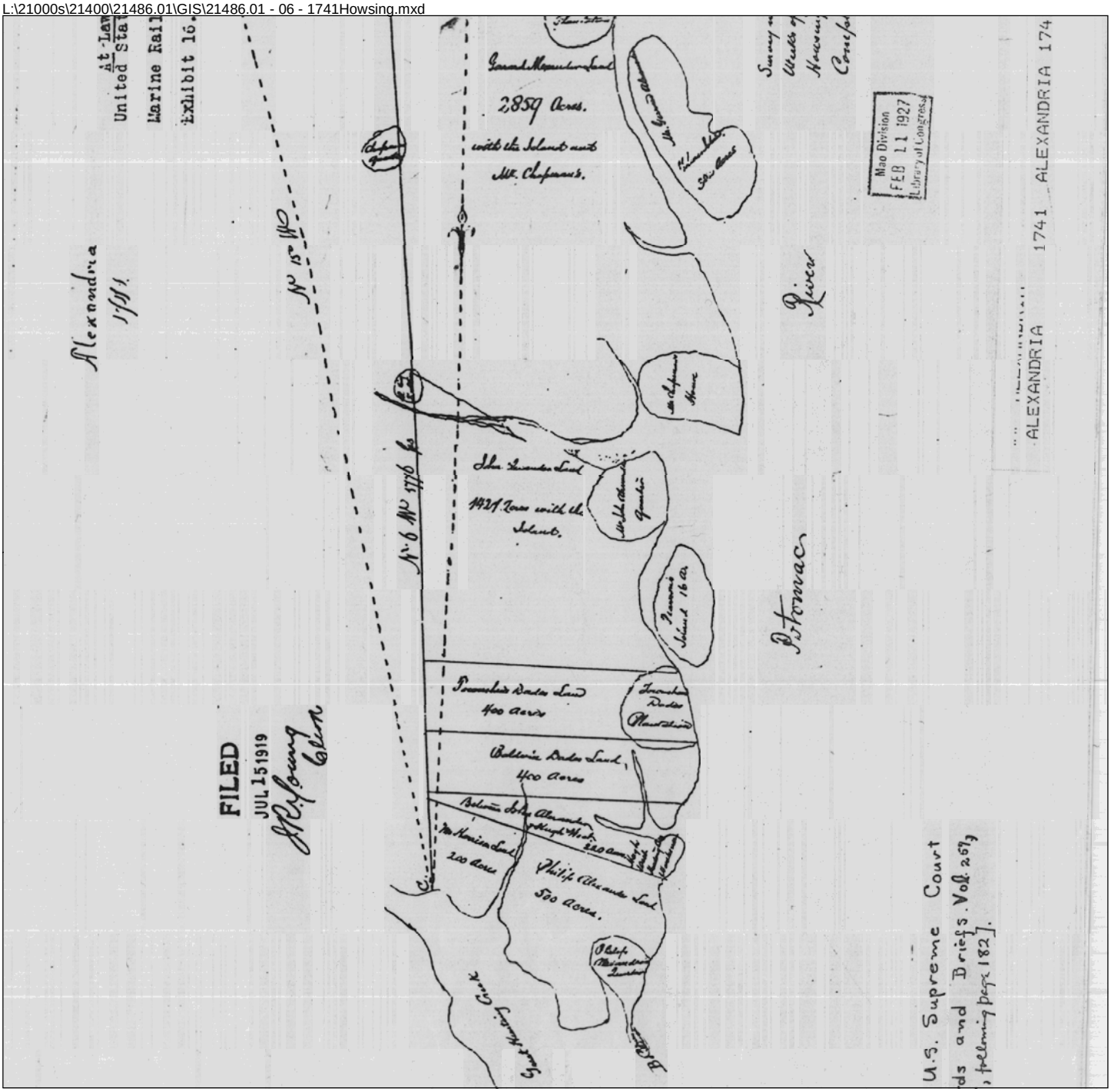
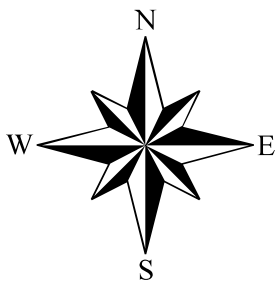


1741 Howsing's Patent Survey Map
Northeast Virginia and Vicinity of Washington D.C.
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = ½ mile



Map Source: Map of N. Eastern Virginia and Vicinity of Washington. Compiled by General Irvin Mc Dowell, January 1862. United States. Corps of Topographical Engineers". Original Scale: 1" = 1 mile.

in 1739, did not establish a residence on her land. However, in 1739, Parthenia Alexander Massey Dade and her husband Townshend Dade moved to the 400-acre tract that she inherited from her father and established a plantation along the Potomac River, southeast of the project area (Pippenger 1990; Stetson 1935; Miller 1989). At the time of Robert Alexander's death, his son, Gerrard, was living on a plantation north of Four Mile Run. This property became known as Abingdon and was located roughly where National Airport lies today.

In 1735, John Alexander inherited Daingerfield Island and 1,421-acres on the south bank of Four Mile Run, including the project area, as well as substantial property in Stafford County. By 1741, they had established a quarter in the northeast corner of the 1,421-acre tract along Four Mile Run (Stetson 1935). In 18th century terminology, a quarter was a portion of a larger tract of land where slaves lived and worked under the supervision of an overseer. Typically, the landowner did not live on a quarter. In the late 1750s or early 1760s, their son Charles built Preston plantation in roughly the same location as the quarter. Family lore credits John and Susannah Alexander with the construction of Preston in the 1730s. However, their son Charles was born in 1737 in Stafford County (where the family plantation was located), indicating that at that time, the family was not living at the site of Preston, which lay in what was then Prince William County. John Alexander died in 1763 in Stafford County, and deeds and other legal documents (including his will) refer to him as a resident of Stafford, not Prince William (Pippenger 1990). Because of this, it is unlikely that Preston was established prior to the late 1750s or early 1760s with Charles' arrival.

With the establishment of John Alexander's quarter, the Dade plantation, and Preston, enslaved Africans came to live in the project area. Most of the slaves on these properties probably worked in tobacco fields, as tobacco dominated the agricultural economy of 18th century Virginia, and the land south of Four Mile Run was well-situated for growing and selling this crop. The soil along rivers such as the Potomac was good for tobacco cultivation, and proximity to the river facilitated the sale and transportation of the crop, which was usually shipped overseas. The Alexanders, the Dades, and tenant farmers on the property also had quick and easy access to the tobacco inspection warehouse located near the end of present-day Oronoco Street (Alexandria Archaeology Museum 1999a, 1999b).

Following the establishment of the town of Alexandria in 1749, much of the land in the project area was divided into smaller parcels. Charles Alexander and his wife Frances Brown Alexander of Preston sold portions of their land, and the land was further divided among their children after Charles Alexander's death in 1806 (Pippenger 1990). Beginning in the 1770s or earlier, Parthenia Dade subdivided and sold much of the 400-acre tract that she inherited from her father. Subsequent owners further divided the tract (*Alexander v. Pendleton*, 12 U.S. 462 (1814); Alexandria County Deed Book A-T1: 91).

Several factors contributed to this trend towards subdivision. In the late 18th century, farmers in Northern Virginia increasingly abandoned tobacco for wheat, which could be grown on smaller tracts of land and with less labor. The growth of Alexandria also created a market for small parcels of land where farmers could grow foodstuffs for sale in town, and where wealthy townspeople could keep gardens, orchards, and small farms. For example, in 1786, Philip R. Fendall, who resided on Oronoco Street in Alexandria, purchased 31.5 acres of land lying at the southern end of the project area. Fendall and his family likely used the land as a farm, but they reserved one-half acre of the property for a family cemetery (Miller 1992b). Prior to his death in 1805, Philip R. Fendall conveyed a half-interest in the property to his wife Mary, probably as a means of protecting the land from being seized to pay his debts. In the early 19th century, married women could not directly hold property independently of their husbands. In order for Philip Fendall to transfer an interest in the property to Mary Fendall independently, he had to convey the property to three male trustees, who held it in trust for her.

Shortly after Philip Fendall's death in 1805, his widow, Mary Fendall, leased the farm to Alexandria hotelkeeper John Gadsby. The garden and orchard on the property probably helped supply food for Gadsby's own household and for sale in his tavern and hotel (Miller 1992b; Alexandria Deed Book O:289; Alexandria Deed Book 1:332). John Gadsby left Alexandria for Baltimore in 1808. Prior to his departure, he offered his existing land and leases for sale in an advertisement in a local newspaper. This announcement, a transcription of which is available in the Gadsby's Tavern Museum Research Files, does not mention his lease on the 31.5 acre Fendall property. Gadsby may have disposed of the lease before placing the advertisement or he may have continued to hold the lease after he left.

In the late 18th and early 19th centuries, the area north of Alexandria also became home to institutional and recreational facilities that served the growing town. An 18th century horse racing track appears to have been located between Alexandria and Four Mile Run, to the west of the project area. Horse racing was a popular past-time among 18th century men, and several race tracks emerged at the outskirts of Alexandria in the 18th century (Miller 1992a).

At the turn of the 19th century, the town of Alexandria erected a poorhouse and work house at the northwest corner of present-day Monroe Avenue and Route 1. Prior to the American Revolution (1775-1781), responsibility for caring for Virginia's poor rested with Anglican parishes. However, after the British were defeated, the Anglican church was disestablished, and the responsibility shifted to the local governments. Built soon after 1800, the Alexandria Poorhouse (or Alms House) provided shelter, clothing, and food to some of the town's impoverished residents; in addition, slave owners sometimes sent elderly or disabled slaves there. The Alexandria Poorhouse also served as a work house and farm, and the local courts would sentence people to the work house for various petty crimes. Inmates and the keeper of the alms house likely lived in the main building, which was a large, two-and-a-half-story, seven-bay, Federal-style brick structure (U.S. Department of the Interior 1937; Ward 1980; Watkinson 2000; Roach 2002).

For most of the 18th century, the Potomac River and the Georgetown Road (present day Route 1) were the area's primary transportation routes. Rolling roads, essentially crude cleared paths used to transport hogshead of tobacco, were established between the early plantations and the nearest navigable waterway or to tobacco warehouses and ports where the leaf was exported to England (Harrison 1987). In Northern Virginia, transportation in the first half of the 18th century relied upon the rolling roads, the Potomac and Rappahannock River and other inland water ways.

> the real highways, upon which the houses were built, and upon which the imports and exports flowed, existed when the Englishmen arrived. These highways were the rivers. It was for a good reason that Mount Vernon, Gunston Hall, and Belvoir were built on the Potomac. Similarly, the towns of Alexandria and Colchester were built on the Potomac and the Occoquan, and tobacco warehouses were built on the Occoquan, at Hunting Creek, and at Pimmit Run. Even small rivers and creeks were useful as 18th century ships displaced less water and the water levels in the rivers and creeks was greater than it is in the 20th century [Netherton et al 1978: 20].

Other public tobacco warehouses were likely situated on Potomac Creek, Aquia, Quantico, Pohick and Hunting Creeks, and at the Falls of the Potomac (Harrison 1987). The exact location of most of these buildings remains unknown.

As Alexandria grew during the 18th century, several roads developed in the vicinity of the project area. The Georgetown Road, which incorporated portions of present day Route 1 and North Glebe Road, led north from Alexandria to present day Rosslyn, Virginia, where a ferry crossed the Potomac River to Georgetown in what is now Washington, D.C. After the Americans and their French allies defeated the British at the Battle of Yorktown in 1781, the French army, led by Comte de Rochambeau, marched north along this road and camped north of Alexandria. The exact location of the French encampment is unclear (Stephenson 1981; Rose 1976; Alexandria Archaeology Museum 1999c). A portion of the French army camped somewhere near Alexandria as the army made its way to Yorktown to fight with the Americans against the British. As historian C.B. Rose observes, on the return voyage, the army may have returned to its earlier campsite (Rose 1976). Researchers have attempted to locate the camp based on sketch maps, but it was probably located in the vicinity of the southern end of the Potomac Yard project area (XENOPHON Group 2001).

The route taken by Comte de Rochambeau has been evaluated for designation as a National Historical Trail. The Washington-Rochambeau Route has been argued to have national significance "as a domestic cross-cultural experience….and as a manifestation of the international war effort". The researchers argue that the Route was significant for several reasons, including that it was an integral part of the Revolutionary War campaign in 1781; in the emergence of an American identity, and as "the first true acknowledgement of America as a sovereign nation" (National Park Service 2003).

By 1800, an east-west road led west from the Dade plantation towards Braddock Road. Present day Slater's Lane and Monroe Avenue formed a continuous east-west route through the vicinity. The location of the Alexandria Poorhouse, which stood on the north side of the road, suggests that the road was in place by 1800. An 1801 advertisement for Baldwin Dade's plantation described this road as "a fine road at all seasons of the year" (Miller 1992c). Present-day Mount Ida Avenue and Bellefonte Avenue may have developed in the late 18th century as well. These two roads were definitely in use by the early 1840s (Stephenson 1981).

Transportation Improvements, 1808-1860

In 1791, the town of Alexandria became part of the District of Columbia, which was created to serve as the new capital of the United States. The development of Washington, D.C., together with the growth of Alexandria as a center of trade with settlements to the west, brought significant transportation improvements to the project area. By 1860, a turnpike, a canal, and two railroads passed through the area between Alexandria and Four Mile Run.

Roads were crucial to Alexandria's mercantile economy but, in the 18th century, most roads were haphazardly built and poorly maintained. In 1785, a group of Alexandrians received permission from the Virginia General Assembly to erect toll gates on the Georgetown Road and on several roads leading west from the city in order to raise money for road maintenance; however, this strategy proved inadequate. By the 1790s, some local residents were establishing private companies to build turnpikes rather than relying on local governments to improve and maintain major roads. In 1808, once such company received a charter to build a turnpike between Alexandria and Washington, D.C. The Washington and Alexandria Turnpike, which opened in 1809, began on Washington Street in Alexandria then headed north, initially, following the route of the Georgetown Road (see Exhibit 4). It then continued towards Four Mile Run along much the same path as present-day Route 1. Tolls were collected on the south side of a new bridge over Four Mile Run (Terrie 1980; Miller 1992c; Netherton, et al, 1978; Rose 1976).

As Alexandria expanded during the first half of the 19th century, the route of the turnpike into the town shifted to the west. Until at least 1845, the turnpike angled to the northwest from Washington Street, following the route of present day Powhatan Street until it intersected with present day Route 1. By 1862, the portion of the turnpike that angled to the northwest had fallen into disuse in favor of a new route that continued straight from Patrick Street to the turnpike. The old turnpike route continued to be used as a road until 1906, but by 1878, it also carried railroad tracks for the Alexandria & Washington Railroad.

Despite the construction of this and other turnpikes, overland travel in the early 19th century remained slow and hazardous. At the same time, trade between Alexandria and agricultural lands to the west increased. Eighteenth century navigation improvements made part of the upper Potomac navigable for a couple of months a year, but in general, water based transportation ceased at the falls, which lay not far upriver from Georgetown. In 1810, the closing of a channel at Roosevelt Island further curtailed Alexandria merchants' ability to send and receive goods to the upper Potomac via water, leaving the merchants even more anxious to improve navigation along the Potomac River. In order to facilitate this profitable trade, Alexandria merchants and other local residents expressed growing interest in building a canal around the falls of the Potomac.

Constructed between 1831 and 1843, the Alexandria Canal connected Alexandria with the Chesapeake and Ohio (C&O) Canal, which extended west from Washington, D.C. past the falls and into western Maryland. The original plans for the C&O Canal called for it to begin north of Georgetown. Originally, the Canal was supposed to stretch 341 miles to the Ohio River. However, after the canal was completed to Cumberland, Maryland in 1850, the C&O Canal Company decided not to extend it further. Each town within the District of Columbia (Alexandria, Georgetown, and Washington) would then be responsible for building a canal from the C&O to its own port. However, the city of Washington used its influence – and the fact that it invested four times the money in the canal than either Georgetown or Alexandria – to extend the C&O Canal to Washington via Georgetown. Alexandria, meanwhile, was left with the responsibility for building a canal between it and the C&O Canal (Miller 1992b, 1992c; Cressey 1984; Morgan 1965, 1966; Hahn and Kemp 1992).

The Alexandria Canal crossed the Potomac River at Georgetown via the Aqueduct Bridge and continued south towards another aqueduct over Four Mile Run. South of Four Mile Run, the canal lay to the east of the Alexandria Turnpike and ran roughly parallel to the road before angling to the southeast (see Exhibit 4). In the 1840s, boats along the Alexandria Canal primarily transported agricultural products from western farms into Alexandria. Westbound vessels carried mostly manufactured goods and fish. After 1850, when the C&O Canal reached Cumberland, Maryland, boats entering Alexandria via the canal increasingly carried coal, much of which was loaded onto seagoing vessels for export to ports along the East Coast and in Europe (Hahn and Kempt 1992).

The 1850s saw the construction of two railroads within the vicinity: the Alexandria & Washington Railroad and the Alexandria, Loudoun, & Hampshire Railroad. In 1854, state delegate James S. French obtained a charter from the Virginia General Assembly to build a railroad to link Alexandria with Washington, D.C. Completed in 1857, the Alexandria & Washington (A&W) Railroad originated at a passenger station on St. Asaph Street in Alexandria, and continued to run parallel to and east of the Alexandria Turnpike, between it and the canal (see Exhibit 4). The railroad crossed over Four Mile Run on a causeway, and continued north to the Potomac River. At the river crossing, passengers and freight were transferred onto omnibuses or wagons and re-loaded onto rail cars to enter Washington, D.C. With six trains leaving Alexandria for Washington each day, the A&W was a fast and convenient way to travel between the two cities and to connect with trains bound for points north. In addition, wheat, foodstuffs, and other products that were imported into Alexandria could be transported to Washington by rail for sale or transfer to northbound trains (Griffin 1984; Hurst 1991).

In 1853, a group of local residents secured a charter for the Alexandria, Loudoun and Hampshire (AL&H) Railroad. Supporters of the railroad hoped that it would help Alexandria compete with Baltimore, Maryland for trade with western lands, as Baltimore already had a rail connection to Virginia's prosperous Shenandoah Valley. Construction on the AL&H began in 1855. From the northeast corner of Alexandria, the railroad headed northwest across the project area, crossing the Alexandria Turnpike, the Alexandria Canal, and the A&W Railroad near the intersection of present day Route 1 and East Custis Avenue (see Exhibit 4). In 1860, the AL&H began running trains between Alexandria and Leesburg, the county seat of Loudoun County, Virginia (Williams 1964; Harwood 1969). Today, a small park west of Route 1 and north of East Custis Avenue marks the former route of the AL&H.

The transportation projects of the early and mid-19th century brought significant – and often unwelcome – changes in the landscape north of Alexandria. The companies that sponsored these projects bought or seized farmland from local landowners, reducing the amount of tillable land and sometimes dividing farms. As a result, property values often fell after a canal or railroad was constructed. Moreover, living next to a railroad or a canal was not necessarily a pleasant experience. Canals were prone to flooding, and early trains were loud and noxious. The construction of the two railroads, for instance, drove the Swann family to leave their residence on the west side of the A&W Railroad and just north of the AL&H Railroad (Pippenger 1990). In 1839, Frances Swann of Preston sued the Alexandria Canal Company, claiming that the company had illegally seized her land to build the canal. Ultimately, the case went before the U.S. Supreme Court, and Swann received almost $7,000 in damages (Miller 1992b).

Despite the changes in the landscape that came with the turnpike, canal, and railroads, the Potomac Yard area remained a sparsely settled rural enclave. In the early 19th century, Preston was divided among Charles Alexander's heirs, but they did not build farms or residences east of the turnpike. By 1861, several buildings stood northwest of the former Dade plantation, immediately east of the project area; these were part of a farm established by Henry Daingerfield. The Boschke map shows the land surrounding the project area as open and presumably agricultural, however, wooded areas border the Potomac River and its major tributaries (see Exhibit 4).

By the early 1860s, a small cluster of buildings had emerged near the intersection of Poorhouse Lane (Monroe Avenue) and the Alexandria Turnpike, and several buildings stood along the west side of the Alexandria Turnpike (Exhibit 7). Most of these buildings were situated on smaller tracts of land.

Although the occupants of the houses at the intersection of Poorhouse Lane and the Alexandria Turnpike could not be precisely identified in the 1860 population census for Alexandria County, Virginia, the major landowners in the area (Thomas W. Swann and John Lloyd) were located. The entries for households in the vicinity of Swann and Lloyd included several non-landowners and small landowners who worked as laborers, tradespeople, or farmers.

Civil War, 1861-1865

The City of Alexandria was occupied by Union forces throughout the duration of the war. On May 24 1861, Federal troops entered the city of Alexandria, Virginia, as Confederate troops exited the city to the west. During the Civil War, railroads influenced the nature and timing of campaigns and affected the outcome of battles; thus, the war has been often called "the first railroad war" (Henry 1961). Seifert has noted that the main impetus for occupation of Alexandria was its rail connections with the South (Seifert 1988). Alexandria was the terminus of three lines: the Orange & Alexandria (O&A), the Alexandria, Loudoun and Hampshire (AL&H), and the Alexandria and Washington Railroad (A&W). All three were finally interconnected during the occupation and the rail connection with the North was made complete when tracks were laid across Long Bridge to the Baltimore & Ohio Railroad.

The passage of the Railways and Telegraph Act of January 31, 1862 centralized the authority of the federal government to control all Northern and captured Southern railroads. Daniel C. McCallum was appointed the Military Director and Superintendent of United States Railroads on February 11, 1862. McCallum reported both to the War Department and to the Office of the Quartermaster General. The Quartermaster Department (QMD) was essentially used as a procurement agency for McCallum's railroads (Risch 1962).

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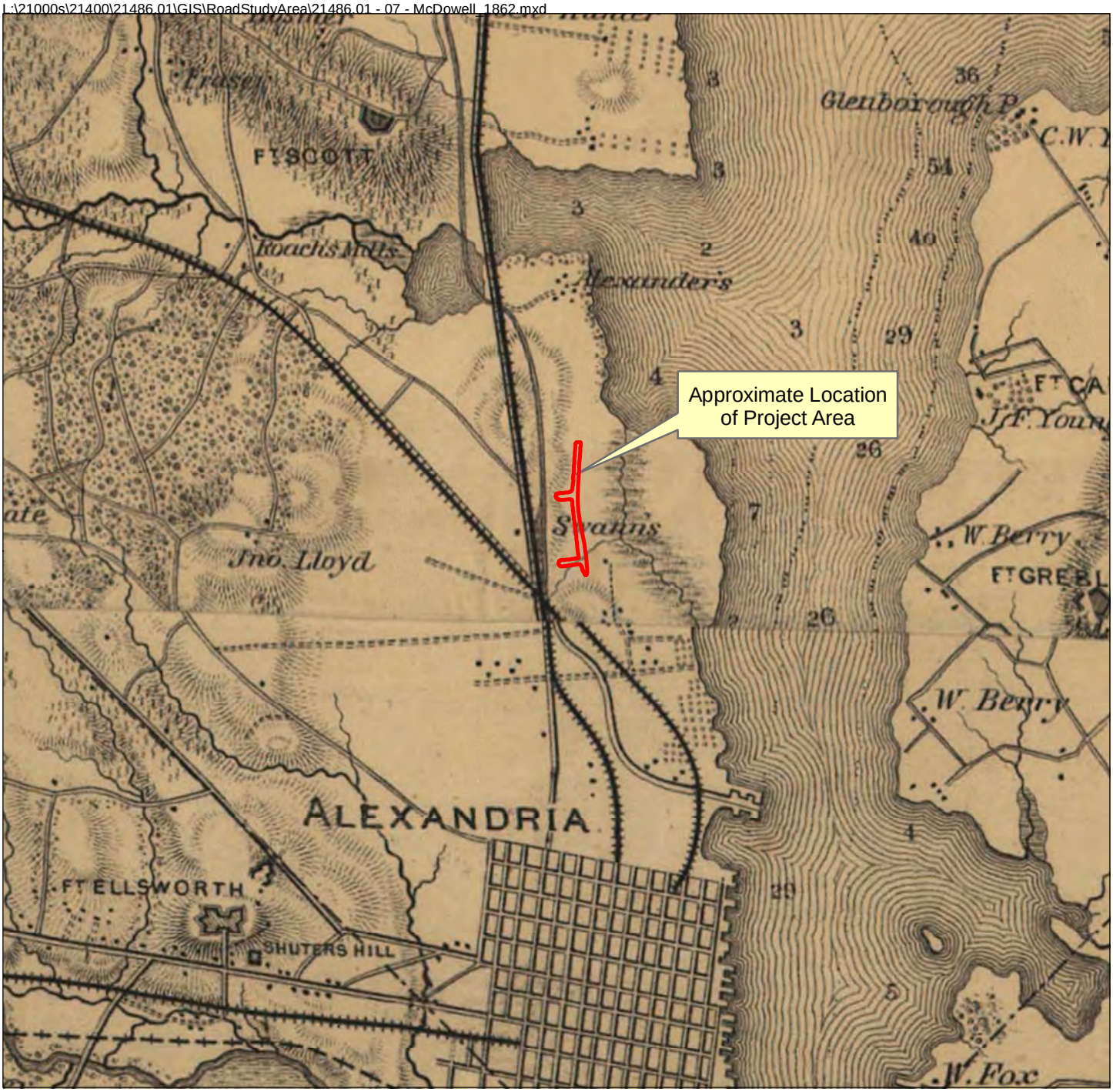

1862 McDowell Map
Northeast Virginia and Vicinity of Washington D.C.
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = ½ mile

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Map Source: Map of N. Eastern Virginia and Vicinity of Washington. Compiled by General Irvin Mc Dowell, January 1862. United States. Corps of Topographical Engineers". Original Scale: 1" = 1 mile.

In May of 1862, Herman Haupt was commissioned by Secretary of War Stanton to act as the director of rail operations for the military. Although authority overlapped in some cases, McCallum and Haupt were able to work together. Haupt was extremely efficient in the operations of moving troops and supplies over the rails and improvising new methods of repairing damaged track. Haupt organized the military railroads into the Construction Corps, which he supervised, and placed his assistant John H. Devereux in charge of the Transportation Corps.

The USMRR laid new track that brought the A&W into Alexandria along Henry Street, creating a railroad junction just north of Poorhouse Lane [Monroe Avenue] (Griffin 1984). In 1861 and 1862, the U.S. Army drained the Aqueduct Bridge that carried the canal over the Potomac River and converted it to a bridge for wagons, giving the Union Army another means of moving men and material across the Potomac into Virginia. As a result, the Alexandria Canal fell into disuse until the war's end in 1865 (Morgan 1966). During the Civil War, Union troops were a regular presence in the area north of Alexandria. Federal troops appropriated Preston for use as a hospital for sick soldiers and, in 1862, burned the house. Robert Hodgkin, who became keeper of the Alexandria Poorhouse in 1861, recorded several instances of Union troops coming through the area and some Union soldiers may have set up encampments nearby (Miller 1992c; Ward 1980). Corbett's 1861 *Sketch of the Seat of War* and the shows the 5th Massachusetts camped just north of the intersection of the AL&H and A&W and west of the canal; while an earlier sketch shows the camp further to the north (Exhibits 8 and 9).

Railroad Expansion and Early Suburban Development, 1865-1905

In the decades after the Civil War, canals throughout the country closed as railroads assumed most of the overland shipping traffic. The Alexandria Canal was no exception, as it was increasingly unable to compete with the Baltimore & Ohio (B&O) Railroad for the western coal trade. The B&O Railroad, which followed much the same route as the C&O Canal, was more reliable than the canal system, which suffered from unreliable water flow, floods, poor maintenance, and labor strikes. In 1885, a train wreck that occurred near the aqueduct over Four Mile Run soured public opinion about the Alexandria Canal. Only one track could fit through the railroad tunnel beneath the aqueduct, and a signal failure caused two trains to collide head-on, killing six people. The accident was blamed on the canal's aqueduct and its narrow tunnel. In 1886, following a break in the Aqueduct Bridge to Georgetown, the Alexandria Canal was abandoned (Miller 1992b; Morgan 1966; The Alexandria Canal and a Train Wreck 1973).

During the Civil War, new track was laid that brought the A&W into Alexandria along Henry Street; by 1878, both the original route along the old turnpike and the new route were used, with the Henry Street track splitting into two separate tracks (Exhibit 10). By 1885, the route along the old turnpike was no longer used.

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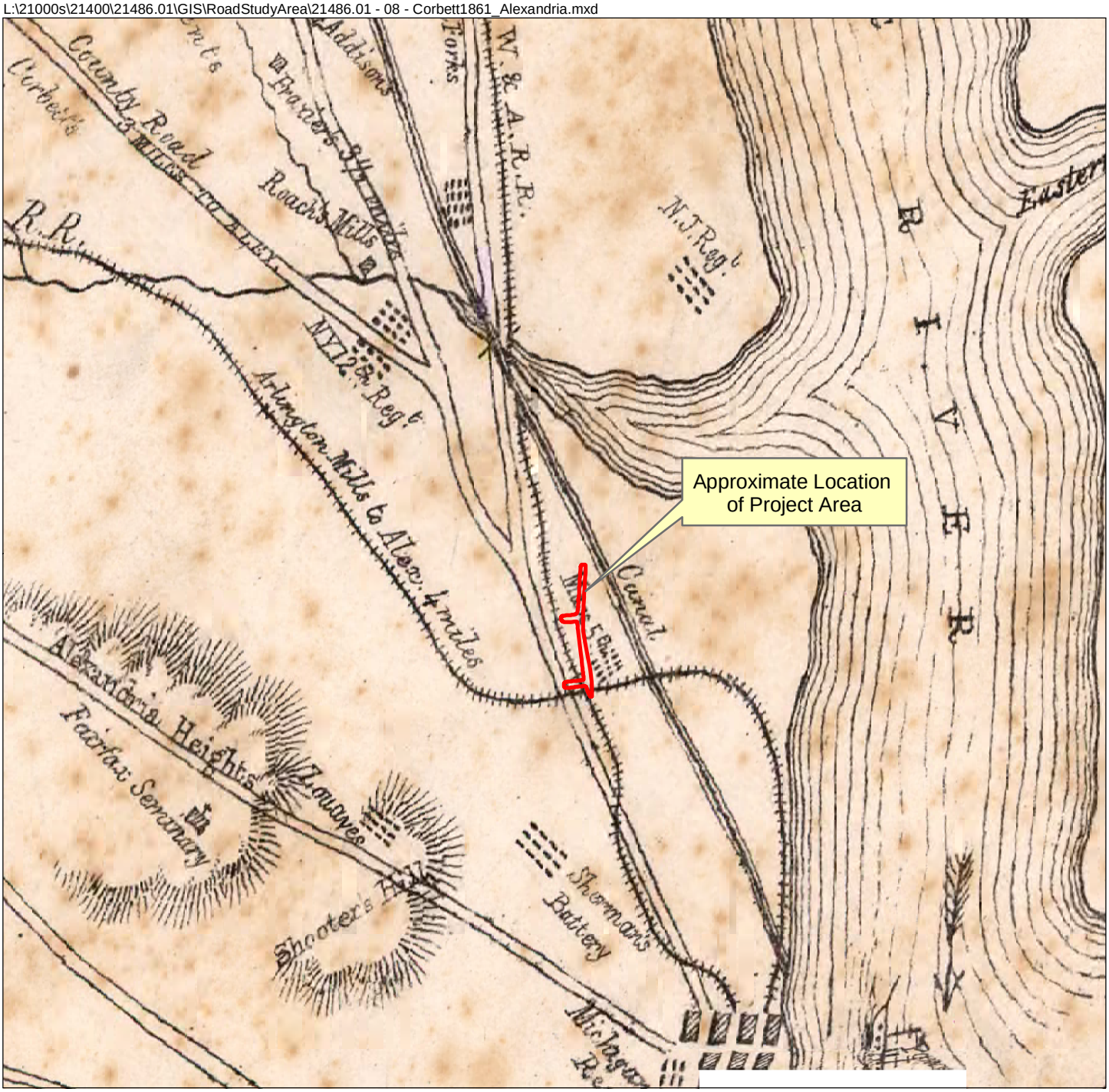

1861 Corbett Map
Alexandria, Virginia
Potomac Yard - Testable Area
WSSI# 21486.01
Not to Scale

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Map Source: "Sketch of the seat of war in Alexandria & Fairfax Cos." V. P. Corbett. 1861. Library of Congress Geography and Map Division Washington, D.C. 20540-4650

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Exhibit 8

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Circa 1860s Reconnaissance in Advance of Camp Mansfield
Alexandria, Virginia
Potomac Yard - Testable Area
WSSI# 21486.01
1" = ½ Mile

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Map Source: "Reconnaissance in advance of Camp Mansfield / by 12th Regiment Engr. Capt. B.S. Church." 1860s. Library of Congress Geography and Map Division Washington, D.C.

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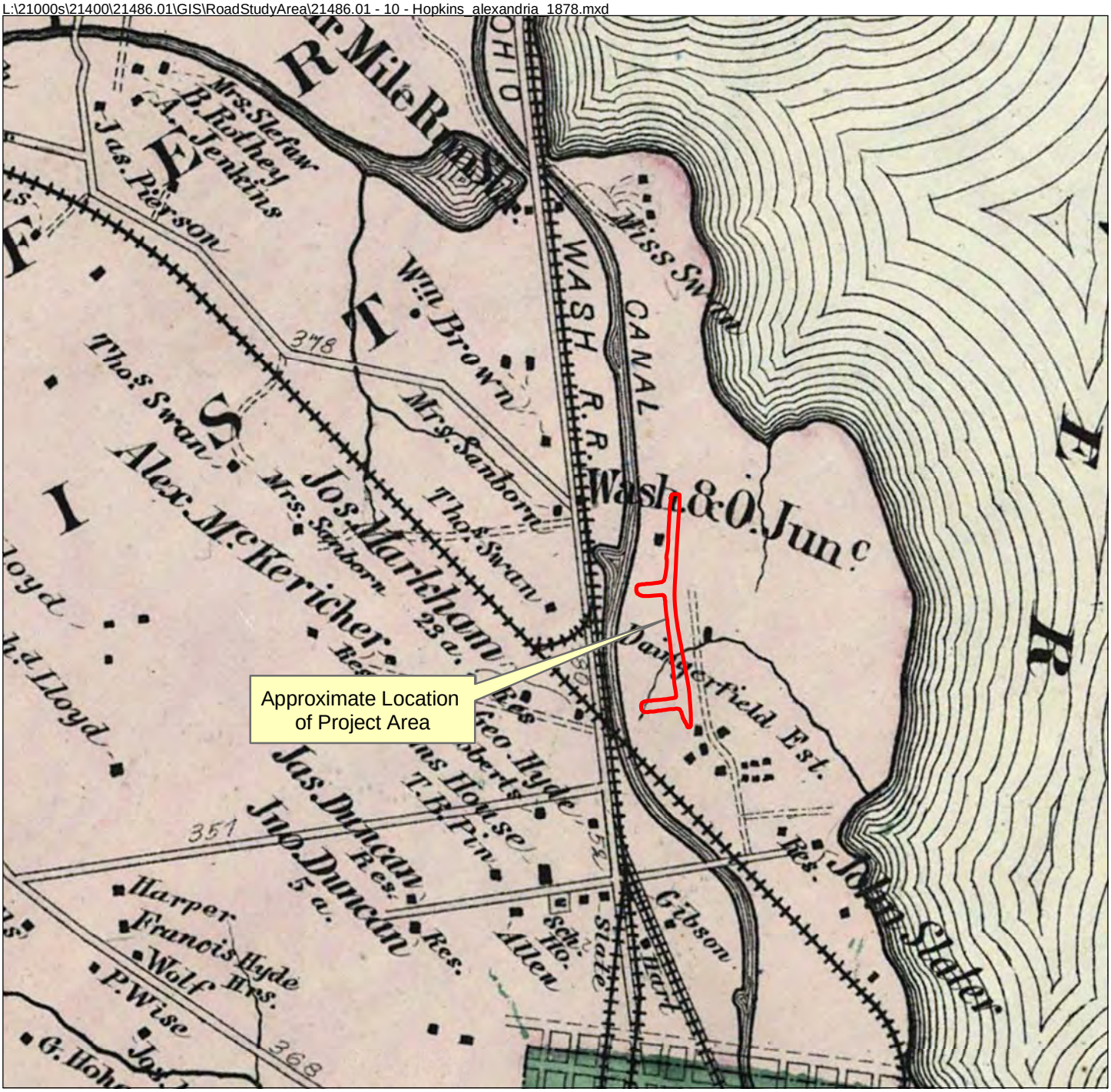

1878 Hopkins Map
Alexandria, VA
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = 1500'

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Map Source: "Alexandria County, Virginia. Entered according to the Act of Congress in the year 1878. By G.M. Hopkins in the Office of the Librarian of Congress at Washington". Library of Congress Geography and Map Division Washington D.C. Original Scale: 2 inches = 1 mile.

In the 1860s and 1870s, the nation's rail network expanded and carried more freight, but it was a fragmented and uncoordinated system composed of numerous rail lines. In the 1880s and 1890s, this fragmented network saw increased standardization and consolidation (Wiebe 1967). The trend towards consolidation was reflected in the experiences of the two railroads that passed through the project area. In 1894, the former AL&H Railroad (then known as the Washington, Ohio & Western Railroad) became the Bluemont Branch of Southern Railway, a large railroad company owned by New York financier J.P. Morgan (Harwood 1969). In 1872, the Pennsylvania Railroad acquired control of the A&W Railroad, creating a continuous connection between Baltimore and Alexandria. In 1890, the Pennsylvania Railroad merged the A&W with another of its subsidiaries (the Alexandria and Fredericksburg Railroad) to form the Washington Southern Railway, which stretched from Quantico in Prince William County, Virginia to Washington, D.C. (Griffin 1984).

While the canal and railroads underwent dramatic changes, the surrounding landscape saw only modest alternations. Farms containing more than 50 acres continued to occupy most of the area. From the early 1860s through the early 1890s, the area west of the turnpike was characterized by scattered residences and small farms, as shown in the 1878 and 1894 Hopkins maps (see Exhibit 10; Exhibit 11). The 1861 residence in the southern central portion of the project area is now associated with George Hyde. South of this house, stood a small community at the intersection of Poorhouse Lane (Monroe Avenue) and the Alexandria Turnpike (Route 1); by 1878, it included a school. In the 1880s or early 1890s, a series of closely set houses was built along the southwest side of what is now Powhatan Street.

The Washington and Ohio Junction Station is shown northwest corner of the project area on the 1878 Hopkins map (see Exhibit 10). An unidentified residence east of the railroad station is identified in 1894 as the S.L. Barbour Estate (see Exhibit 11). The Barbour tract was formally part of Henry Dangerfield's "Island Farm", which was situated between the Preston Plantation and Slater's Lane. The Dangerfield property was divided among his heirs upon his death in 1866. The 76-acre tract (Lots 6 and 7) was inherited in 1870 by his daughter, Susan Barbour. The 1870 plat map does not show a house within this 76 acre property, and the land was valued at $9,394, less than other lots that did have buildings (Alexandria County Deed Book A4, pp. 171, 272-298). The house on this property, therefore, must have been constructed between 1870 and 1878, when it first appears on the Hopkins map. Notably, the plat of the estate shows a bridge over the Alexandria Canal on Susan Barbour's lot.

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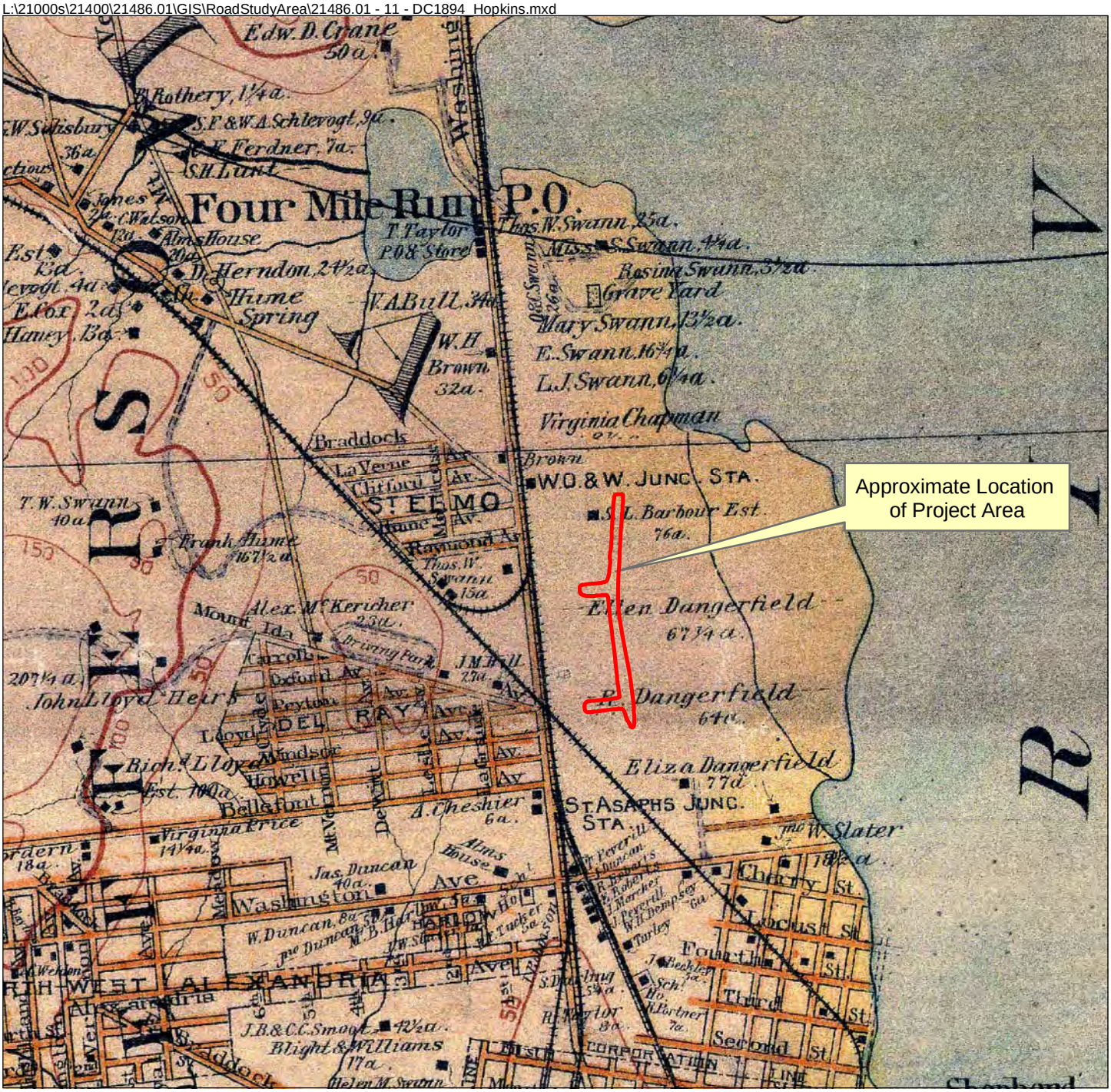

1894 Hopkins Map
Alexandria, Virginia
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = 1500'

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Map Source: 1894. Hopkins Map. National Archives. Reproduction obtained from History Matters, LLC. 1502 21st Street, NW 2nd Floor. Washington, DC 20036. Original Map Scale: Unknown.

It is unclear whether Susan Barbour resided here, but there is a good possibility that she rented the property to tenants. She owned other property in Alexandria, Washington D.C. and in Prince Georges County, Maryland. Prior to her marriage, Susan and her sister inherited the Sewall-Belmont House in the District and the Poplar Hill estate in Maryland. Although there is evidence that the family moved to Poplar Hill, the 1860 census lists the entire family as residents of Alexandria. In 1865, she married John S. Barbour, the president of the Orange & Alexandria Railroad. By 1870, the couple was residing in Washington D.C., with her sister, Ellen C. Daingerfield, and three servants. They may have moved back to Alexandria, or maintained a residence in the town, as John Barbour was elected in 1881 to serve three terms in the U.S. House of Representatives, representing Alexandria. He went on to represent Virginia as a U.S. Senator in 1889.

Susan Barbour died in at her Maryland estate in 1886, and left the Barbour tract to her husband for use during his lifetime. When he died in 1892, the Barbour House tract and other properties went to her sister, Ellen. Ellen eventually sold both her portion and Susan's portion of the Island Farm inheritance to Norman Call, who had acquired the entire Island Farm property from the Dangerfield heirs (Alexandria County Deed Book 108:21). Call sold the entire property in 1903 to Washington Southern Railway (Alexandria County Deed Book 108:32); the deed does not mention any structures on the property.

In 1894, two planned residential developments – Del Ray and St. Elmo – were established on the west side of the Alexandria Turnpike; the establishment of these developments laid the groundwork for the suburbanization of the landscape surrounding the project area. Del Ray was located between East Bellefonte Avenue and Mount Ida Avenue; St. Elmo lay between the Bluemont Branch of the Southern Railway (the former AL&H Railroad) and Glebe Road (see Exhibit 11). The developments' proximity to two railroads made it possible for residents to commute daily to jobs in Alexandria or the nation’s capital. St. Asaph Junction Station and the Washington and Ohio Station on the A&W Railroad served Del Ray and St. Elmo, respectively. Beginning in 1896, the Washington, Alexandria and Mount Vernon Railway (WA&MV), an electric railway that ran along present-day Commonwealth Avenue, provided frequent rail service to Alexandria and Washington, D.C. Despite these transportation advantages, Del Ray and St. Elmo grew slowly between 1894 and 1905. By 1905, the developers had sold more than half the lots in Del Ray, but only 37 houses had been constructed. The national economy was still recovering from a financial panic in 1893, and the Alexandria area remained in an economic slump through the 1890s. In addition, unlike Alexandria, Del Ray and St. Elmo lacked public utilities such as water and sewer service (Escherich 1992).

Some blamed the two neighborhoods' slow growth on St. Asaph's Race Track, which lay between Del Ray and St. Elmo (Exhibit 12; see Exhibit 11). The race track (or driving park) was operated by the Alexandria Gentlemen's Driving Club and, by 1894, it boasted several buildings, including a gambling house and stables for 300 horses. In the 1890s, a spur from the WA&MV served the track, making it easy for residents of both Alexandria and Washington, D.C. to gamble there. As early as 1895, local residents began campaigning against the track, arguing that it brought shady characters to the area and discouraged "good law-abiding citizens" from settling there. In 1904, government officials closed the track (Escherich 1992; Miller 1992a).

Potomac Yard, 1906-1930

In the late 19th and early 20th centuries, the Washington, D.C. area became a major transfer point between northern and southern rail networks. Fruits, vegetables, and livestock from the southern states traveled along the rails to urban markets in the North, while manufactured goods were shipped south from northern factories. Multiple railroad lines served each region, but at the turn of the 20th century, there was no central location to transfer freight between northern and southern rail lines. As a result, northern railroads such as the Pennsylvania Railroad and the B&O delivered southbound freight to multiple sites for classification and transfer to the different railroads that served the South. This system became increasingly unwieldy as the volume of rail traffic rose (Carper 1991; Griffin 1984; MacCart, 1905).

In 1901, in order to ensure equal access to track between Richmond and Washington, six railroads (the Pennsylvania Railroad, the Atlantic Coast Line Railroad, Southern Railway, the Chesapeake and Ohio Railway, Seaboard Air Line Railway, and the B&O Railroad) formed the Richmond-Washington Company, which assumed control of the two railroads that owned this section of track – the Washington Southern Railway (the former A&W Railroad) and the Richmond, Fredericksburg and Potomac (RF&P) Railroad. To facilitate the movement of freight between the northern and southern rail lines, the Richmond-Washington Company built Potomac Yard to serve as the main classification yard for the six railroads. All six participating railroads were guaranteed equal treatment at the yard, an arrangement secured by the fact that they jointly owned the RF&P, which was responsible for operating the facility. This arrangement was unusual among classification yards; in most cases, individual rail lines owned and operated their own area within a yard rather than sharing ownership, tracks, facilities, and management (Griffin 1984; Carper 1992).

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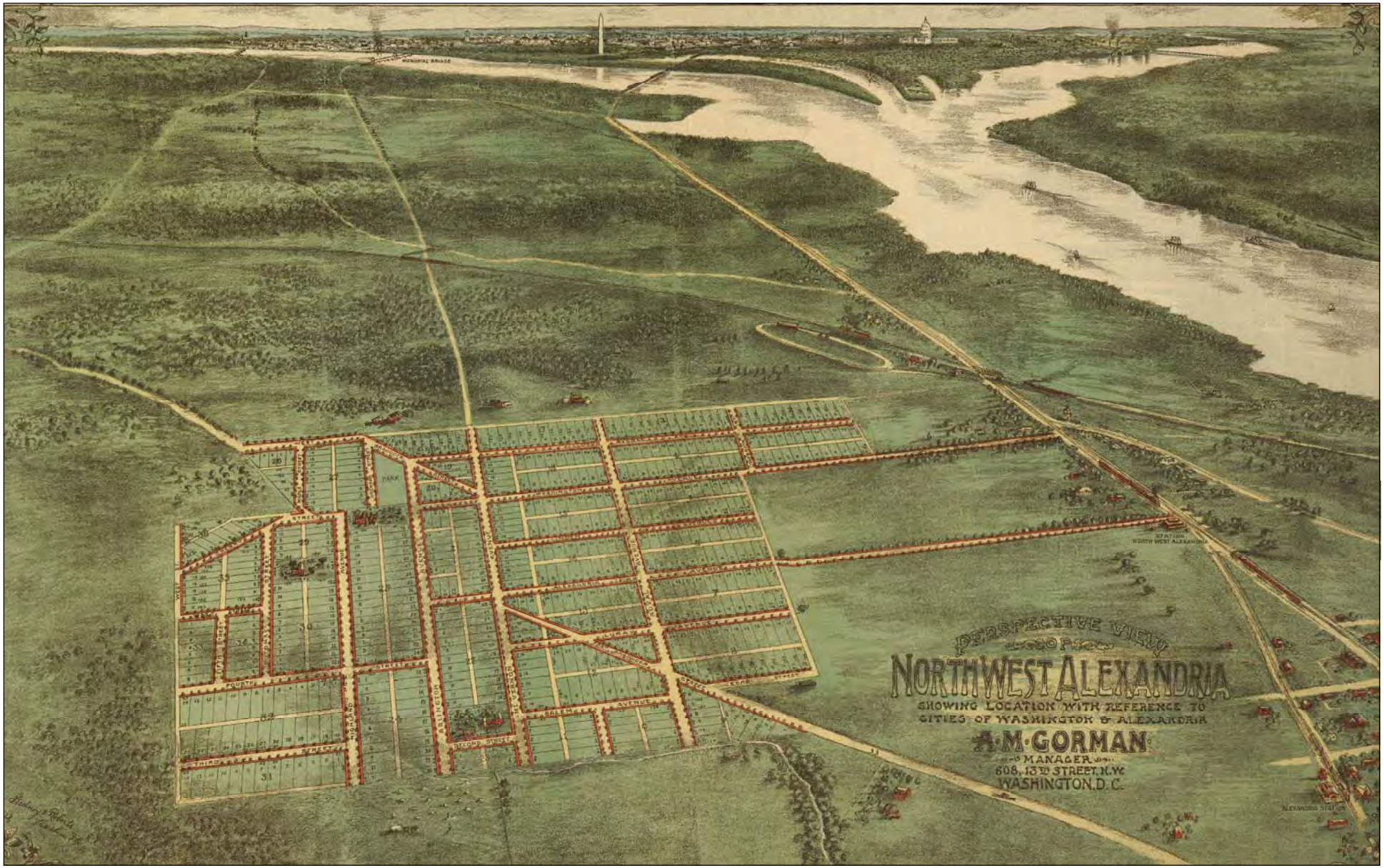

Circa 1890 Bird's Eye View of Northwest Alexandria
Alexandria, Virginia
Potomac Yard
WSSI# 21486.01
Not to Scale

Map Source: Perspective view of northwest Alexandria : showing location with reference to cities of Washington & Alexandria." Gedney & Roberts. 1890s. Library of Congress Geography and Map Division Washington, D.C. 20540-4650

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Thunderbird Archeology
A division of Wetland Studies and Solutions, Inc.

Exhibit 12

The construction of Potomac Yard transformed the land east of the Alexandria Turnpike from farmland into a maze of railroad tracks and railroad-related buildings (Exhibit 13). When it opened in the summer of 1906, it encompassed 450 acres of land and stretched 5.8 miles south from the Virginia side of the Long Bridge. The classification yard was approximately 2.5 miles long, and its 52 miles of track could handle 3,127 cars. Trains entering the facility began the classification process in the receiving yard, where they waited for hump locomotives to push them up the hump. At the top of the hump, the cars were detached in groups of one or more. They then rolled down the hump along switched tracks to join with trains headed for the appropriate destination. When a single rail car contained freight intended for several rail lines, it was diverted to the less-than-car-load shed, where freight was unloaded and re-distributed (Griffin 1984).

Although the primary function of Potomac Yard was rail car classification, the yard provided other services as well. Steam locomotives could refuel at Potomac Yard and be repaired at the roundhouse that was located near the middle of the yard. Rail car inspectors examined all rail cars entering the yard to ensure that they met federal safety standards; cars that did not pass inspection were repaired on site. Livestock in transit were fed and rested at a stock yard at the northeast edge of Potomac Yard. At the re-icing facility, workers replenished the ice in refrigerated cars that carried fruit and other perishable goods to northern markets. The Mutual Ice Company, which stood just east of the yard, supplied the ice, which was conveyed across the tracks on an elevated platform. From atop the car icing platform, workers moved the ice to the tops of the cars then lowered it into the cars through hatches. Since the platforms primarily serviced northbound freight cars carrying fruit and other perishable items, they were located at the south end of the yard (just south of the Monroe Avenue bridge) so that the cars could be re-iced before moving through the classification process. The Fruit Growers Express Company, which dominated the shipment of fruits and vegetables from the southern states, supervised the icing operations. From 1906 to 1926, the company also maintained a complex of car repair shops and offices at the southern end of Potomac Yard near the icing facilities (Griffin 1984; Miller 1992b).

To operate the classification yard and associated facilities, Potomac Yard employed approximately 1,200 people in 1906. Employees included car inspectors, brakemen, switch operators, locomotive engineers, mechanics and carpenters to work on rail cars, and clerks to manage the volumes of paperwork associated with freight transfer. Potomac Yard employed whites and African-Americans but enforced racial segregation in employee facilities such as locker rooms and wash buildings (RF&P 1954). In the early 20th century, the labor force was primarily or exclusively male. By 1954, the RF&P employed African-American women at Potomac Yard and may have employed white women as well.

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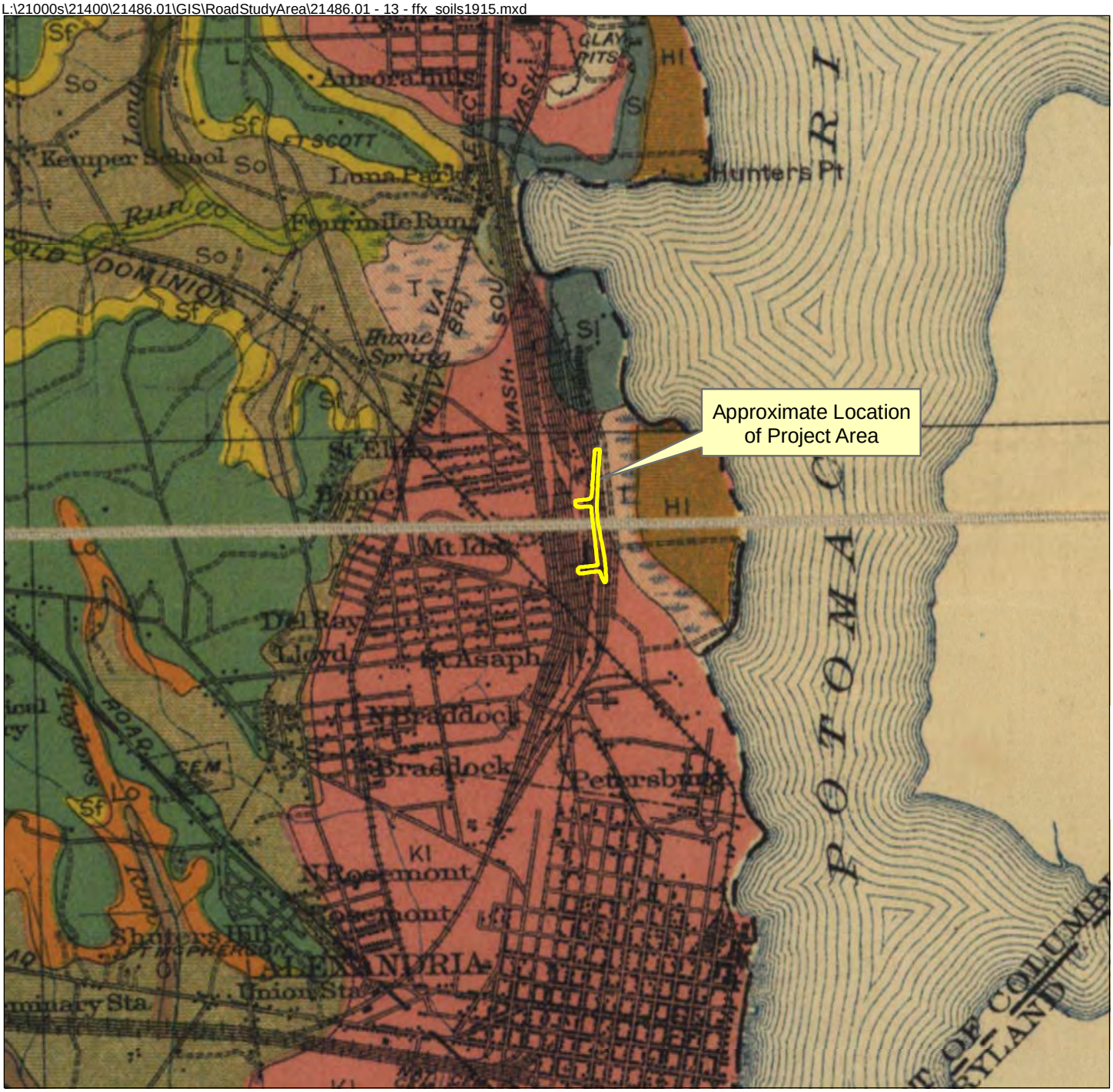

1915 Fairfax County Soils Map
Fairfax County, VA
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = ½ mile

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Map Source: "Soils Map of Fairfax County. 1915.
Field Operations Bureau of Soils, US Dept. of Agriculture.
Basemap in part from U.S.Geological Survey Sheets.
Library of Congress Geography and Map Division
Washington D.C. Original Scale: 1:62,500.

Potomac Yard thrived in the first three decades of the 20th century. In 1922, the yard management inaugurated a modernization program that included new receiving tracks, a 105-foot turntable, and a 1,000-ton coaling station. Locomotives belonging to the six participating railroads used the 105-foot turntable, while the yard locomotives continued to use the old 85-foot turntable. The coaling station stood several stories tall and located north of the roundhouse and turntables (Plate 1). Elevators moved the coal into four coaling bins located near the top; the coal then dropped through chutes to the locomotive tenders (Potomac Yard 2006; RF&P Historical Society 2006). The ownership and management structure of Potomac Yard, which was revised in 1927, prevented major conflicts between the six participating railroads. In hopes of securing the tax revenue from the prosperous rail yard, the City of Alexandria made several attempts to annex the area from Alexandria (now Arlington) County, but local residents objected. In 1930, the city finally succeeded in annexing Potomac Yard (Escherich 1992).

After 1906, the railroad tracks, bridges, and railroad-related structures of Potomac Yard covered what was once farmland and scattered residences. Between 1903 and 1905, the Richmond-Washington Company purchased or seized property to create the yard and to complete related road re-alignments and bridge construction. The Daingerfield farm, what remained of Preston, and the Susan Barbour house (located between the Daingerfield farm and Preston and built in the 1870s) were demolished. The Alexander family cemetery at Preston remained in place until 1922, when the heirs agreed to convey the land to the railroad, provided that the railroad reinter the graves in a church cemetery (Adams 1996). Several buildings at the intersection of Washington Avenue (Monroe Avenue) and the Alexandria Turnpike were removed, though the Alexandria Poorhouse remained standing until the mid 20th century (Plate 2). Some of the buildings along the southwest side of Powhatan Street also fell victim to the rail yard. Two or three of the 1894 structures on the southwest side of Powhatan Street were probably still standing in 1941 (Sanborn Fire Insurance Map 1921, 1941). St. Asaph's Junction Station was likely moved at this time as well; by 1957, it stood near the intersection of Howell Avenue and the Alexandria Turnpike.

The construction of Potomac Yard affected both transportation routes and nearby residential developments. The Alexandria Turnpike was re-aligned south of East Howell Avenue, making it curve to the west and parallel the Potomac Yard property line. This realignment is the present-day Route 1. In 1906, the Richmond-Washington Company, which owned Potomac Yard, erected a bridge to carry the turnpike and Washington Avenue over the rail yard. In addition, the former AL&H Railroad, which did not use Potomac Yard, crossed the yard via an iron trestle. According to one historian of Potomac Yard, the trestle originally rested on fill dirt in the center of Potomac Yard and was supported by piers only at the east and west ends (James Foley, personal communication 2006.) By 1921, piers supported the steel trestle across the entire width of the yard (Plate 3).

The establishment of Potomac Yard also accelerated the expansion of Del Ray and St. Elmo, which incorporated as the Town of Potomac in 1908. Many of the white workers at the yard settled in Del Ray, St. Elmo, or one of several new neighborhoods established within the town in the 1910s and 1920s. Between 1908 and 1926, Potomac grew rapidly (Exhibit 14).

By 1915, there were buildings on 111 lots in the town and, by 1921, Del Ray alone had 168 lots with buildings (Escherich 1992). Plate 4 shows a circa 1934 overview of the Yard and neighborhoods. Although railroad workers continued to represent a significant portion of the town's population, much of the town's growth in the late 1910s and 1920s was the result of an influx of workers to the area as a result of the United States' participation in World War I. The federal workforce expanded during the war, and by 1920, the town included many federal employees who commuted from Potomac to Washington, D.C. via the WA&MV railroad (or trolley). Other residents of Potomac worked in war-related industries in Alexandria, particularly the Virginia Shipbuilding Company and the Torpedo Factory, which was constructed in 1917 and 1918 respectively (1920 Census records).

While many white employees at Potomac Yard lived in the Town of Potomac, no African-American railroad workers settled there since the white residents and leadership did not welcome them because of their race. A handful of African-Americans resided in white households, where they worked as servants, and a couple of African-American households appear in the Town of Potomac in the 1910 and 1920 population censuses. African-Americans owned some of the lots in the town, but few houses. Some white property owners in the Town of Potomac used deed restrictions to prevent their property from being owned or occupied by African Americans. An advertisement for the town in a 1924 city directory boasted that it was "the only municipality in the United States that did not have residents of 'African Descent' " (Escherich 1992).

White hostility to African Americans living in the Town of Potomac reflected a statewide embrace and enforcement of racial segregation on the part of whites. Their choices limited, African Americans who worked at Potomac Yard likely settled in the Parker-Gray district of Alexandria or in one of several other African-American neighborhoods in the city.

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USGS Quad Map
Washington DC & Vicinity, 1929
Potomac Yard
WSSI #21486.01
Scale: 1" = 2000'

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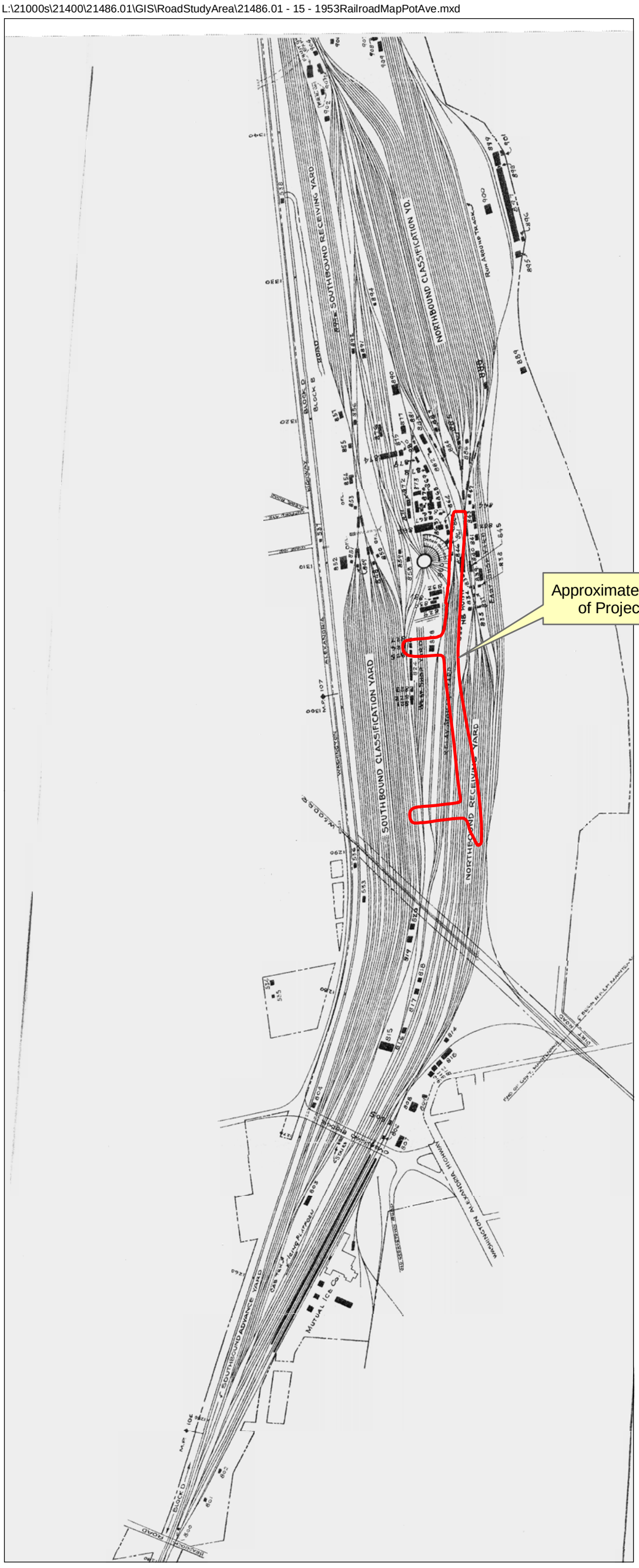

1953 Richmond, Fredericksburg & Potomac Railroad Co. Map
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = 800'

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Map Source: "Richmond, Fredericksburg & Potomac Railroad Co. Potomac Yard, VA. Location of Buildings". Original Scale: 1" = 400'. Revised to April 20, 1953. Obtained from History Matters, LLC. 1502 21st Street, NW Washington, DC 20036

Technological Change and Expansion at Potomac Yard, 1930-1970

Between 1930 and 1945, changes in railroad technology altered the operation and landscape of Potomac Yard. Beginning in 1930, the RF&P installed remotely operated switches and car retarders that workers controlled from two towers, one at each of the two humps. The car retarders replaced the brakemen who rode rail cars down the hump, and the remotely operated switches replaced the switch tenders who operated the manual switches. The car retarders, which consisted of electro-pneumatic brakes along the track that gripped the wheels of passing cars in order to control their speed down the hump, were installed on the northbound hump in 1930 and on the southbound hump in 1945 (Griffin 1984). In 1935, after the Pennsylvania Railroad introduced electric locomotives to Potomac Yard, overhead wires were strung along wooden posts through part of the yard. In 1945, the less-than-car-load shed closed. Between 1946 and 1953, Potomac Yard shifted from steam to diesel locomotives. The shift to diesel substantially reduced the labor force needed to service and repair locomotives. While servicing and repairing steam locomotives required over 60 workers per shift, only ten workers per shift were need to service and repair diesel locomotives (Plate 5). With the advent of gasoline-powered diesel engines, the coaling station was no longer needed; it was demolished in 1956 (Griffin 1984).

In the 1930s, the federal government funded road projects that brought changes to transportation routes in and around Potomac Yard. Between 1929 and 1932, Mount Vernon Memorial Highway – the first parkway built and maintained by the federal government – was constructed east of Potomac Yard, between it and the Potomac River (Mackintosh 1981). In 1936, the Bureau of Public Roads funded the construction of a 600 foot-long concrete bridge to replace the 1906 bridge that carried Route 1 over Potomac Yard (Miller 1992b; Sanborn Map 1941).

During World War II (1941-1945), Potomac Yard expanded to meet the demands of wartime shipping. Railroads transported materiel, munitions, and supplies for the U.S. military, and rail traffic at Potomac Yard and throughout the country increased dramatically. Between 1940 and 1943, the number of rail cars moving through Potomac Yard grew by 96%. In order to accommodate the increased traffic, 11.5 miles of additional track were laid in the northeast section of the yard, bringing its total track mileage to 95 miles. At its wartime peak, Potomac Yard encompassed 700 acres of land and employed between 1,200 and 1,500 workers (Hitz 1978; Prince 1973; Griffin 1984). Exhibit 15 on the preceding page shows the locations of buildings and tracks in 1953.

The wartime expansion of Potomac Yard's labor force brought increased population and residential construction to the surrounding areas. In the 1940s, construction in existing neighborhoods to the west accelerated, and new subdivisions were established or developed. There was also modest development east of the yard, including the construction of Abingdon Apartments. New schools and recreational facilities adjacent to Potomac Yard served the area's growing population. In 1935, George Washington High School opened on a lot on the west side of Potomac Yard and near its southern tip.

By 1941, a baseball stadium (now Simpson Stadium) stood on the grounds of the former poorhouse, which had closed in 1928 and was demolished by the mid-1950s; a 1957 article on St. Asaph Junction Station noted that the Poor House "disappeared a few years ago" (Shivers 1957; Griffin 1984).

After World War II, technological changes continued to shape the landscape of Potomac Yard. In the late 1950s, Potomac Yard management removed track and facilities for obsolete steam locomotives; erected new car and locomotive repair buildings; reconfigured and built track; and installed an electronic system for switching and car retardation. At the southbound classification yard, a new electronic switching system called Velac was controlled from a four-story concrete tower built in 1959; this tower quickly became a local landmark (Griffin 1984). Also in 1959, the RF&P added facilities at Potomac Yard for loading and unloading truck trailers on rail cars. Rail cars carrying truck trailers – known as "piggy-backs" – reflected the fact that motorized trucks were increasingly challenging railroads for dominance of the nation's freight shipping. In the late 1960s, due to changes in refrigerator car technology, the re-icing facilities were demolished and replaced with additional rail tracks (Potomac Yard 2006).

Beginning in the 1950s, Potomac Yard shrank in size as the RF&P sold or leased portions of the land to offset the costs of rising real estate taxes. Most of the land sold between the 1950s and the 1980s was located north of Four Mile Run. For instance, in the 1960s, the company granted a long-term lease to a real estate company that developed Crystal City on land that was once part of Potomac Yard. This trend toward selling land would accelerate in the decades after 1970 as the RF&P further reduced the scale of classification and repair operations at Potomac Yard (Hitz 1978). U.S.G.S. maps show this evolving rail yard in the two decades from 1945-1965; the most recognizable change is the increase in the number of tracks (Exhibits 16-18).

Decline and Closing, 1970-1992

In the 1970s and 1980s, local and national events reduced demand for a classification facility at Potomac Yard. In 1976, following passage of the Railroad Revitalization and Reform Act, Amtrak – the new national passenger rail system – began imposing fees on freight trains traveling through Washington, D.C. and restricting when these trains could use the rail corridor between Washington and New York City. These restrictions caused delays and service disruptions and, as a result, freight rail lines began seeking routes to avoid passing through Washington. The Railroad Revitalization and Reform Act also accelerated the trend towards railroad mergers; as the number of railroads decreased, the need for classification services declined.

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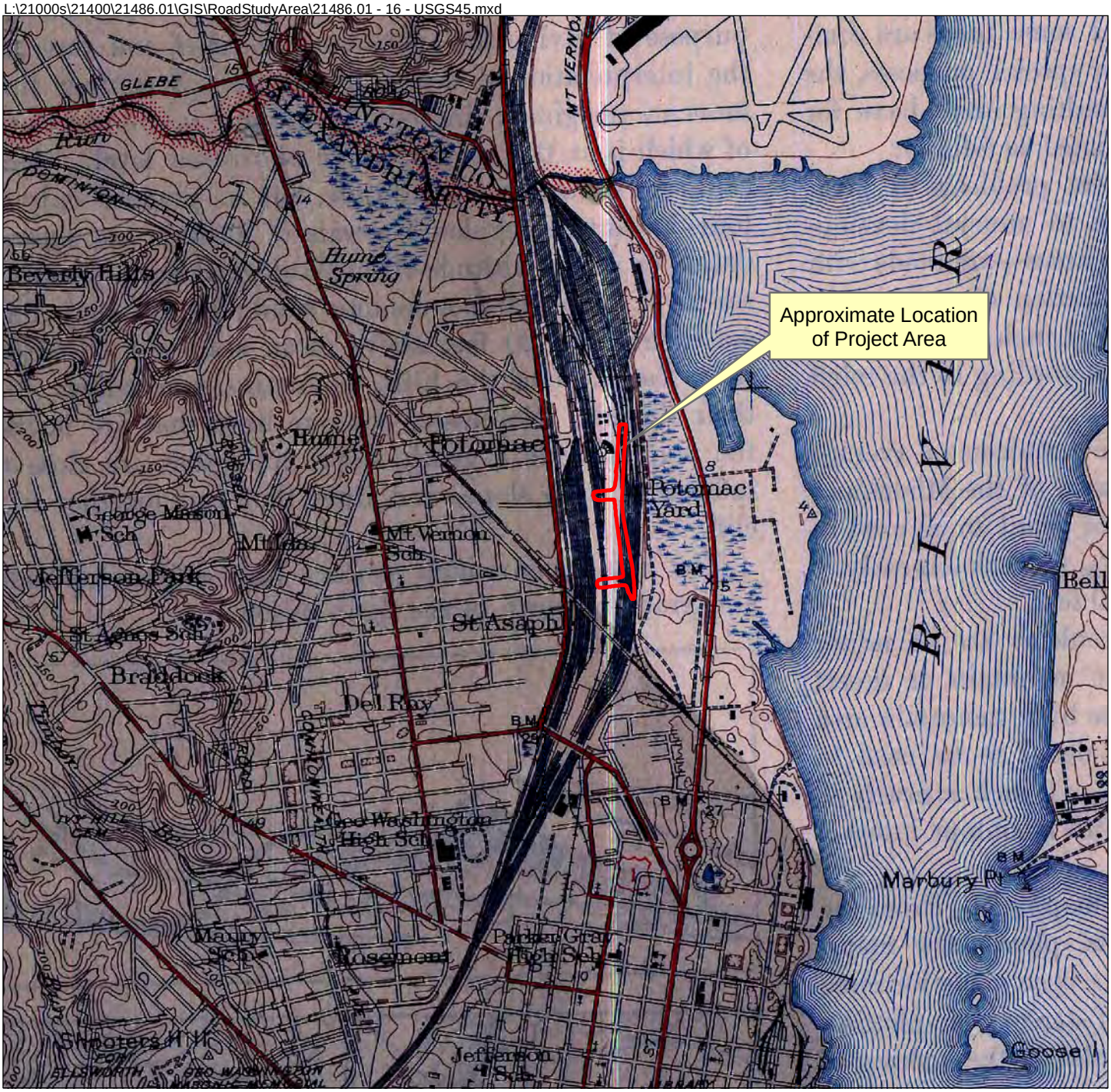

USGS Quad Map
Alexandria, VA-DC-MD 1945
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = 2000'

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USGS Quad Map
Washington DC & Vicinity, 1956
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = 2000'

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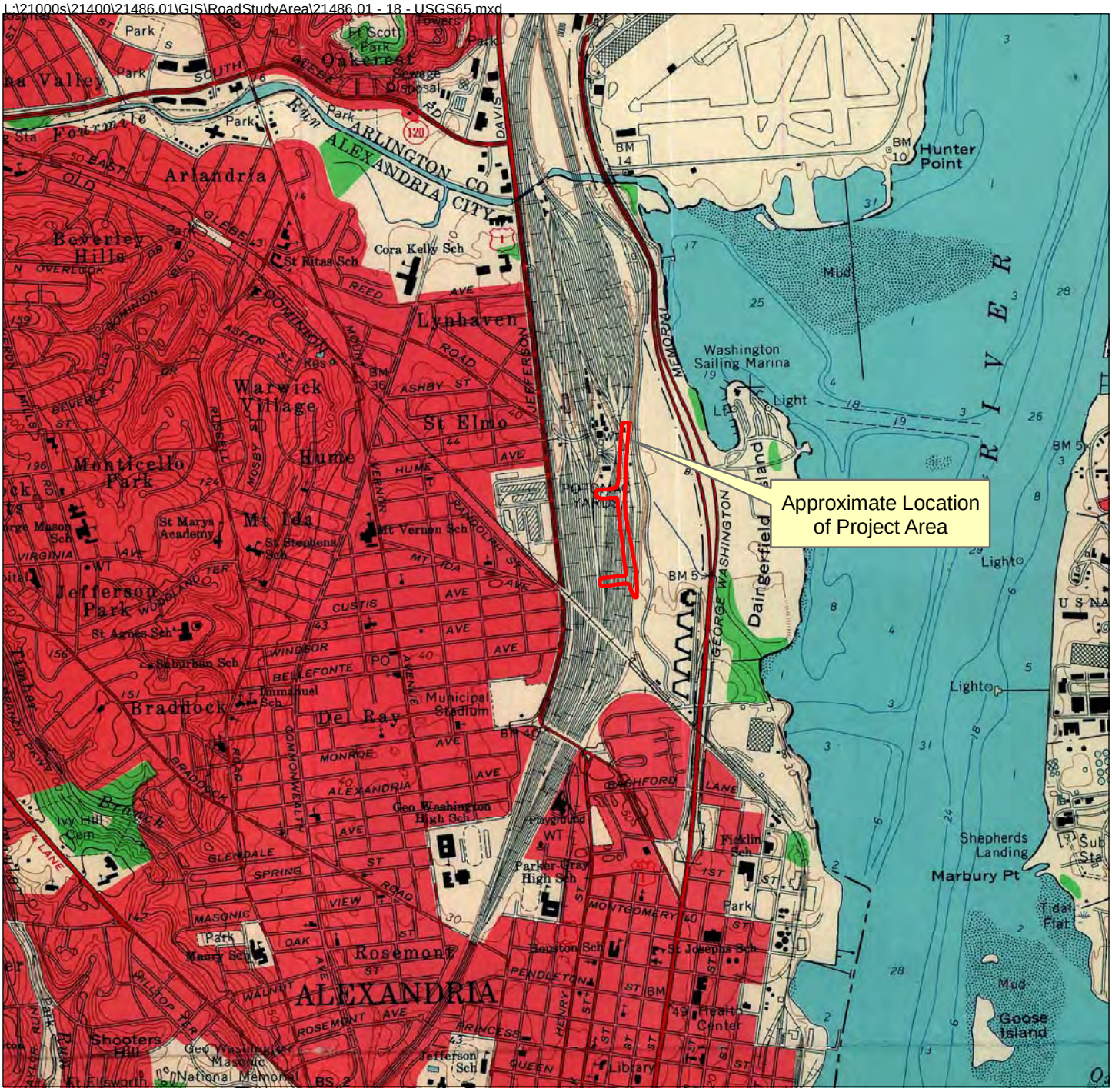

USGS Quad Map
Alexandria, VA-DC-MD 1965
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = 2000'

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At the same time, local construction projects hampered Potomac Yard's ability to perform efficiently. In the mid- to late 1970s, construction of the Metrorail line at the east edge of the yard and implementation of the Four Mile Run Flood Control project forced track re-configuration and disrupted service within the yard. During a 1986 labor strike by the Brotherhood of Maintenance of Way Employees, the RF&P management struggled to keep the yard operating at capacity but the tenant lines nevertheless began classifying trains outside of Potomac Yard. In 1987, after a collision between a freight train and an Amtrak train north of Washington, D.C., the railroads increasingly diverted traffic west of Washington, further reducing demand for Potomac Yard's classification services. In 1990, the RF&P terminated its rail classification operations; two years later, Potomac Yard closed (Potomac Yard 2006). Sometime after 1992, the RF&P main track line was moved from its former position on the west side of the property to east of the property paralleling the Metro Rail tracks.

FIELD AND LABORATORY METHODS

Fieldwork – Test Borings

Based on the presence of existing utilities under the proposed roadbed, the soil bore testing was conducted between Stations 35+50 and 52+50 for Potomac Avenue (Exhibit 19). Station 52+50 is the southern limit for testing, as this is the boundary of what has been historically in-filled. The northern limits for testing terminated near an existing water line located around Station 32+50. Soil bore testing for Swann Avenue was limited to the area that has been historically in-filled: between Stations 14+87.5 and 16+68.5 and Stations 17+50 through 18+25.69.

The testing interval and strategy was established in consultation with Francine Bromberg, of Alexandria Archaeology (see Appendix I) and consisted of testing at 100 foot intervals. The boring was conducted using the Geoprobe® Model 7720DT, a high-capacity direct push machine that collected 5 foot soil samples within a plastic tube liner, allowing for easy continuous sampling and recording of the soil profile (Plate 6). Bores were excavated to the shallower of: the projected depth of the historic surface or to the depth of the planned impact by utility construction.

Soil profiles were recorded with soil descriptions noted in standard soil terminology (A, Ap, B, C, etc.). Soil colors were described using the Munsell Soil Color Chart designations. The location of each bore was mapped and documented with field notes.

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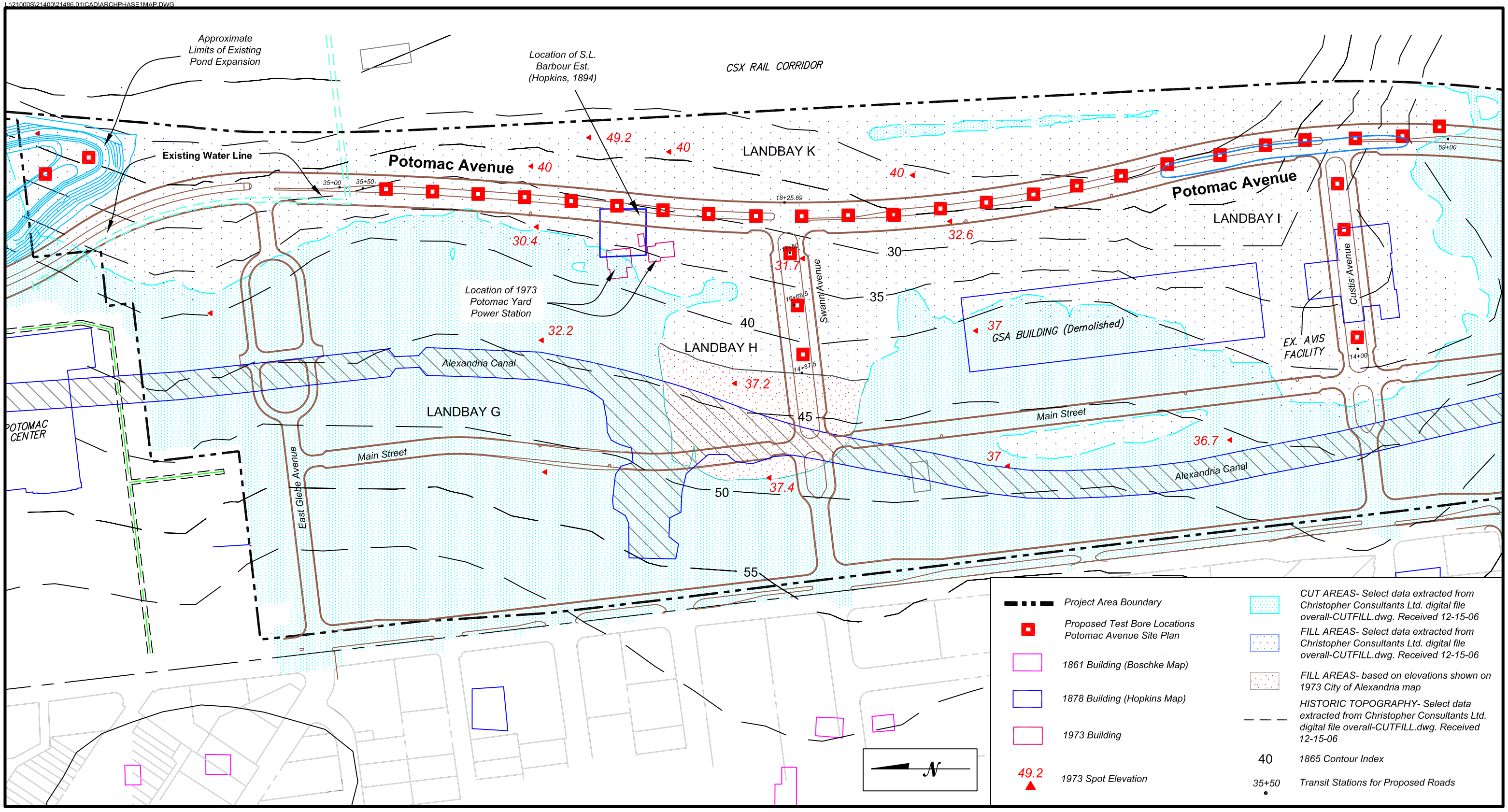

Potomac Avenue and East/West Roads - Proposed Geomorphological Bore Locations
Potomac Yard - WSSI #21486.01
Scale: 1" = 200'

Thunderbird Archeology
A division of Wetland Studies and Solutions, Inc.

Exhibit 19

Fieldwork - Phase I Trenching

The Phase I trenches were excavated by machine backhoe in order to archeologically sample the soils. Alexandria Archaeology determined the 50 foot testing interval; and approved the methodology. The trenches measured approximately one bucket width, or roughly four feet in width, and were excavated to an approximate depth of 13 feet below the surface. A small sample of the buried ground surface was screened through 1/4-inch mesh hardware cloth screen. Artifacts were bagged and labeled by test pit number and by soil horizon. All trenches were backfilled immediately upon the completion of the sample screening.

Only one trench (Station 58+00) was excavated in a stepped fashion in compliance with OSHA regulations, in order to allow for the safe hand excavation of one (3 by 3 foot) test unit into the buried ground surface. The fill overburden was removed without screening to expose the buried ground surface. The test unit was then excavated stratigraphically and all soil was screened through 1/4-inch mesh hardware cloth screen. A soil profile was drawn and soil colors were described using the Munsell Soil Color Chart designations. Artifacts were bagged and labeled by unit number and by soil horizon. All work was documented with field notes and photographs.

Laboratory Analysis

All artifacts recovered from the project area will be cleaned, stabilized (if necessary), cataloged, labeled and packaged in accordance with the guidelines set forth in the *City of Alexandria Archaeological Standards*.

Historic artifacts were separated into four basic categories: glass, metal, ceramics, and miscellaneous. The ceramics were identified as to ware type, method of decoration, and separated into established types, following South 1977, Miller 1992 and Magid 1990. All glass was examined for color, method of manufacture, function, etc., and dated primarily on the basis of method of manufacture when the method could be determined (Hurst 1990). Metal and miscellaneous artifacts were generally described; the determination of a beginning date is sometimes possible, as in the case of nails.

The prehistoric artifacts were classified by cultural historical and functional types and by lithic material. In addition, the debitage was specifically studied for the presence of striking platforms and cortex, wholeness, quantity of flaking scars, signs of thermal alteration, size, and presence or absence of use. Chunks are fragments of lithic debitage, which, although they are culturally modified, do not exhibit clear flake or core morphology.

RESULTS OF THE SOIL BORINGS

An evaluation of the potential archeological resources within the Potomac Yard property concluded that the eastern half of the property contained a moderate to high probability of containing intact archeological resources, because the 20th century disturbance in this area consisted of infilling, rather than down-cutting (Mullen and Breckenridge, 2007). The proposed path of Potomac Avenue and its associated East/West Roads were situated within this "in-filled area", where the pre-1906 ground surface was believed to have been buried under several feet of fill soil.

This area was felt to have a moderate to high probability for locating prehistoric resources within the buried ground surface, as the level terraces situated above the marshes of Daingerfield Island would have been attractive to prehistoric populations. Because the planned construction would impact the potentially buried ground surface (Ab or Apb horizon) beneath these proposed roads, geotechnical boring was recommended to look for evidence of this buried surface. The excavation of test trenches was also recommended in the projected location of the 19th century Barbour House, which was located partially within the proposed path of Potomac Avenue.

A total of thirty-two (32) test borings were planned at 100 foot intervals within the *Potomac Avenue and East/West Roads* site plan study area (see Exhibit 19). Twenty-four (24) of the bores were to be excavated between Stations 35+50 and 59+50 of the proposed Potomac Avenue; three (3) test bores were to be excavated along Swann Avenue (between Stations 14+87.5 and 17+50) and three (3) test bores along Custis Avenue (Stations 14+00 to 17+50).

Twenty-one bores were completed along Potomac Avenue (Exhibit 20). Three of the bores, (GP 13-15) within Potomac Avenue and those along Custis Avenue, are planned within the Avis parking lot and will not be excavated until the Avis Car Rental Company vacates this portion of the study area. Finally, three tests were excavated along Swann Avenue; and two tests were excavated northeast of Station 30+00 of Potomac Avenue, in anticipation of the expansion of the existing pond (see Exhibit 20).

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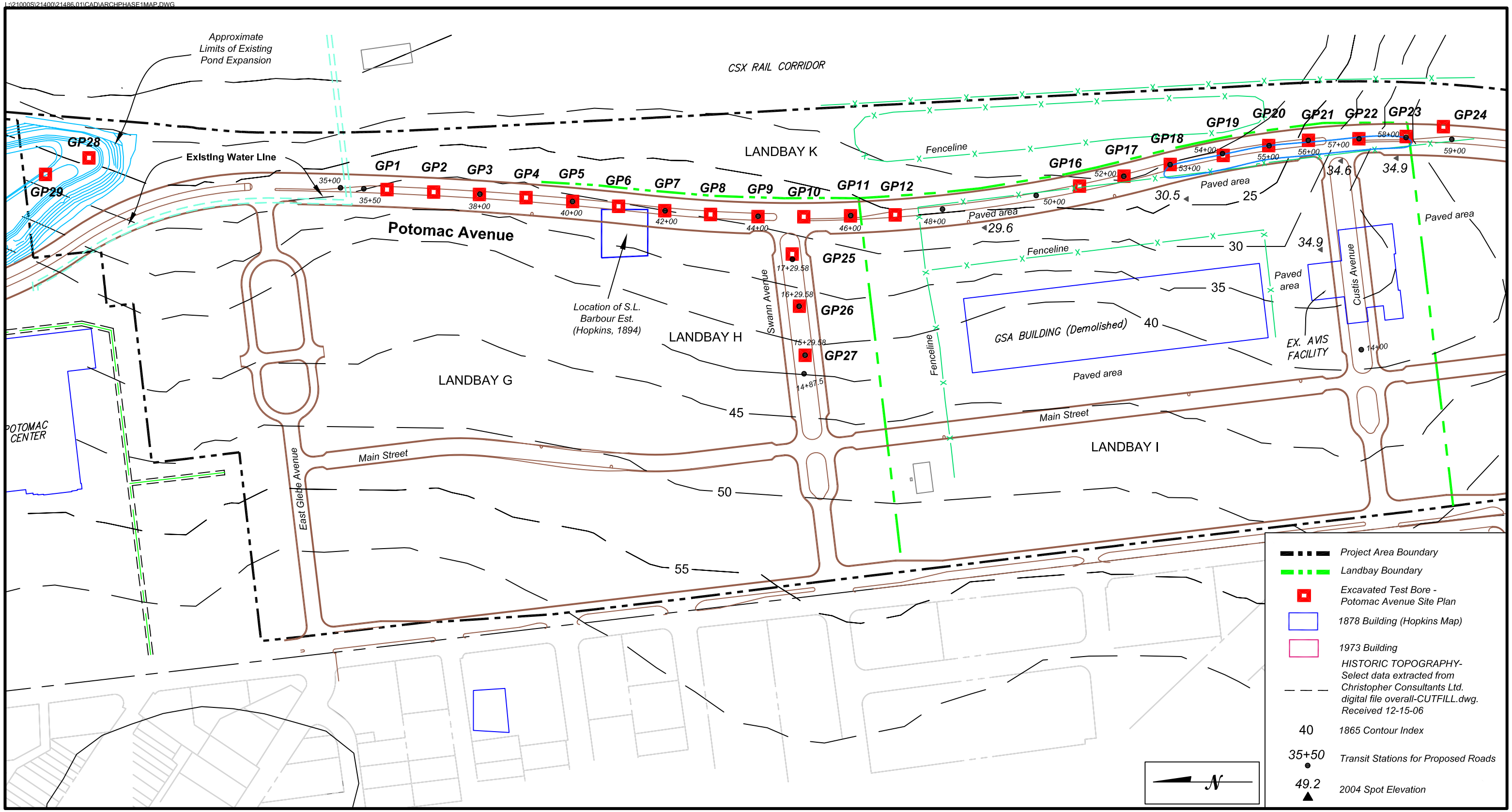

Potomac Avenue and East/West Roads - Excavated Test Bore Locations
Potomac Yard - WSSI #21486.01
Scale: 1" = 200'

Thunderbird Archeology
A division of Wetland Studies and Solutions, Inc.

Exhibit 20

Potomac Avenue

The majority of the tests along Potomac Avenue showed various fills ranging in depth from 10-25 feet overlying sterile subsoil. The detailed soil profile from each of the test bores can be found in Appendix II. Test Bore 4 is representative of the soil profiles from the first 1600 feet of the Potomac Avenue study area (Table 1).

Table 1: Test Bore GP 4 (Station 39+00)

Depth (feet)	Soil Horizon	Soil Description
0 - 5.0	Various fills	Crushed asphalt, cinder and gravel fills
5.0 - 9.75	Various C and B/C horizons	[2.5Y 5/3] light olive brown and [2.5Y 5/4] light olive brown sand and sandy clays
9.75 - 12.5		[10YR 5/2] grayish brown sandy clay loam
12.5 - 15.0	C horizon	[10YR 5/6] yellowish brown coarse sand

Buried Ground Surface (Ab or Apb horizon)

A buried ground surface, however, was identified along the southern end of the study area, between Stations 53+00 and 58+00 of Potomac Avenue (see Exhibit 20; Plate 7). The buried surface ranged between four and 14 feet below the modern surface (Table 2):

Table 2: Elevation of Ab horizon within Potomac Avenue Testing

Test Bore #	Station	Station Elevation	Ap Elevation	Depth below surface (feet)
GP 18	53+00	37.19	24.39	12.8
GP 19	54+00	37.35	24.75	12.6
GP 20	55+00	37.51	24.71	12.8
GP 21	56+00	37.60	23.60	14.0
GP 22	57+00	37.53	28.53	9.0
GP 23	58+00	37.16	32.86	4.3

The first three test bores that exhibited the buried surface were found at roughly the same elevation. At Test Bores GP 18 and GP 20, the buried surface was found covering B/C horizons (Tables 3-4).

Table 3: Test Bore GP 18 (Station 53+00)

Depth (feet)	Soil Horizon	Soil Description
0 - 12.8		Various fill horizons
12.8 - 13.3	Ab horizon	[2.5Y 4/2] dark grayish brown sand
13.3 - 13.5	E horizon	[2.5Y 5/3] light olive brown sandy loam
13.5 - 13.9	B/C horizon	[10YR 5/8] yellowish brown sandy clay
13.9 - 16.4	B/C horizon	[10YR 5/8] yellowish brown sandy clay mottled with [2.5Y 5/6] light olive brown sandy clay
16.4 - 23.6	B horizon	[5YR 4/3] reddish brown silty clay with iron oxide and manganese banding
23.6 - 25.0	B/C horizon	[5YR 4/6] yellowish red sand with some clay content

Table 4: Test Bore GP 20 (Station 55+00)

Depth (feet)	Soil Horizon	Soil Description
0 - 12.8		Various fill horizons
12.8 - 13.3	Ab horizon	[2.5Y 4/2] dark grayish brown sand
13.3 - 13.6	Ab horizon	[2.5Y 5/2] grayish brown sandy loam
13.6 - 13.8	E horizon	[2.5Y 5/3] light olive brown sandy clay loam
13.8 - 16.1	B/C horizon	[2.5Y 5/2] grayish brown sandy clay mottled with [2.5Y 6/8] olive yellow sandy clay
16.1 - 17.0	B/C horizon	[2.5Y 6/1] gray sandy clay
17.0 - 20.0		various B/C horizons and a horizon

The soil profile at Station 54+00 showed the top of the Ab horizon at a similar depth, with a series of A/C horizons overlying older C horizon and B/C horizons (Table 5).

Table 5: Test Bore GP 19 (Station 54+00)

Depth (feet)	Soil Horizon	Soil Description
0 - 12.6		Various fill horizons
12.6 - 13.1	Ab horizon	[10YR 4/4] dark yellowish brown sandy loam
13.1 - 13.4	A/C horizon	[10YR 4/6] dark yellowish brown sand
13.4 - 13.7	A/C horizon	[10YR 5/4] yellowish brown sand
13.7 - 14.0	A/C horizon	[2.5Y 6/4] light yellowish brown sand
14.0 - 15.6	B/C horizon	[2.5Y 6/2] light brownish sandy clay mottled with [2.5Y 5/6] light olive brown sandy clay
15.6 - 15.9	C horizon	[7.5YR 4/3] brown sand
15.9 - 16.4	B/C horizon	[5YR 4/6] yellowish red sand with some clay content
16.4 - 16.8	C horizon	[7.5YR 4/3] brown sand
16.8 - 20.0		Various B/C horizons

The soil profile of Test Bore GP 21 consisted of a shallow Ab horizon and an E horizon overlying numerous C horizons (Table 6). The buried surface was found at a depth of 14 feet below the current ground surface.

Table 6: Test Bore GP 21 (Station 56+00)

Depth (feet)	Soil Horizon	Soil Description
0 - 14.0		Various fill horizons
14.0 - 14.35	Ab horizon	[2.5Y 3/2] very dark grayish brown sandy loam
14.35 - 14.45	E horizon	[2.5Y 4/2] dark grayish brown sandy loam
14.45 - 17.0	C horizon	[10YR 5/8] yellowish brown sandy clay
17.0 - 18.1	C horizon	various C horizons
18.1 - 19.5	B/C horizon	
19.5 - 20.0	C horizon	[7.5YR 4/3] brown sand

The historic topography appears to rise in elevation to the south, as the buried surface in the final two test bores was between 4-9 feet below the current surface (Tables 7-8). The soil bore showing the buried surface from GP 22 is shown in Plate 8.

Table 7: Test Bore GP 22 (Station 57+00)

Depth (feet)	Soil Horizon	Soil Description
0 - 9.1		Various fill horizons
9.1 - 9.5	Ab horizon	[2.5Y 4/2] dark grayish brown sandy loam
9.5 - 9.9	Ab horizon	[2.5Y 5/2] grayish brown sandy loam
9.9 - 12.6	C horizon	[2.5Y 5/3] light olive brown sand
12.6 - 13.7	C horizon	[2.5Y 7/1] light gray sand mottled with [2.5Y 6/8] olive yellow sand
13.7 - 20.0	B/C horizons	various B/C horizons and C horizons

Table 8: Test Bore GP 23 (Station 58+00)

Depth (feet)	Soil Horizon	Soil Description
0 - 4.35		Various fill horizons
4.35 - 4.8	Ab horizon	[2.5Y 4/2] dark grayish brown sandy loam
4.8 - 4.9	E horizon	[2.5Y 5/3] light olive brown sandy loam
4.9 - 8.0	B horizon	[7.5YR 5/8] strong brown sandy clay
8.0 - 10.0	C horizon	Various C horizons

The rise in elevation of the buried A horizon from north to south appears to corroborate the topography depicted on the historic maps from the 1860s and 1870s. Exhibit 21 shows the test bore locations with the buried surface overlaid on the late 19th century historic map. The stream is shown flowing between Stations 53+00 and 54+00 at an elevation that appears to range between 20-25 feet in elevation. The ground rises over 10 feet in elevation between Stations 56+00 and 58+00.

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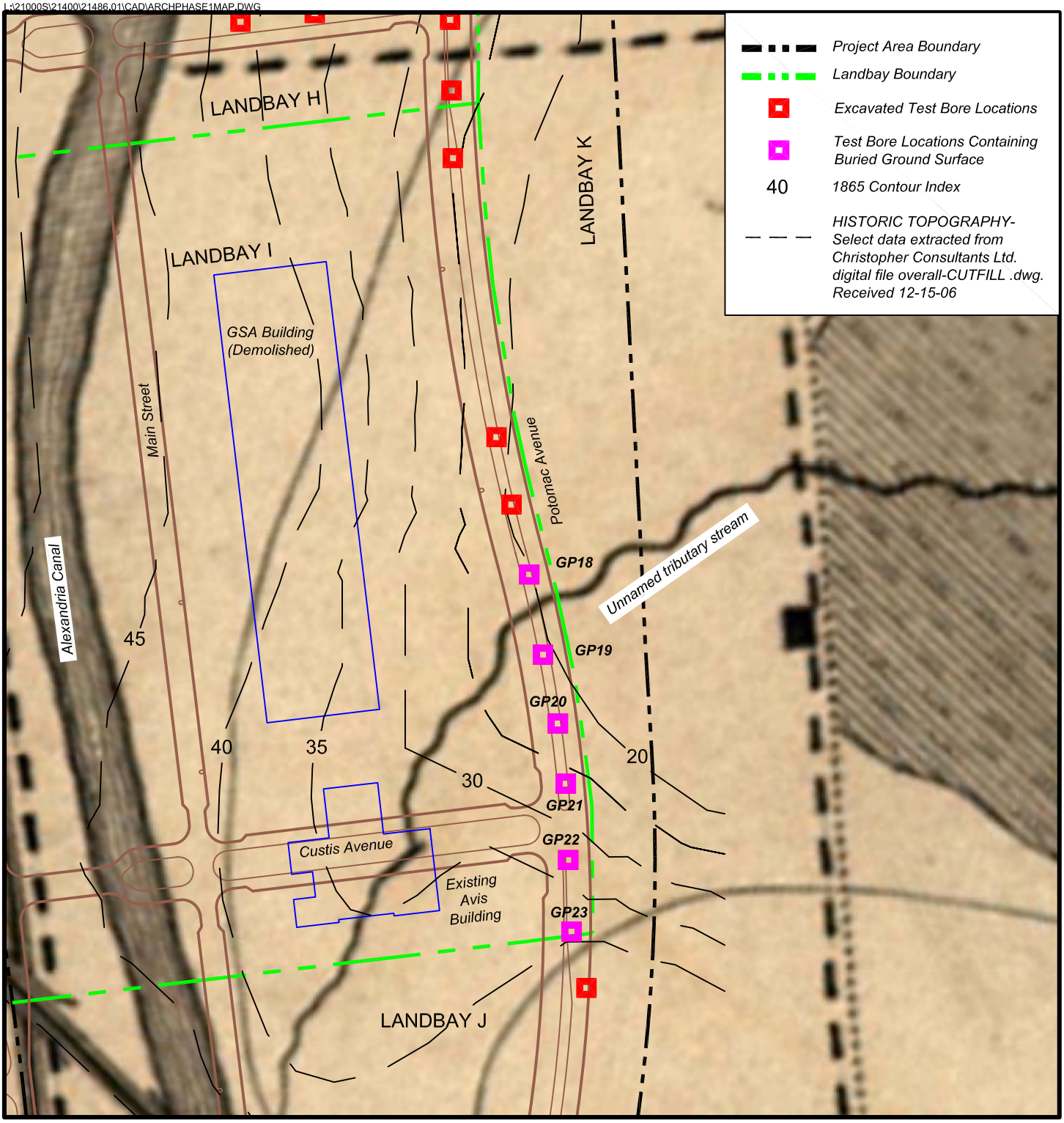

Location of Test Bores With Buried Ground Surface With Historic Map Overlay
Potomac Yard - WSSI #21486.01
Scale: 1" = 200'

Map Source: "Topographic map of the District of Columbia. Surveyed in the years 1856, '57 '58 & '59 by A. Boschke". Library of Congress Geography and Map Division Washington D.C. Original Scale: 1:15,840

Swann Avenue

Three test bores were excavated within the proposed path of Swann Avenue (see Exhibit 20). The test bore at Station 17+29.58 was offset approximately 25-30 feet to the south (Plate 9). The soil profile revealed a buried ground surface approximately 16 feet below the surface, or at roughly 31 feet in elevation (Table 9).

Table 9: Test Bore GP 25 (Station 17+29.58)

Depth (feet)	Soil Horizon	Soil Description
0 - 16.8		Various fill horizons
16.8 - 17.7	Ab horizon	[2.5Y 5/2] grayish brown sand
17.7 - 18.4	Ab horizon	[2.5Y 6/2] light grayish brown sandy loam
18.4 - 19.4	C horizon	[10YR 5/8] yellowish brown sand
19.4 - 20.0	B/C horizon	[10YR 5/8] yellowish brown sand mottled with [10YR 7/1] light gray clay

The soil profiles of GP 25 and GP 26 revealed deep fill deposits; no original surfaces were located.

Also located within the first 1600 feet of the study area was the projected location of the 19th century Barbour House. Three test bores were excavated in this area.

S.L. Barbour Estate

In 1870, Susan Dangerfield Barbour inherited a 76 acre tract, which includes the current study area, upon her father's death. The house, shown on the 1878 Hopkins map, must have been constructed between 1870 and 1878, as this is first time it appears on historic maps (see Exhibit 10). The projected location of the Barbour House lies along the proposed path of Potomac Avenue between Stations 40+00 and 42+00 (see Exhibit 20; Plates 10-11).

Archeological testing using machine backhoe trenching was recommended to look for evidence of the house (Mullen and Breckenridge 2007), and the current scope of work designed by Alexandria Archaeology called for the excavation of four test trenches in this location (see Appendix I). Additionally, three test bores were excavated as part of the testing effort to identify and/or confirm the presence of preserved buried ground surfaces (Ab or Apb horizon) underneath Potomac Avenue that would be impacted by utility construction.

The soil profile of the test bores excavated at these three stations (GPs 5-7) showed fill deposits overlying subsoil, as shown in the profile of GP5 (Table 10).

Table 10: Test Bore GP 5 (Station 40+00)

Depth (feet)	Soil Horizon	Soil Description
0 - 4.5		Various fill horizons with gravel, cinder and brick
4.5 - 6.7		Compact sandy clay fills
6.7 - 10.0		[10YR 5/1 gray sand; [2.5Y 5/3] light olive brown and [2.5Y 5/4] light olive brown sand and sandy clays
10.0 - 15.0		Alternating bands of [7.5YR 5/8] strong brown wet sand and [2.5Y 4/1] dark gray sandy clay loam

Pond Expansion (Landbay K)

Two test bores were excavated within the proposed expansion of an existing pond located east of Station 28+50 of Potomac Avenue (see Exhibit 20; Plates 12-13). The soil profiles of Test Bores GP 28 and 29 revealed deep fill deposits, as shown in the profile of GP 29 (Table 11).

Table 11: Test Bore GP 29

Depth (feet)	Soil Horizon	Soil Description
0 - 14		Various fill horizons
14 - 16.7		[7.5YR 4/4] brown sandy clay
16.7 - 18.0		[2.5Y 5/6] light olive brown sandy clay fill
18.0 - 18.7		[2.5Y 4/2] dark grayish brown silty clay loam
18.7 - 20.0		[2.5Y 5/1] gray clay
20.0 - 25.0		Various clay fill horizons

Evidence of gleying was observed within the fills between 18-19 feet below surface and at the base of the excavation.

Summary and Recommendations

Potomac Avenue

Archeological test boring within the proposed path of Potomac Avenue and a portion of proposed Swann Avenue revealed that much of the original landscape had been altered in this area, presumably by the development of Potomac Yard. With the exception of one area, the tests showed various fills ranging in depth from 5-10 feet; no evidence of original ground surface was located in these areas. No further work was recommended in these locations.

However, a buried ground surface was identified in six test bores along a 500 foot section of the proposed Potomac Avenue in the southern end of the project area (Stations 53+00 to Station 58+00). The soil core profiles showed an Ab-A/C-E-C/B horizon sequence, which has the possibility of containing historic and prehistoric cultural materials. Further archeological investigations were recommended to determine whether the buried ground surface contained archeological resources. The excavation plan for the subsequent Phase I investigations was developed in consultation with Alexandria Archaeology (see Appendix I). The results of the Phase I excavations are presented below.

Swann Avenue

One of the three test bores within Swann Avenue also revealed a buried ground surface at approximately 31 feet in elevation. The surface was not located in test bores to the north or south and construction impacts were not planned to the east and west of this location that would disturb this elevation depth. No further work is recommended for this isolated pocket of buried ground surface.

S.L. Barbour Estate

Three test bores were excavated within the projected location of the circa 1870s Barbour House. The soil profiles also showed fill deposits overlying subsoil; no evidence of a buried ground surface was located. Therefore, the potential for finding undisturbed contexts related to the occupation of the Barbour House are extremely low, and no further archeological testing was recommended for this area. Alexandria Archaeology concurred with the recommendation and no test trenching or any further work was conducted in this area.

Pond Expansion

Testing within the proposed expansion area of the existing pond located in the northern end of the study area, revealed deep fill deposits overlying gleyed soils. No intact buried surfaces or cultural materials were located and no additional archeological work is needed.

RESULTS OF THE PHASE I TRENCHING

Initial testing by mechanical auguring within the proposed alignment of Potomac Avenue revealed a buried ground surface (A horizon) within the southern end of the study area. The buried surface had the possibility of containing historic and prehistoric cultural materials and Phase I investigations were recommended.

The Phase I archeological fieldwork consisted of the excavation of eleven backhoe trenches at 50 foot intervals across the study area (Exhibit 22; Plates 14-15). The testing interval and strategy was established in consultation with Francine Bromberg, of Alexandria Archaeology (see Appendix I). Additionally, the Scope of Work included the excavation of one test unit within the southern end of the study area; the buried ground surface was located approximately four feet below the current ground surface in this area. The test unit was designed to determine if the buried surface had been plowed.

Testing within the project area revealed the presence of one new archeological site, 44AX0204 (see Appendix III). All artifacts recovered from the testing are included with site 44AX0204 (Appendix IV)

Site 44AX0204

Site 44AX0204 is defined by 11 test pits and measures approximately 500 by 50 feet (see Exhibit 22). The archeological site limits and locations of test pits depicted in the exhibit are approximate and have not been survey located. The soil profiles from the test pits revealed the presence of an Apb or Ab horizon overlying subsoil. The soil profiles from each excavated trench and artifacts from the site are discussed below.

Trenches 1-4 (Stations 53+00 to 54+50)

The buried surface was first encountered along Potomac Avenue at Station 53+00 (see Exhibit 19). Here, mechanical augering encountered the buried surface at an approximate depth of 12.8 feet below the current ground surface in Station 53+00 and about 12.6 feet below surface in Station 54+00. Table 12 shows the approximate recorded depths and elevations of the buried ground surface in the first four trenches that were excavated.

Table 12: Recorded Depths of Buried Ground Surface in Trenches 1-4

Station	Station Elevation	Phase I Trench	Ab/Apb Elevation	Depth below surface (feet)	Test Bore #	Depth below surface (feet)
53+00	37.19	Trench 1	24.5	12.5	GP 17	12.8
53+50	circa 37.0	Trench 2	26.4	10.6		
54+00	37.35	Trench 3	27.55	9.8	GP 18	12.6
54+50	circa 37.0	Trench 4	25.5	11.5		

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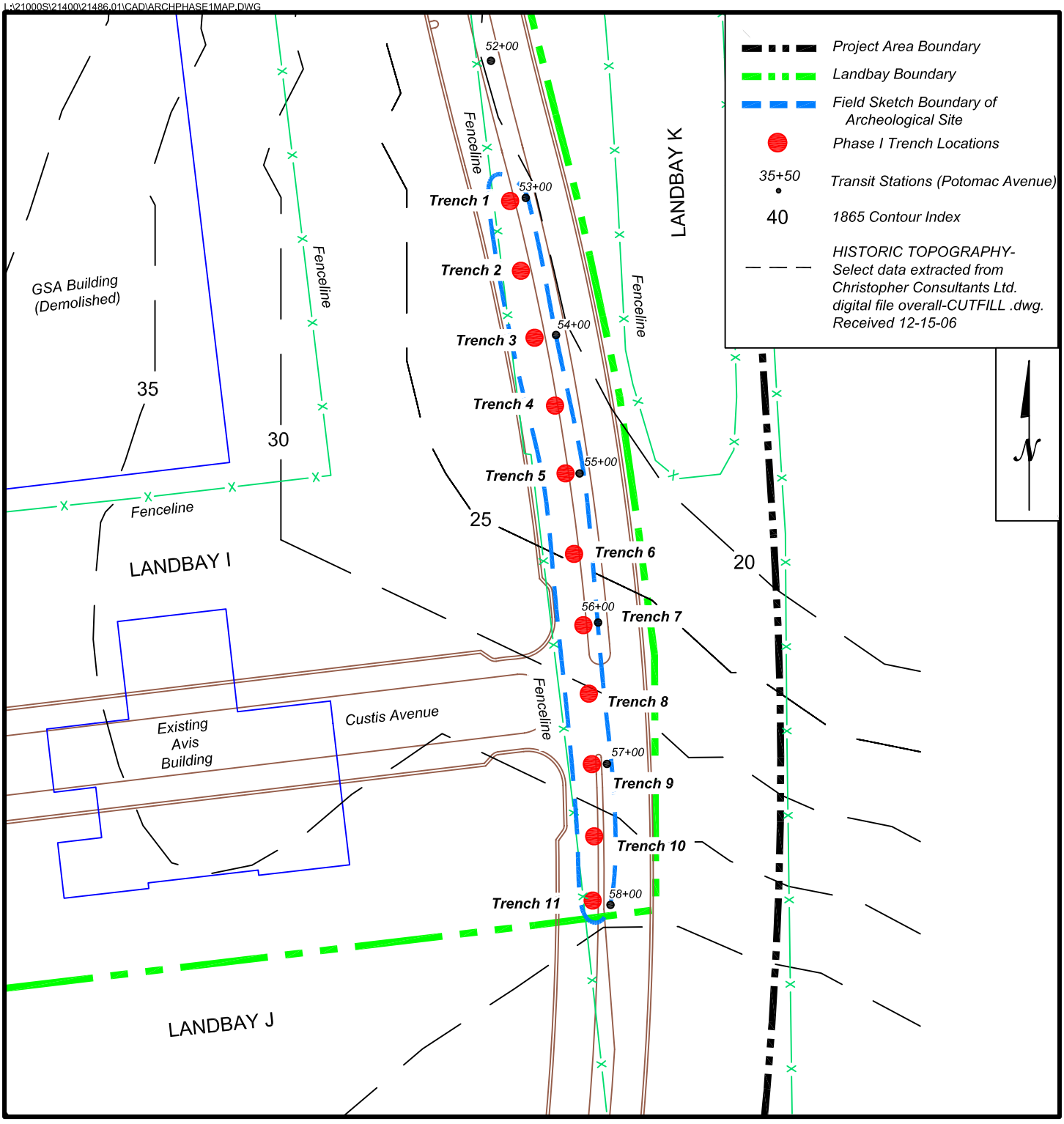

Location of Phase I Test Trenches within Site 44AX0000
Potomac Yard - WSSI #21486.01
Scale: 1" = 100'

Placement of the Trench 1 at Station 53+00 showed that the mechanical auger was accurate in determining the upper depth of the buried surface below the current terrain elevation. No compression of strata as a result of mechanical augering was noticed.

The profile exposed in Trench 1 is representative of the soils in this portion of the study area. The profile consisted of thick cap of fill extending to about 12.5 feet below ground surface; this rested on a buried A horizon that extended from approximately 12.5 feet to about 14.0 feet below surface. This moderately thick A horizon may include an E horizon and perhaps the upper part of the underlying C/B-horizon that extended to approximately 16.4 feet below surface (as measured in the Geoprobe auger profile). All soils are fine to medium sandy loams. Since the depth of the trench prevented access to more closely examine the profile, discernment of the break between the Ab and the underlying E to C/B break was difficult to identify.

Comparable profiles were obtained in the backhoe trenches excavated at Stations 53+50 and 54+00. The buried surface or Ab-horizon was encountered at 10.60 feet and 9.8 feet respectively, below surface. The profiles from these two test pits are nearly identical to the one exposed in the trench at Station 53+00. In the backhoe trench excavated at Station 54+50, the top of the Ab-horizon was reached at a depth of 11.5 feet below the existing ground surface.

Artifacts

Prehistoric artifacts recovered from the screened sample of the buried A horizon included quartz and chert flakes and several small fragments of Early Woodland pottery. Historic materials included ceramics and glass (Table 13 and Appendix IV).

Table 13: Artifacts Recovered from Trenches 1-4

Provenience	Quantity	Artifact	Begin Year	End Year
Trench 1, Ab horizon				
	Prehistoric			
	2	flake, chert		
	1	flake, quartz		
Total Trench 1, Ab horizon	**3**			
Trench 2, Ab/Apb horizon				
	Glass			
	1	unidentified glass		
	1	windowpane, potash/soda		1864
	Prehistoric			
	1	flake, quartzite		
	1	shatter, quartzite		
Total Trench 2, Ab/Apb horizon	**4**			

Table 13: Artifacts Recovered from Trenches 1-4 continued

Provenience	Quantity	Artifact	Begin Year	End Year
Trench 3, Ab/Apb horizon				
	Ceramics			
	1	kaolin		
	1	redware		
	1	yellowware	1830	1940
	Glass			
	8	bottle, bottle/jar		
	3	unidentified, glass		
	Metal			
	1	nail, cut	1790	
	Miscellaneous			
	1	bone		
	1	brick		
	1	coal		
	5	shell		
	Prehistoric			
	1	flake, quartz		
Total Trench 3, Ab/Apb horizon	**24**			
Trench 4, Ab/Apb horizon				
	Ceramics			
	2	tin glazed earthenware	1700	1800
	1	Rockingham/Bennington	1800	1900+
	3	whiteware	1820	1900+
	1	yellowware	1830	1940
	2	redware		
	Glass			
	5	bottle/jar		
	3	unidentified		
	Metal			
	1	nail, cut	1790	
	Miscellaneous			
	8	brick		
	1	cinder		
	1	coal		
	1	mortar		
	3	shell		
	Prehistoric			
	16	Quartz tempered Early Woodland pottery	1000 B.C.	250 B.C.
	1	chunk, quartz		
	4	flake, quartz		
	1	flake fragment, quartz		
Total Trench 4, Ab/Apb horizon	**54**			
Total Trenches 1-4 Ab/Apb horizon	**85**			

Trenches 5-8 (Stations 55+00 to 56+50)

Placement of backhoe trenches at Stations 55+00 and 56+00 revealed a continuation of the buried surface (see Exhibit 22). It was encountered at a depth of 12.00 feet below surface in Station 55+00, rising to 9.00 feet below surface in Station 56+50. The depth below surface where this horizon was encountered corresponds well to depths recorded with the mechanical auger (Table 14).

Table 14: Recorded Depths of Buried Ground Surface in Trenches 5-8

Station	Station Elevation	Phase I Trench	Ab/Apb Elevation	Depth below surface (feet)	Test Bore #	Depth below surface (feet)
55+00	37.51	Trench 5	24.5	12.0	GP 19	12.8
55+50	circa 37.5	Trench 6	23	14.5		
56+00	37.60	Trench 7	27.55	12.0	GP 20	14.0
56+50	circa 37.5	Trench 8	28.5	9.0		

The profiles from the mechanical auger show a thick Ab horizon capping an E to C/B horizon of sandy loam in this area. This depositional package appears to be thinning out by the time Station 56+50 is reached, as the subsequent profiles from both the trench and the Geoprobe revealed profiles characterized by fine silt loams. Such a texture shift may reflect a change from Pleistocene-Holocene alluvial depositional contexts within the small stream valley to much older upland marine terrace contexts on the surrounding uplands.

Artifacts

Cultural materials were low in count in the backhoe trenches placed between Stations 55+00 to 56+50 (Table 15 and Appendix IV). No artifacts were recovered from Trench 6, while only historic materials were found in Trenches 5 and 7. Cultural materials increased in Trench 8, excavated at Station 56+50. Here, the assemblage was dominated by historic materials, although one prehistoric quartz flake was recovered.

Table 15: Artifacts Recovered from Trenches 5-8

Provenience	Quantity	Artifact	Begin Year	End Year
Trench 05, Ab/Apb horizon				
	Ceramics			
	1	yellowware	1830	1940
	1	redware		
	Glass			
	1	bottle/jar		
	1	unidentified glass		
	Miscellaneous			
	4	brick		
	1	coal		
Total Trench 05, Ab/Apb horizon	**9**			
Trench 07, Ab/Apb horizon				
	Glass			
	1	windowpane, potash		1864
	2	nail, cut	1790	
Total Trench 07, Ab/Apb horizon	**3**			
Trench 08, Ab/Apb horizon				
	Ceramics			
	5	refined white earthenware		
	Glass			
	2	unidentified, glass		
	Miscellaneous			
	3	brick		
	Prehistoric			
	1	flake, quartz		
Total Trench 08, Ab/Apb horizon	**11**			
Total Trenches 5-8 Ab/Apb horizon	**23**			

Trenches 9-11 (Stations 57+00 to 58+00)

The backhoe trenches (and earlier mechanical auger probes) placed at Stations 57+00 and 58+00 showed that the buried surface was not as deep as that found in the stations to the north (see Exhibit 22). For example, the depth at which the buried surface was reached in Station 57+00 was 7.50 feet below surface, while in Station 58+00 it was encountered only at 3.85 feet below the current surface (Table 16).

Table 16: Recorded Depths of Buried Ground Surface in Trenches 9-12

Station	Station Elevation	Phase I Trench	Ab/Apb Elevation	Depth below surface (feet)	Test Bore #	Depth below surface (feet)
57+00	37.60	Trench 9	30.1	7.5	GP 21	9.0
57+50	circa 37.5	Trench 10	30.0	7.5		
58+00	37.16	Trench 11	33.3	3.85	GP 22	4.3

Artifacts

Low quantities of lithic debris were recovered from Trench 10 (and from the test unit in Trench 11). The recovery of ceramics and glass, along with the presence of several nails, brick fragments and window pane fragments suggests that a structure may have been located in the vicinity. The artifacts recovered from Trenches 9 and 10 are shown in Table 17; a complete inventory is found within Appendix IV.

Table 17: Artifacts Recovered from Trenches 9-10

Provenience	Quantity	Artifact Type	Begin Year	End Year
Trench 09, Ab/Apb horizon				
	Ceramics			
	3	refined white earthenware		
	Glass			
	2	bottle/jar		
	3	unidentified glass		
	Metal			
	1	nail, cut	1790	
	Miscellaneous			
	4	brick		
Total Trench 09, Ab/Apb horizon	**13**			

Table 17: Artifacts Recovered from Trenches 9-10 continued

Provenience	Quantity	Artifact Type	Begin Year	End Year
Trench 10, Ab/Apb horizon				
	Ceramics			
	2	refined white earthenware		
	2	stoneware		
	Glass			
	1	unidentified glass		
	Miscellaneous			
	11	brick		
	Prehistoric			
	3	flakes, quartz		
Total Trench 10, Ab/Apb horizon	**19**			
Total Trenches 9-10 Ab/Apb horizon	**32**			

Test Unit 1

Given the shallow depth at which the surface was encountered within the southern end of the study area, the excavation of a 3 by 3 foot test unit at Station 58+00 was possible (see Exhibit 20). The test unit was placed within an excavated 25 foot square block placed to comply with OSHA requirements.

This test unit clearly showed that the buried surface in this area is an historic plow zone, overlying a thin E horizon and subsoil (Exhibit 23 and Plate 17). The plow zone contained moderate quantities of nineteenth century ceramics, glass and other cultural materials (Table 18 and Appendix IV). Low quantities of lithic debris were recovered from the test unit as well as from the backhoe trench placed in Station 57+50. The quantity of materials, along with the presence of several nails, brick fragments and windowpane sherds suggests that a structure may have been located in the vicinity. Testing of the underlying subsoil, composed of a thin E horizon merging into an underlying B horizon, did not reveal any additional archeological materials.

Site Discussion

Plotting the depth at which the buried surface was reached between Station 53+00 to Station 55+00 (Trenches 1-4) revealed a small topographic rise that likely represents a levee or terrace formation that bordered the north bank of the now buried historic stream (Exhibit 24). The prehistoric materials recovered from the buried surface on this terrace likely represent a multi-component prehistoric occupation of unknown size.

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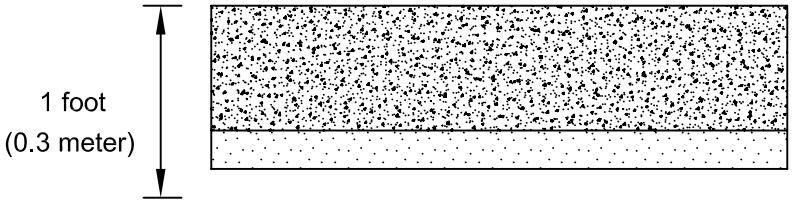

Ap horizon: [2.5Y 4/2] dark grayish sand

B horizon: [10YR 5/8] yellowish brown sandy clay

North Wall Profile of Test Unit 1 (Within Trench 11)
Potomac Yard - WSSI #21486.01
Scale: 1" = 1'

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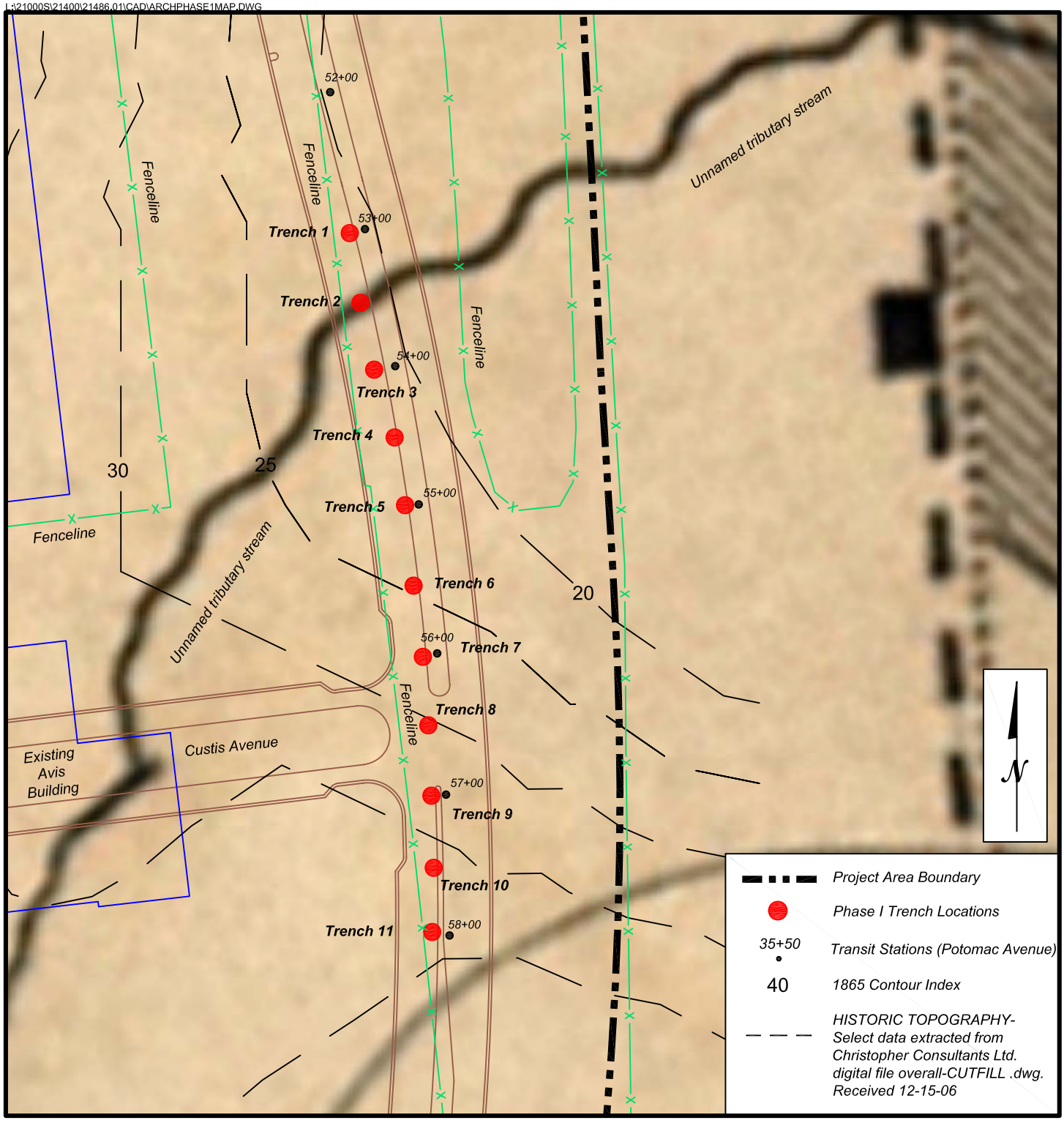

Location of Phase I Test Trenches With Historic Map Overlay
Potomac Yard - WSSI #21486.01
Scale: 1" = 100'

Map Source: "Topographic map of the District of Columbia. Surveyed in the years 1856, '57 '58 & '59 by A. Boschke". Library of Congress Geography and Map Division Washington D.C. Original Scale: 1:15,840

The rise in elevation of the buried surface between the Station 55+00 and 56+00 (Trenches 5-7) is interpreted as marking the side of a gradual slope that once overlooked the historic stream located just north of Station 55+00 (see Exhibit 24). The trench profiles from Station 55+00 and 55+50, and perhaps 56+00, reflect what may be a narrow terrace formation leading towards a gradual slope that ascended upwards towards Station 58+00. This terrace is not as apparent as the one located south of the buried stream noted above.

The vicinity of Trench 11 (Station 58+00) is in effect on an "upland" setting overlooking the south side of the above noted historic stream. This landform appears to be nearly level in the 50 foot stretch between Stations 57+00 and 57+50 (see Exhibit 24).

Phase I archeological investigations of the buried land surface along Potomac Avenue, first documented by mechanical augering in July 2007, revealed both prehistoric and historic cultural materials, identified as Site 44AX0204 (Exhibit 25).

The prehistoric archeological materials recovered from the Trenches 1-4 (between Stations 53+00 to 54+50) are associated with a low-lying terrace associated with a former (and now buried) stream that drained east into the Potomac River. It was not possible to determine if the A horizon found between Stations 53+00 and 54+50 was a plow zone; the depth of the backhoe trenches precluded entry to more closely examine their profiles.

Table 18: Artifacts Recovered from Test Unit 1

Provenience	Quantity	Artifact Type	Begin Year	End Year
Trench 11, Test Unit 1, Ap horizon				
	Ceramics			
	3	soft paste porcelain		
	5	creamware	1762	1820
	19	pearlware	1780	1830
	25	whiteware	1820	1900+
	1	ironstone	1840	1900+
	3	yellowware	1830	1940
	5	refined white earthenware		
	1	buff bodied earthenware		
	3	redware		
	3	stoneware		
	Glass			
	4	bottle, bottle/jar		
	1	bottle, contact mold	1810	1880
	13	unidentified glass		
	1	windowpane, potash		1864
	Metal			
	5	nail, cut	1790	
	10	unidentified ferrous metal		
	Miscellaneous			
	101	brick		
	2	coal		
	1	shell		
	2	slate		
	Prehistoric			
	1	flake, rhyolite		
Total Trench 11, Test Unit 1, Ap horizon	**209**			

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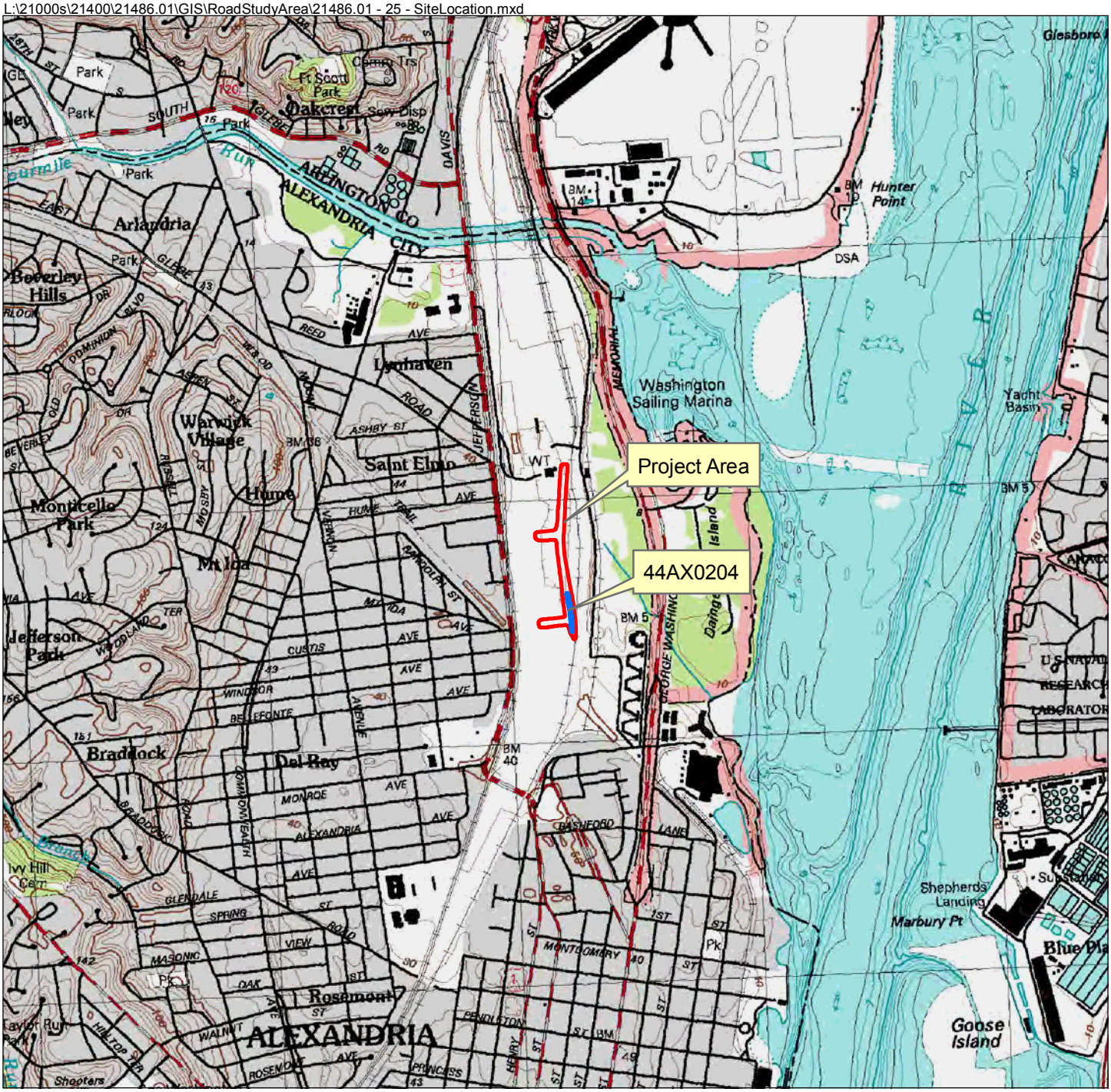


Site Location Map
USGS Quad - Alexandria, VA-DC-MD 1994
Potomac Yard - Testable Area
WSSI #21486.01
Scale: 1" = 2000'

The mechanical auger samples in this area suggest that it may include an Ab-A/C-E-C/B horizon sequence of potential alluvial origin. This type of sequence might contain intact prehistoric contexts.

The low density of prehistoric flaking debris found within the buried surface between Station 57+00 and 58+00 (Trenches 9-11) was recovered from a relatively higher elevated bench overlooking the former stream valley. The buried surface in this area was clearly a plow zone, as shown in the profile of the test unit in Trench 11.

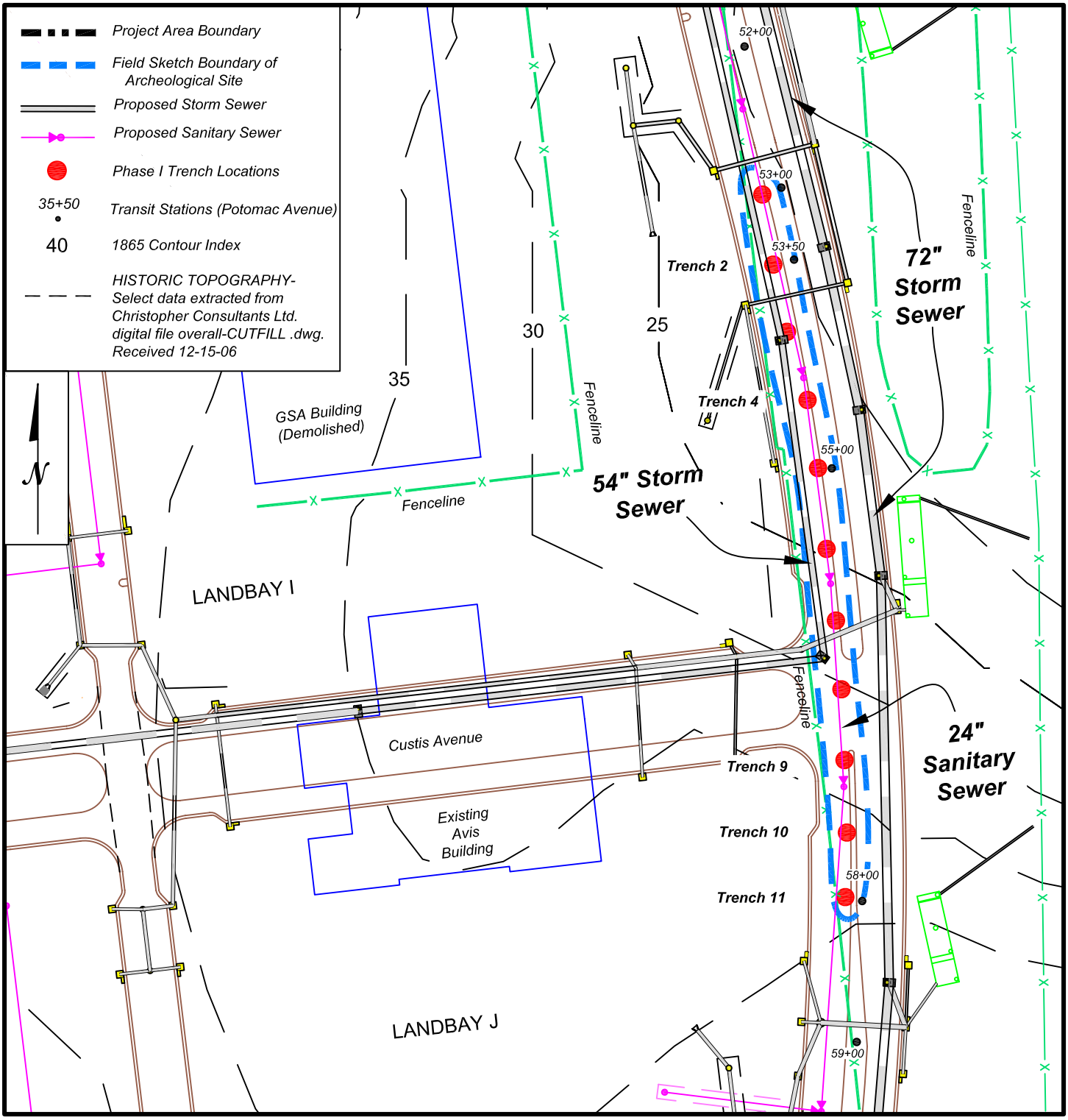
Historical materials were recovered from all but one of the trenches. It was not possible to determine whether they were recovered from plow zone contexts between Stations 53+00 and 57+00, as the depth of the trenches precluded close examination of the profiles.

The historic artifacts recovered from the stretch of Potomac Avenue between Station 57+00 and 58+00 include moderate quantities of nineteenth century artifact classes, all recovered from plow zone contexts. The range of artifact classes suggests the presence of a nearby structure once situated on the elevated landform overlooking the stream to the north. Historic maps do not show any buildings in this vicinity; however, it is possible the site is associated with the nearby Dangerfield estate shown east of the study area.

Proposed Utilities and Existing Site Conditions

At the time of the Phase I survey, site 44AX0204 was located beneath an existing dirt road that overlooked the AVIS Car Rental Company facility and parking lot (see Exhibit 22). The dirt road in this location roughly ran along the same alignment of the proposed Potomac Avenue at a present elevation of 37 feet above sea level. The Avis parking lot was about four feet lower than the grade of this dirt road, and was roughly at the same grade as the historic 1865 elevation. It is highly likely that the construction of the Avis parking lot and associated infrastructure may have completely disturbed or removed the historic surface and, potentially, the western end of site 44AX0204. Further, no evidence of the buried ground surface was located during the demolition monitoring of the GSA warehouse building in December of 2007.

The proposed construction beneath Potomac Avenue that necessitates the archeological work includes two storm sewers and a sanitary sewer (Exhibit 26). A 72-inch storm sewer is proposed beneath the eastern side of Potomac Avenue, while a second storm sewer (54-inch) and a 24-inch sanitary sewer are proposed beneath the western side of the road. The proposed construction will impact up to 25 feet below the current grade of Potomac Avenue. As mentioned previously in the Methodology section, the previous archeological testing was conducted to the shallower of the projected depth of the historic surface or to the deepest planned impact by utility construction.



Proposed Utilities within Site 44AX0204
Potomac Yard - WSSI #21486.01
Scale: 1" = 100'

Following the completion of the archeological investigations reported herein, the author learned that a section of the 72-inch storm sewer had already been constructed underneath Potomac Avenue to the east of our testing. This construction appears to have impacted an unknown portion of site 44AX0204. Exhibit 27 presents a cross section profile showing the excavation line for the placement of the 72-inch storm sewer in relation to the proposed 24-inch sanitary sewer. The excavation trench profile reveals that the buried ground surface (containing site 44AX0204) has been disturbed roughly four to twelve feet on either side of the utility.

Although the east to west extent of site 44AX0204 has not been determined, the placement of the 72-inch storm sewer has likely destroyed the eastern portion of the site and the western portion of the site has likely been disturbed or destroyed by the construction of the AVIS parking lot. The potentially undisturbed portion of the site measures 500 by 50 feet (see Exhibit 22).

Summary and Recommendations

Phase I archaeological testing of a buried ground surface along the 500 foot section of Potomac Yard was conducted in October of 2007 and resulted in the identification of Site 44AX0204 (see Exhibit 25). Site 44AX0204 is a multi-component site, containing both historic and prehistoric cultural materials. The prehistoric component dates to the Woodland time period, while the historic component dates to the 19th century.

Site 44AX0204 appears to have been disturbed by plowing, and the artifacts cannot be spatially separated. Further, the east-west site limits are narrow, potentially leaving an incomplete picture of the occupation of the site. Therefore, WSSI recommends archeological monitoring during construction of the sanitary sewer to look for the presence of features. Although the southern end of the site, between Trenches 9-11 (Station 57+00 to 58+00), has the greatest functional variety of historic artifacts, and therefore the greatest potential for historic features, archeological monitoring is recommended for the entire site.

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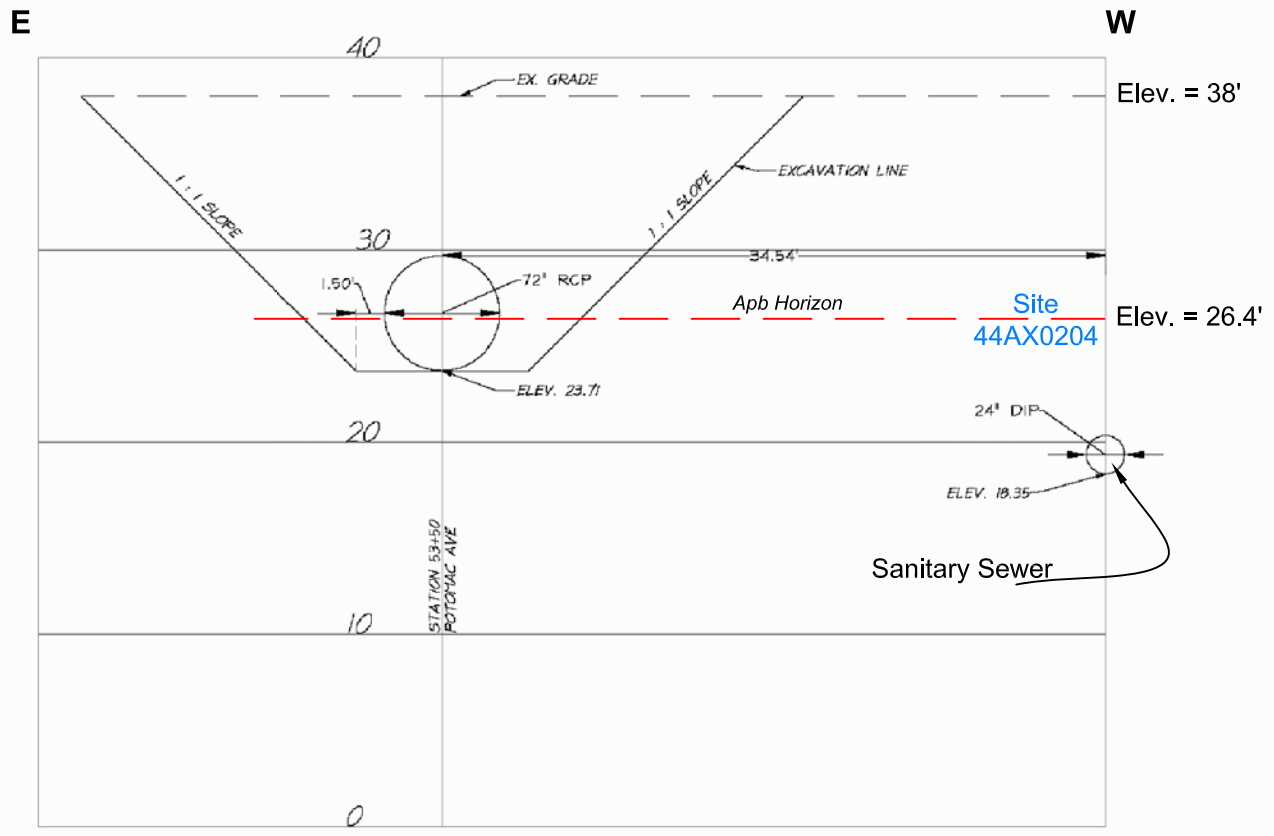
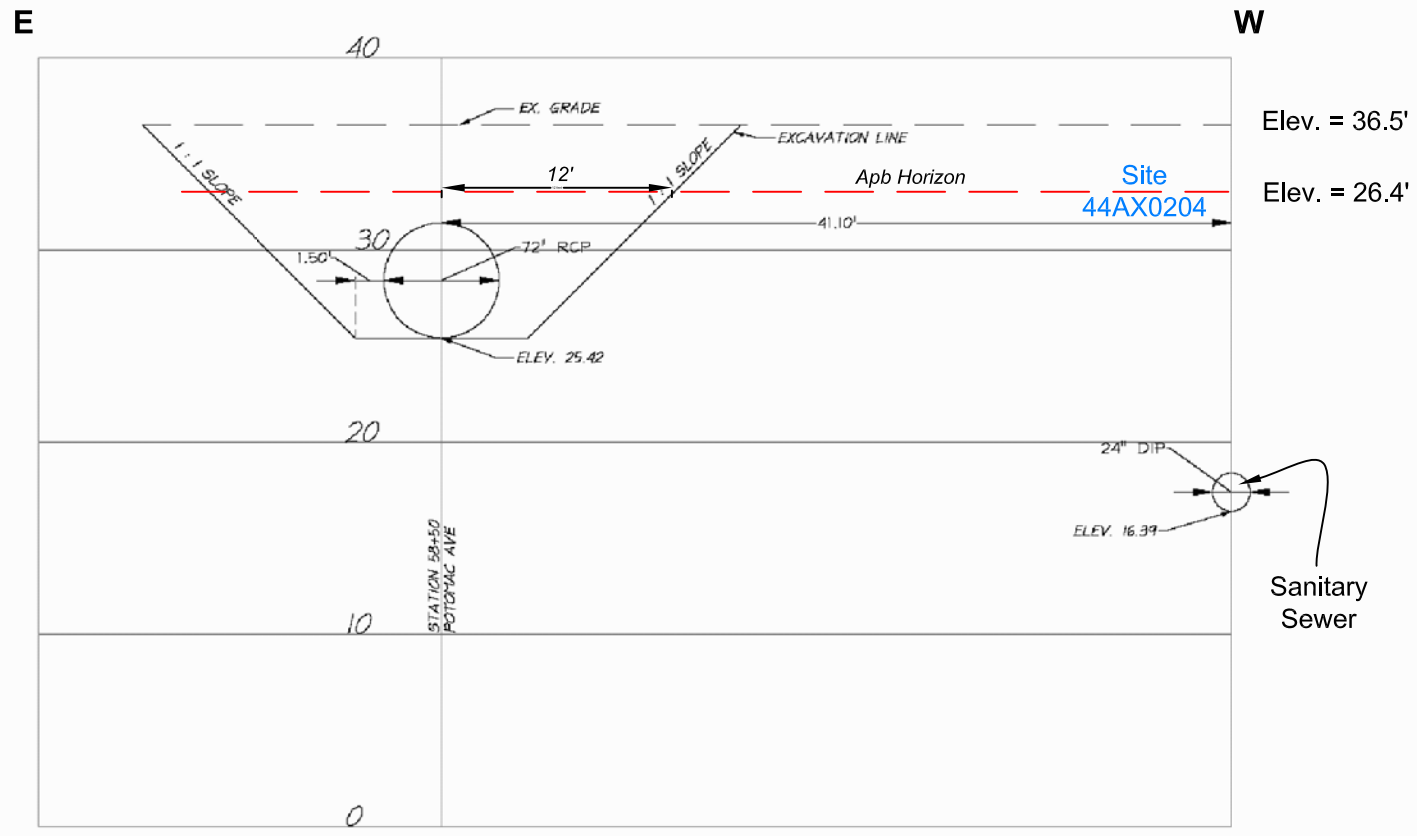
Cross-Section Profile
STA 53+50



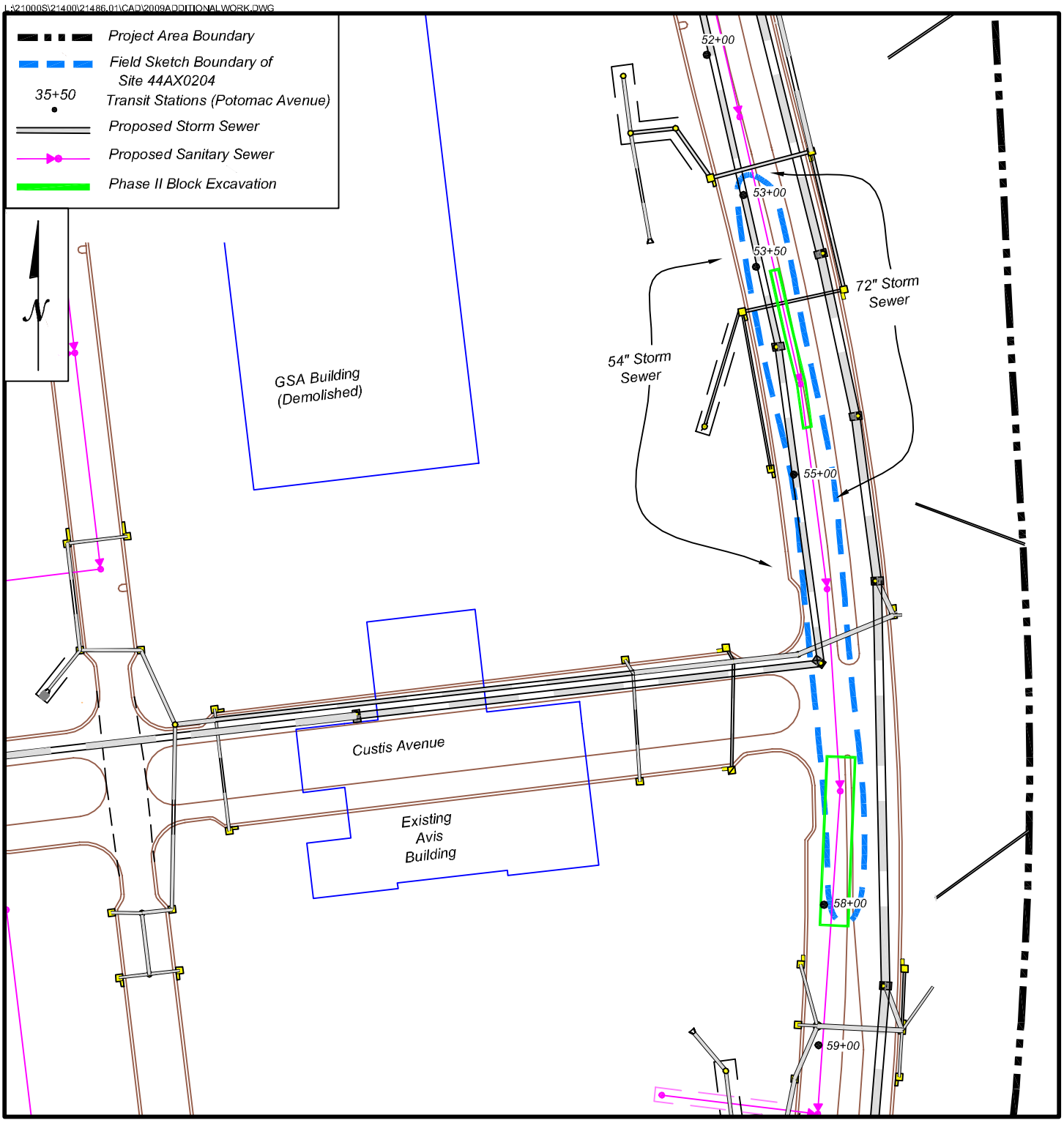
Cross-Section Profile
STA 58+00



Cross Section Profile of 72" Storm Sewer Construction Beneath Potomac Avenue
Showing Site 44AX0204/Buried Ground Surface (Apb Horizon)
Potomac Yard - WSSI #21486.01
Scale: 1" = 10'

Thunderbird Archeology
A division of Wetland Studies and Solutions, Inc.

Exhibit 27



Location of Proposed Utilities and
Additional Block Excavations Within Site 44AX0204
Potomac Yard - WSSI #21486.01
Scale: 1" = 100'

RESULTS OF ADDITIONAL TESTING WITHIN SITE 44AX0204

In accordance with a Scope of Work approved by Alexandria Archaeology, additional archeological work was conducted at Site 44AX0204 in conjunction with the construction of the 24-inch sanitary sewer that would impact the site along the west side of Potomac Avenue. The purpose of the additional testing was to look for the presence of historic features within the southern end of the site, and to further investigate an apparent prehistoric concentration located within the potentially unplowed buried surface (Ab horizon) at the northern end of the site. Two excavation blocks were opened over the northern and southern ends of the site (see Exhibit 28).

Block 1

Previous archeological work at the northern end of site 44AX0204 revealed a scatter of prehistoric and historic artifacts along a deeply buried terrace overlooking a now extinct stream. During the current investigations, a 120 foot long trench was excavated *in concert* with the excavation of a 24-inch sanitary sewer utility (Exhibit 29). This trench, designated Block 1, was positioned roughly between Stations 53+50 to 54+65 and was designed to determine if the prehistoric materials recovered in the previous investigations were located within an undisturbed context. Following the Scope of Work, shovel test pits were excavated at five-foot intervals within the southern end, middle and northern end of the Block 1 (see Exhibit 29).

Seven shovel test pits were excavated within the southern portion of the trench, in the vicinity of Phase I Trench 4 (Plate 18). Trench 4 had previously yielded a concentration of prehistoric artifacts, including Early Woodland pottery sherds. The shovel testing was designed to explore/refine this distribution of artifacts and to determine if this portion of the site had been plowed.

Testing revealed two buried historic plow zones overlying subsoil, as shown by the profiles of STP 1 and 4 (Exhibit 30). The Apb2 horizon was slightly thicker in the profile of STP 4, which was expanded against the trench wall (Plate 19). The east and west trench wall profiles of the block excavation showed that the buried surface sloped to the east, as well as to the north, which is consistent with the historic topography in this area.

STP 1

Apb1 horizon: 0-8.4 inches below surface – [2.5Y 5/2] grayish brown sandy loam
Apb2 horizon: 8.4-12 inches below surface – [2.5Y 5/3] light olive brown sandy clay loam
B horizon: 12-19.2 inches below surface – [2.5Y 5/4] light olive brown silty clay loam mottled with [2.5Y 6/3] light yellowish brown silty clay loam

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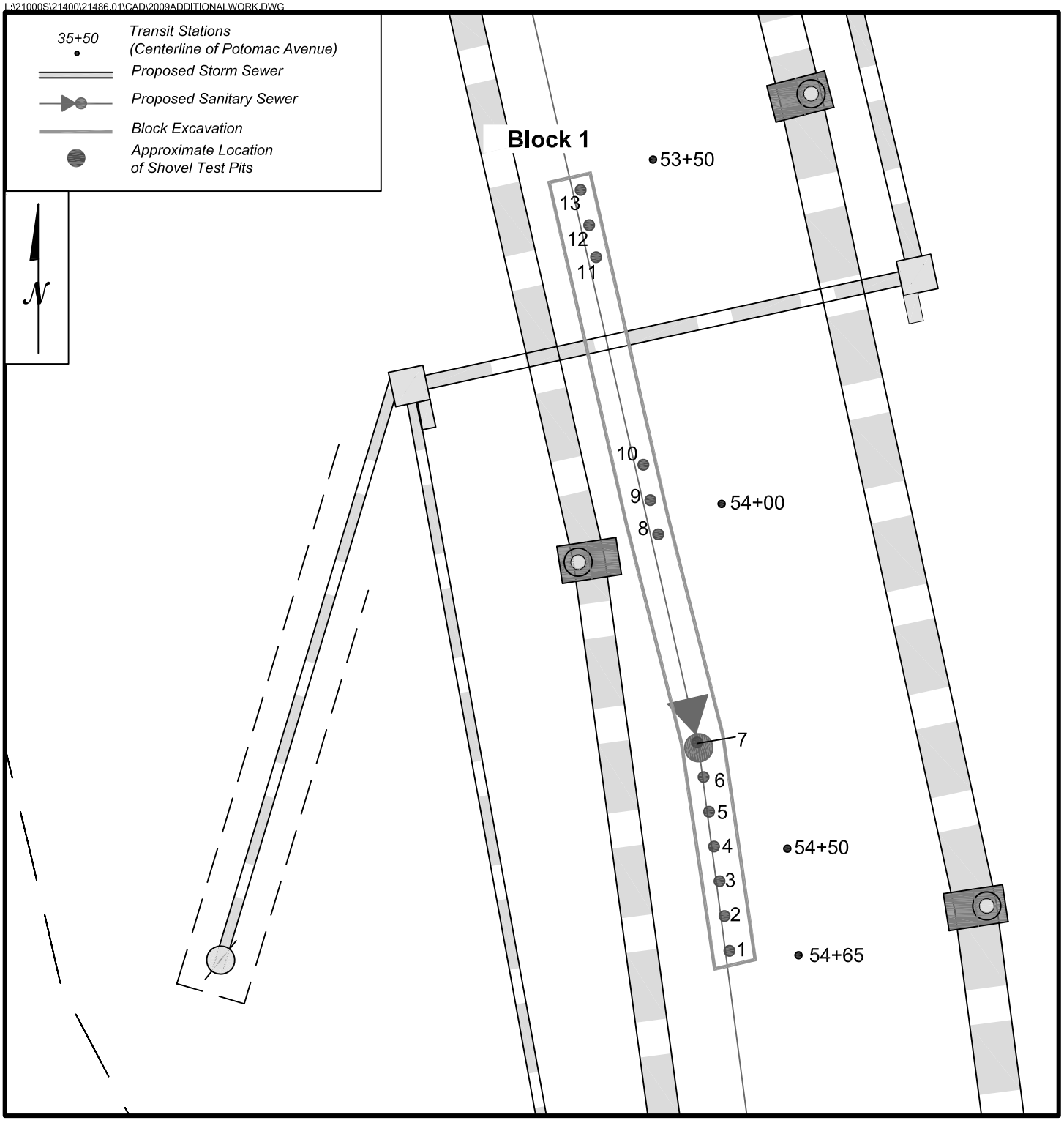

Location of Block 1 Shovel Test Pits
Potomac Yard - WSSI #21486.01
Scale: 1" = 20'

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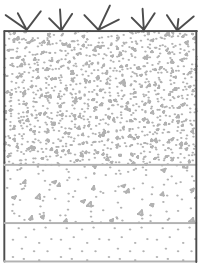
STP 1

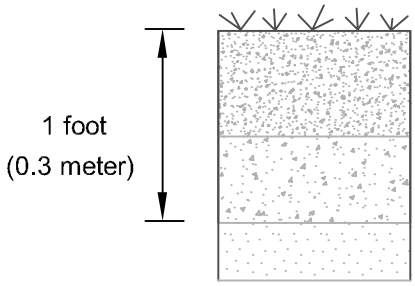


Apb1 horizon: 2.5Y 5/2 grayish brown sandy loam

Apb2 horizon: 2.5Y 5/3 light olive brown sandy clay loam

B horizon: 2.5Y 5/4 light olive brown silty clay loam mottled with 2.5Y 6/3 light yellowish brown silty clay loam

STP 4



Apb1 horizon: 2.5Y 5/2 grayish brown sandy loam

Apb2 horizon: 2.5Y 5/3 light olive brown sandy clay loam

B horizon: 2.5Y 5/4 light olive brown mottled with 2.5Y6/3 light yellowish brown clay loam

Representative Soil Profiles from Block 1, Site 44AX0204
Potomac Yard - WSSI #21486.01
Scale: 1" = 1'

STP 4

Apb1 horizon: 0-8.4 inches below surface – [2.5Y 5/2] grayish brown sandy loam
Apb2 horizon: 8.4-13.2 inches below surface – [2.5Y 5/3] light olive brown sandy clay loam
B horizon: 13.2-16.2 inches below surface – [2.5Y 5/4] light olive brown silty clay loam mottled with [2.5Y 6/3] light yellowish brown silty clay loam

Shovel test pits 8 through 10 were excavated approximately 45 feet north of STP 7 in the vicinity of Station 54+00 of Potomac Avenue. These three shovel test pits exhibited the same soil horizons as the previous STPs, but with slightly more pebbles in the lower plow zone horizon (Exhibit 31):

STP 9

Apb1 horizon: 0-12 inches below surface – [10YR 5/2] grayish brown sand
Apb2 horizon: 12-15.6 inches below surface – [10YR 6/2] light brownish gray sand (more compact)
B horizon: 15.6-19.8 inches below surface – [2.5Y 5/3] light olive brown sandy loam

Finally, shovel test pits 11 through 13 were excavated at the northern end of the site. These soil profiles exhibited a plow zone horizon over multiple C horizons with iron oxide and manganese banding (see Exhibit 31).

STP 12

Apb1 horizon: 0-8.4 inches below surface – [10YR 5/2] grayish brown sand
C1 horizon: 8.4-12 inches below surface – [10YR 6/2] light brownish gray compact sand
C2 horizon: 12-19.2 inches below surface – [2.5Y 5/4] light olive brown sandy loam
C3 horizon: 19.2-24 inches below surface – [2.5Y 6/3] light yellowish brown sand
C4 horizon: 24-28.8 inches below surface – [2.5Y 6/3] light yellowish brown mottled with 2.5Y 6/8 olive yellow loose sand

Artifacts

Cultural materials were recovered from the upper plow zone (Apb1 horizon) in all shovel test pits, although no artifacts were recovered from the lower plow zone (Table 19 and Appendix IV). Low quantities of lithic debris were recovered from only three shovel test pits during the additional testing. The Apb1 horizon in STPs 2, 6 and 8 produced two chert flakes, one jasper flake, and one quartz flake. Additionally, a quartz perform was recovered from the surface of the Apb1 horizon in the southern end of the site.

Historic materials were recovered from all shovel test pits and included ceramics, glass, nails, brick fragments, bone and oyster shell fragments. Large quantities of coal and cinder fragments were also recovered. Slightly higher quantities were recovered from STPs 2-4, although again, the total assemblage included coal and cinder fragments.

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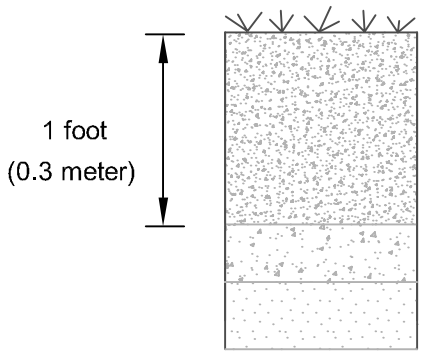
STP 9

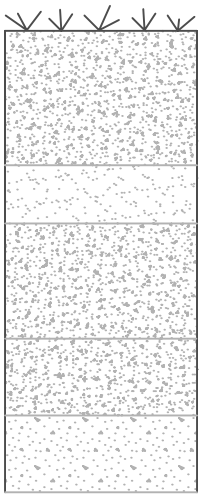


Apb1 horizon: 10YR 5/2 grayish brown sand

Apb2 horizon: 10YR 6/2 light brownish gray compact sand

B horizon: 2.5Y 5/3 light olive brown sandy loam

STP 12



Apb1 horizon: 10YR 4/2 dark graish brown silt loam

C1 horizon: 2.5Y 6/2 light brownish gray sand with concreations

C2 horizon: 2.5Y 5/3 light olive brown sandy loam

C3 horizon: 2.5Y 6/3 light yellowish brown sand

C4 horizon: 2.5Y 6/3 light yellowish brown mottled with 2.5Y 6/8 olive yellow loose sand

Representative Soil Profiles from Block 1, Site 44AX0204
Potomac Yard - WSSI #21486.01
Scale: 1" = 1'

Table 19: Artifacts Recovered from Block 1 Shovel Test Pits from Potomac Yard, Site 44AX204, Additional Testing

Provenience	Quantity	Artifact Type	Begin Year	End Year
Apb horizon				
	Ceramics			
	1	hard paste porcelain	1890	
	1	tin glazed earthenware	1700	1800
	7	whiteware	1820	1900+
	4	ironstone	1840	1900+
	10	refined white earthenware		
	2	buff bodied earthenware		
	3	redware		
	1	stoneware		
	Glass			
	20	bottle, bottle/jar, tableware		
	1	bottle, contact mold	1810	1880
	2	bottle/jar, clear manganese	1880	1915
	8	unidentified glass		
	Metal			
	1	nail, wrought, rosehead and spatulate tip		
	2	nail, cut	1790	
	4	nail, cut, machine headed	1830	
	5	nail, unidentified		
	Miscellaneous			
	4	bone		
	8	brick		
	29	cinder		
	64	coal		
	18	oyster shell		
	Prehistoric			
	1	chert decortication flake		
	1	chert biface thinning flake		
	1	jasper biface thinning flake		
	1	quartz primary reduction flake		
	1	quartz preform		
Total Site 44AX204, Additional Testing	**200**			

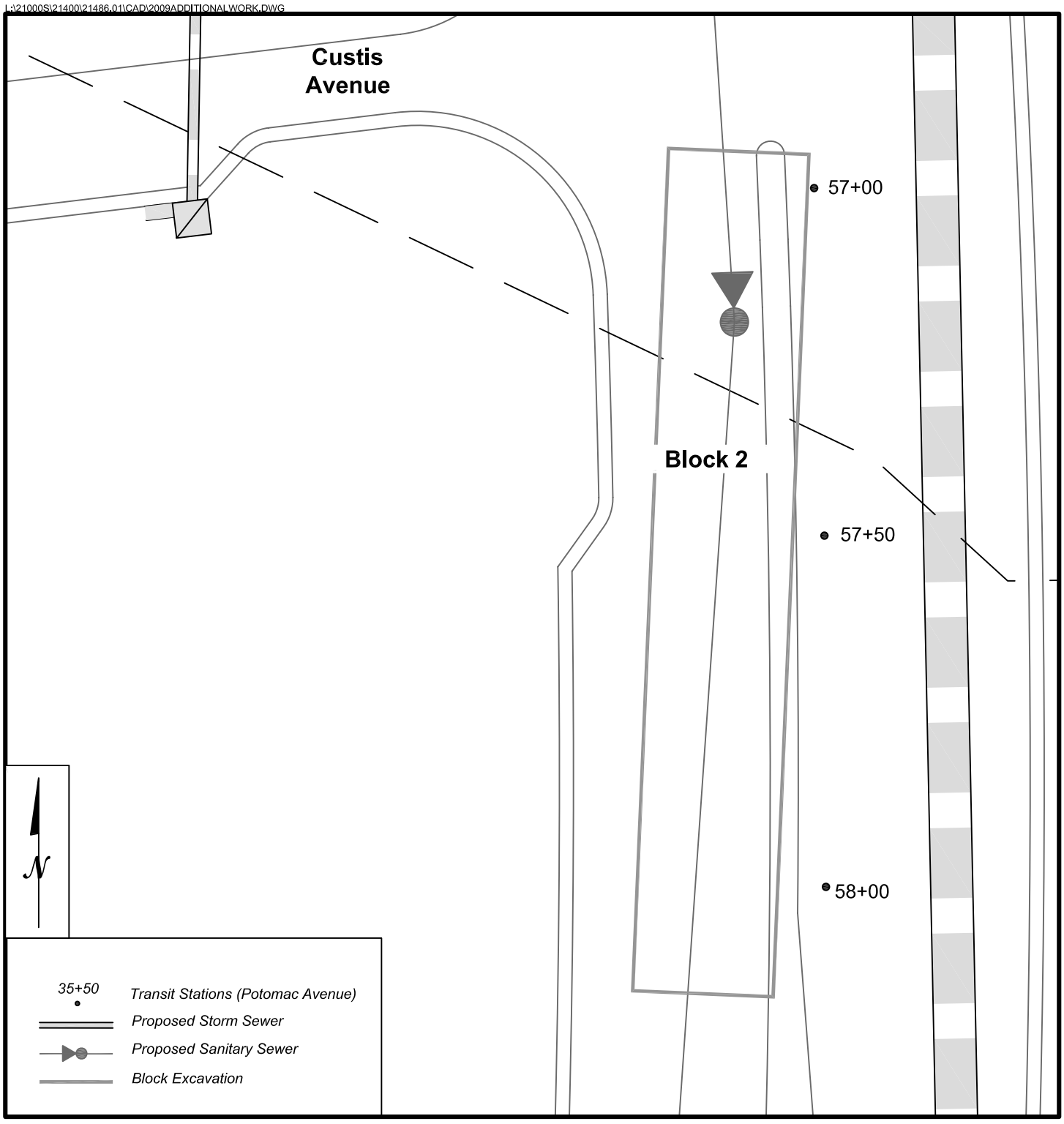
Block 2

Block 2 was located within the southern end of site 44AX0204 and measured 120 feet in length and between 15-20 feet in width. The mechanically excavated trench was positioned within the proposed path of the sanitary sewer line beneath Potomac Avenue, roughly between Stations 57+00 to 58+00 (Exhibit 32 and Plate 20).

Previous testing in this relatively shallow end of the site resulted in the identification of an Apb horizon that contained a diversity of historic artifacts, suggesting the presence of a nearby domestic structure. During the current investigations, the buried plow zone was mechanically stripped using a backhoe outfitted with a smooth bladed bucket, and the underlying subsoil was examined for the presence of historic features (Plate 21).

Excavation revealed that the buried historic surface was not present within the first 30-35 feet of the southern end of Block 2, which is consistent with the results of initial test boring conducted at Station 59+00. The Apb horizon may have been scraped away by the construction or dismantling of the rail yard, but more likely during the construction of the adjacent Avis facility parking lot. Sterile subsoil was reached at approximately three feet below ground surface (Plate 22). Two buried plow zones, however, were observed in the remainder of the soil profiles for Block 2 (Plate 23); the second plow zone increased in depth along the northern end of the site, as a result of colluvial soils or slope wash (Plate 24).

Several features/disturbances (utilities, wooden posts) associated with the more recent use of the property were observed intrusive through the upper fill overburden. Additionally, evidence of the Phase I excavation block for Test Unit 1, measuring 25 feet in length, was observed along the southeastern side of the trench (Plate 25). No historic or prehistoric features associated with site 44AX0204 were located within Block 2.



Location of Block 2
Potomac Yard - WSSI #21486.01
Scale: 1" = 20'

Summary and Conclusions

Additional testing within site 44AX0204 revealed that the entire site had been plowed and the recovered artifacts were from mixed contexts (Table 20 and Appendix IV). Shovel testing within the northern end of the site was designed to refine the distribution of prehistoric cultural remains; however, only low quantities of lithic debris were recovered from the additional testing.

The diversity of historic materials recovered during previous excavations indicated the presence of a nearby domestic structure. Therefore, the buried surface within the sanitary sewer corridor at the southern end of the site was mechanically removed and the subsoil was examined for the presence of historic features. No historic or prehistoric features associated with site 44AX0204 were indentified within the site.

Table 20: Artifacts Recovered from Site 44AX204

Provenience	Quantity	Artifact Type	Begin Year	End Year
Apb horizon	**Ceramics**			
	1	kaolin		
	1	hard paste porcelain	1890	
	3	soft paste porcelain		
	3	tin glazed earthenware	1700	1800
	5	creamware	1762	1820
	19	pearlware	1780	1830
	35	whiteware	1820	1900+
	5	ironstone	1840	1900+
	25	refined white earthenware		
	3	buff bodied earthenware		
	1	Rockingham/Bennington	1800	1900+
	10	redware		
	6	stoneware		
	6	yellowware	1830	1940
	Glass			
	40	bottle, bottle/jar, tableware		
	2	bottle, contact mold	1810	1880
	2	bottle/jar clear manganese	1880	1915
	35	unidentified glass		
	2	windowpane, potash		1864
	1	windowpane, potash/soda		1864
	Metal			
	10	unidentified ferrous metal		
	1	nail, wrought, rosehead and spatulate tip		
	12	nail, cut	1790	
	4	nail, cut, machine headed	1830	
	5	nail, unidentified		

Table 20: Artifacts Recovered from Site 44AX204 continued

	Miscellaneous			
	5	bone		
	140	brick		
	30	cinder		
	69	coal		
	1	mortar		
	18	oyster shell		
	9	shell		
	2	slate		
	Prehistoric			
	16	prehistoric ceramic crumbs, Early Woodland	1000 B.C.	250 B.C.
	1	chert decortication flake		
	1	chert primary reduction flake		
	2	chert biface thinning flake		
	1	jasper biface thinning flake		
	1	rhyolite biface thinning flake		
	1	quartz decortication flake		
	3	quartz primary reduction flake		
	7	quartz biface thinning flake		
	1	quartz preform		
	1	quartz flake fragment		
	1	quartz chunk		
	1	quartzite biface thinning flake		
	1	quartzite shatter		
Total Site 44AX204	**549**			

Although the sanitary sewer was constructed through the entire 500 foot length of the site, the east-west impacts appears to have been minimal – only 3-4 feet wide within the trench box (Plate 25). Although the buried ground surface appears to have been disturbed by the construction of the Avis Car Rental facility, it is likely that the site extends westward underneath the Avis parking lot.

SUMMARY AND RECOMMENDATIONS

Geoarcheological testing within the Potomac Avenue and East/West Roads study area was completed in July 2007. The purpose of the testing was to determine whether pre-1906 land surfaces existed within the planned construction impact areas. Much of the original landscape had been altered with the establishment of the rail yard circa 1906; however, the eastern half of the yard was lower in elevation and was believed to have been filled, burying the original ground surface. The possibility of locating cultural resources was determined to be greater in these potentially filled areas.

Although the majority of the bore soil profiles revealed various fills ranging in depth from 10-25 feet, a buried ground surface (Ab horizon) was identified in two locations: within Swann Avenue (Station 17+29.58), and between Stations 53+00 and 58+00 within Potomac Avenue. Because the buried surface was not located in adjacent test bores within Swann Avenue, and construction impacts were not planned to the east and west of this location that would disturb this elevation depth, no further work was recommended for this isolated pocket of buried ground surface.

However, because of the high probability for prehistoric resources in this area and the planned construction impacts beneath Potomac Avenue, archeological testing of the buried ground surface was recommended in the 500 foot section of Potomac Avenue between Stations 53+00 and 58+00.

Subsequent Phase I testing of the buried ground surface along the 500 foot section of Potomac Yard was conducted in October of 2007 and resulted in the identification of site 44AX0204 (see Exhibit 25). Site 44AX0204 is a multi-component site, containing both historic and prehistoric cultural materials. The prehistoric component dates to the Woodland time period, while the historic component dates to the 19th century.

The southern end of site 44AX0204 was situated along the edge of an "upland" setting overlooking the south side of historic stream. Historic artifact diversity was greatest within this portion of the site. Artifact scatter extended down the historic slope towards the northern end of the site, toward a levee or terrace formation that bordered the north bank of the now-buried historic stream. A narrow terrace formation was potentially located halfway down the slope. The depth of the buried, artifact bearing surface varied between 4-12 feet below the existing grade at the time of survey, depending upon the historic topography of a particular area. The buried surface is shallower in the southern section in the upland portion and deeper to the north where the terrace formation is located.

Because the site was deeply buried beneath historic fills, the Phase I testing consisted of the excavation of machine backhoe "test pits" at 50-foot intervals. A small sample of the buried ground surface was screened and the artifacts recovered. It was not possible to determine whether the artifacts were recovered from plow zone contexts between Stations 53+00 and 57+00, as the depth of the trenches precluded close examination of the profiles. However, at the southern shallow end of the site, a 3 by 3 foot test unit was excavated and the soil profile exhibited a plow zone and shallow E horizon overlying subsoil.

Prehistoric artifacts recovered included quartz and chert flakes and several small fragments of Early Woodland pottery. The historic artifacts included moderate quantities of nineteenth century artifact classes that suggested the presence of a nearby structure; this structure may have once been situated on the elevated landform overlooking the stream to the north. Historic maps do not show any buildings in this vicinity; however, it is possible the site is associated with the nearby Dangerfield estate shown east of the study area.

Additional testing was required within site 44AX0204 because of proposed impacts from the construction of a 24-inch sanitary sewer beneath the western side of Potomac Avenue. Two large trench blocks were excavated *in concert* with the excavation/construction of the utility. As previous excavations revealed the southern end of the site was plowed, the buried plow zone was removed along a 120 foot section of the utility corridor and the underlying subsoil was examined for features. No historic or prehistoric features were identified.

Thirteen shovel test pits were excavated within a second trench block opened in the deeply buried northern end of the site. The testing revealed two buried plow zone horizons overlying subsoil. Additional cultural materials were recovered only from the uppermost plow zone. The scatter of historic artifacts down the historic slope towards the stream at the northern end of the site was consistent with the earlier testing; however, no prehistoric ceramic sherds and very few lithic materials were recovered during the additional testing. A prehistoric component is present at the site, but the additional testing did little to further refine the distribution of prehistoric artifacts.

Site 44AX0204 measures 500 feet in length and although the eastern and western site limits have not been determined, an estimated 50 feet in width. The placement of the 72-inch storm sewer has likely destroyed the eastern portion of the site and the western portion of the site has likely been disturbed or destroyed by the construction of the AVIS parking lot. Additional archeological work may be required to determine the extent of the site limits, should impacts be planned beneath the Avis facility.

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