March 2004

Prepared for:

PENNDOT
District 6-0

Phase IA
Archaeological Sensitivity Study
S.R. 0095, Sec. GIR
Interstate 95/Girard Avenue Interchange

Federal Project No. Q92-0066-101
State Project No. 1-0095-03-GIR-0650-316
MPMS No. 17821 & 57874
E.R. No. 01-8007-101

Philadelphia, Pennsylvania

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Pennsylvania Department of Transportation
Engineering District 6-0

Prepared by

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Philadelphia, Pennsylvania

March 2004

Abstract

Historic lots and streets are still buried and extant below the open spaces adjacent to Interstate 95 (I-95). Today, within the project area (the Northern Liberties, Fishtown, and Port Richmond sections of Philadelphia) there is a high density of standing structures that straddle the western side of I-95 in the form of early-to-mid-nineteenth-century brick row houses; two-part commercial structures and the former Port Richmond rail yard dominate the eastern side.

The following I-95, Section GIR, Phase IA archaeological sensitivity study (ER 01-8007-101) is a site-specific study to guide, locate, and identify archaeological resources within an urban environment throughout the project area. It was cost prohibitive and impractical to perform fieldwork at every location of anticipated ground disturbance, until a preferred alternative was selected in the design of this undertaking. URS engineers are developing a preliminary design for the recommended build option. Given the urban setting, the archaeological subsurface testing for the I-95/GIR project will be guided by a developed Programmatic Agreement (PA). The PA will be revised as needed and presented in consultation with the Pennsylvania Department of Transportation District 6-0 (PENNDOT), the Federal Highways Administration (FHWA), the Advisory Council on Historic Preservation, the Pennsylvania Historical Museum Commission (PHMC), and interested parties after this Phase IA report is reviewed.

Subsurface disturbance will occur at 161 locations: 29 locations have no potential to contain intact archaeological deposits; 67 locations have a low precontact or historic archaeological sensitivity; and 65 locations have a high archaeological sensitivity toward either precontact or historic deposits. It is recommended that the 29 locations with no potential remain untested. Conversely, it is recommended that all 65 high sensitivity locations be subjected to testing. However, a staged approach is recommended and discussed in the Summary. The remaining 67 low-sensitivity locations will be sampled after the high-sensitivity locations are tested. In this way, knowledge gained from the nearby areas of high sensitivity will direct the low-sensitivity sampling strategy. It is expected that at least one third of the low-sensitivity locations will be tested. Archaeological monitoring is recommended where retaining walls will be constructed.

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Introduction

Historic lots and streets are still buried and extant below the open spaces adjacent to Interstate 95 (I-95). Today, within the project area (the Northern Liberties, Fishtown, and Port Richmond sections of Philadelphia) there is a high density of standing structures that straddle the western side of I-95 in the form of early-to-mid-nineteenth-century brick row houses; two-part commercial structures and the former Port Richmond rail yard dominate the eastern side. These sections of the I-95 highway are either supported on earth embankments with occasional retaining walls or on raised bridge structures, many with numerous piers. Immediately beyond the embankments are the modern businesses and open paved areas adjacent to the highway, reflecting the dense, urban nature of the neighborhood, which is still mirrored below the surface buried in the original construction of I-95.

The following I-95, Section GIR, Phase IA archaeological sensitivity study (ER 01-8007-101) is a site-specific study to guide, locate, and identify archaeological resources within an urban environment throughout the project area. It was cost prohibitive and impractical to perform fieldwork at every location of anticipated ground disturbance, until a preferred alternative was selected in the design of this undertaking. URS engineers are developing a preliminary design for the recommended build option. Given the urban setting, the archaeological subsurface testing for the I-95/GIR project will be guided by a developed Programmatic Agreement (PA). The PA will be revised as needed and presented in consultation with the Pennsylvania Department of Transportation District 6-0 (PENNDOT), the Federal Highways Administration (FHWA), the Advisory Council on Historic Preservation, the Pennsylvania Historical Museum Commission (PHMC), and interested parties after this Phase IA report is reviewed.

As supporting documentation for the PA, this Phase IA study presents a research design that ranks both historic and precontact archaeological resources for the entire project area. The ranking criteria defines the site-specific environmental and historic research directed at every location slated for subsurface disturbance in order to determine areas of high and low sensitivity for the location of National Register archaeological resources. This Phase IA report explains which historic lots are most likely to contain information (i.e., part of the archaeological record) that is important to Philadelphia history. The areas that potentially contain precontact archaeological resources, buried beneath deep modern fills, are also included in this report. The Phase IA report further identifies the exact locations for Phase IB testing based on a ranking scheme relating the lots to areas that will be impacted by ground disturbance associated with abutments, piers, ramps, etc. After acceptance of the Phase IA report, the PA will stipulate when Phase IB archaeological fieldwork will be scheduled and define the criteria to be used for evaluating archaeological site excavation and sampling. The purpose of the Phase IB archaeological fieldwork will be to identify any archaeological sites within the project area that may be eligible for the National Register of Historic Places.

Implementation of this survey will be in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended; 36 CFR Part 800, particularly sections 800.4, and 800.5; as well as the Pennsylvania Historical and Museum Commission (PHMC), Bureau of Historic Preservation's (BHP) *Guidelines for Archaeological Investigations* (1991). Work will also be in accordance with PENNDOT's Directive 430-92-29, dated March 18, 1992. Metric conversions will be provided in accordance with PENNDOT's Strike-Off-Letter 430-94-25, dated March 15, 1994. In addition, URS will contact historic organizations and federally recognized Native-American

groups (identified by PENNDOT) who may wish to participate in the Section 106 process. If there are positive responses to URS inquiries, then the organizations will be invited to review the Phase IA archaeological sensitivity study and be involved throughout the duration of the project. URS will also provide PENNDOT with 18 copies of a project description and location map for tribal coordination of federally recognized tribes with an interest in Pennsylvania.

Undertaking

PENNDOT proposes to improve capacity, operation, and access on I-95 between the Vine Street and Girard Avenue Interchanges. Interstate 95 currently consists of four lanes in each direction between Vine Street and Girard Avenue. The ramp from I-676 eastbound to I-95 northbound will be widened from one lane to two lanes and enter I-95 to form a five-lane section. This five-lane section will continue north to the Girard Avenue Interchange, where one lane will drop off to Delaware Avenue and four lanes will continue north. Similarly, in the southbound direction, an on-ramp will be added from the Girard Avenue Interchange to I-95 southbound to form a five-lane section as it approaches the three-lane exit to the Vine Street Expressway (I-676)/Callowhill Street, leaving three lanes on I-95 southbound. PENNDOT further proposes to eliminate lane drops within the Girard Avenue Interchange to create a continuous, eight-lane section of I-95 from Vine to Ann Streets. The undertaking also provides direct access from I-95 southbound to Delaware Avenue and from Delaware Avenue to I-95 southbound. Detailed descriptions of the undertaking are provided within each section (Figure I.1.)

Archaeological Area of Potential Effects (APE)

PHMC approved the archaeological APE for I-95, Section GIR (Frankford Avenue north to Ann Street), in February 2001 (ER 01-8007-101) (Appendix A). The archaeological APE also extends south from Frankford Avenue to Race Street, though proposed work between Spring Garden and Race Streets will consist of pavement reconfiguration and bridge rehabilitation, rather than new construction. The archaeological APE is confined to those areas where ground disturbance will occur as a result of project construction. These areas include proposed new and/or extended abutments, piers, retaining walls, the relocation of Richmond Street, and equipment staging and storage areas.

Report Organization

The organization of this report is straightforward; it is organized into sections based on types of highway design. Stations (highway distance indicators of 100 feet) mark the exact locations within sections from south to north. For ease of discussion, given the size of the project area, each section of the report can be reviewed as a standalone document. However, the highway design graphic and the soil-profile schematic, when compared, reflect a continuous project area. Text is presented first within each section, followed by graphics, and, subsequently, plates. Each section of the report is outlined into four components: the undertaking, site-specific environmental data, site-specific historical data, and archaeological recommendations.

Report Section *Stations*

- Section 1 Station 249+00 to 273+00 (Race Street to South Side of Spring Garden Street)
- Section 2 Station 273+00 to 289+00 (South Side of Spring Garden Street to Ellen Street)
- Section 3 Station 289+00 to 304+00 (Ellen Street to South Side of Frankford Avenue)
- Section 4 Station 304+00 to 324+00 (North Side of Frankford Avenue to Palmer Street)
- Section 5 Station 325+00 to 333+00 (Palmer Street to Berks Street)
- Section 6 Station 334+00 to 351+00 (Berks Street to South Side of Girard Avenue)
- Section 7 Station 351+00 to 396+00 (North Side of Girard Avenue to Ann Street)

The engineering undertaking is based on the current highway improvement design prepared by URS. The undertaking or engineering design is described in detail and then portrayed in graphic form at the end of each section. The highway design graphic includes the location of subsurface disturbance and specific archaeological potential. The potential that is shown on the graphic is the higher potential of either precontact or historic archaeological deposits. For example, if the precontact potential is "low" and the historic potential is "high," the particular location will be shaded as "high potential." The abutments are identified via street location and geographic position as southeast, northeast, southwest, or northwest. The Delaware River is to the east; the city stands to the west. The piers are numbered as follows: 3P N3, in which "3" is the section number, "P" the abbreviation for pier, "N" indicates lane direction (north or south), and the last number denotes pier location (in this case, the third pier location).

After describing the undertaking, site-specific environmental data is presented. Data was gathered from soil borings taken in the early 1960s and from soil-profile schematics created as part of the original construction of I-95. Historic soil-boring logs were examined in detail and reproduced within this report to help determine both historic and precontact sensitivity of the APE. The soil borings located nearest the areas to experience subsurface disturbance are described in detail within the text.

The schematic soil profiles were redrawn to provide a continuous soil profile for the entire length of the project area. To assist with identifying site-specific locations, street names were added to the soil schematics. The soil schematics follow the undertaking graphics at the end of each section. The soil schematics are drawn along one consistent line of soil borings, north to south, to provide a general representation of soil formations in the project area. In some cases, soil borings described in the text are not depicted on the soil schematics because such borings existed east or west of the depicted north-south line on the borings grid.

The following soil-boring sources were utilized for this Phase IA study: the test-boring logs of the Pennsylvania Drilling Company of Pittsburgh, Pennsylvania; test-boring logs created by Sprague and Henwood, Inc.; plans prepared by Ammann and Whitney Consulting Engineers of New York, Sections B-53, B-54, B-55, B-56, (July 1966); and plans prepared by Gannett, Fleming, Corddry and Carpenter, Inc., Engineers, Section C-1 (April 1963), C-2B1and C-2A (January 1961), and C-2B2 (June 1961) for the Pennsylvania Department of Highways, L.R. 1000, Philadelphia, Pennsylvania.

Soil-Boring Location	*Report Section*
• B-53 (S11802)	Section 3
• B-54	Section 1
• B-55 (S-10941, S-10942, S-10943)	Section 2
• B-56 (S-8706, S-8707, S-8708)	Section 4
• C-1 (S6496, S6502, S6499)	Sections 5 and 6
• C-2B1 (S-5014)	Section 7
• C-2A (S-5016)	Section 7
• C-2B2 (S-5017)	Section 7

Site-specific historical data was obtained from the sources listed below and matched to the same site-specific-environmental data gathered for those areas to experience subsurface disturbance. Although earlier maps were examined, the 1916 Sanborn Insurance map of Philadelphia was used as the base historical map for the Northern Liberties and Fishtown neighborhoods; the 1919 Sanborn map was used as the base map for the Port Richmond neighborhood. The Sanborn maps were picked as historic base maps because they are accurate enough to overlay the current I-95 project map. When necessary, and in support of the research design discussed below, earlier or later historical data was collected to help determine archaeological sensitivity.

Archaeological recommendations in the form of Phase IB investigations are presented for each section; the recommendations are site specific to match site-specific environmental and historical data. The archaeological sensitivity of the APE is then summarized in the last chapter. A general Phase IB/II archaeological work plan, based on the PA, is also provided as part of the summary chapter.

The background research methods, previous research within the project area, and the historic and precontact research design follows.

Archaeological Sensitivity Within the APE

Background Research

Sources consulted during background research include local historical and archaeological societies, the archaeological and historic site files of the PHMC, published and unpublished primary and secondary sources, historic and contemporary atlases and maps, and other records. The most informative documents are listed below under previous research. Some of the key repositories and offices contacted include the Philadelphia Historical Commission, the American Philosophical Society, the Athenaeum, Temple University, the Philadelphia City Archives, the Library Company of Philadelphia, the Map Division and Rare Book Department of the Free Library of Philadelphia, Philadelphia Maritime Museum, University of Pennsylvania – Van Pelt and Fine Arts Libraries, the Mid-Atlantic Regional Branch of the National Archives, Philadelphia Records Center, Historical Society of Pennsylvania, the Fishtown Civic Association, and the Library of Congress.

URS performed a review of documentary and background information. The collected data were important, as they assisted in the development of the testing strategy for archaeological resources.

The data also provided the necessary context for the interpretation of recovered archaeological materials. Our research concentrated on land usage and site development through time within the APE. Physical environmental factors—such as underlying lithology, topographical configuration, soil types and/or hydrology—were researched and correlated with cultural resource data for the purpose of assessing potential settlement pattern distributions and site integrity. Proximity of previously resource-rich locales (where food, lithic, or other resources would have been abundant), in conjunction with well-drained, level, or gently sloping soils, served as discriminating factors in identifying areas of high potential for precontact occupation. Social and cultural traits of aboriginal groups also served as factors affecting precontact site location.

High-probability areas for historical sites generally fell into two categories. Early historic sites were expected to occur in areas of high precontact potential. Later historic site areas were expected to occur in the vicinity of extant historic buildings, locations of historic occupations indicated on historic maps, along and in the vicinity of transportation networks and nodes, and adjacent to water sources (for power and household, agricultural, and industrial use). Historical background research also provided details of post-depositional effects to potential precontact and historic sites, including site burial, deflation, and disturbances.

After the collection of background data, a pedestrian reconnaissance was undertaken to evaluate and identify locations of disturbance in the project area. This strategy divided the urban lots into areas of greater or lesser cultural resource sensitivity based on criteria such as amount of subsurface disturbance, micro-environmental conditions, proximity to natural resources and known sites, documentation by historical sources, and models of precontact settlement and subsistence.

Previous Research

The following key sources were referenced to determine historic archaeological sensitivity within the project area. Full citations are presented within the reference list following the report text.

Philadelphia Preserved, Catalog of the Historic American Buildings Survey, by Richard Webster (1976), identifies significant structures demolished within the project area during the construction of the Delaware Expressway (I-95) from 1967 to 1969.

The Fishtown Architectural and Archeological Industrial Survey, by Stuart Dixon, Sara Jane Elk, and Carmen A. Weber (1989), offers an industrial context for Fishtown that includes a survey of industrial sites. The Philadelphia Historical Commission enabled its staff to begin a study of the history and development of industry in Philadelphia. The pilot program started with a survey of industrial sites in the Fishtown section of Philadelphia. This survey identified significant industrial sites in the project area with a high potential for archaeological resources.

The Fishtown Historic District was defined as a triangular parcel bounded by Frankford Avenue on the west, East Norris Street on the north and east, and the Delaware River to the south and east. The study identified 190 sites for investigation; of these, 55 resources were chosen as the best representatives of the industrial history of Fishtown and documented on Pennsylvania Industrial Resources Survey forms or Pennsylvania Archeological Site Survey forms. Although the widening of Delaware Avenue and the construction of I-95 destroyed a number of eighteenth- and early-nineteenth-century industrial sites, the built environment still reflects early-nineteenth-century

settlement and activity. The Fishtown Historic District is eligible for the National Register under Criterion A as one of the first important industrial communities in Philadelphia. It is also eligible under Criterion C as an intact working-class neighborhood dating from the early nineteenth century to the early twentieth century, consisting of a cohesive mix of related industrial, commercial, community, and residential architectural resources. This district lies within the current I-95, Section GIR, project area.

Draft Report: An Examination of Philadelphia's Early Waterfront Through the Archaeology of the Hertz Lot, by Carmen Weber (1990), occurred in the Northern Liberties area of Philadelphia. The "Hertz Lot" is an archaeological site that is an eighteenth- through nineteenth-century shipyard, located north of Vine Street between Front Street and Delaware Avenue. Carmen Weber performed preliminary excavations at this site in 1987. Many buried wharves and docks are located to the east of the project area, between Race Street and Frankford Avenue.

Workshop of the World: A Selective Guide to the Industrial Archaeology of Philadelphia, by the Oliver Evans Chapter of the Society for Industrial Archaeology (1990), contains a selective identification of significant industrial archaeological sites based on three criteria: significance based on historic, architectural, engineering, or industrial reasons; industries prominent to a specific neighborhood; or eminent danger of demolition or collapse.

The Buried Past: An Archaeological History of Philadelphia, edited by John L. Cotter, Daniel G. Roberts, and Michael Parrington (1992), notes the only archaeological investigation conducted within the Fishtown section of the project area. In 1967, the University of Pennsylvania excavated a mound in the basement of the Kensington Methodist Episcopal Church. Legend claimed that the mound was precontact; instead, graves from 1801, possibly marking the founders of the original church, were uncovered.

Interstate 95 Intermodal Mobility Project: Bucks, Delaware and Philadelphia Counties, Pennsylvania, Draft Historic Context Statement, by P.A.C. Spero & Company (April 1994), was a historic resources study confined to a corridor extending 250 feet on either side of the toe slope of the existing I-95 highway (including ramps and interchanges). The report includes a historical context of the entire corridor and individual, detailed historical contexts for each of the 10 study units. In their 1989 Fishtown industrial survey, the Philadelphia Historical Commission mentions the above-defined Fishtown neighborhood in the same way.

Interstate 95 Intermodal Mobility Project: Bucks, Delaware and Philadelphia Counties, Pennsylvania, Draft Historic Context Statement. Attachment 1: Survey Area Historical Summaries, by P.A.C. Spero & Company (April 1994), derived historical boundaries for Fishtown from the proposed Fishtown Historic District limits delineated in the Philadelphia Historical Commission's 1989 Fishtown survey. Survey area boundaries were defined as Frankford Avenue to Norris and Cumberland streets.

Interstate 95 Intermodal Mobility Project: Bucks, Delaware and Philadelphia Counties, Pennsylvania, Draft Survey Results: Fishtown Survey Unit, by P.A.C. Spero & Company (May 1994), indicated that Frankford Avenue was the boundary for the Fishtown survey unit on the south and Norris Street to the north. A total of 72 resources—either blocks or individual structures—were identified as 50 years or older within the study unit. The National Register-eligible Fishtown

Historic District included all 72 resources. All resources within the study unit contributed to the Fishtown Historic District.

Interstate 95 Intermodal Mobility Project: Bucks, Delaware and Philadelphia Counties, Pennsylvania, Draft Survey Results: Richmond/20th Century Kensington Survey Unit, by P.A.C. Spero & Company (June 1994), identifies a total of 98 resources (either blocks or individual structures) as 50 years or older within the survey boundaries (five resources were later found to be less than 50 years old). Boundaries of the proposed Richmond Industrial Historic District were defined as Allen Street between Kingston and Wensley Streets to the east; the north sides of Wensley Street, the south side of Tioga Street between Salmon and Richmond Streets, and the north side of Schiller Street between Edgemont and Salmon Streets to the south; the east side of Richmond and Edgemont Streets to the west; and the northern property lines of the buildings located at 3500 Salmon Street and 3501 Salmon Street, as well as the south side of Kingston Street to the north. This district lies approximately one mile outside of the I-95, Section GIR, project area.

Phase I Archaeological Survey: I-95 Intermodal Mobility Project, Section 001, I-276 to I-676, Bucks County, Philadelphia County, and City of Philadelphia, Pennsylvania, Volume I. ER #94-1057-042, by Alan D. Beauregard, William A. Hinds III, and Margaret Anne Bishop (KCI) (December 2, 1994), included a walkover that identified six archaeological loci exhibiting no readily discernable signs of prior disturbance. Locus 6 was eliminated after geomorphological data suggested the area had a deep deposit of unconsolidated fill. Loci 1, 3, 4, and 5 yielded cultural material dating to the twentieth century. Locus 2 contained a precontact lithic scatter on the edge of a second terrace overlooking a small stream. No further work was recommended; all loci are located miles north of the project area. Within the project area, the report simply notes the urban environment.

I-95 Intermodal Mobility Project, Philadelphia and Bucks Counties, Pennsylvania, Environmental Assessment/Programmatic Section 4(f) Evaluation, by PAC Spero & Company (December 1995), identifies National Register-eligible districts and individual sites: "Although the Recommended Alternative [in the Fishtown Survey Unit] will introduce new visual elements to the setting of the survey area, it will not be out of character with the existing setting of the four identified historic resources, which has already been compromised by the earlier I-95 construction. The future elevated HOV lanes will be set back far enough from the residential areas that they will not cast a shadow on the surrounding residential and commercial resources. The proposed I-95 reconstruction/rehabilitation work will not detract from the historical or architectural significance of the surrounding resources" (Page III-65).

From Creek to Sewer A Philadelphia Story, by Adam Levine (2002), discusses the process that made hundreds of streams part of the city's sewer system. From the early nineteenth through early twentieth centuries, the Philadelphia Streets and Sewer departments, in an effort to provide workers housing and industry, systematically expanded the city from its center. The city would set a datum elevation and lay the street grid. Streams were an integral part of the sewer and drainage plans. Streams were confined to their channels and designated canals; these streams were later converted into covered sewers. Also, the land bounded by the city's grid system was either filled, as is the case with stream valleys, or cut away to remove interceding hills. Early in the nineteenth century, the streams were covered and/or confined to their bed through canal formation, such as Cohocksink Creek in 1811 and Gunner's Run in 1847. Pegg's Run was covered and filled in 1828. Later,

Cohocksink Creek was capped in the 1880s; Gunner's Run, or the Aramingo Canal, was converted to a covered sewer in 1901.

Historic Structures Survey/Determination of Eligibility Report, S.R. 0095, Sec. GIR, Interstate 95/ Girard Avenue Interchange, by URS (August 2003), did not duplicate the efforts of the I-95 Intermodal Mobility Project from 1994 mentioned above. The URS study noted an additional 11 historic resources older than 50 years. It was determined that one of the resources—Race Street Pumping Station on Race Street—was eligible for the National Register under Criterion A for its association with the development of a high-pressure fire system in Philadelphia.

Historic Research Design

General History

William Penn designed the city of Philadelphia to occupy a rectangular tract of land, between South and Vine Streets, extending west from the Delaware River to the Schuylkill River. As the city's population increased throughout the eighteenth century, settlements began to emerge on the perimeter of the city. Spring Garden, Kensington, Northern Liberties, and Penn Districts, lying north of the city limits, were absorbed into the street pattern radiating out of Philadelphia (URS 2003).

Philadelphia's population had reached 20,000 by 1775. Immigration increased throughout the eighteenth century, creating cramped conditions and the need for more housing. By 1783, the districts of Southwark and Northern Liberties alone had a population of 39,000 (Nash and Smith 1975:366). Temporary dwellings were built along the riverfront to accommodate the exploding population. The city's unhealthy conditions led to the Yellow Fever Epidemic of 1762. Two other epidemics followed: a severe one in the summer of 1793, and another moderate outbreak in the years 1794–1798 (URS 2003).

The towns bordering the Delaware River on the outskirts of Philadelphia were magnets for industries, such as fishing and shipbuilding. At the beginning of the nineteenth century, Philadelphia was poised to become one of the world's largest manufacturing centers. Investment capital poured in, making Philadelphia a center for chemicals, textiles, glass, ships, and iron-related products (Cotter et al. 1992:57). Other smaller industries included cigar making, breweries, leather works, and furniture making. A diverse manufacturing base helped Philadelphia weather the financial panics of the nineteenth century. Philadelphia's early focus on shipping gave way to turnpikes, canals, and railroads. In the 1830s, anthracite coal transformed the city and surrounding areas into a highly industrialized manufacturing region and paved the way for the development of the nation's railroads. Indeed, Spring Garden became the site of the Baldwin Locomotive Works in 1832. In 1854, the districts of Northern Liberties, Kensington, and Richmond were among the outlying territory of Philadelphia County consolidated under the municipal government of Philadelphia (Wainwright 1952:276).

Waves of immigrants poured into Philadelphia in search of manufacturing jobs. By 1860, 30 percent of the city's inhabitants were foreign-born. Crowded, unsanitary conditions spread the rate of disease. Outbreaks of cholera, malaria, typhoid, and tuberculosis killed thousands before the city modernized their sewage and water systems in the first decade of the twentieth century.

Manufacturing and commercial uses became the predominant aspects of the city in the 1920s, as the more-affluent residents migrated to the suburbs. Left behind were the working-class ethnic enclaves, such as Italians in South Philadelphia and Polish/Eastern European families in North Philadelphia. Northern Liberties became a poverty stricken neighborhood (Cotter et al. 1992:70). Following a brief economic boom during the Second World War, a steady erosion of its manufacturing base plagued Philadelphia. The city experienced a turnaround when the nation's bicentennial celebration in the 1970s touched off a commitment to historic preservation and heritage tourism.

Northern Liberties

The Northern Liberties District is comprised of the land north of Vine Street to the now-culverted Cohocksink Creek, roughly the 1000 Block of Frankford Avenue, and from the Delaware River west to Sixth Street. The name "Northern Liberties" refers to the "liberty land or free lots" given as a bonus to early Philadelphia purchasers. West's Shipyard, established by James West (circa 1690), was one of the first riverfront industries in Northern Liberties. The shipyard was expanded to include a two-story brick tavern called the Penny Pot House, located at the foot of Vine Street (Cosans and Barrett 1982:67; Cotter et al. 1992:227). In 1702, James' son Charles inherited the business; by 1762, he constructed a wharf over the original shoreline. More wharves were created on landfill between Vine and Callowhill Streets. The area quickly filled with residents connected to shipbuilding or the marine trade (Philadelphia Tax Ledger 1819).

In 1701, William Rakestraw built a ropewalk immediately north of West's Shipyard (Province of Pennsylvania Minutes of the Board of Property, March 8, 1690, Book D, p. 28). Ropewalks provided all the lines necessary for the shipbuilding trade. The waterfront experienced a transformation during the first three decades of the nineteenth century, when manufacturing plants supplanted shipyards and related industries. The Delaware River waterfront in the Northern Liberties District became associated with extensive lumberyards. Railroads, beginning with the Philadelphia and Trenton Railroad in 1834, played an increasing role in the industrialization of the Delaware River corridor. In 1842, the Philadelphia and Reading Railroad completed its Falls of the Schuylkill to Richmond line and established freight depots and yards along present-day Delaware Avenue (URS 2003).

Eighteenth-century city directories indicate that the street pattern had become fully developed by 1785. Nonetheless, some of the smaller eighteenth-century streets—with intriguing names like Rose Alley, Long Lane, and Petticoat Alley—had already disappeared from Northern Liberties by the early twentieth century (Bloch 1913; MacPherson 1785). The district was created out of the much larger township of the same name in 1803. Fifteen years later, its development had progressed enough to require its subdivision into seven wards.

As a close suburb of Philadelphia, Northern Liberties was the ideal place for businesses such as tanneries, clay pits, and dyeworks, industries that were finding it increasingly difficult to find space inside the city boundaries. Cohocksink Creek and Pegg's Run (later Willow Street) flowed through Northern Liberties and became the foci of settlement (Figure I.2). Pegg's Run was named for Daniel Pegg, a brick maker who owned much of the surrounding area in the seventeenth century (Walther 1925). Native Americans had called the stream "Cohoquinoque." Governors Mill, constructed circa 1700 on the Cohocksink Creek, was among the first gristmills in the area. By 1811, Cohocksink

Creek was transformed into a canal; by 1872, the entire canal was bricked over and became an enclosed storm drain and sewer. Gunner's Run underwent the same transformation, but at a slightly earlier date, due to its greater proximity to the city. Throughout the nineteenth century, row houses, commercial buildings, and industrial structures were built in the area to accommodate the growing community. Second Street was the district's main retail street. Wholesale markets selling the produce of the surrounding agricultural districts were found on Second and Third Streets (URS 2003; P.A.C. Spero 1994).

John F. Watson, in his anecdotal history of Philadelphia, remembered the landscape of Northern Liberties as it appeared at the end of the eighteenth century. City boys played merrily in the marsh bordering Pegg's Run, regularly inundated by the Delaware River. Winter freezes brought out sledders and ice skaters from throughout the city. Watson described a landscape of scattered houses in comparison with the densely built-up appearance it displayed a few decades later. Northern Liberties district had a number of noteworthy early buildings still extant in the nineteenth century neighborhood. Daniel Pegg's two-story brick house stood on the west side of Front Street, a little south of Green Street (now Spring Garden Avenue). A lovely green meadow surrounded by cherry trees completed the pre-Revolutionary idyllic setting. The meadow was located on the blocks bounded by Front Street and Second Street, between Spring Garden Avenue and Fairmount Avenue (Watson 1857:chapter 71).

The period between 1791 and 1860 saw the expansion of industry in Northern Liberties. Governor's Mill became Globe Mills (circa 1803), Pennsylvania's largest textile mill until the mid-nineteenth century. Several tanneries, a carpet factory, Deringer's pistol works, and Haig's earthenware manufactory called Northern Liberties home (P.A.C. Spero 1994). Henry Disston's Keystone Saw Works, located on Laurel Street, and Rowland's Saws, located on Beach Street, were two of America's leading saw manufacturers (URS 2003). Additional houses were constructed in response to continued population growth spawned by increasing industrialization (P.A.C. Spero 1994). Large-scale factories began to move operations to Northern Liberties. In the 1850s, due to the expansion of commercial enterprises along the waterfront, the need for warehouses and storage facilities precipitated the development of a warehouse district between the Delaware River and Third Street (Webster 1976:313). During the first half of the twentieth century, industry in Northern Liberties began to decline. The area became a transfer point for goods, large warehouses were being built to store and transfer goods to and from trucks (P.A.C. Spero 1994).

Fishtown

The antecedent of the Fishtown section of Kensington was a village known as Sachamexin that developed on the 1800-acre tract granted to Swede Laurens Cock in 1678. Shackamaxon Street, deriving its name from this early community, opened between the river and Richmond Street in 1816.

In 1730, Anthony Palmer, an English merchant from Barbados, purchased 600 acres of land in Northern Liberties and named the area "Kensington." Palmer subdivided the land to attract settlement; soon the Kensington waterfront was populated with fishermen and shipbuilders.

Modern-day Aramingo Avenue traces the former alignment of Tumanaraming Creek, as named by Native Americans. The creek was more commonly known as Gunner's Run, after Gunner Rambo,

another early Swedish settler (Figure I.3). Gunner's Run became the Aramingo Canal in 1847; by 1911, the creek was rerouted and became an underground storm drain and sewer.

Kensington was incorporated as a district out of Northern Liberties in 1820. Fishtown was named for the fishermen who settled in the area south of Gunner's Run (URS 2003). The area was sometimes referred to as "lower Kensington." For the purposes of this study, the boundaries for Fishtown are set as the area along I-95 from Frankford Avenue to Cumberland.

Fishtown's residents worked predominantly in maritime trades such as shipbuilding, rope and mast making, wharf building, and fishing in the nineteenth century. Waterfront development and community expansion led to the establishment of the Kensington District in 1820, which includes Fishtown (URS 2003). Kensington District was established from the Cohocksink Creek to the south, Frankford Road to the west, the Tumanaraming Creek to the north, and the Delaware River to the east.

In 1830, William Cramp founded the Cramp Shipyard on Susquehanna Street, where he constructed the only clipper ships built in Philadelphia. Operations moved to the Norris Street shipyard and grew into one of the world's largest manufacturers of iron ships. Formally known as William Cramp and Sons Ship and Engine Building Company, the shipyard was Fishtown's biggest employer well into the twentieth century (URS 2003).

In November 1834, the Philadelphia & Trenton Railroad opened a line connecting Trenton to New York. Although the original plans called for the tracks to run down Front St. to 3rd and Willow, the plan met community resistance and, instead, the Kensington Depot was constructed at Front and Berks Streets (URS 2003).

Despite Cramp's success, a number of Fishtown's older, traditional shipyards did not make the transition to an industrialized operation. Ironworks and rolling mills, fueling their blast furnaces with anthracite from the nearby coal terminals in Port Richmond, took over many of the riverfront locations (URS 2003).

As industry concentrated along the riverfront and railroad corridors, the Kensington and Port Richmond neighborhoods expanded greatly from the 1850s through the 1880s to form working-class districts. Large numbers of workers, mostly immigrants, moved into block upon block of newly built brick row houses (URS 2003).

Late in the nineteenth century through the early twentieth century, the neighborhood continued to grow. The Kensington Souphouse was built and expanded by 1870; the George Chandler School was built in 1907–1908. Like Northern Liberties, the building trend along Delaware Avenue was low-truck warehouses and multiple-bay crane buildings for the Cramp yard (P.A.C. Spero 1994).

Port Richmond

The Richmond area of Philadelphia remained relatively rural until the mid-nineteenth century (P.A.C. Spero 1994). In 1728, William Ball built a country estate north of Gunner's Run that he named "Richmond Manor." Present-day Port Richmond derives its name from this early estate. A

small village called Ballstown was established here in the late eighteenth century and a few houses were built along what became Richmond Street; however, Ballstown never grew very large in the shadows of the emergent industries located in the area (URS 2003).

In 1771, a glass furnace was constructed on the north bank of Gunner's Run. The operation grew and, by the nineteenth century, the Dyottville Glass Works (as it was then known) became a prominent industrial plant in the area (URS 2003).

The Philadelphia & Reading Railroad reached Richmond in 1842. An extensive tidewater port was established at Richmond to facilitate the shipment of coal throughout the Atlantic seaboard. Port Richmond, as it was called, was at one time the largest privately owned railroad tidewater terminal in the world (Figure I.4). The arrival of the railroad was the catalyst for increased development in Richmond; thus, in 1847 the Richmond District was incorporated out of Northern Liberties (URS 2003).

In the 1840s, businessmen in Kensington and Richmond joined in an attempt to improve Gunner's Run up to its intersection with the Reading Railroad. It was hoped that, by improving the stream, a depot with docks and basins would develop. The Gunner's Run Improvement Association was formed in 1848 to construct a canal. The resultant Aramingo Canal was largely a failure. A limited number of wharves and warehouses were built, but the amount of business was found to be insufficient to pay for expenses; therefore, the canal was removed and converted into a sewer in 1901 (Levine 2002).

An influx of immigrants from Germany and Poland began in the late nineteenth century; the new communities built houses and social clubs throughout the Port Richmond neighborhoods. By the 1920s–1940s, Baltic immigrants began to move into the area. The Port Richmond Terminal closed in 1976, and Port Richmond fell into gradual decline (P.A.C. Spero 1994).

Life Develops Along the Delaware River Corridor from 1790 to 1940

Northern Liberties, Fishtown, and Port Richmond's reconstructed historical past will be derived from the scientific collection of technological and environmental data, as well as from historical documents. During this time period, new technology was introduced, new natural resources were exploited, trade agreements were formed or expired, political boundaries were defined and redefined, houses were demolished for factories, streams were sealed and turned into drains and sewers, the riverbank was encapsulated by wharfs and docks, and warfare occurred. These types of events interrupted historical life; day-to-day living was then reconstituted, and society moved on toward the future (Heller 1984). In understanding historic life in the past, scientific and social-scientific approaches can in some cases substantiate these kinds of major events and, moreover, highlight cultural elements of stability maintained for generations in between. In this light, the archaeologist can assist in recreating social relations while examining material items to understand cultural concepts that reinforced a historical group's lifeways. Various historical groups (i.e., neighbors, politicians, industrialists) maintained or imposed new technology or exploited new ecological niches and established the degree to which change would occur.

The basic premise of this research design is the attempt to recreate historical life at distinct points in time, and then assess the interruptions and adaptive changes to that life. The object of inquiry is a simple one, and pervades the discipline of anthropology: Why does the behavior of an individual, group (or groups) of people change over time? Are these changes caused by the environment, or through technological inventions? Are these changes inherent to culture, trade, religion, politics, population growth, random accidents, or a myriad of responses to everyday life?

The historic research design can be applied to all future Phase IB archaeological investigations and standalone for each section; when sections are combined, the research design is dynamic enough to show a progression of change over time and space, as historic settlement progressed north along the Delaware River away from the city. The focus will be on points in time (dated material culture) and points in space (opportunistic subsurface disturbances) as it relates to the recovered archaeological record. In this way, the research design can be applied to each (as yet unidentified) historic archaeological site. The historic research design comprises the continuous time period from 1790 through 1940 within three distinct spaces or neighborhoods.

Report Section	*Historic Research Community*	*Significant Time Period*
Sections 1, 2, and 3	Northern Liberties	1792–1836
Sections 4, 5, and 6	Fishtown	1836–1870
Section 7	Port Richmond	1870–1940

If intact archaeological deposits are exposed during Phase IB investigations, then more-comprehensive research design questions will be developed. The summary chapter discusses the Phase IB/II approach in more detail.

Precontact Research Design

A middle-range research model will be developed to understand precontact activities and describe everyday life along this section of the Delaware River at its confluence with Cohocksink Creek and Tumanaraming Creek. This research model is an attempt to recreate everyday life at distinct points in time from the Archaic and Woodland periods and explain their cultural similarities and differences. The model will focus on moments in time and discuss any precontact component along this section of the Delaware River corridor. A general research design is presented here as a starting point for future studies. The ultimate goal of the precontact research design is to reconstruct the lifeways of the site's precontact inhabitants and place their activities into a regional settlement pattern within the Lower Delaware River Valley. Numerous investigations in southern New Jersey and southeast Pennsylvania have resulted in the development of settlement models for the Late Archaic through early Late Woodland periods. The models define a range of site typologies and distributions. As a continuing test of current models of settlement and subsistence patterning, research at the Cohocksink Creek and Tumanaraming Creek will involve the definition of site function and content over time. First, it will be necessary to determine the types of activities that took place within the site. Lithics, ceramics, and features will be examined in terms of their spatial and temporal relationships. Establishment of temporal relationships among the site's cultural components will be accomplished through relative and absolute dating techniques.

A breakdown of the types of lithic raw materials used, along with recovered ceramic types, will help define the distribution of ancient populations within the Lower Delaware Valley. Ceramic assemblages from this area will be compared to Woodland ceramic assemblages from various nearby physiographic provinces. Specific comparisons will be made to Late Woodland ceramic assemblages from the middle Delaware Valley, including Abbot Zoned Incised (Stewart 1998), Overpeck/Bowmens Brook Incised (Cavallo 1987;Kinsey 1972;Staats 1974), and Sackett Corded (Struthers and Roberts 1982). Other assemblages that will be examined are identified from the upper Delaware Valley: Owasco types (Kraft and Mounier 1982b), Chance Incised (Kraft 1975), and, from the lower Hudson Valley, Munsee Incised (Lenik (1992). Assemblages from southern New Jersey (Riggins types) will also be examined (Kraft and Mounier 1982b). At the Pidcock South Site, located in the middle Delaware Valley, buried intact Late Woodland ceramics substantiate the co-occurrence of pottery types with upper and lower Delaware Valley origins (Tull 1993), suggesting contacts between different Late Woodland groups throughout the Delaware River Valley.

Definition of occupational duration, group size, and regional interaction associated with the site are other research issues that will be examined. Another research effort will provide an accurate portrayal of the precontact environment of the site and vicinity. Gained knowledge will help answer questions concerning settlement and subsistence patterns in general, while shedding light on cooking methods, types of temporary dwellings, and fishing practices at sites in particular.

The following general research questions will assist with the development of the middle-range research model and support the general research goals and issues, as well as guide future work within any identified site.

1. *What functional attributes and activities can be discerned from the precontact deposits at Cohocksink Creek and Tumanaraming Creek?*

The interpretation of site function is based upon the nature and location of subsurface features and artifacts within the site. Stratigraphic profiles and the horizontal distribution of artifact classes and feature types will be used to determine the representation of functionally different but contemporary deposits—or functionally similar but non-contemporaneous contexts—at the site.

Lithic classification according to raw material and form can assist in identifying lithic reduction activities within the site. Ratios of diagnostic, complete lithic artifacts to flakes can help identify toolmaking traditions; e.g., primary lithic sources versus pebble or cobble reduction. Lithic tool dimensions, edge retouch, and surface retouch provide information on functional shifts in tools as the result of reworking. Ceramic sherds classified according to temper, paste texture, surface finishing, decorative techniques, and average thickness can assist in identifying cultural groups, as well as food preparation, storage, and/or cooking activities.

2. *What is the length of aboriginal occupation within sites identified near the Cohocksink Creek and Tumanaraming Creek?*

High densities of artifacts can, in some cases, reflect longer occupancy; in other cases, they can reflect many intense brief encampments. High densities of features, such as postmolds, can indicate long-term occupation. Plant remains are another key indicator of seasonality. Unique features, such as storage pits, also suggest long-term occupation. Comparing the densities of artifacts to features can help distinguish between brief encampments versus long-term occupation.

3. Does the site represent a large gathering of several extended family groups or a smaller, nucleated family? What is the composition of these groups?

The density of artifacts and their association with features across the site, as well as the diversity of site activities, will need to be examined in order to determine the size of the group(s) occupying the site. Large groups should exhibit more-complex patterns of features and artifacts, whereas smaller groups should produce spatially restricted distributions of artifacts with similar patterning. Gender-specific activities are more problematic. The presence of ceramics could indicate female activities, and the presence of projectile points and biface preforms could represent male activities. This interpretation, of course, relies heavily on the presumed existence of a division of labor based on gender.

4. *What niche will sites identified near Cohocksink Creek and Tumanaraming Creek occupy within the settlement pattern model formulated for precontact occupation in the Lower Delaware Valley?*

Diagnostic artifacts recovered from the site would provide information needed to place the site within a meaningful context of the Lower Delaware Valley. This can be accomplished by comparing the site's cultural material and stratigraphic deposits with that of other intact buried Archaic and Woodland floodplain sites located throughout the Delaware Valley. These sites would include: the Williamson Site in Hunterdon County, New Jersey (Hummer 1991); the Miller Field Site in Warren County, New Jersey (Kraft 1972); and the Pidcock sites in Bucks County, Pennsylvania (Tull 1993).

5. *What type of environment and what resources were available to the aboriginal inhabitants of sites identified near Cohocksink Creek and Tumanaraming Creek*?

By identifying historic intrusions and determining how they altered the landscape, one should be able to reconstruct, approximately, the appearance of the area prior to any historic contact. This elimination of historic features from the landscape, used in conjunction with other environmental reconstruction methods (e.g., geomorphology) should provide an accurate portrayal of the precontact environments and resources available to the aboriginal inhabitants. Such knowledge could help answer questions concerning site usage, raw material acquisition, subsistence practices, transportation, trade, and settlement patterns at various points of time in the past. This information can also help define original site boundaries, indicate the state of site preservation, and aid in identifying the effects of post-depositional disturbances on the precontact remains.

With abundant available resources, the Woodland Indians of southeast Pennsylvania found no need to evolve into a complex society; most groups developed simple political and social forms of

organization. Their activities did not pollute the environment or drive any species into extinction. Therefore, if success is measured by stability, then the southeast Pennsylvania Woodland Indians would rank high.

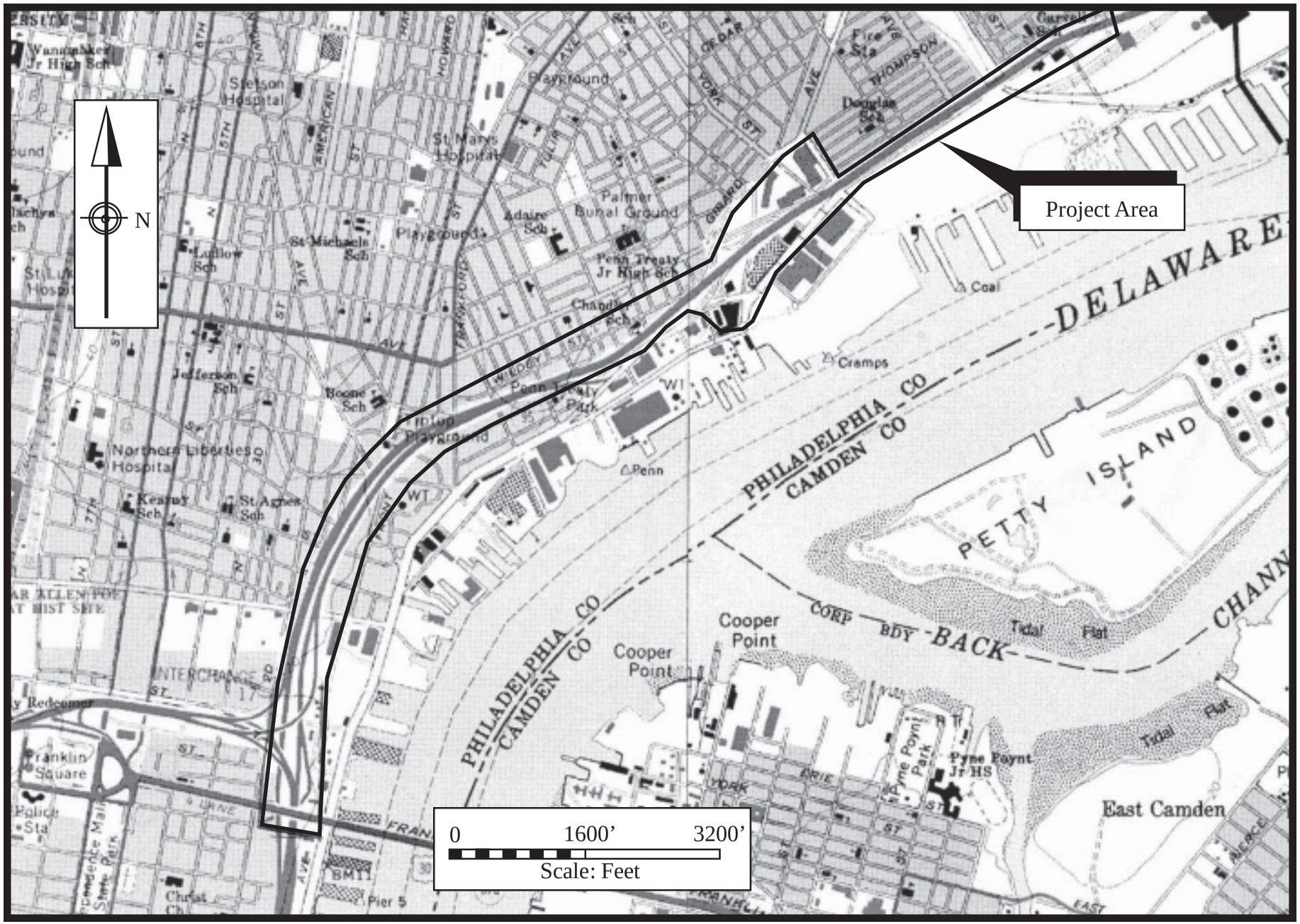


Figure I.1 I-95, Section GIR, Archaeological Project Location (Source: Camden USGS QUAD).

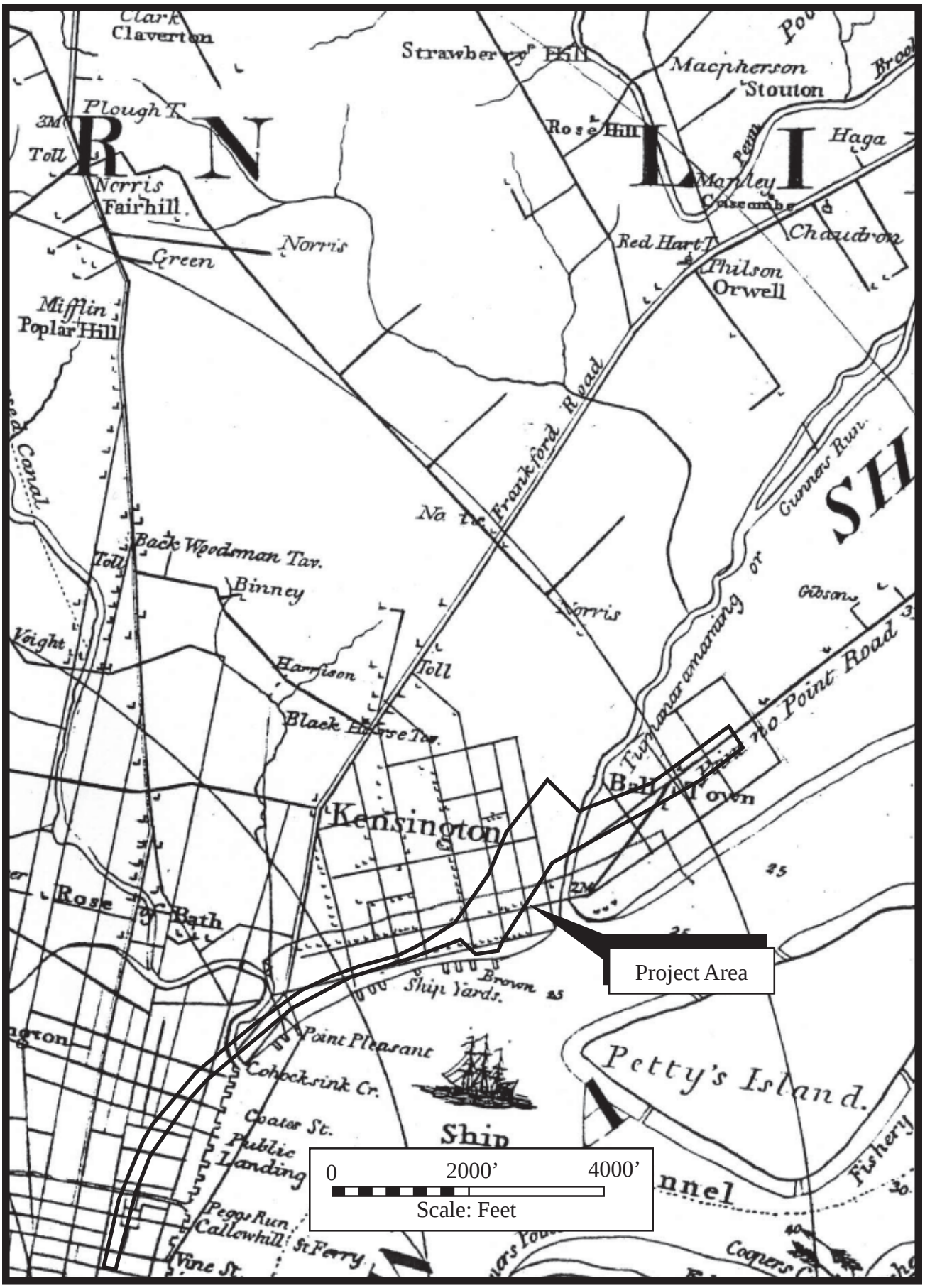


Figure I.2 Location of I-95, Section GIR, Archaeological Project Area at the Beginning of the Nineteenth Century (Source: Hills 1809).

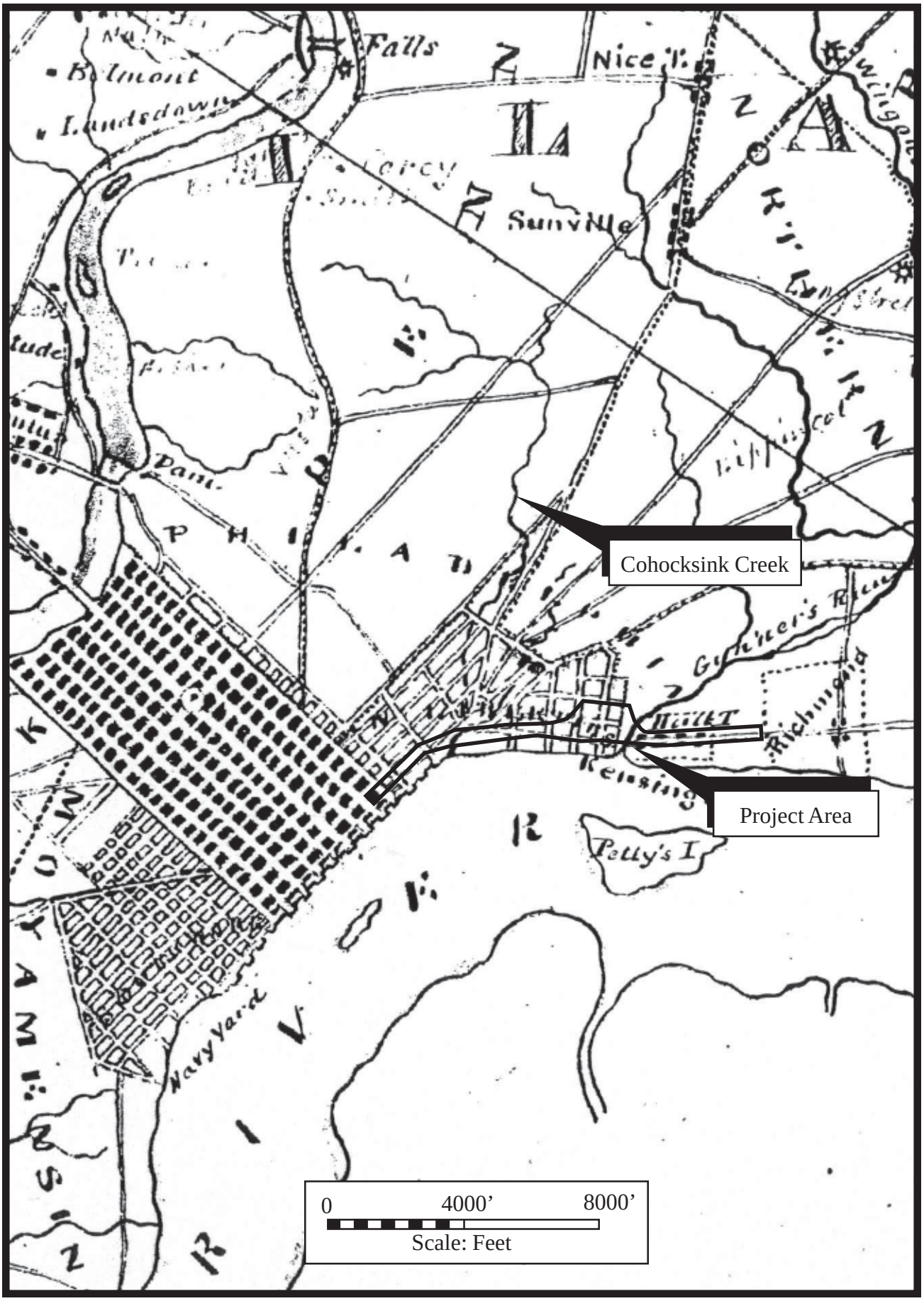


Figure I.3 I-95, Section GIR, Archaeological Project Area in the 1820s (Source: Troost 1826).

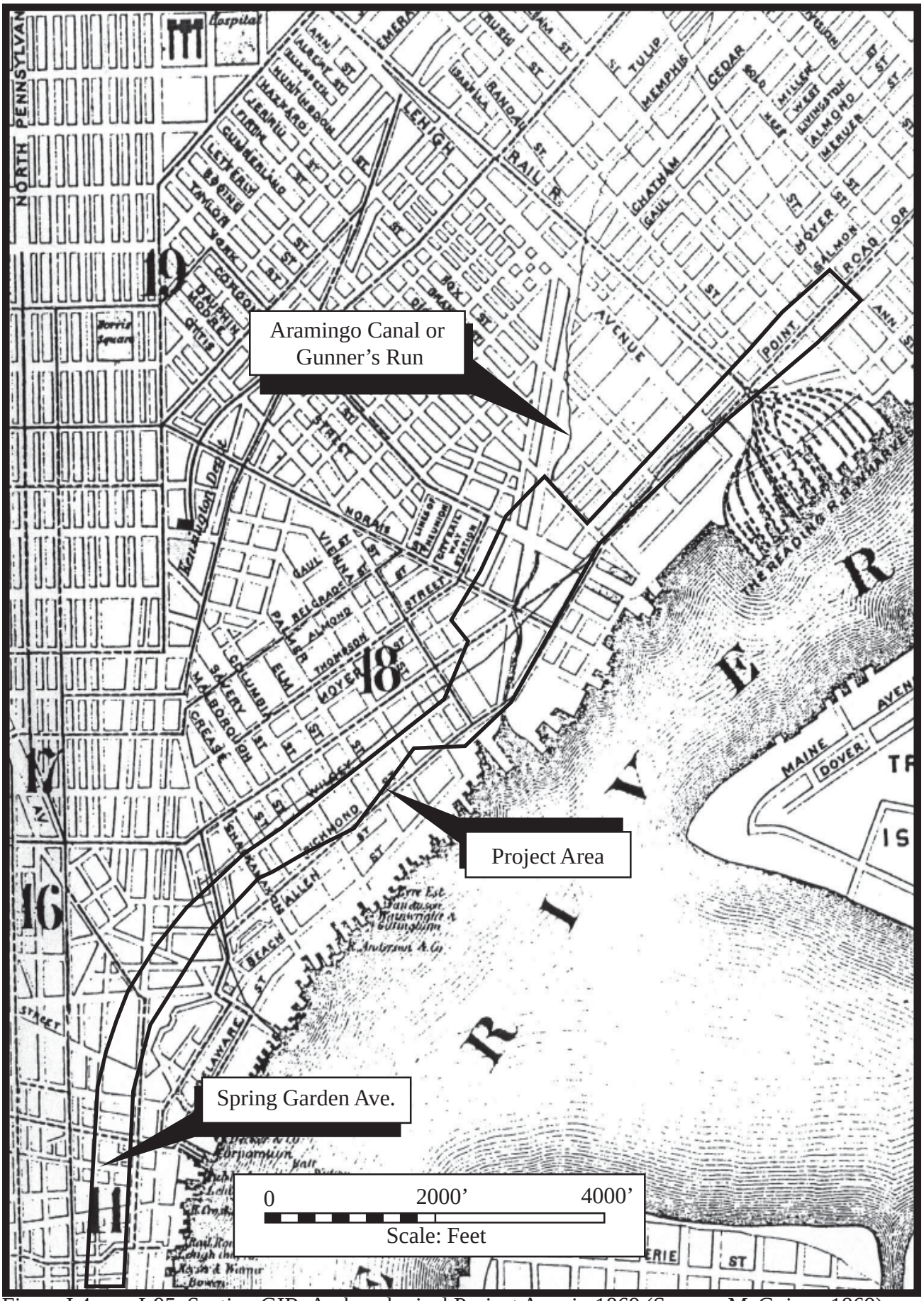


Figure I.4 I-95, Section GIR, Archaeological Project Area in 1869 (Source: McGuigan 1869).

Section 1: Stations 249+00 to 273+00
Race Street to the South Side of Spring Garden Street

Undertaking

Section 1 begins at Race Street (Station 249+00) and stretches north to just south of Spring Garden Street (Station 273+00). Improvements to this section of highway are confined to pavement and deck replacement. No abutments or piers will be replaced; the subsurface will not be disturbed (Figure 1.1).

Section-Specific Environmental Data

Given that the ground will not be disturbed, section-specific environmental data is not required. However, the soil profiles from this section of the project area are of interest. Test borings taken during the early 1960s indicate that the former location of Pegg's Run was situated between Willow Street and Noble Street (or near I-95, Stations 265+00 and 270+00). The original construction plans for I-95 Section B-54 soil boring logs B-131, B-133, and B-134 reveal 10 to 15 feet of fill overlaying 10 to 15 feet of organic silt (Figures 1.2 and 1.3), giving a representative schematic soil profile that highlights Pegg's Run and its valley.

Section-Specific History

Susan Anderson of the U.S. National Park Service described the area around Pegg's Run in her book *The Most Splendid Carpet*:

> It was in reality a complete small community, a microcosm of industriousness separated and rather isolate from the rest of Philadelphia. To the north of Pegs [sic] Run was a broad, tidewater marsh where sportsmen hunted birds. It flooded frequently and a boat was sometimes required to get across to the business establishments of "Camptown" or "Campington," as it was sometimes called from the barracks built by the British on North Third Street before the Revolution (Anderson 1978:33).

One of the most inventive and controversial boats that may have been built and floated in or near Pegg's Run was John Fitch's steamboat between 1785 and 1790 (Westcott 1857). Fitch demonstrated his steamboat to George Washington and members of the Federal (Constitutional) Convention in 1787. Three years later, he inaugurated the world's first regularly scheduled steamboat service between the Arch Street Ferry slip in Philadelphia and Trenton, New Jersey (Smith 1986:62). John Fitch lived at 462 North Second Street (Plates 1.1 to 1.4).

In 1828, the city covered and filled in Pegg's Run as a drain and sewer, as noted by Levine (2002); the run is not shown on the 1831 Snyder map.

Recommendations

The undertaking within Section 1, Stations 249+00 to 273+00, will not disturb the subsurface. No further archaeological work is recommended within Section 1.

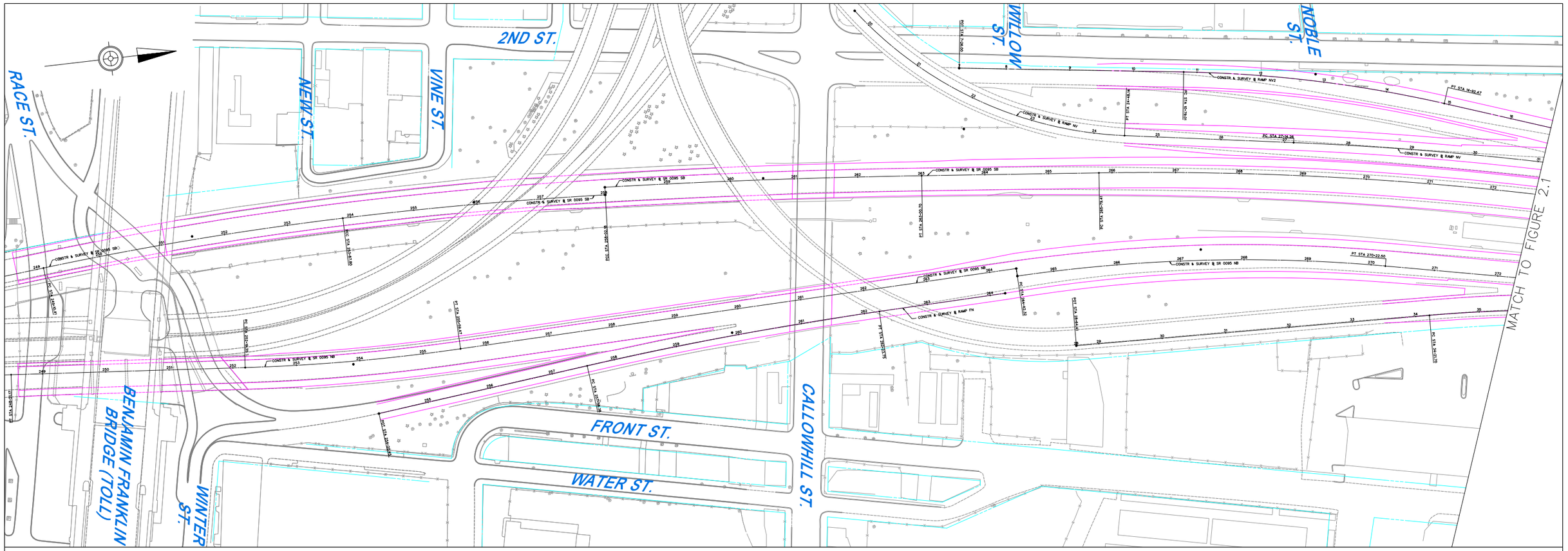


FIGURE 1.1
SECTION 1 - STATION 249+00 TO 273+00 (RACE STREET TO SOUTH SIDE OF SPRING GARDEN STREET)

Figure 1.1 Section 1, Archaeological Potential, Stations 249+00 to 273+00 (Race Street to South Side of Spring Garden Street).

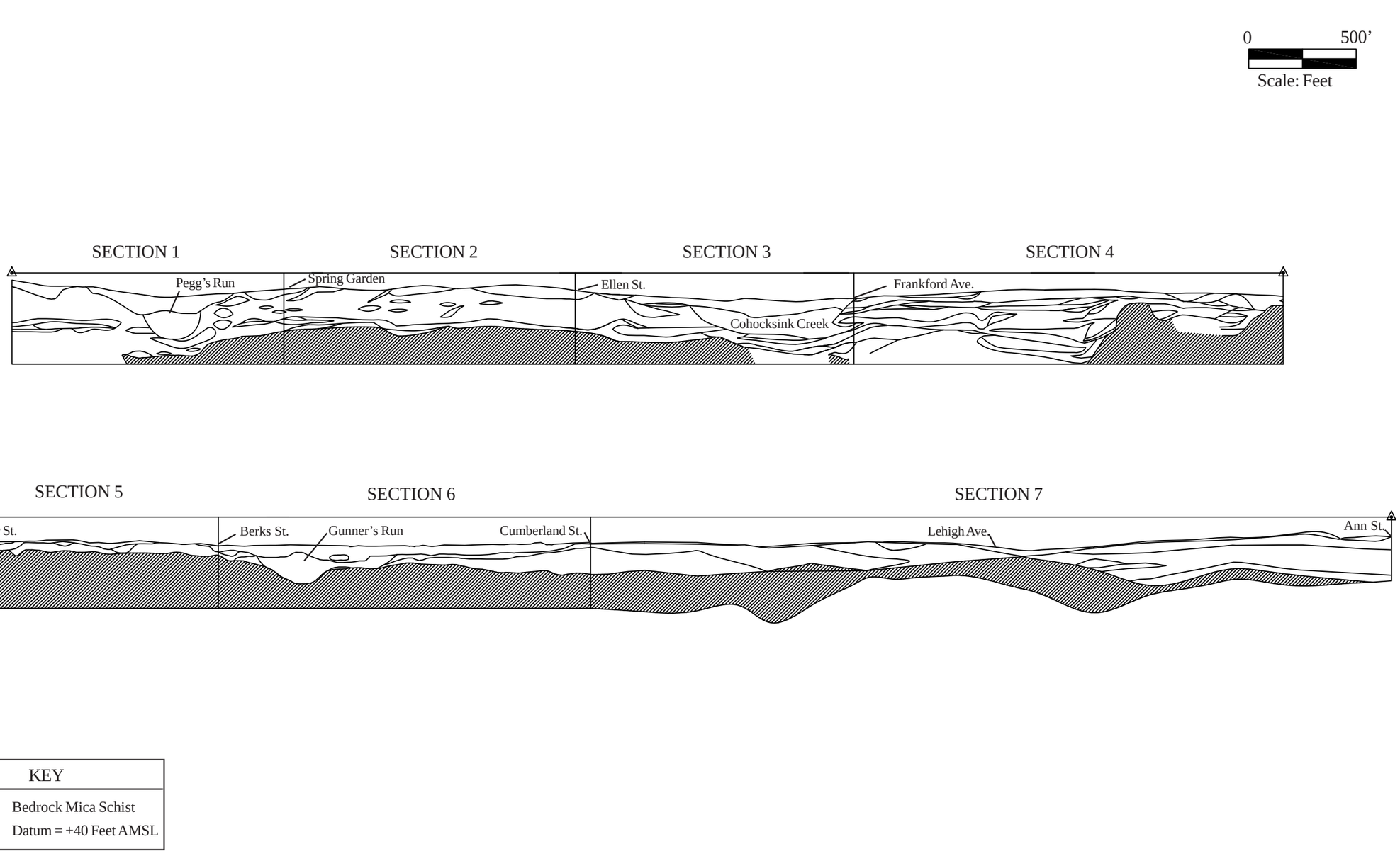
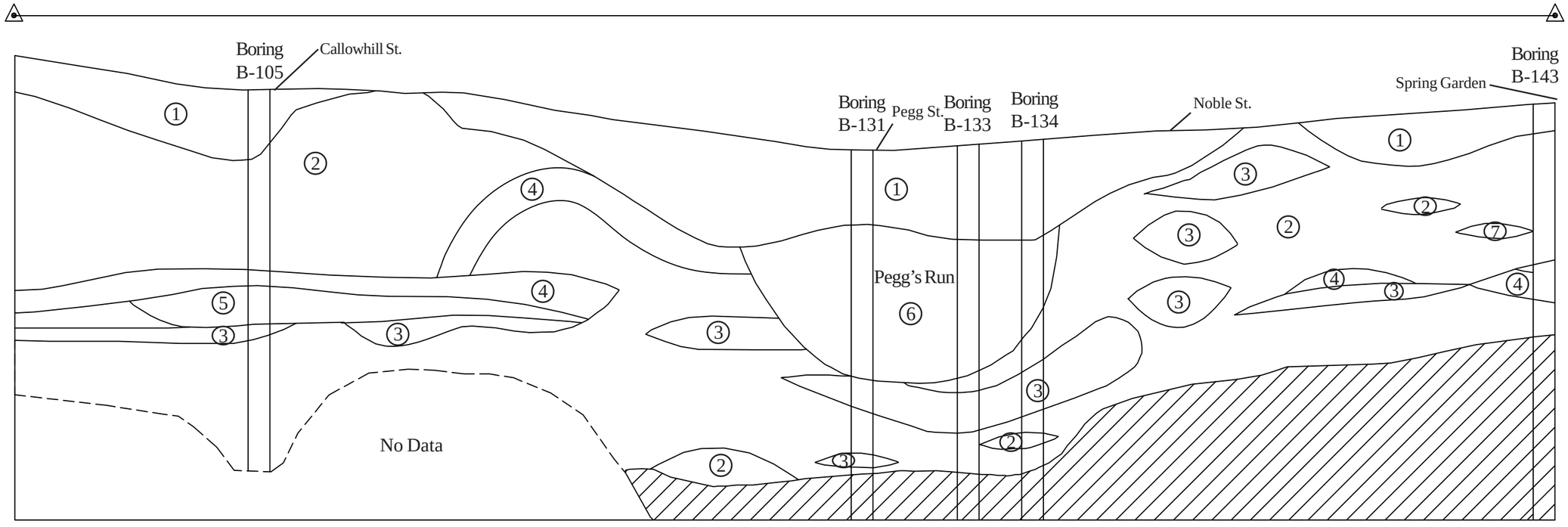


Figure 1.2 Master Profile of Sections 1-7, Race Street to Ann Street.

SECTION 1



KEY	
– – – – – –	Limit of Testing
	Bedrock Mica Schist
▲	Datum = +40 Feet AMSL

SOIL KEY	
①	Anthropogenic Soil Fill Horizon with Differential Ammounts of Brick, Coal Ash, etc.
②	Stratum of Stone or Gravel, and Sand with or without Fines
③	Stratum of Stone or Gravel with Sand and Silt
④	Stratum of Silt and Sand with or without Coarse Fragments
⑤	Stratum of Silt or Clay
⑥	Organic Muck/Silt
⑦	Fine Sand

Horizontal Scale
0 100'

Scale: Feet

0
20'
Vertical Scale

Figure 1.3 Section 1, Stations 249+00 to 273+00, Race Street to South Side of Spring Garden Street.

Plate 1.1 Front and Vine Streets.

Plate 1.2 Northwest Corner of Callowhill and Front Streets.

Plate 1.3 Front Street North of Callowhill Street.

Plate 1.4 Southwest Corner of Front and Spring Garden Streets.

Section 2: Stations 273+00 to 289+00
South Side of Spring Garden Street to Ellen Street

Undertaking

Proposed abutments will be erected in the same locations as the existing abutments, but will be widened symmetrically at the following intersections of Spring Garden Street, Fairmount Avenue, Brown Street, and the south side of Ellen Street. New piles, which will reach bedrock, will support the abutments. Retaining walls will be built between the abutments on both the northbound and southbound sides of I-95 to a depth of three to five feet. Fill will be placed behind the retaining walls to support the highway (Figure 2.1; also see Plates 2.1 to 2.13).

Section-Specific Environmental Data

The master soil-profile schematic (see Figure 1.2) best shows a Delaware River terrace located between the two tributaries (Pegg's Run and Cohocksink Creek). The Section 2 soil-profile schematic indicates a series of historic cuts and fill areas (Figure 2.2).

Spring Garden Street (Station 273+00)

Soil-test-boring data for Section 2 was collected from the original construction plans for I-95 Section B-55 (structure plans 10941, 10942, and 10943). Representative Spring Garden Street intersection soil profiles are: B-143 southeast, B-144 northeast, B-148 southwest, and B-153 northwest.

Soil borings on the east side of Spring Garden Street (B-143 and B-144) contained about five feet of fill (stone and gravel), overlaying 25 feet of stone and gravel mixed with some fine sand. Silt and sand extend to 30 feet, followed by a layer of stone and gravel to 35 feet, where mica schist bedrock was encountered.

On the west side of Spring Garden Street, soil borings (B-148 and B-153) exposed black cinders to a depth of one foot, overlaying brown, fine sand and silt with traces of fine coal and cinders to a depth of five feet. Brown silt and small amounts of fine sand with traces of wood were encountered over the next three feet, overlaying 15 feet of brown coarse-to-fine sand and medium-to-fine gravel with some silt, followed by bedrock.

Fairmount Avenue (Station 278+00)

Representative Fairmount Avenue intersection soil profiles come from C-5 southeast, C-10 northeast, C-1 southwest, and C-6 northwest. Most of the soil profiles consistently contain 0.2 feet of brick or concrete sidewalk capping black, fine cinders to a depth of one foot. Under this cap, a layer of brown-to-reddish-brown, coarse-to-fine sand and medium-to-fine gravel with some silt extends to a depth of nine feet. This soil layer is followed by six feet of brown, coarse sand to fine and medium-to-fine gravel containing some silt and, finally, 11 feet of brown, coarse-to-fine gravel.

Brown Street (Station 282+00)

Representative Brown Street intersection soil profiles come from C-17 southeast, C-22 northeast, C-13 southwest, and C-18 northwest. Most of the soil profiles consistently contain brick to a depth of 0.2 feet, overlaying 0.8 feet of brown sand and gravel. The next 14 feet are composed of brown-to-reddish-brown, coarse-to-fine sand and medium-to-fine gravel with some silt, followed by brown coarse sand from two to four feet in depth. Sand and stone fragments with stone or gravel follow for two feet, underlain by stone or gravel for another 40 feet to bedrock.

Ellen Street (Station 288+00)

Representative Ellen Street intersection soil profiles come from C-39 southeast and C-38 southwest. Most of the soil profiles consistently contain stone and gravel to a depth of two feet, overlaying another two feet of silt and sand. These layers are followed by 10 feet of fill, capping 30 feet of stone or gravel and sand with or without gneiss for 30 feet, followed by mica schist bedrock.

Section-Specific History

As mentioned in the introduction and repeated here, the Philadelphia Streets and Sewer Departments systematically expanded the city from the early nineteenth through early twentieth centuries in an effort to provide workers housing and industry. These departments set datum elevations and laid out street grids. Streams were an integral part of the sewer and drainage plans. Streams were confined to their channels and then called canals; later, they were converted into covered sewers. The land bounded by the city's grid system was either filled (as in the case of stream valleys) or the land was cut away to remove interceding hills. Pegg's Run was covered and filled in 1828. The Cohocksink Creek was historically confined to its streambed and designed as a canal in 1811 to support mills; however, this effort did not stop drainage and sewage from being discharged into the canal/creek. The Cohocksink Creek was systematically capped throughout the late nineteenth century for sanitation purposes (Smith 1995:22; Levin 2002).

Prior to the construction of Spring Garden Street, sometime after 1916, and the construction of the Market Frankford elevated line in 1918, this section of Northern Liberties experienced significant economic and social development throughout the nineteenth century (Oliver Evans Chapter 1990: 9-7 and 9-11). Spring Garden Street replaced portions of Green Street and Nectarine Street; some of the row homes were demolished and removed long before the construction of I-95. The remaining houses in Northern Liberties stood until 1968, when they were removed during I-95 highway construction.

Houses constructed along Nectarine and Green Streets were most likely built between 1792 and 1830 in this section of Northern Liberties (Webster 1976:307–311). Specifically, houses constructed at 142 to 144 Nectarine Street were built between 1823 and 1830; houses located at 146 to 150 Nectarine Street were built between 1792 and 1803 (Webster 1976:329). Joseph Singerly houses located at 120 to 122 Fairmount Avenue were built between 1831 and 1836

(Webster 1976:329); Thomas Holloway houses at 125 to 131 Ellen Street were constructed in 1832.

Spring Garden Street (Station 273+00)

Southeast. By 1916, on the southeast corner of Spring Garden Street, two-story row homes were located on the north side of 131 and 133 Nectarine Street. Small, three-story apartments were located behind them at Wallington Place.

Northeast. A one-story carpenter's workshop was located at 129 Green Street. A small, three-story building was located behind the workshop; a lumber shed stood behind the three-story building.

Southwest. This was an open area probably used for storage by shop owners fronting 543 to 547 North 2nd Street.

Northwest. The James Madison Public School was located along Green Street, between New Market and North Hancock Street.

Fairmount Avenue (Station 278+00)

Southeast. Two-story row homes were constructed in the early nineteenth century at 124 and 126 Fairmount Avenue. Small, three-story apartments were situated behind them, numbered 2 and 3 Bristow Place.

Northeast. A two-story dwelling stood at 125 Fairmount Avenue. Across the alley from the dwelling, a one-story store stood at 127 Fairmount Avenue.

Southwest. A three-story dwelling was located at 146 Fairmount Avenue, bracketed by three-story shops at 144 and 148.

Northwest. Hobensack Place separated a three-story store from a junkyard—not a particularly grand entrance to the apartments located behind them.

Brown Street (Station 282+00)

Southeast. Three-story row houses were located at 116 and 118 Brown Street. Three-story apartments stood at 7 and 8 Burwick Place.

Northeast. Two-story dwellings were located at 121 and 123 Brown Street.

Southwest. A three-story tin shop was located at 144 Brown Street.

Northwest. A wide-front, two-story dwelling was located at 145 Brown Street.

Ellen Street (Station 288+00)

Southeast. By 1916, George W. Kugler and Sons had a box factory with both working and vacant warehouses in this section of Ellen Street.

Southwest. The backyards of three-story row homes were located at 931 and 933 New Market Street and 132 and 134 Ellen Street.

Recommendations

Historic Archaeological Potential

The growth and development of row-home architecture and the lives of their inhabitants within Northern Liberties are not precisely known within the Section 2 APE. However, row homes and stores were built between 1792 and 1836, illustrating the first major period of worker housing constructed within Northern Liberties to provide shelter for the valuable human resource needed to spur industrial growth (see Figure 2.1).

Low Potential

Spring Garden Street (Station 273+00, Northeast, Southwest, and Northwest)
Ellen Street (Station 288+00, Southeast)

The APE associated with these wingwall-abutment construction areas have a low potential for the recovery of intact historic archaeological deposits, given the early-twentieth-century construction of Spring Garden Street, the Frankford elevated train, and the later construction of I-95. Furthermore, the material remains most likely would not have accumulated from previously extant schools and business in this location.

High Potential

Spring Garden Street (Station 273+00, Southeast)
Fairmount Avenue (Station 278+00)
Brown Street (Station 282+00)
Ellen Street (Station 288+00, Southwest)

The wingwall-abutment APE associated with these areas encompasses locations where densely packed residential homes would have been constructed prior to the installation of the Philadelphia sewer system. Deep shaft features, such as privies, make up the high potential for intact historic deposits in these locations.

Precontact Archaeological Potential

No Potential

Spring Garden Street (Station 273+00)
Fairmount Avenue (Station 278+00)

The Delaware River terrace located between Pegg's Run and Cohocksink Creek would have been an opportunistic area for precontact settlement. However, historic disturbance affected all locations on the former terrace. The low-lying area north of Pegg's Run was historically a marshy area and would not have been suitable for precontact occupation in the vicinity of Spring Garden Street. Interpretation of the historic soil-boring profile indicates that the terrace around Fairmount Avenue would have been historically cut to provide a level area for the construction of houses. Nineteenth- and twentieth-century construction has left the Spring Garden and Fairmount Avenue wing-abutment APEs with no potential for intact precontact deposits.

Low Potential

Brown Street (Station 282+00)
Ellen Street (Station 288+00)

A low potential for intact precontact archaeological deposits exist within the Brown Street and Ellen Street wing-abutment APEs.

Monitoring

Retaining walls will be built between the abutments on both the northbound and southbound sides of I-95 to a depth of three to five feet. The wall construction APE will be archaeologically monitored, because it is expected that only fill will be exposed. Monitoring, if needed, will be determined and guided by the results of any future Section 2 Phase IB archaeological testing at the high- and low-potential abutment APEs.

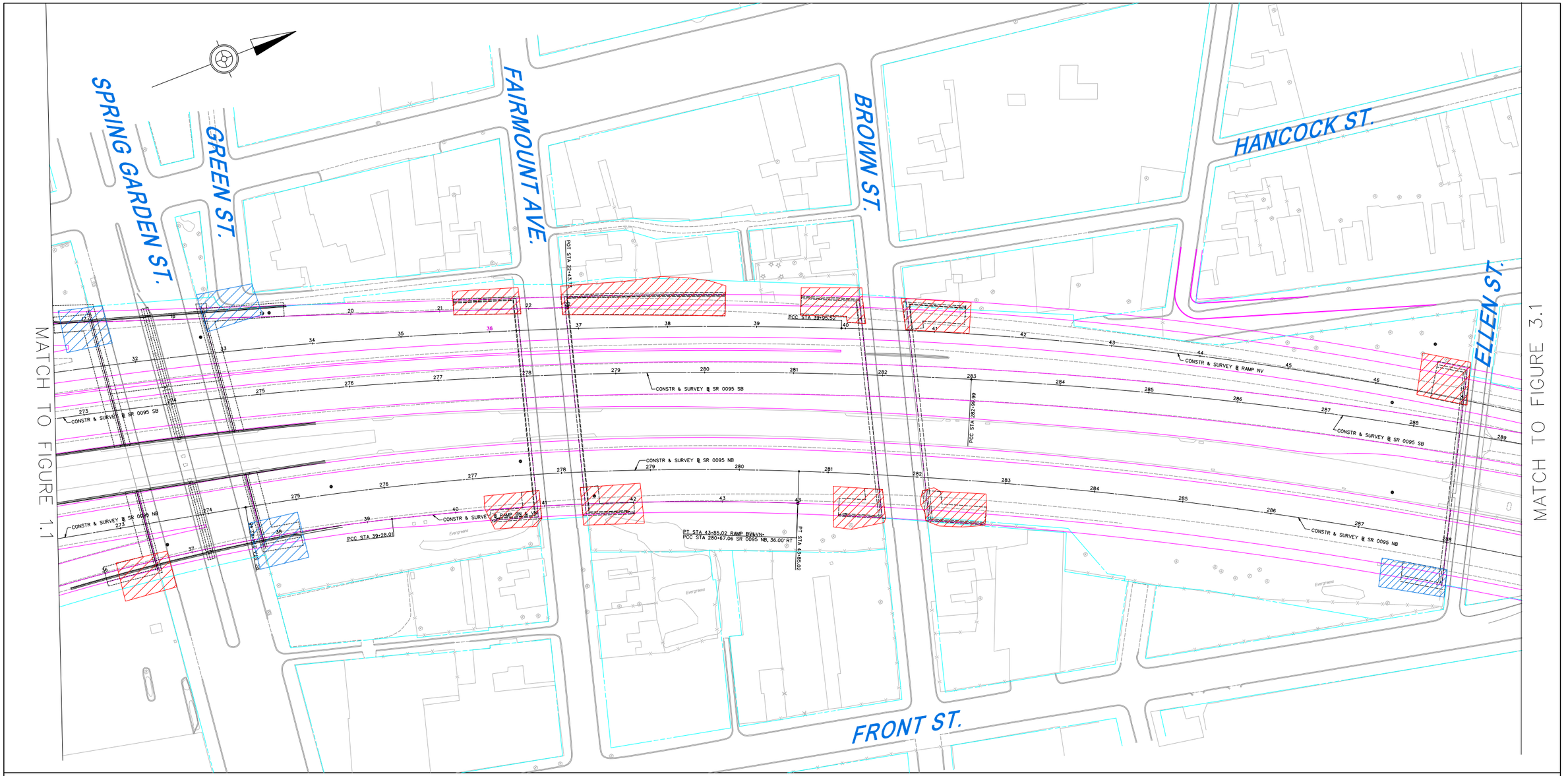


FIGURE 2.1
SECTION 2 - STATION 273+00 TO 289+00 (SOUTH SIDE OF SPRING GARDEN STREET TO ELLEN STREET)

LEGEND:

- NO POTENTIAL
- LOW POTENTIAL
- HIGH POTENTIAL
- PROPOSED EDGE OF PAVEMENT/ SHOULDER
- PROPOSED FOUNDATION

INTERSTATE 95/GIRARD AVENUE INTERCHANGE PROJECT

PHASE Ia ARCHAEOLOGY REPORT

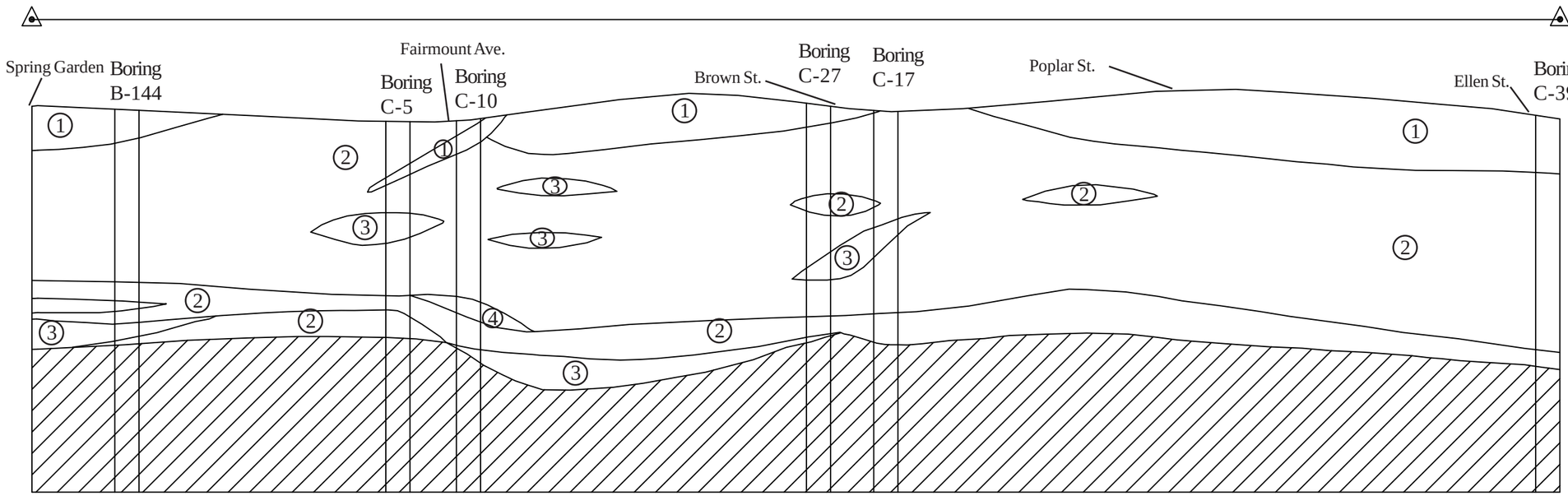
JANUARY 2004

100 0 100 200
SCALE IN FEET

URS

Figure 2.1 Section 2, Archaeological Potential, Stations 273+00 to 289+00 (South Side of Spring Garden to Ellen Street).

SECTION 2



KEY	
_ _ _ _ _ _	Limit of Testing
	Bedrock Mica Schist
△	Datum = +40 Feet AMSL

SOIL KEY	
①	Anthropogenic Soil Fill Horizon with Differential Amounts of Brick, Coal Ash, etc.
②	Stratum of Stone or Gravel, and Sand with or without Fines
③	Stratum of Stone or Gravel with Sand and Silt
④	Stratum of Silt and Sand with or without Coarse Fragments

Horizontal Scale

0 100’

Scale: Feet

0

20’ Vertical Scale

Figure 2.2 Section 2, Soil Profile, Stations 273+00 to 289+00, South Side of Spring Garden Street to Ellen Street.

Plate 2.1 Spring Garden Street, East of I-95.

Plate 2.2 Spring Garden and Front Streets, Southwest Corner.

Plate 2.3 Fairmount Avenue, East of I-95.

Plate 2.4 Fairmount Avenue, West of I-95.

Plate 2.5 Second Street Market, Fairmount Avenue.

Plate 2.6 Front Street Between Fairmount Avenue and Brown Street.

Plate 2.7 Brown Street, East of I-95.

Plate 2.8 Poplar Street, East of I-95.

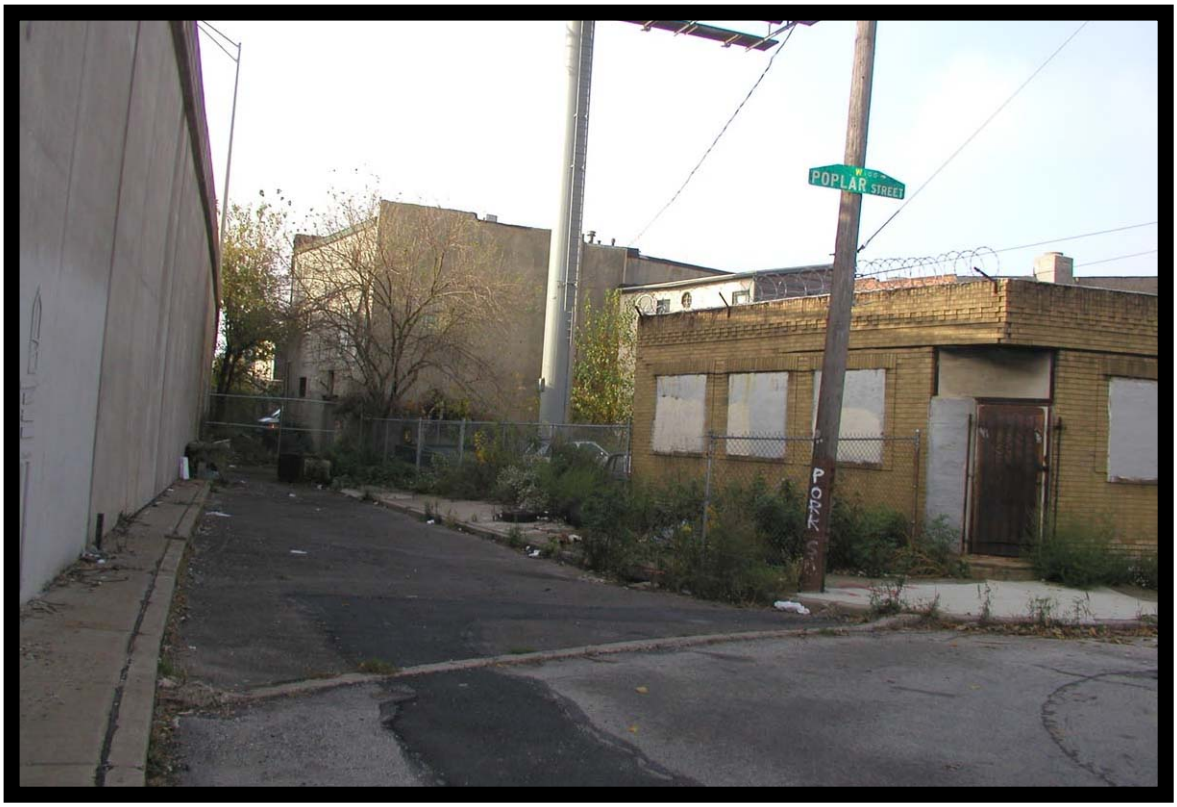


Plate 2.9 Poplar Street, West of I-95, Facing South.

Plate 2.10 Southwest Corner of Front and Poplar Streets.

Plate 2.11 Nectarine Street Between Second and New Market Streets.

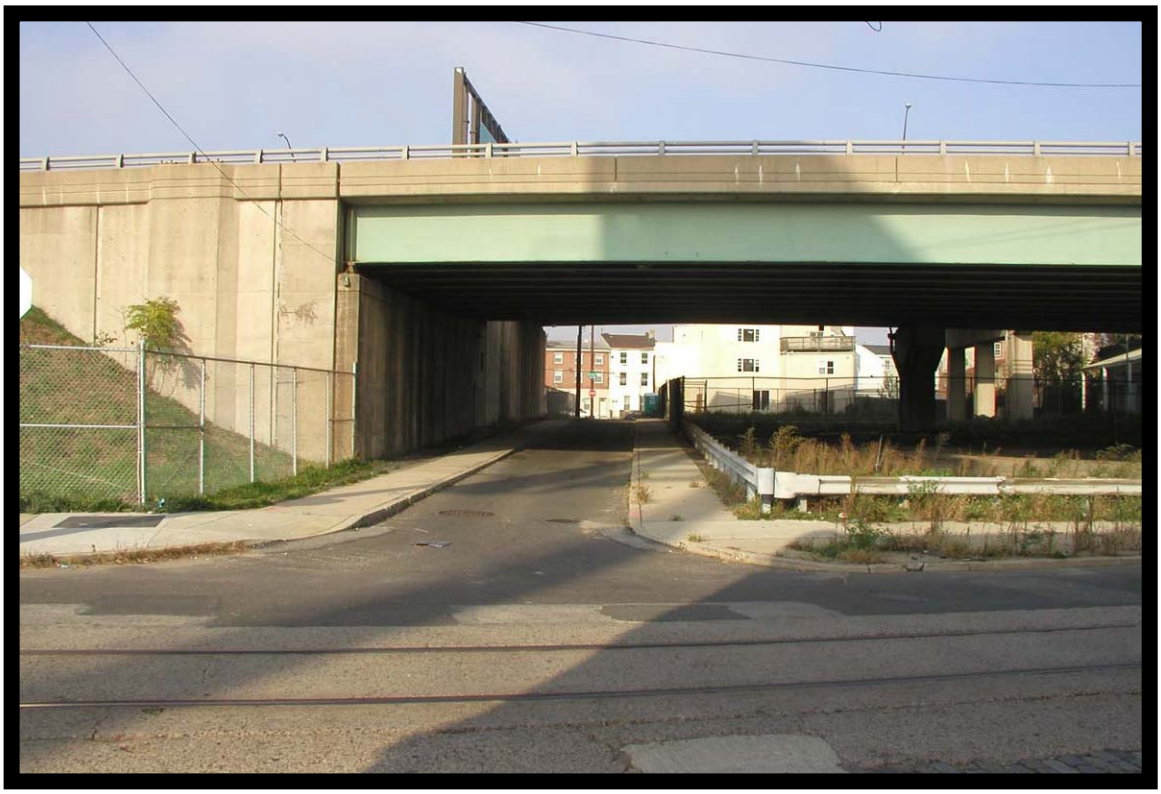


Plate 2.12 Ellen Street, East of I-95.

Plate 2.13 Ellen Street, West of I-95.

Section 3: Stations 289+00 to 304+00
Ellen Street to the South Side of Frankford Avenue

Undertaking

Existing piers will be extended on both the southbound and northbound sides of I-95. Between Ellen Street (Station 289) and East Allen Street (Station 297), seven northbound piers and seven southbound piers will be extended to the east and west (Figure 3.1; also see Plates 3.1 to 3.12). Between East Allen Street (Station 297) and Frankford Avenue (Station 304), five northbound piers and five southbound piers will be extended to the east and west. The fifth northbound pier actually spans the northbound and southbound lanes at the convergence of the two directions of I-95; for ease of discussion, this pier is labeled as a northbound pier.

Section-Specific Environmental Data

The soil-boring schematic (see Figure 1.2) notes that the ancestral Cohocksink Creek meandered south from its northern bedrock-defended position at Marlborough Street in Section 4 to its current underground position at Allen Street. The Holocene portion of the creek's valley was located between Laurel Street and Frankford Avenue (Figure 3.2). Soil-test-boring data for Section 3 was collected from the original construction plans for I-95 Section B-53.

Ellen Street (Station 289+00) and East Allen Street (Station 297+00)

Representative soil profiles located between Ellen Street (Station 289+00) and East Allen Street (Station 297+00) come from C-47 south and C-86 north. Most of the soil profiles consistently contain silt and sand to a depth of two feet, overlaying 35 feet of stone or gravel and sand, followed by mica schist bedrock.

East Allen Street (Station 297+00) and Frankford Avenue (Station 304+00)

Representative soil profiles located between East Allen Street (Station 297+00) and Frankford Avenue (Station 304+00) come from C-73 south, C-82 middle, and C-90 north. The soil profiles mostly contained fill to a depth of 10 feet, capping 20 feet of organic silt. Beneath the remnants of the Cohocksink Creek valley are another 10 feet of stone or gravel and sand to mica schist bedrock, at a depth of 40 feet. URS conducted archaeological monitoring on December 12, 2002, during the excavation of a geomechanical test pit near Station 297+00, adjacent to one of the existing columns. After removal of five feet of fill in one of the two test pits, organic silty clay was exposed. Five artifacts were recovered from the test pit (see historic data below).

Section-Specific History

Ellen Street (Station 289+00) and East Allen Street (Station 297+00)

Going from south to north, the first two piers northbound (3P N1 and 3P N2) and the first two piers southbound (3P S1 and 3P S2) are located within the former W. H. Lear Lumber Yard; 3P N1, 3P S1, and 3P S2 are to be extended within the open area of the lumber yard. Pier 3P N2

will be expanded over a store associated with the lumberyard at 964 Front Street. Adjacent to the store is an alley leading back to seven small, three-story apartments.

Pier 3P S3 will be extended near a former three-story shop front at 118 Laurel Street and, possibly, into Laurel Street.

Piers 3P N3, 3P N4, and 3P S4 are mostly situated within the massive 1916 intersection of Laurel Street, Germantown Avenue, and Front Street.

Pier 3P N5 will be extended within a former automobile shop located at 1007 to 1011 Front Street. Pier 3P S5 will be extended into the backyards of the former two-and-a-half-story dwellings at 1008 and 1010 Front Street.

Pier 3P N6's extension will be near Disston's Building Number 20, a woodworking and machine shop, one of many buildings occupying the entire block of Front and Laurel Streets. Pier 3P N7 will expand within Building Number 12. Disston's "Saw Manufactory" has often been described as the most extensive in the United States and was probably the largest in the world, covering nearly eight acres (Oliver Evans Chapter 1990: 9–6). Disston's buildings were constructed between 1873 and 1907 (Webster 1976: 323).

Pier 3P S6 will extend near a courtyard behind the Church of the Immaculate Conception (listed on the National Register of Historic Places) and Front Street. Pier 3P S7 will extend into a small alley off of 1031 Front Street, across the street from the church. Several small, three-story apartments overlook the misnamed alley, called Bristol Avenue.

East Allen Street (Station 297+00) and Frankford Avenue (Station 304+00)

Piers 3P N8 through 3P N11 and 3P S8 through 3P S12 will be expanded within the former G. & H. Barnett Black Diamond File Works, specifically the steel storage and forge shop between East Allen Street and Richmond Street and the cutting, stripping, grinding, and hardening shops between Richmond and Frankford—places of late-nineteenth-to-early-twentieth-century industry. A recent test pit that was archaeologically monitored near Pier 3P N8 yielded five artifacts (see environmental data above): one asbestos tile, two sherds of a white granite platter (manufactured between 1851 and 1882 with the following maker's mark: "JAMES ED…/DALE…," referring to James Edwards Dalehall Pottery in Burslem, England), and two sherds from a soup tureen lid of blue transfer-printed whiteware, manufactured between 1840 and 1860. The artifacts represent mid-nineteenth-century domestic archaeological deposits underneath the late-nineteenth-century factory construction foundations and fill.

It should be noted that on the 1916 Sanborn map, the Ajax Metal Company was located on Frankford Avenue between East Allen Street and Richmond Street, directly south of the G. & H. Barnett Black Diamond File Works. The Ajax building is still standing and is a contributing element to the Fishtown Historic District.

Pier 3P N12 is actually one span; as mentioned above, the north and southbound lanes of I-95 merge in this location. The pier will be expanded into the former grinding and stripping shops of

the G. & H. Barnett Black Diamond File Works to the east and into the former oven area of a bakery located at 1088 to 1090 Frankford Avenue, at the corner of Wildey Street.

Recommendations

Historic Archaeological Potential

Low Potential

Ellen Street (Station 289+00) and East Allen Street (Station 297+00)
3P N1 to 3P N4
3P S1 to 3P S7

The APEs associated with these extended modern pier construction areas have a low potential for the recovery of intact historic archaeological deposits, given the late-nineteenth-to-early-twentieth-century industrial construction of lumberyards and factories, as well as street and sewer installation. Furthermore, the material remains most likely would not have accumulated within factories and lumberyards previously located in this area. This area's natural soil was most likely cut and filled to install the streets and sewer systems accessed by late-nineteenth-century industries. The earlier historic buildings and their associated features would have been clustered closer to the Cohocksink Creek, as discussed below (see Figure 3.1).

High Potential

East Allen Street (Station 297+00) and Frankford Avenue (Station 304+00)
3P N5 to 3P N12
3P S8 to 3P S12

The APEs associated with these expanded modern pier construction areas have a high potential for containing intact historic deposits. Early Northern Liberties historic structures, eighteenth- through mid-nineteenth-century houses and mills, would have clustered near the Cohocksink Creek. It was noted above that one modern test pit near 3P N8 yielded appropriately dated artifacts beneath fill. The late-nineteenth/early-twentieth-century factories would not have disturbed earlier historic deposits, and the soil profile indicates that the former floodplain of the Cohocksink Creek exists beneath the fill.

Precontact Archaeological Potential

Low Potential

Ellen Street (Station 289+00) and East Allen Street (Station 297+00)
3P N1 to 3P N4
3P S1 to 3P S7

The Delaware River terrace located between Pegg's Run and Cohocksink Creek would have been an opportunistic area for precontact settlement. However, historic disturbance affected all

locations on the former terrace. Nineteenth- and twentieth-century construction in these locations points to a low potential for intact precontact deposits.

High Potential

East Allen Street (Station 297+00) and Frankford Avenue (Station 304+00)
3P N5 to 3P N12
3P S8 to 3P S12

A high potential for precontact archaeological deposits exists within this location, given the presence of alluvial soils beneath fill at the confluence of the Cohocksink Creek and the Delaware River. Historically, the Philadelphia Streets and Sewer Departments would have filled this area rather than remove land.

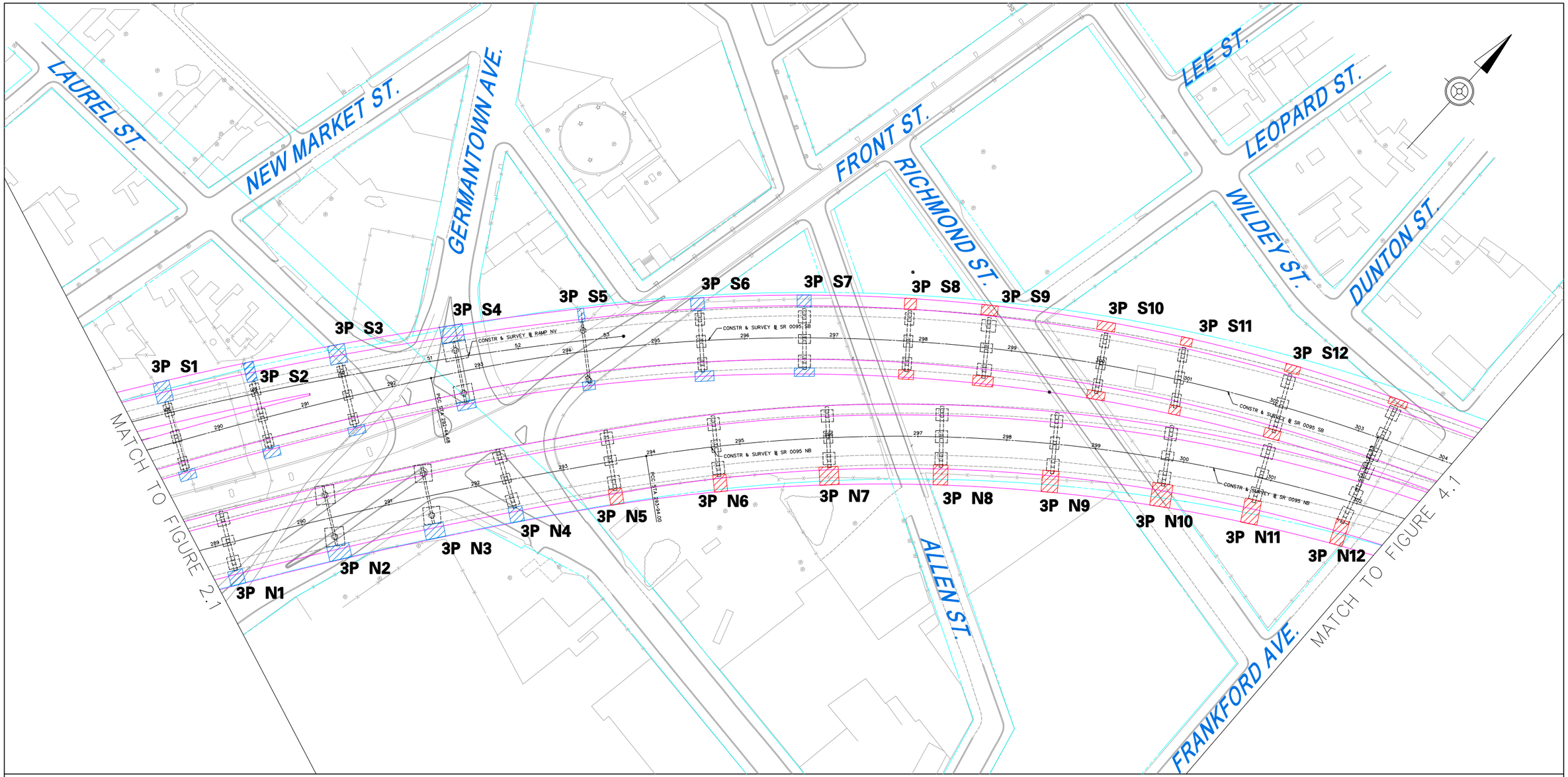


FIGURE 3.1
SECTION 3 - STATION 289+00 TO 304+00 (ELLEN STREET TO SOUTH SIDE OF FRANKFORD AVENUE)

LEGEND:

- NO POTENTIAL
- LOW POTENTIAL
- HIGH POTENTIAL
- PROPOSED EDGE OF PAVEMENT/ SHOULDER
- PROPOSED FOUNDATION

INTERSTATE 95/GIRARD AVENUE INTERCHANGE PROJECT

PHASE Ia ARCHAEOLOGY REPORT

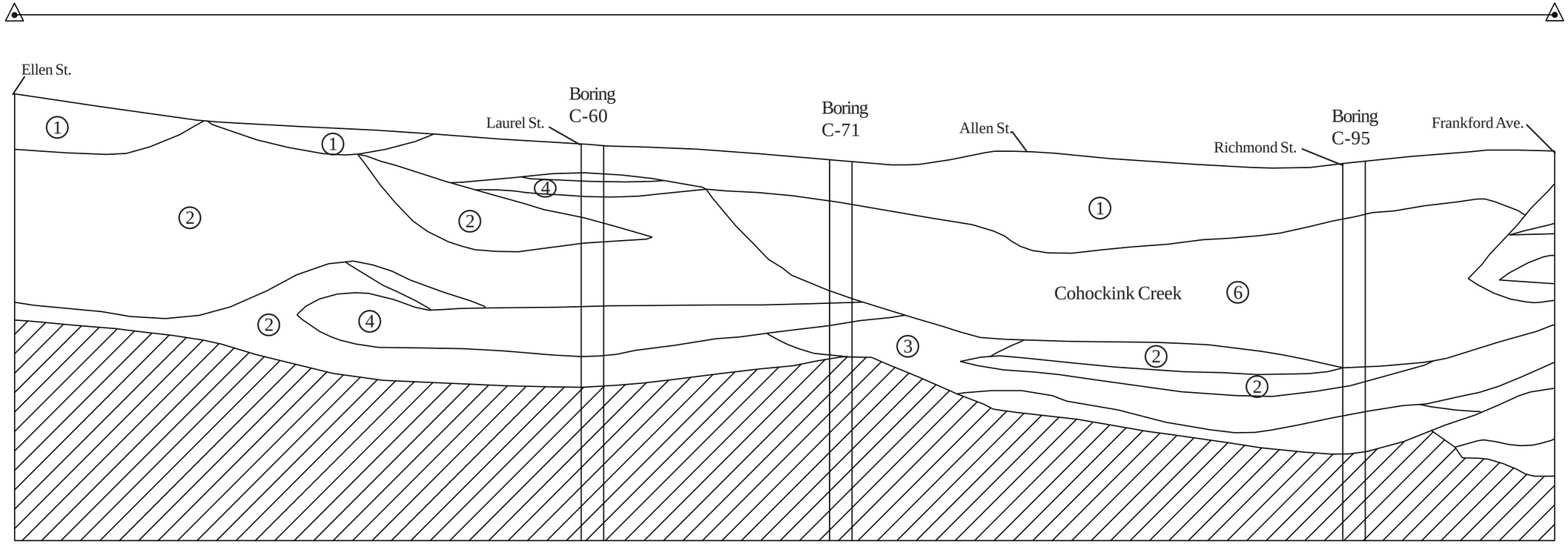
JANUARY 2004

100 0 100 200
SCALE IN FEET

URS

Figure 3.1 Section 3, Archaeological Potential, Stations 289+00 to 304+00 (Ellen Street to South Side of Frankford Avenue).

SECTION 3



KEY	
	Bedrock Mica Schist
	Datum = +40 Feet AMSL

SOIL KEY	
1	Anthropogenic Soil Fill Horizon Differential Amounts of Brick, Coal Ash, etc.
2	Stratum of Stone or Gravel, and Sand with or without Fines
3	Stratum of Stone or Gravel with Sand and Silt
4	Stratum of Silt and Sand with or without Coarse Fragments
6	Organic Muck/Silt

Horizontal Scale

0 100’

Scale: Feet

0

20’ Vertical Scale

Figure 3.2 Section 3, Soil Profile, Station 289+00 to 304+00, Ellen Street to South Side of Frankford Avenue.

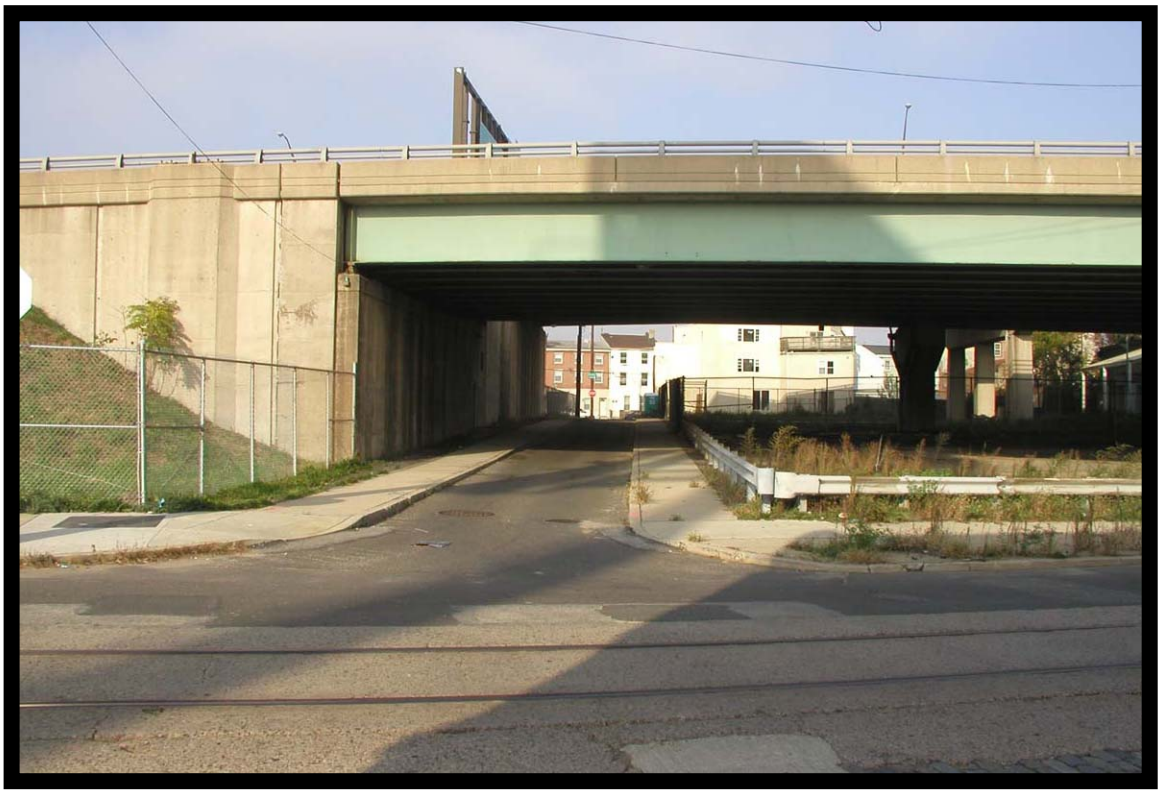


Plate 3.1 Ellen Street, East of I-95.

Plate 3.2 Ellen Street, West of I-95.

Plate 3.3 Laurel Street, Representing All Sides of I-95.

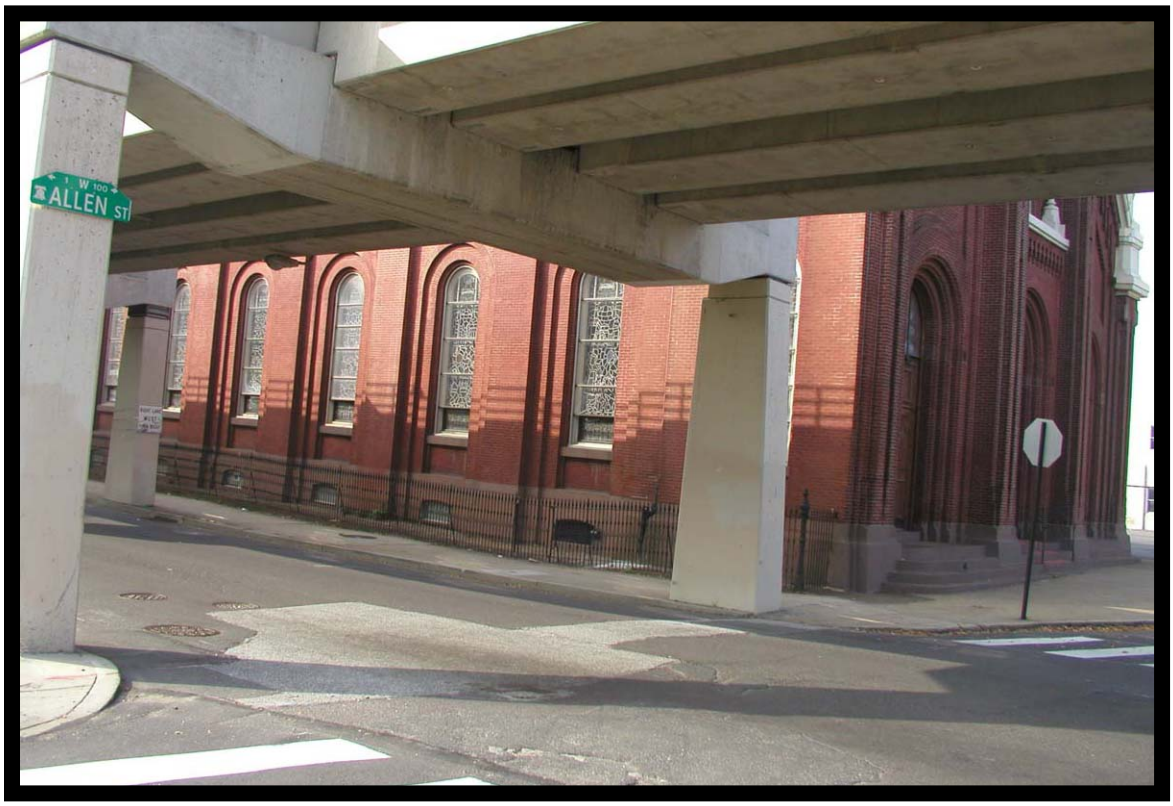


Plate 3.4 Allen Street, East of I-95.

Plate 3.5 Allen Street, Cohocksink Canal.

Plate 3.6 Richmond Street, East of I-95.

Plate 3.7 Richmond Street, East of I-95, Facing North.

Plate 3.8 Richmond Street.

Plate 3.9 Richmond Street, West of I-95.

Plate 3.10 Frankford Avenue, East of I-95.

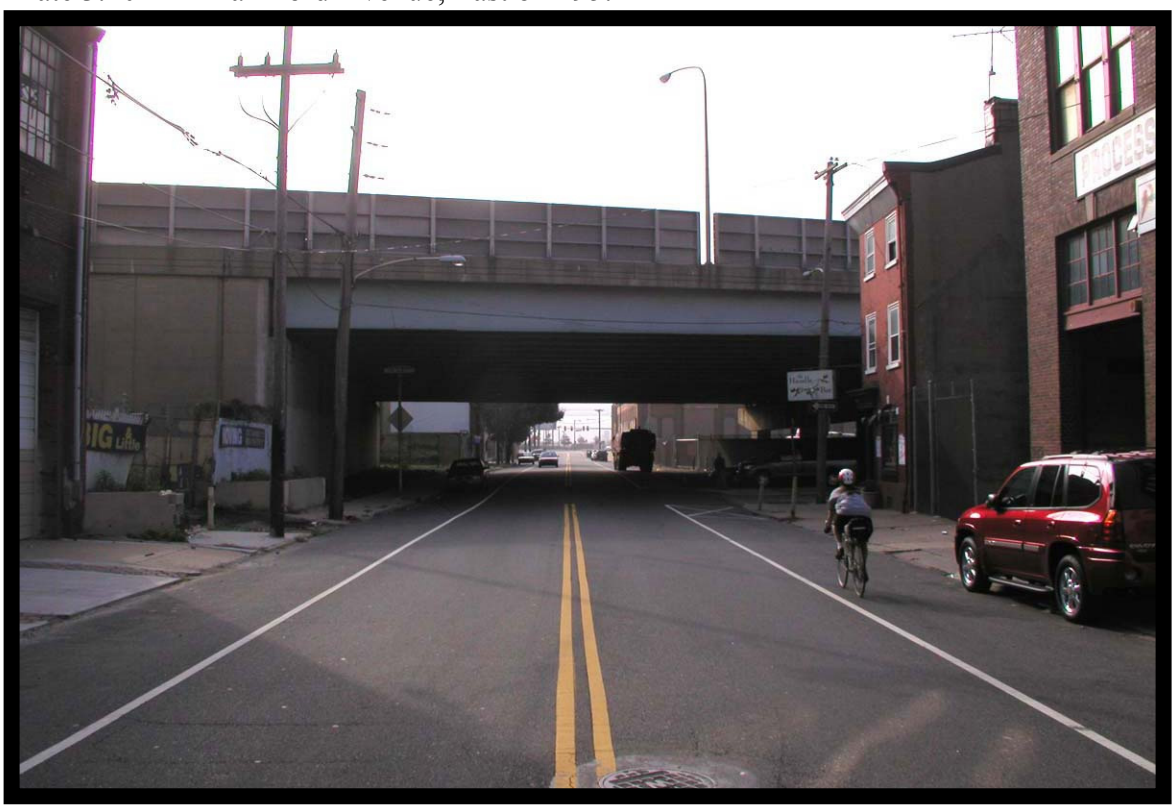


Plate 3.11 Frankford Avenue, West of I-95.

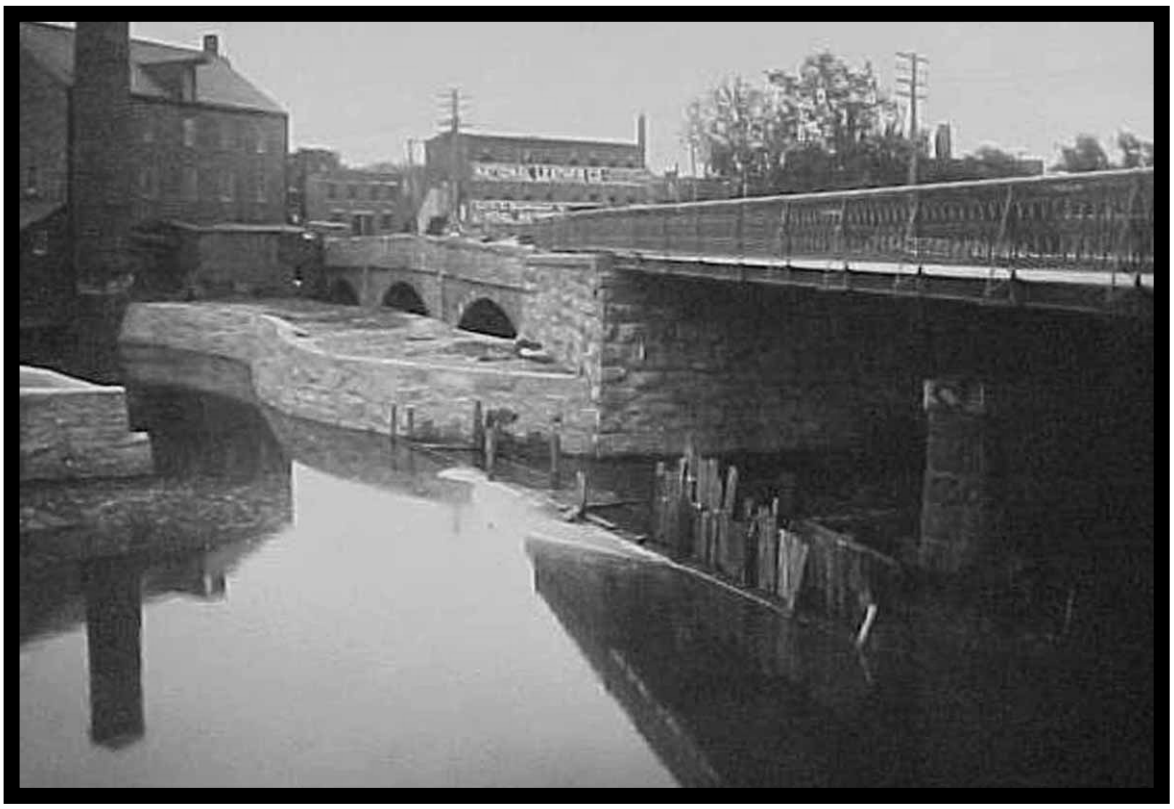


Plate 3.12 Frankford Avenue and Front Street, Cohocksink Canal.

Section 4: Stations 304+00 to 324+00
Northeast Side of Frankford Avenue to the South Side of Palmer Street

Undertaking

The widened portions of the highway will generally extend east to the Delaware River. Minimal widening will occur on the west side of I-95, toward the city, in this section—with the exception of the southwest side of Palmer Street. It is expected that the minimal abutment widening to the west will be within the original construction area of I-95 and will be disturbed. The highway will be constructed on fill with single-span bridges over Shackamaxon Street, Marlborough Street, and Columbia Avenue. New piles will be driven and will rest on mica schist bedrock; new abutments and wingwalls will replace old abutments and wingwalls in the same locations. A retaining wall will be constructed to a depth of three to five feet beyond the expanded northbound lanes. The key wingwall and abutment widening will occur along the northbound lanes, or the east side of the existing highway. The following locations will be affected: the northeast side of Frankford Avenue (Station 304+00), Shackamaxon (Station 309+00), Marlborough (Station 315+00), Columbia (Station 319+00), and the southeast and west sides of Palmer Street (Station 324+00) (Figure 4.1; see also Plates 4.1 to 4.7).

Section-Specific Environmental Data

Northeast Side of Frankford Avenue (Station 304+00)

Soil-test-boring data for Section 4 was collected from the original construction plans for I-95 Section B-56. A representative northeast Frankford Avenue intersection soil profile is found in C-106 (Figure 4.2). The soil profile consists of a 0.3-foot concrete sidewalk, capping ash fill for another seven feet. A more-natural soil profile continues with five feet of brown silt containing small amounts of fine sand, followed by three feet of brown, medium-to-fine sand and silt. Brown, coarse-to-fine sand with medium-to-fine gravel continues for another four feet. A rather deep soil layer of brown, fine sand and silt continues for nearly 15 feet. Gray, fine sand and clayey silt is mixed for another 4.5 feet, followed by clayey silt for 6.5 feet. Finally, a reddish-brown, coarse-to-fine sand with stone fragments extends for another 18 feet to bedrock (see Figure 4.1).

Shackamaxon Street (Station 309+00)

Representative Shackamaxon Street intersection soil profiles come from C-113 (southeast) and C-117 (northeast). The soil profiles consist of 0.1 foot of red brick, capping four feet of brown silt with small amounts of fine sand and wood. Brown silt only underlies the fill for another four feet; then a brown, fine sand and silt layer is exposed for the next two feet. Brown, coarse-to-fine sand with medium gravel continues for another six feet. Some silt is revealed in essentially the same soil layer above for another six feet. A rather deep soil layer of brown silt continues for nearly 13 feet. A 2.5-foot layer of brown, fine sand and silt is revealed over the next 2.5 feet. A thin, gray silt layer, 0.5 feet wide, caps a soil layer of gray, fine sand for another five feet. The soil package here is extremely deep. At a depth of 70 feet is an organic silt layer, possibly the remnant of the Cohocksink Creek mouth, as discussed above.

Marlborough Street (Station 315+00)

Representative Marlborough Street intersection soil profiles come from C-124 (southeast) and C-128 (northeast). These soil profiles consist of one foot of concrete fill with cinders, capping 2.5 feet of brown, fine sand and silt. Brown, coarse-to-fine sand with medium-fine gravel and some silt extends for another six feet. Thin, gray and brown clayey silt with a trace of sand, 1.5 feet thick, is followed by a six-foot-thick, brown, fine sand and silt. Two thin soil layers follow: brown, coarse-to-fine sand and silt (1.5 feet); and gray and brown fine sand and silt (1.5 feet). A 10-foot-thick, mottled gray brown to gray white to brown, coarse-to-fine sand with a little silt soil layer follows. A gray silt layer, three feet thick, underlies the thick, mottled soil horizon. A 12.5-foot-thick, brown, organic, silt soil layer lies 33 feet below the surface. The soil package here is extremely deep to bedrock.

Nearby soil borings C-126, C-127, and C-128 also revealed a dark brown, organic silt with a trace of charred wood at depths of 32, 30, and 35 feet, respectively. The organic silt layer is possibly a remnant of the Cohocksink Creek mouth, as discussed above.

Columbia Street (Station 319+00)

Representative Columbia Street intersection soil profiles come from C-138 (southeast) and C-145 (northeast). These soil profiles consist of five feet of concrete, cinder, and red brick fill, capping five feet of brown silt with some fine sand. Brown, coarse-to-fine sand with medium gravel extends for another five feet. A gray white, coarse-to-fine sand and medium-to-fine gravel make up a thick, 9-foot soil layer. Three layers, each three feet thick, continue down: gray white, medium-to-fine sand; brown, medium-to-fine sand and silt; and, lastly, gray white, medium-to-fine sand. The final soil layer is composed of a 7.5-foot-thick, gray brown decomposed mica schist layer resting on bedrock. Overall, these are very shallow soil profiles with bedrock climbing nearly to the surface. The presence of bedrock so near the surface explains how the mouth of the Cohocksink Creek was bedrock defended and slowly migrated downstream.

South Side Palmer Street (Station 324+00)

A representative southeast side of Palmer Street intersection soil profile is found in C-157. The soil profile consists of one foot of red brick mixed with brown clayey silt and gravel, followed by two feet of gray brown silt. Brown, coarse-to-fine sand and stone fragments extended for another four feet. A gray brown silt makes up the next three-foot soil layer. The final soil layer is composed of a 15.5-foot-thick, gray black decomposed mica schist layer resting on bedrock. Overall, this profile is very shallow, with bedrock climbing nearly to the surface. As noted above, the presence of bedrock so close to the surface illustrates how the mouth of the Cohocksink Creek was bedrock defended and slowly migrated downstream.

Section-Specific History

Northeast Side of Frankford Avenue (Station 304+00)

A two-story tin shop was located at 1015 to 1017 Frankford Avenue, as depicted on the 1916 Sanborn map.

Shackamaxon Street (Station 309+00)

Southeast. The following historic properties were located near the expansion of the wingwall abutment in the area. A three-story dwelling stood at 1008 Shackamaxon Street; the backyards of three-story homes at 157 and 159 Richmond Street were also located nearby. An automobile club existed in the garage behind 159 Richmond Street. A two-story steam laundry was located at 155 Richmond Street; its engines were located in the rear. A three-story store stood on the corner, at 161 Richmond Street.

Northeast. A small alley separated a three-story twin located at 1007 and 1009 Shackamaxon Street from the two-story store at 1011 Shackamaxon Street. The alley leads to the backyards of several small, two-story row homes formerly fronting Emery Street (addresses 202 through 210).

Marlborough Street (Station 315+00)

Southeast. A two-story machinery shop, office, and storage were located at 251 to 253 Richmond Street, at the corner with Marlborough Street.

Northeast. Three stores were located on the opposite corner at 301, 303, and 305 Richmond Street. Two dwellings were located at 307 and 309 Richmond Street. Separated by an alley, 313 Richmond Street was the Birely House (circa 1859), home of a shipbuilder. The house was demolished with the other nearby building in 1969 during the original construction of I-95.

Columbia Street (Station 319+00)

Southeast. Most of the wingwall and abutment widening may extend into the middle of former Richmond Street. However, this work may affect the original southeast corner of Columbia and Richmond Streets, the former location of the Keyser-Wainwright Building (circa 1850), at 336 Richmond Street. The building was demolished in 1968.

Northeast. Most of the wingwall and abutment widening may extend into the middle of former Richmond Street. At 400 Richmond, on the opposite corner from 336 Richmond, stood the Michael Day house (circa 1866), demolished in 1968.

Palmer Street (Station 324)

Southeast. Most of the wingwall and abutment widening may extend into the middle of former Richmond Street. However, the project may affect the original northwest corner of Palmer and Richmond Streets, the former locations of three stores: 457, 459, and 461 Palmer Street.

Southwest. The wingwall-abutment widening may impact the former three-story houses on Palmer Street, addresses 1012 through 1016, and their backyards.

Recommendations

Historic Archaeological Potential

High Potential

Northeast Side of Frankford Avenue (Station 304+00)
Shackamaxon Street (Station 309+00)
Marlborough Street (Station 315+00)
Columbia Street (Station 319+00)
Palmer Street (Station 324+00)

All wingwall-abutment APEs are locations formerly occupied by the densely packed residential homes and businesses of Fishtown. These structures were constructed prior to the installation of the Philadelphia sewer system in the late nineteenth century, suggesting a high potential for intact historic deposits (namely, deep shaft features such as a privies and cisterns) in these locations (see Figure 4.1).

Precontact Archaeological Potential

Low Potential

Northeast Side of Frankford Avenue (Station 304+00)
Shackamaxon Street (Station 309+00)
Marlborough Street (Station 315+00)
Columbia Street (Station 319+00)
Palmer Street (Station 324+00)

Although located on a former terrace of the Delaware River between Cohocksink Creek and Gunner's Run, the soils in this section indicate a low potential for precontact deposits, given the amount of historic disturbance—especially disturbance in the form of historic street elevation leveling and the late-nineteenth-century installation of sewers.

Monitoring

A retaining wall will be built between the abutments on both the northbound and southbound sides of I-95 to a depth of three to five feet and minimal abutment widening to the west will be within the original construction area of I-95. The wall and abutment construction APE will be archaeologically monitored, because it is expected that only fill will be exposed. Monitoring, if needed, will be determined and guided by the results of any future Section 4 Phase IB archaeological testing at the high- and low-potential abutment APEs.

Block 1 A/B = 0-500 501-1000 1001-1500 1501-200

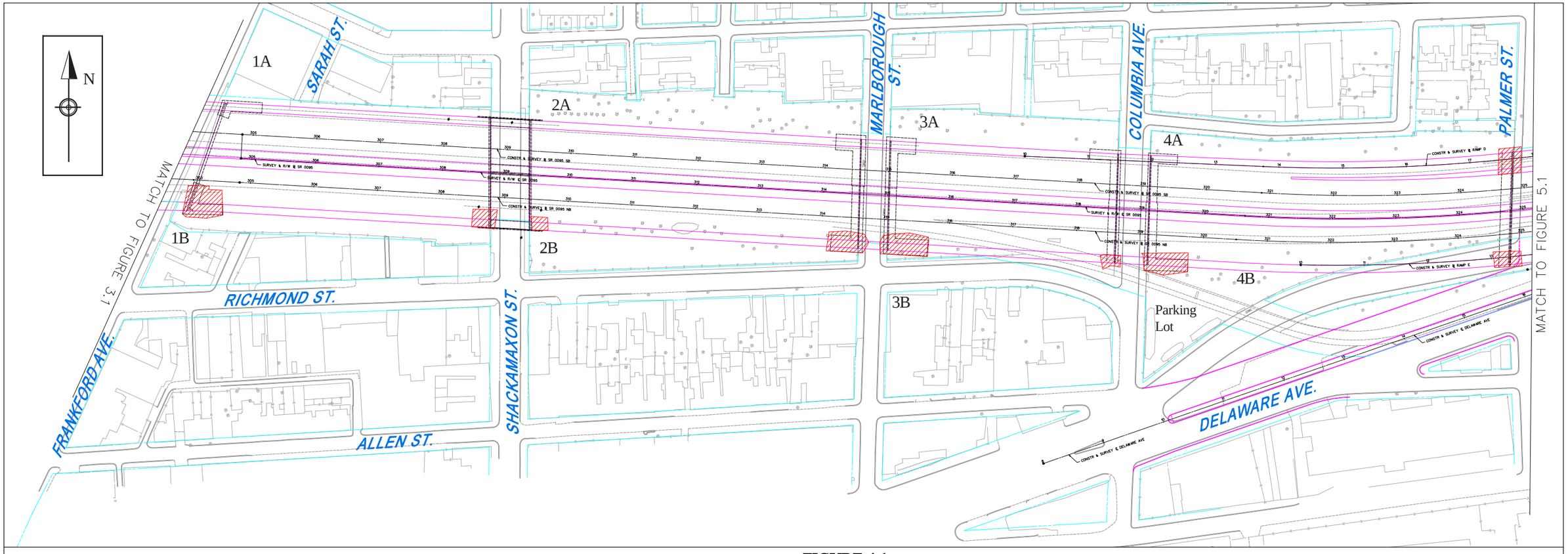


FIGURE 4.1
SECTION 4 - STATION 304+00 TO 324+00 (NORTH SIDE OF FRANKFORD AVENUE TO PALMER STREET)

LEGEND:

- NO POTENTIAL
- LOW POTENTIAL
- HIGH POTENTIAL
- PROPOSED EDGE OF PAVEMENT/SHOULDER
- PROPOSED FOUNDATION

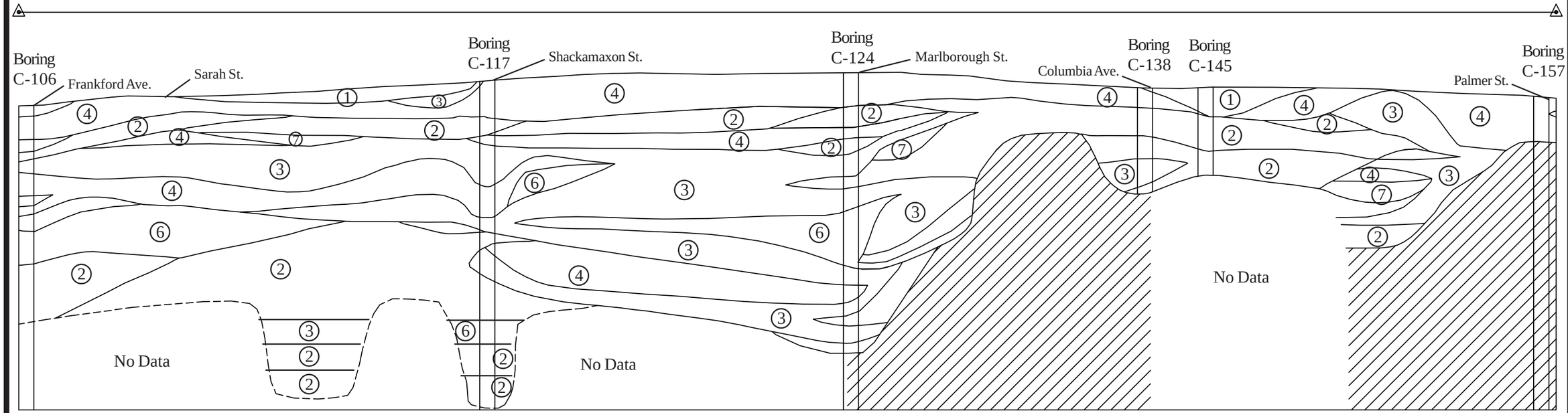
INTERSTATE 95/GIRARD AVENUE INTERCHANGE PROJECT
PHASE Ia ARCHAEOLOGY REPORT
JANUARY 2004

100 0 100 200
SCALE IN FEET

URS

Figure 4.1 Section 4, Archaeological Potential, Stations 304+00 to 324+00 (North Side of Frankford Avenue to Palmer Street).

SECTION 4



KEY	
	Limit of Testing
	Bedrock Mica Schist
	Datum = +40 Feet AMSL

SOIL KEY	
1	Anthropogenic Soil Fill Horizon with Differential Amounts of Brick, Coal Ash, etc.
2	Stratum of Stone or Gravel, and Sand with or without Fines
3	Stratum of Stone or Gravel with Sand and Silt
4	Stratum of Silt and Sand with or without Coarse Fragments
5	Stratum of Silt or Clay
6	Organic Muck/Silt
7	Fine Sand

Horizontal Scale

0 100’

Scale: Feet

0

20’

Vertical Scale

Figure 4.2 Section 4, Soil Profile, Stations 304+00 to 324+00, North Side of Frankford Avenue to Palmer Street.

Plate 4.1 Frankford Avenue, East of I-95.

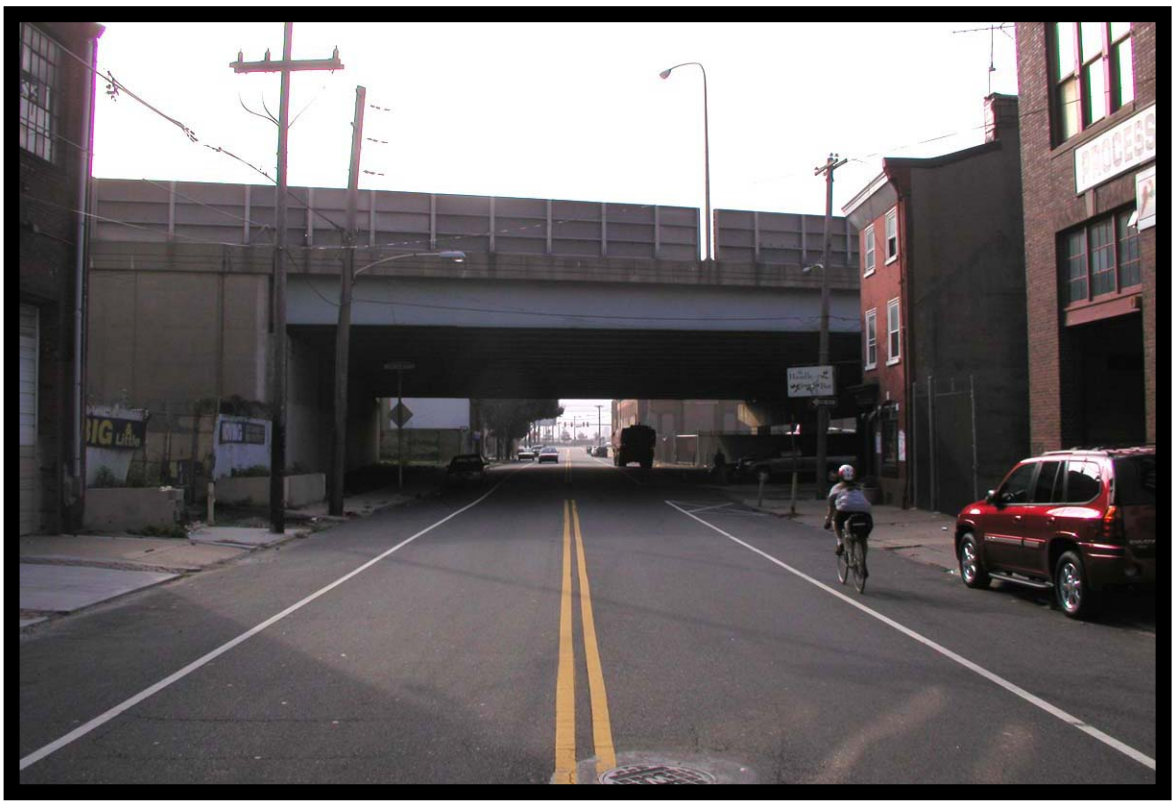


Plate 4.2 Frankford Avenue, West of I-95.

Plate 4.3 Shackamaxon Street, East of I-95.

Plate 4.4 Shackamaxon Street, West of I-95.

Plate 4.5 Marlborough Street, West of I-95.

Plate 4.6 Palmer Street, East of I-95.

Plate 4.7 Palmer Street, West of I-95.

Section 5: Stations 325+00 to 333+00
North Side of Palmer Street to Berks Street

Undertaking

Existing I-95, in both the northbound and southbound directions, is on viaduct structure in Section 5. In the proposed condition, a new viaduct will support northbound I-95 with the placement of six new piers (5P N1 through 5P N6) in new locations supported by piles driven to bedrock (Stations 326+00, 327+00, 329+00, 330+00, 331+00, 332+00). Southbound I-95 will be roadway on fill with single-span bridges over Montgomery Avenue and Berks Street. New abutments (Station 333+00) will be constructed to the north and south of Berks Street under southbound I-95 and to the north of Berks Street under northbound I-95. New abutments will be constructed to the north and south of Montgomery Avenue under southbound I-95 at Stations 329+00 and 330+00. A new abutment will also be constructed to the north of Palmer Street under southbound I-95 (Figure 5.1; also see Plates 5.1 to 5.8). Delaware Avenue will also be realigned in Section 5 (see Figure 5.1).

Also, there will be retaining walls on both the east and west sides of southbound I-95 between Palmer and Montgomery and between Montgomery and Berks.

Section-Specific Environmental Data

Soil-test-boring data for Section 5 was collected from the original construction plans for I-95 Section C-1. Specifically, soil borings were taken at the following locations: C-106 at Pier 5P N1; C-109 at Pier 5P N2; C1-4 at Pier 5P N3; C1-9 near Piers 5P N4 and 5P N5; and C1-12 near Pier 5P N6 and the abutments at Berks Street.

Piers 5P N1 and 5P N2 and the Northwest Abutment at Palmer Street (Station 326+00 and 327+00)

Soil profiles near the first two piers (taken from C-106 and C-109) are similar and consist of two feet of brown silty clay overlaying six feet of fine, brown and gray sand. The next six-foot soil layer is brown, fine sand with traces of mica overlaying nine feet of decomposed mica schist. Bedrock is present in Section 5 to within 14 feet of the ground surface; as the bedrock profile continues north, it terminates to within 10 feet of the surface (Figure 5.2).

Pier 5P N3 and the Southwest and Northwest Abutments at Montgomery Avenue (Station 329+00)

The soil profiles near Pier 5P N3 contains three feet of cinder fill, capping four feet of brown, silty sand, overlaying five feet of brown sand and gravel. Decomposed mica schist is the final soil layer, starting at 12 feet below the present ground surface.

Piers 5P N4 and 5P N5 (Stations 330+00 and 331+00)

The soil profiles near Pier 5P N4 contain one foot of cinder fill, capping 11 feet of brown sand and silt, overlaying decomposed mica schist at a depth of 11 feet below the present ground surface.

Pier 5P N6 and the Berks Street Abutments (Stations 332+00 and 333+00)

The soil profiles near Pier 5P N6 and the Berks Street abutment consist of three feet of black cinders and gravel fill, capping eight feet of brown, fine sand and silt, overlaying decomposed mica schist at a depth of 11 feet below the present ground surface.

Section-Specific History

New pier locations within Section 5 are approximate and may shift. Piers 5P N1 through P5 N4 will be positioned at intervals of 125 feet. Piers 5P N5 and P5 N6 will be placed at 80-foot intervals. Numerous businesses and homes were located along the 500 block of Richmond Street. Shifting of the pier locations will only result in affecting the former locations of adjacent houses or stores mentioned below.

Piers 5P N1 and 5P N2 and the Northwest Abutment at Palmer Street (Station 326+00 and 327+00)

Pier 5P N1 will be placed within the backyards and former locations of two three-story dwellings at 505 and 507 Richmond Street. The pier will then extend into the middle of historic Richmond Street. Pier 5P 2N will be placed within the backyards of a two-and-half-story dwelling formerly located at 519 Richmond Street, as well as a three-story dwelling at 521 Richmond Street. The pier will then extend into the middle of historic Richmond Street. The Richmond Street dwellings were located across the street from William Cramp & Sons Ship & Engine Building Company.

The northwest abutment at Palmer Street will be placed near the former locations of four three-story dwellings at 1007 to 1013 Palmer Street and a three-story shop formerly located on the corner of Palmer and Salmon Streets, at 1015 Palmer Street.

Pier 5P N3 and the Southwest and Northwest Abutments at Montgomery Avenue (Station 329+00)

Pier 5P N3 will be placed within the backyard of a two-and-a-half-story dwelling formerly located at 531 Richmond Street; an iron storage area, accessed by a driveway, was located directly behind the house. The new pier will also affect the former location of a three-story dwelling at 533 Richmond Street. The pier will then extend into the middle of historic Richmond Street. The Richmond Street dwellings were located across the street from the Stroud & Wilgus Lumberyard and stores at 532 and 534 Richmond Street.

The southwest abutment at Montgomery Avenue will expand into the former location of three-story dwellings at 1016 and 1018 Montgomery Avenue. The George Chandler Public School yard is still located adjacent to these former dwellings on Montgomery Avenue (the school is listed on the National Register of Historic Places). The northwest abutment will be expanded near a former two-story shop located at 1017 Montgomery Avenue and three two-and-a-half-story dwellings at 1019 to 1023 Montgomery Avenue.

Pier 5P N4 and 5P N5 (Stations 330+00 and 331+00)

Pier 5P N4 will be placed within the backyards of two small, three-story houses formerly located at 1011 and 1013 East Montgomery Avenue, a three-story shop at 603 Richmond Street, and a two-story house at 605 Richmond Street.

Pier 5P N5 will be placed within the former locations of six small, three-story apartment buildings. A covered alley located at 619 Richmond Street provided access to the apartments. The top rear view of the apartments would have overlooked a contractor's yard and shed located at 623 Richmond Street.

Pier 5P N6 and the Berks Street Abutments (Stations 332+00 and 333+00)

Pier 5P N6 will be placed within the contractor's yard of the William Cummings Bolt Works and the oven area of the Gotlieb Bakery. Access to the contractor's yard is at 623 Richmond Street, on either side of the contractor's shed (625 Richmond Street). Gotlieb bakery was located at 635 Richmond Street, at the corner of East Berks Street.

The northeast Berks Street abutment will be expanded into the location of a former two-story dwelling at 1013 East Berks Street and the rear area behind a store formerly located at 705 Richmond Street. The former locations of two two-and-a-half-story dwellings and their backyards, at 1028 and 1030 Berks Street, are near the southwest abutment expansion APE. Two-and-a-half and three-story dwellings and their backyards once stood across the street at 1035 and 1037 Berks Street, where the northwest abutment will be expanded.

Recommendations

Historic Archaeological Potential

High Potential

Piers 5P N1 and 5P N2 and the Northwest Abutment at Palmer Street (Station 326+00 and 327+00)
Pier 5P N3 and the Southwest and Northwest Abutments at Montgomery Avenue (Station 329+00)
Pier 5P N4 and 5P N5 (Stations 330+00 and 331+00)
Pier 5P N6 and the Berks Street Abutments (Stations 332+00 and 333+00)

All abutment APEs are locations formerly occupied by the densely packed residential homes and businesses of Fishtown. These structures were constructed prior to the installation of the

Philadelphia sewer system in the late nineteenth century, suggesting a high potential for intact historic deposits (namely, deep shaft features such as a privies and cisterns) in these locations.

The William Cramp & Sons Ship and Engine Building Co., started in 1830, was destined to become one of the foremost private shipyards in America, especially due to the advent of the steam engine. The company was not so far removed in time and space from Mr Fitch's first steam-powered boat. Workers who lived on Palmer, Montgomery, Berks, and Richmond Streets no doubt worked in the shipyards and other small manufacturing companies.

Precontact Archaeological Potential

Low Potential

Piers 5P N1 and 5P N2 and the Northwest Abutment at Palmer Street (Station 326+00 and 327+00)
Pier 5P N3 and the Southwest and Northwest Abutments at Montgomery Avenue (Station 329+00)
Pier 5P N4 and 5P N5 (Stations 330+00 and 331+00)
Pier 5P N6 and the Berks Street Abutments (Stations 332+00 and 333+00)

Although located on a former terrace of the Delaware River between Cohocksink Creek and Gunner's Run, the soils in this section indicate a low potential for precontact deposits, given the amount of historic disturbance—especially disturbance in the form of historic street elevation leveling and the late-nineteenth-century installation of sewers.

Monitoring

A retaining wall will be built on both the east and west sides of southbound I-95, between Palmer and Montgomery and between Montgomery and Berks, to a depth of three to five feet. The wall and abutment construction APE will be archaeologically monitored, as it is expected that only fill will be exposed. Monitoring, if needed, will be determined and guided by the results of any future Section 5 Phase IB archaeological testing at the high- and low-potential abutment APEs.

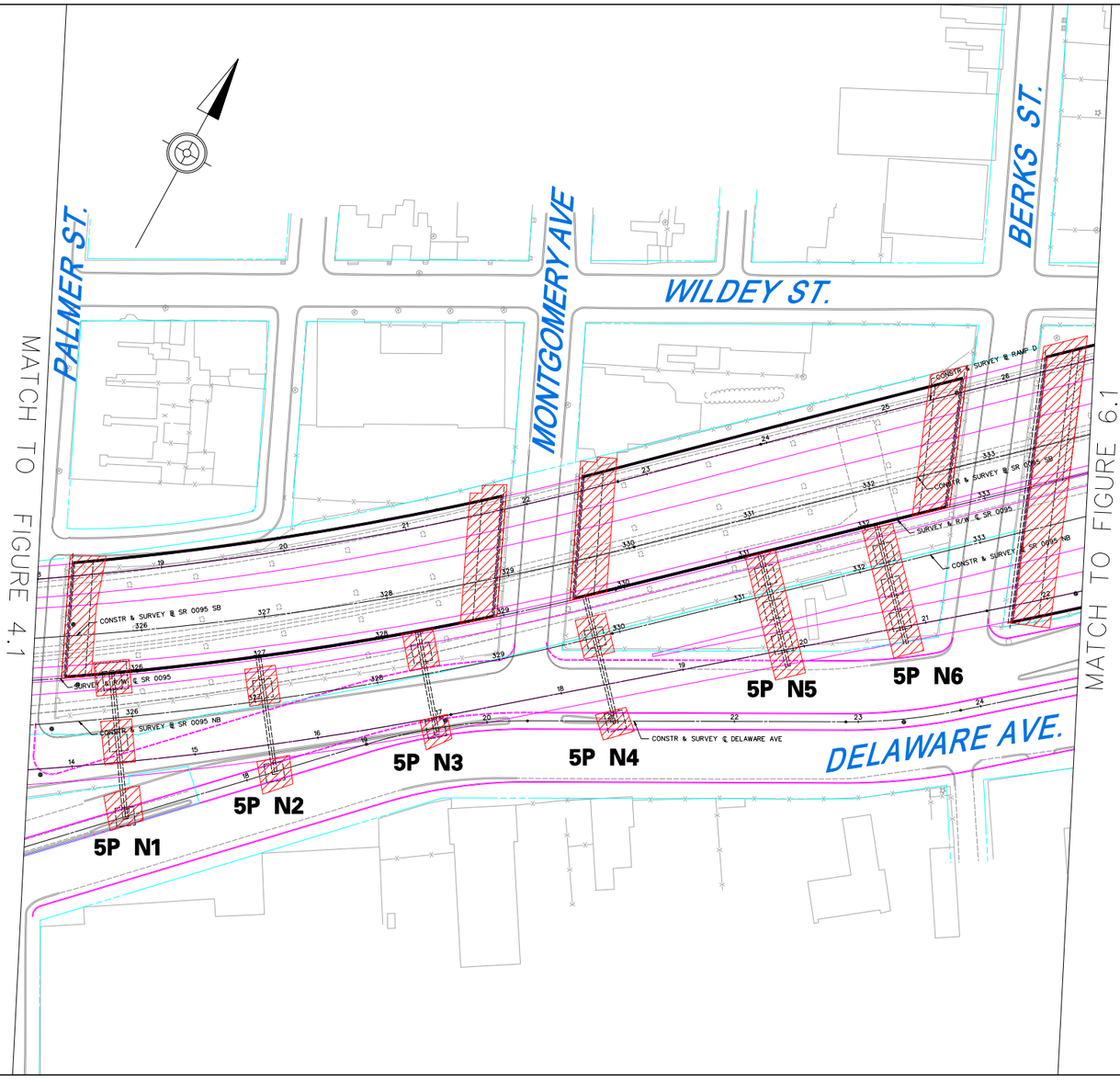


FIGURE 5.1
SECTION 5 - STATION 325+00 TO 333+00 (PALMER STREET TO BERKS STREET)

LEGEND:

- NO POTENTIAL
- LOW POTENTIAL
- HIGH POTENTIAL
- PROPOSED EDGE OF PAVEMENT/ SHOULDER
- PROPOSED FOUNDATION

INTERSTATE 95/GIRARD AVENUE INTERCHANGE PROJECT

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Figure 5.1 Section 5, Archaeological Potential, Stations 325+00 to 333+00 (Palmer Street to Berks Street).

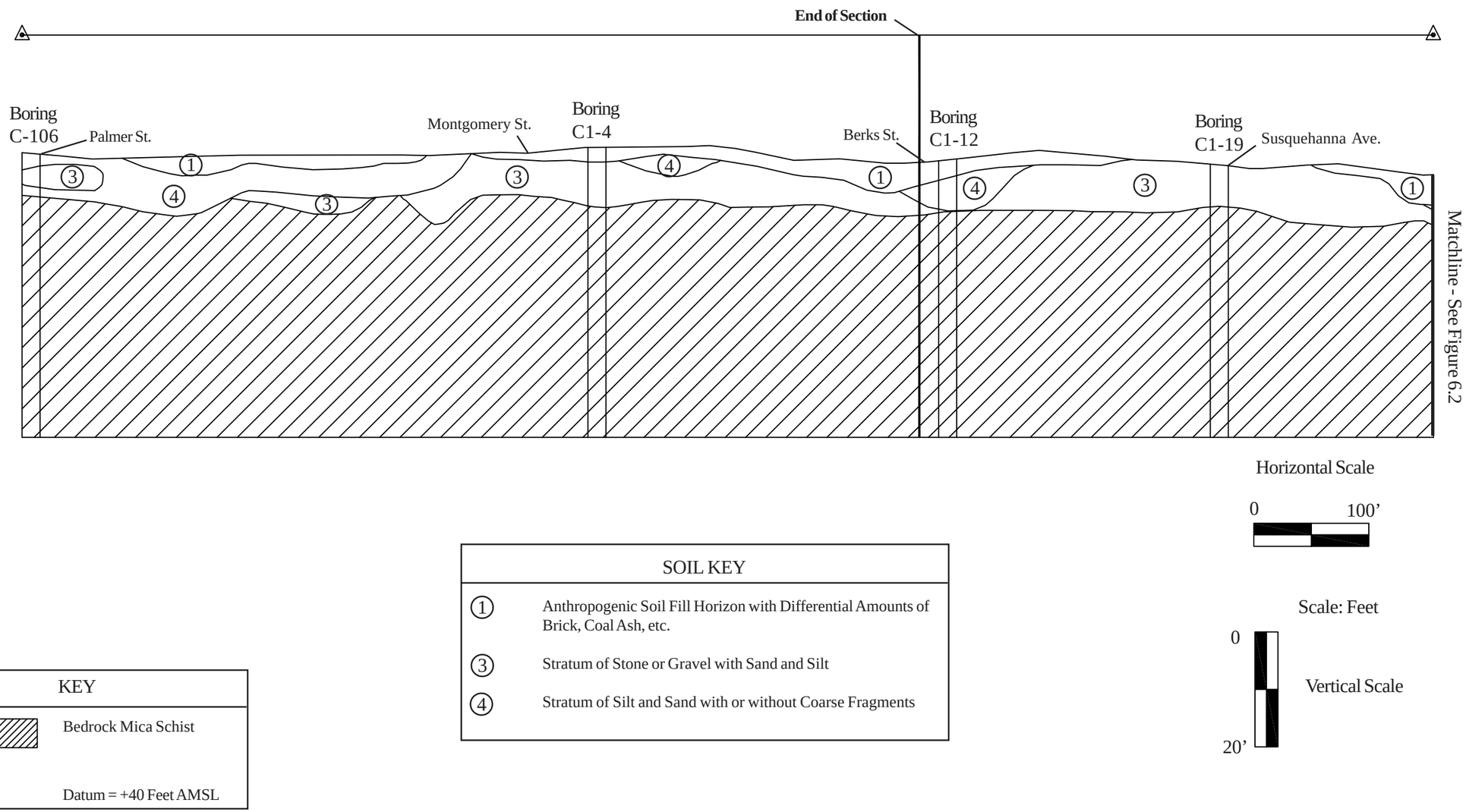

Figure 5.2 Section 5, Soil Profile, Stations 325+00 to 333+00, Palmer Street to Berks Street, and Portion of Section 6.

Plate 5.1 Palmer Street, East of I-95.

Plate 5.2 Palmer Street, West of I-95.

Plate 5.3 Columbia Avenue, East of I-95.

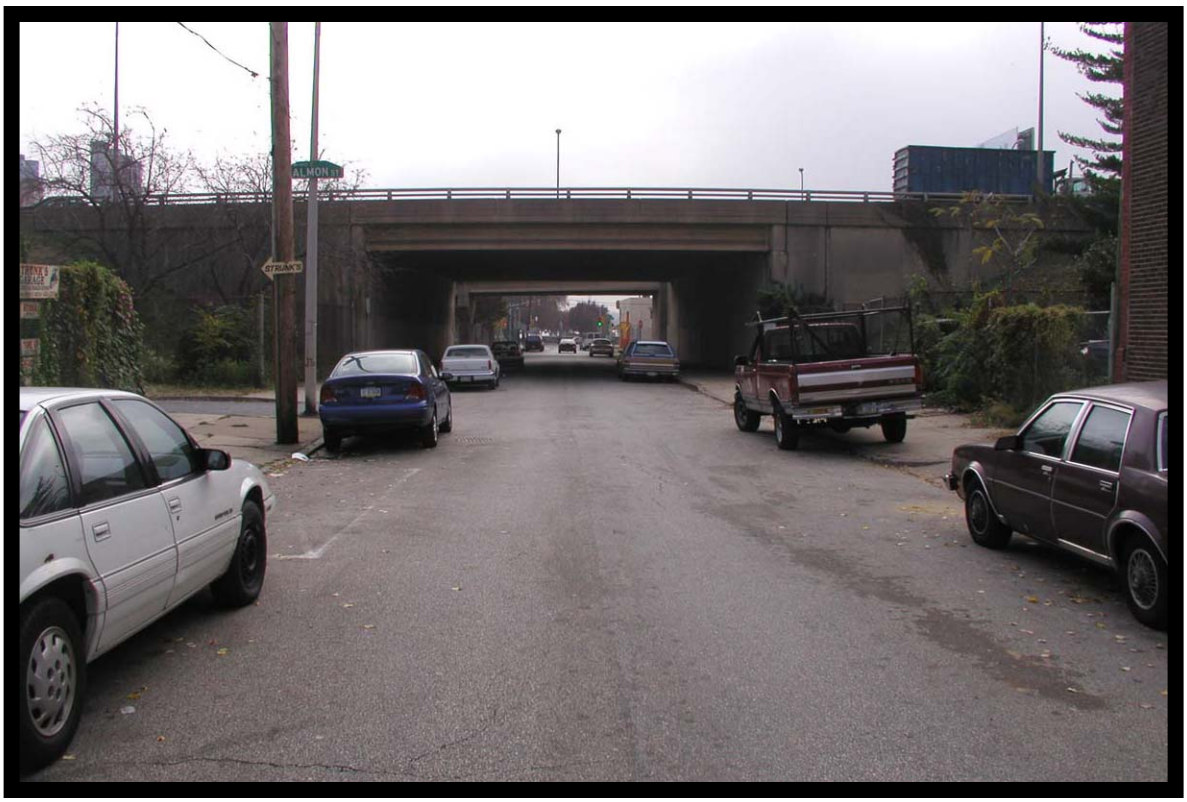

Plate 5.4 Columbia Avenue, West of I-95.

Plate 5.5 Montgomery Avenue, East of I-95.

Plate 5.6 Montgomery Avenue, West of I-95.

Plate 5.7 Berks Street, East of I-95.

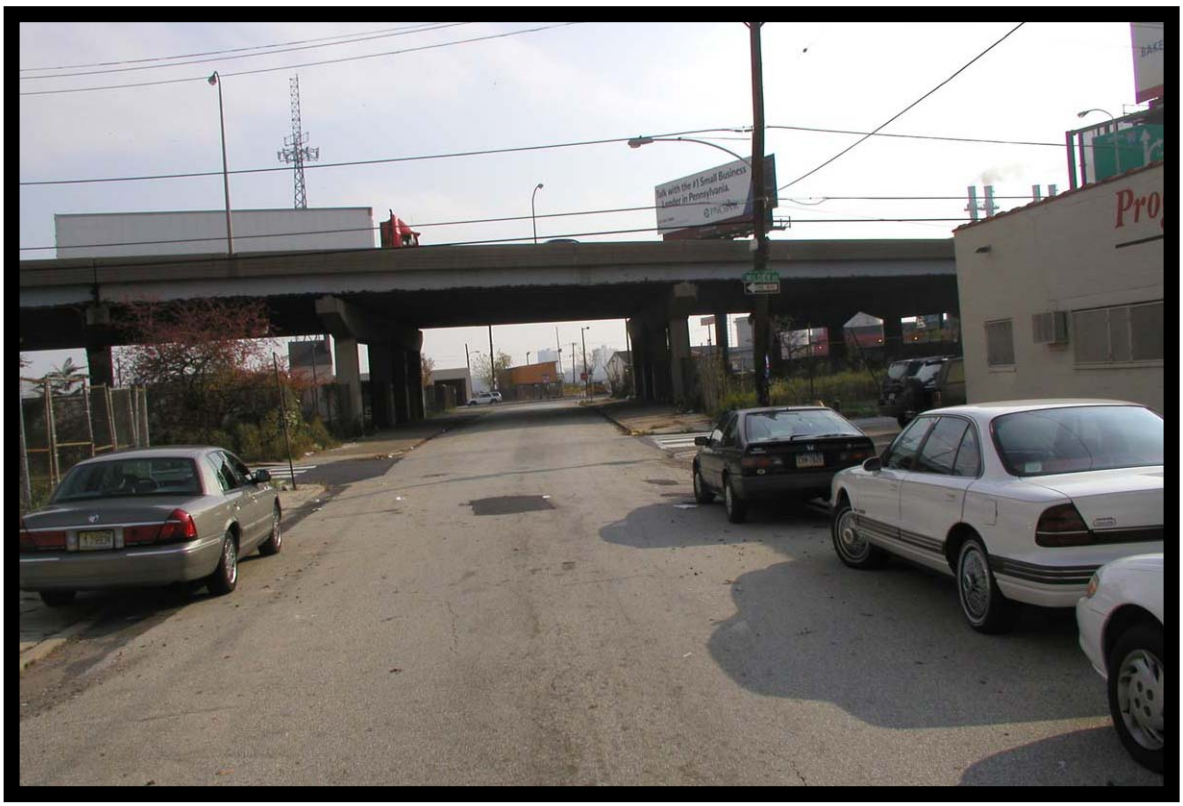

Plate 5.8 Berks Street, West of I-95.

Section 6: Stations 334+00 to 351+00
Berks Street to the South Side of Girard Avenue

Undertaking

Existing I-95, in both the northbound and southbound directions, is on viaduct structure in Section 6. In the proposed condition, I-95 will be supported on fill from Berks Street (Station 334+00) to Station 339+00. No abutments or piers will be replaced, nor new piers and abutments constructed. The subsurface will not be disturbed.

A new abutment will be constructed on the south side of proposed Aramingo Avenue southbound (Station 339+00), under the northbound and southbound lanes of I-95 and under Ramp E. To the east of the I-95 northbound lanes, two new piers (6P E1 and 6P E2) will be placed at Ramp E (Stations 28+00 and 29+00).

Between Stations 340+00 and 345+00, four new piers in new locations will support a new I-95 northbound and southbound lanes. Piers will be placed at approximately 125-foot intervals and are designated 6P NS1 through 6P NS4.

Fill will elevate I-95 between Station 346+00 and 350+00, and two new abutments will be constructed on the south side of Girard Avenue for both the northbound and southbound lanes at Stations 346+00 and 351+00. At Station 351+00 the new abutment will also extend to the east to support Ramp A.

Five new piers will be constructed (6P B1 through 6P B5) to support Ramp B at Stations 46+00 through 53+00. A new abutment will be constructed to the south of Aramingo Avenue NB/Spur A under Ramp B.

Currently, Ramp D is partially on viaduct structure in this section. This ramp will be entirely on fill in the proposed condition. One pier will be placed between Ramp D and Girard Avenue near the existing pier in the middle of Girard Avenue. There will be retaining walls on the east side of I-95/Ramp E between Berks Street and Aramingo Ave SB, as well as on the west side of Ramp D between Girard Avenue and Berks Street (Figure 6.1; also see Plates 6.1 to 6.7).

Section-Specific Environmental Data

Soil-test-boring data for Section 6 was collected from the original construction plans for I-95 Section C-1.

Aramingo Avenue Abutments (Stations 339+00), and Ramp E Piers (6P E1 through 6P E3; Stations 28+00 and 29+00).

The soil profile (C1-28) near the south side Aramingo Avenue abutment consists of 4.5 feet of loose black cinders and gravel fill, capping three feet of gray, very fine sandy silt. A three-foot, compact brown, medium-to-coarse sand and gravel soil layer overlays 15 feet of decomposed mica schist to bedrock. The first pier supporting Ramp E (6P E1) and 6P NS1 representative soil profile was exposed in soil boring C1-18; the profile consists of four feet of cinder fill, capping two feet of yellow sand. Six feet of gray brown silty sand follows, overlaying two feet of coarse,

gray sand to mica schist bedrock. The representative soil profile in the vicinity of Piers 6P E2 is taken from C1-19; the profile consists of nine feet of cinders, ashes, gravel, and wood above a thin, 1.1-foot lens of brown silty and clayey sand. Beneath this thin soil layer is 5.6 feet of gray clay, with a trace of vegetation, overlaying 7.1 feet of medium and coarse, gray sand with a trace of mica schist (see Figure 5.2).

Piers 6P NS1 through 6P NS4 (Stations 340+00 to 345+00), and Abutment (Station 346+00)

Representative soil profiles in the vicinity of the first three piers (6P NS1 to 6P NS3) come from borings C1-35 and C1-42; these profiles consist of 11.5 to 14 feet of brick, ash, coal, and cinder fill, overlaying 10 to 18 feet of gray clayey (organic) silt with wood present and, in some cases, burnt. Mica schist bedrock is present in Section 6 beneath the fill and silt (Figure 6.2). The soil profile is consistent on the south side of the Aramingo or Dyott sewer. Soil borings from near and above the sewer come from C1-46 and C1-49. The soil profiles contain 18 feet of fill to the top of the sewer. The last pier 6P NS4 and the abutment (Station 346+00) will be located on the north side of the sewer. Soil boring C1-57 best represents the soil profile present on the north side of the sewer; this profile consists of eight feet of brown black cinders, brick, and gravel, capping 3.5 feet of brown gray silty clay. A 3.5-foot layer of brown, coarse, sandy silt and gravel overlays mica schist bedrock.

South Side of Girard Avenue and Ramp A (Station 351+00)

On the south side of Girard Avenue and Ramp A, soil borings (represented in the profile from C1-120) exposed 12 feet of brick and rock fill, overlaying 4.3 feet of fine and medium dark brown sand. Coarse brown sand was encountered over the next 2.5 feet, capping one foot of gravel, followed by gneiss bedrock.

Ramp B, Piers 6P B1 to 6P B5 (Stations 46+00 to 53+00)

The soil profiles near Pier 6P B1 (represented in C1-44), Station 46—on the south side of the Aramingo or Dyott sewer—is similar to the C1-35 and C1-42 soil borings described above. In these profiles, 12 feet of cinders, ash, and brick fill cap nine feet of gray clay with vegetation. The organic soil layer is underlain by four feet of gravel, followed by decomposed mica schist to bedrock. On the north side of the sewer, where Piers 6P B2 through 6P B5 will be placed, the general soil profile consists of four feet of cinder fill, four feet of brown, silty clay, followed by two feet of black brown clay, and, subsequently, two feet of wood (most likely lumber from one of the previous lumberyards) overlaying three feet of black, silty, fine sand resting on six feet of wood. Immediately beneath the wood lies mica schist bedrock.

Section-Specific History

Aramingo Avenue Abutments (Station 339+00) and Ramp E Piers (6P E1 through 6P E2; Stations 28+00 and 29+00).

The new abutments will be placed on the south side of Aramingo Avenue, near several former two-story dwellings located at 1014, 1016, and 1018 East Fletcher Street, just west of Silvis Place. Ramp E Piers 6P E1 and 6P E2 will be placed within the former lumber piles of the William Cramp & Sons.

Piers 6P NS1 through 6P NS4 (Stations 341+00 to 346+00), Abutment (Station 346+00)

Piers 6P NS1 through 6P NS3 will be placed within the former William Cramp & Sons lumber piles. Pier 6P NS4 and Abutment (Station 346+00) will be placed within the former William Cramp & Sons machine shops, just west of Richmond Street. A bridge over Gunner's Run at Richmond Street (presently the Aramingo/Dyott sewer) was constructed in 1834.

South Side of Girard Avenue and Ramp A (Station 351+00)

The wingwall-abutments south of Girard Avenue and Ramp A will be placed within the former Frank C. Gillingham & Son Company lumberyard and the middle of Richmond Street.

Ramp B, Piers 6P B1 to 6P B5 (Stations 46+00 to 53+00)

Pier 6P B1 will be placed in the former W. H. Lear lumberyard. Piers 6P B2 through 6P B5 will be placed within the former lumber shed of the Frank C. Gillingham & Son Company and the Pennsylvania Railroad freight yard, south of East York Street and east of Aramingo Avenue.

Recommendations

Historic Archaeological Potential

Low Potential

Piers 6P NS1 through 6P NS4 (Stations 341+00 to 345+00) and Abutment (Station 346+00)
Ramp E, Piers 6P E1 through 6P E2 (Stations 28+00 and 29+00)
South Side of Girard Avenue and Ramp A (Station 351+00)
Ramp B, Piers 6P B1 to 6P B5 (Stations 46+00 to 53+00)

The APE listed above lies within the former locations of the William Cramp & Sons company yards, Frank C. Gillingham & Son Company lumberyard, and the Pennsylvania Railroad freight yard. Soil profiles indicate extensive fill in these areas. The potential for intact historic archaeological deposits associated with these industries is low, given that today a modern mall operates east of Aramingo Avenue and south of York Street, near Ramp B. The Jack and Jill Ice Cream Factory, the abandoned Port Richmond Steel Factory, and the Standard Feather Company are located east of I-95's northbound lanes. Construction of these modern industries and I-95 most likely disturbed any earlier industrial features and deposits (see Figure 6.1).

High Potential

Aramingo Avenue Southeast and Southwest Abutments (Station 339+00)

The southeast and southwest Aramingo Avenue wingwall-abutments will be placed where the former boundary line between housing and industry existed. South of Fletcher Street stood the densely packed residential homes of Fishtown, which would have been constructed prior to the installation of the Philadelphia sewer system in the late nineteenth century, suggesting a high potential for intact historic deposits (namely, deep shaft features such as a privies and cisterns) in

these locations. To the north of Fletcher Street, the William Cramp & Sons Ship and Engine Building Company started in 1830 and was destined to become one of the foremost private shipyards in America. Workers who lived on Fletcher Street no doubt worked in the shipyards and other small manufacturing companies nearby.

Precontact Archaeological Potential

Low Potential

Aramingo Avenue Southeast and Southwest Abutments (Station 339+00)
Piers 6P NS4 (Station 345+00) and Abutment (Station 346+00)
Ramp B, Piers 6P B2 through 6P B5 (Stations 47+00 to Station 53+00)
South Side of Girard Avenue and Ramp A (Station 351+00)

Based on soil profiles, there is a low potential for intact precontact deposits over the Aramingo/Dyott sewer and just north of the sewer. The soil profiles north of the sewer display how the area was stripped to bedrock or almost to bedrock for the construction of the William Cramp & Sons Ship and Engine Building Company and the Pennsylvania Railroad freight yard.

High Potential

Piers 6P NS1 through 6P NS3 (Stations 340+00 to 343+00)
Ramp B, Pier 6P B1 (Station 46+00)
Ramp E, Piers 6P E1 through 6P E2 (Stations 28+00 and 29+00)

There is a high potential for precontact archaeological deposits within the APE south of the Aramingo/Dyott sewer, given the presence of alluvial soils beneath fill at the former confluence of Gunner's Run and the Delaware River. Historically, the Philadelphia Streets and Sewer Departments would have filled this area, rather than removing land.

Monitoring

One pier will be placed between Ramp D and Girard Avenue near the existing pier in the middle of Girard Avenue. There will be retaining walls on the east side of I-95/Ramp E between Berks Street and Aramingo Avenue SB, as well as on the west side of Ramp D between Girard Avenue and Berks Street. The retaining wall and pier construction APE will be archaeologically monitored, because it is expected that only fill will be exposed. Monitoring, if needed, will be determined and guided by the results of any future Section 6 Phase IB archaeological testing within the high- and low-potential abutment APEs.

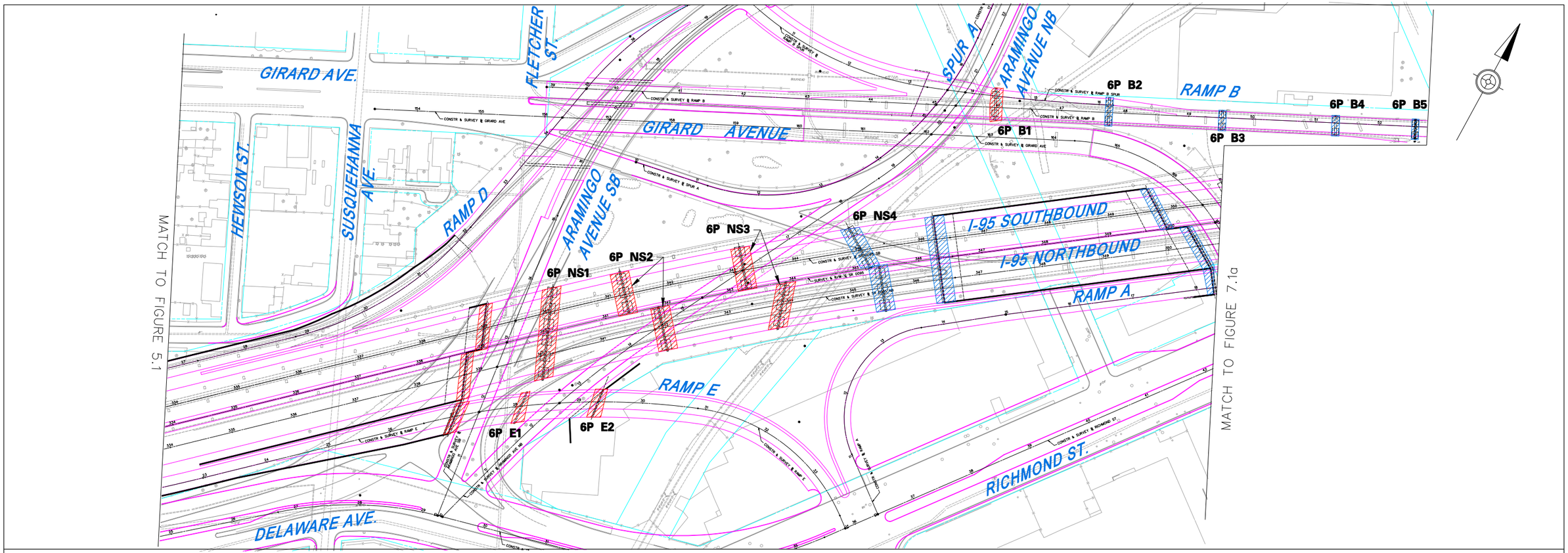

FIGURE 6.1
SECTION 6 - STATION 334+00 TO 351+00 (BERKS STREET TO SOUTH SIDE OF GIRARD AVENUE)

LEGEND:

- NO POTENTIAL
- LOW POTENTIAL
- HIGH POTENTIAL
- PROPOSED EDGE OF PAVEMENT/SHOULDER
- PROPOSED FOUNDATION

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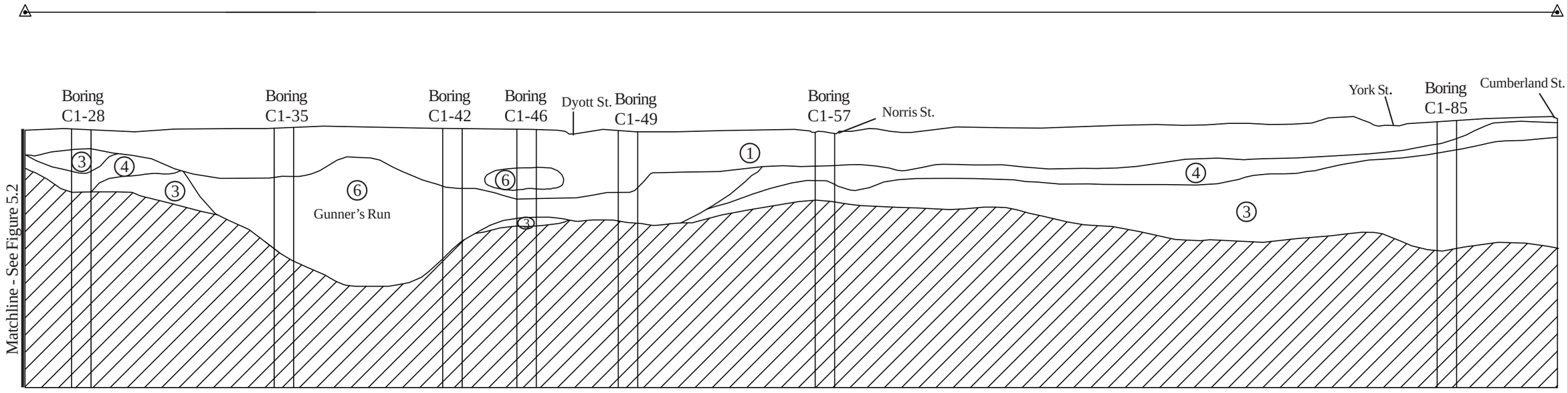
Figure 6.1 Section 6, Archaeological Potential, Stations 334+00 to 351+00 (Berks Street to South Side of Girard Avenue).

SECTION 6



KEY	
	Bedrock Mica Schist
	Datum = +40 Feet AMSL

SOIL KEY	
1	Anthropogenic Soil Fill Horizon with Differential Amounts of Brick, Coal Ash, etc.
3	Stratum of Stone or Gravel with Sand and Silt
4	Stratum of Silt and Sand with or without Coarse Fragments
6	Organic Muck/Silt

Figure 6.2 Section 6 (Continued), Soil Profile, Stations 334+00 to 351+00, Berks Street to South Side of Girard Avenue.

Plate 6.1 Berks Street, East of I-95.

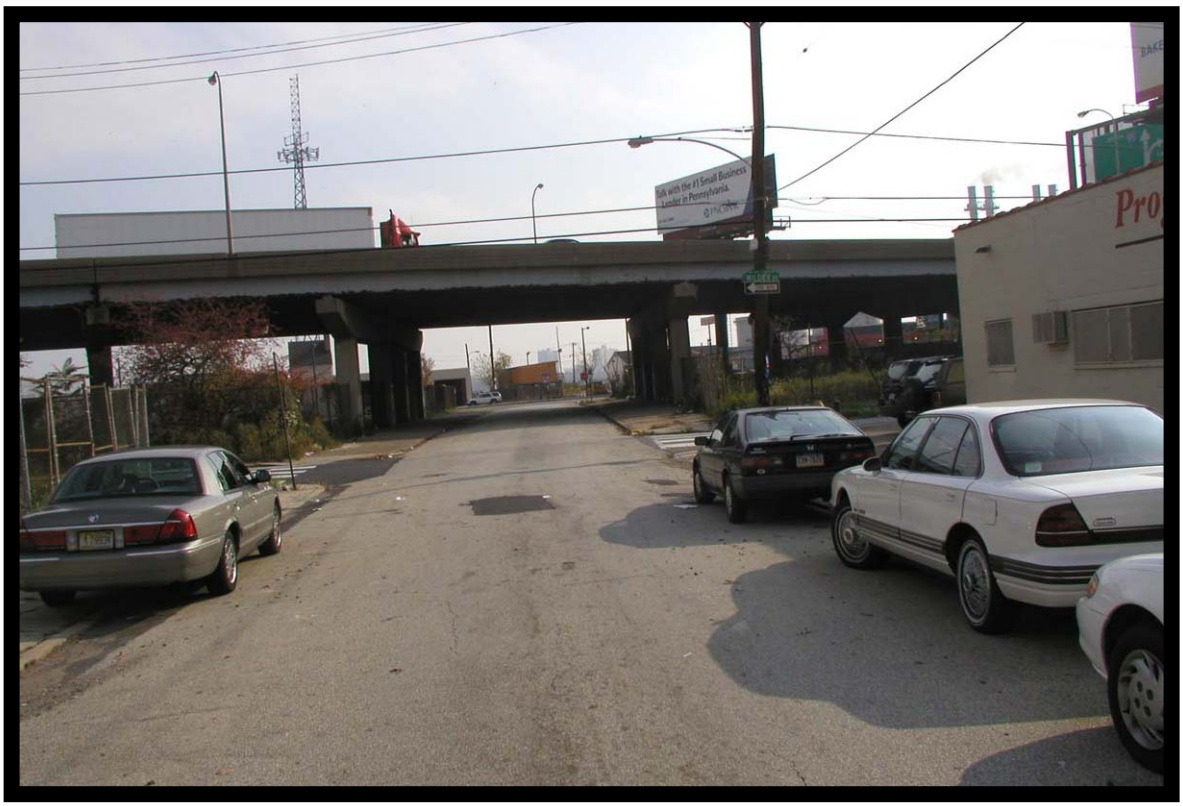


Plate 6.2 Berks Street, West of I-95.

Plate 6.3 Susquehanna Avenue, East of I-95.

Plate 6.4 Susquehanna Avenue, West of I-95.

Plate 6.5 Girard Avenue, East of I-95.

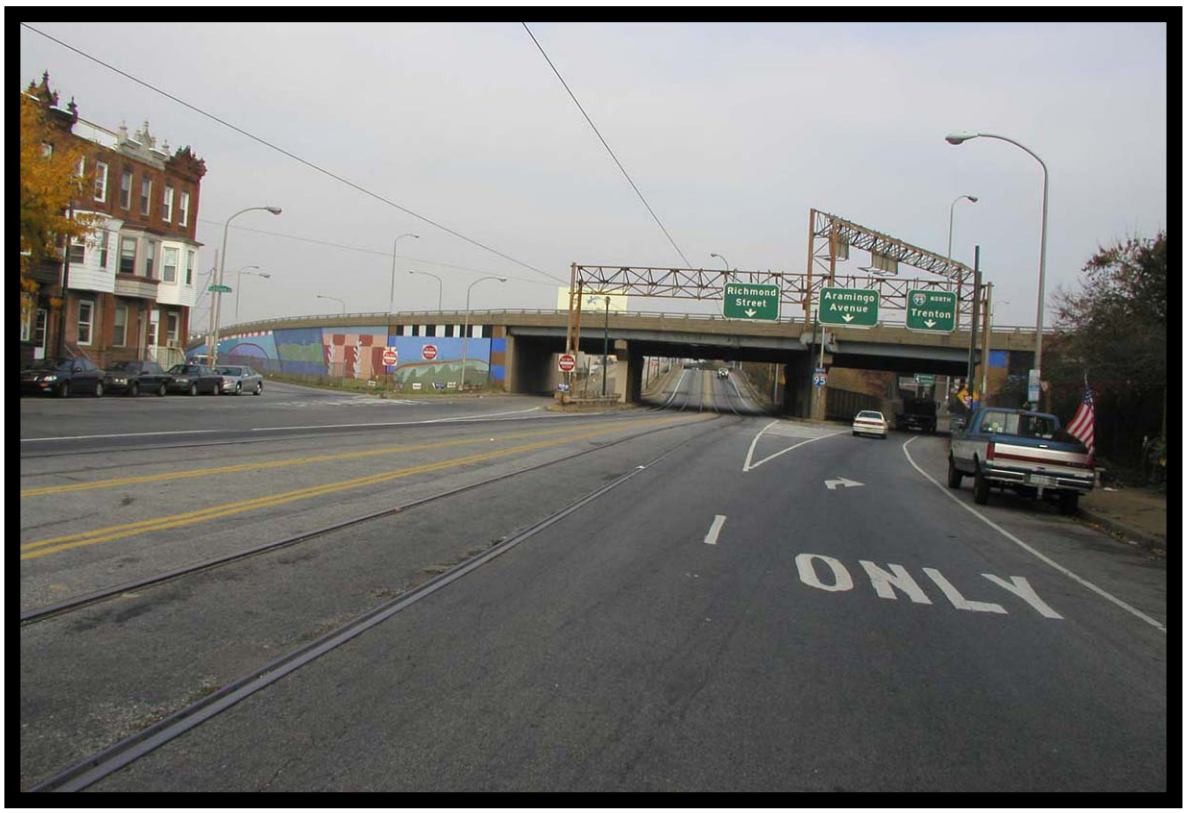


Plate 6.6 Girard Avenue, West of I-95.

Plate 6.7 Aramingo Canal.

Section 7: Stations 351+00 to 396+00
North Side of Girard Avenue to North Side of Ann Street

Undertaking

From the north side of Girard Avenue to Ann Street, I-95 will be supported on a viaduct with new piers in new locations. Between Stations 351+00 and 396+00, 33 northbound piers and 35 southbound piers in new locations will support the northbound and southbound lanes of I-95. Piers will be placed at various intervals and are named 7P N1 through 7P N33 and 7P S1 through 7P S35. On the north side of Ann Street, a new abutment will support both the northbound and southbound lanes (Figures 7.1a and 7.1b; also see Plates 7.1 to 7.14).

Section-Specific Environmental Data

Piers 7P N1 through 7P N6 and 7P S1 through 7P S7, North Side of Girard Avenue (Station 351+00) to Cumberland Street (Station 356+00)

Soil-test-boring data for Section 7 was collected from the original construction plans for I-95 Section C-1 on the north side of Girard Avenue (Station 351+00) to Cumberland Street (Station 356+00). The soil profiles from south to north (C1-74, C1-77, C1-80, C1-83, C-1-85, and C1-90) are similar, with varying depths of fill (ranging from seven feet to one foot) capping brown silt and sand from six feet at C1-74 to one foot at C1-90; medium-to-coarse sand ranges from 10 to 20 feet thick before reaching mica schist bedrock. The soil-profile schematic (Figures 7.2 and 7.3) best exemplifies the soil-boring results.

Piers 7P N7 through 7P N19 and 7P S8 through 7P S20, Cumberland Street (Station 356+00) to the South Side of Lehigh Avenue (Station 374+00)

The soil profile in the vicinity of Cumberland Street (Station 357+00) to Lehigh Avenue (Station 374+00) was developed from Section C-2B1, via 11 soil borings taken between C2-5 and C2-29. The soil-profile schematic best exemplifies these soil-boring results. Specifically soil boring C2-5, at Station 359+00, contained one foot of ash fill, capping eight feet of brown silt with very fine sand overlaying medium brown, wet sand for another eight feet. Eleven feet of medium gray and brown sand containing small gravel overlays three feet of medium brown sand and gravel, resting on decomposed mica schist (see Figures 7.2 and 7.3).

Piers 7P N20 through 7P N25 and 7P S21 through 7P S26, North Side of Lehigh Avenue (Station 374+00) to Somerset Street (Station 385+00)

The representative soil profiles in the vicinity of these piers were taken from Section C-2A (soil borings C2-43, C2-49, and C2-53), between Lehigh Avenue (Station 375) and Somerset Street (Station 385+00). The soil-profile schematic (see Figure 7.3) best exemplifies these soil-boring results. Specifically, soil boring C2-37 at Station 373+00 contained one foot of concrete and cinders fill capping three feet of soft, brown silty moist sand, which overlays 3.5 feet of compact medium brown sand and gravel. Four feet of compact, medium brown sand overlays 4.5 feet of medium brown sand and gravel, which rests on decomposed mica schist.

Piers 7P N26 through 7P N33 and 7P S27 through 7P S35 Somerset Street (Station 386+00) to the South Side of Ann Street (Station 396+00)

The soil profile in the vicinity of these piers from Somerset Street (Station 386+00) to the South Side of Ann Street (Station 396) was developed form Section C-2B1 soil borings C2-60, C2-71, C2-81. The soil-profile schematic (see Figure 7.3) best exemplifies these soil-boring results. Specifically, soil boring C2-71 at Station 389+00 contained 1.5 feet of black cinders fill capping three feet of brown, fine sand and gravel, overlaying six feet of brown, fine sand. Three feet of brown, fine sand and gravel overlays nine feet of gray, fine sandy silt and gravel, followed by a layer of white, fine sand and gravel to a depth of 12 feet. Gray, fine sandy silt, 3.5 feet thick, rests on decomposed mica schist.

Section-Specific History

Piers 7P N1 through 7P N6 and 7P S1 through 7P S7, North Side of Girard Avenue (Station 351+00) to Cumberland Street (Station 356+00)

Piers 7P N1 through 7P N4 and Piers 7P S1 through 7P S5 will be placed within the former Pennsylvania Railroad freight yard, south of East York Street. Piers 7P N5 and 7 P N6 and 7P S6 and 7PS7 will be placed within the former William Caskey & Son brass foundry and extend into Richmond Street.

Piers 7P N7 through 7P N19 and 7P S8 through 7P S20, Cumberland Street (Station 356+00) to the South Side of Lehigh Avenue (Station 374+00)

Pier 7P N7 and 7P S8 will be placed within the middle of Cumberland Street. The remaining northbound piers will be located within Richmond Street and the former Port Richmond rail yard.

The southbound piers will be located between Cumberland and Lehigh Avenue. Given the densely built neighborhood, exact southbound pier placement will affect several former row homes and row stores. A synopsis of former historic structures in locations designated for southbound piers follows.

Fourteen two- and three-story houses and four stores (located at the corners) fronted 2500 to 2541 Emery Street, between Cumberland Street and Sergeant Street. Eighteen three-story shops, two club headquarters, and two dwellings fronted 2500 to 2542 Richmond Street.

Thirteen two-story dwellings and two stores (at the corners) fronted 2543 to 2575 Emery Street, between East Sergeant Street and East Huntingdon Street. Thirteen stores and four offices fronted 2544 to 2576 Richmond Street.

Fourteen two- and three-story dwellings and two wagon sheds were located between 2600 to 2673 Emery Street. Many of the properties fronting Richmond Street on this block extended to Emery Street. Twenty-four three-story shops, two club headquarters (at 2638 and 2668), a paper

junkyard (at 2646), a printer (at 2660), and seven dwellings were located between 2600 and 2674 Richmond Street. Five dwellings and two stores (at 2744 and 2746) were located between 2734 to 2742 Lehigh Avenue.

Piers 7P N20 through 7P N25 and 7P S21 through 7P S26, North Side of Lehigh Avenue (Station 374+00) to Somerset Street (Station 385+00)

Only Pier 7P S21, which will be placed between Lehigh Avenue and Somerset Street has potential to contain historic archaeological deposits. Three two-story dwellings and a store at the corner were located at 2733 to 2739 Somerset Street. Seven dwellings stood at 2707 to 2719 Emery Street. Two offices, a printer, and five stores (all three-stories tall) were located at 2700 to 2714 Richmond Street. The Philadelphia and Reading Railroad tracks, bridge, and coal yard occupied the remainder of the area.

Piers 7P N26 through 7P N33 and 7P S27 through 7P S35 Somerset Street (Station 386+00) to the South Side of Ann Street (Station 396+00)

Between Somerset Street and Cambria Street, the northbound Piers 7P N26 through 7P N30 will be placed within the Richmond Street and the Philadelphia and Reading Railroad tracks, bridge, and coal yard.

All of the southbound piers, Piers 7P S27 through 7P S35, and the north side of Ann Street abutment and the northbound piers 7P N31 through 7P N33 will be placed within the former densely populated neighborhood of Port Richmond. The neighborhood synopsis follows: twenty-eight three-story shops, a one-story shed, and a one-story repair shop stood from 2800 to 2870 Richmond Street. The Philadelphia and Reading Railroad yard were located to the east of Richmond Street.

Seventeen three-story stores, two offices, and a club headquarters (at 2912) stood from 2900 to 2946 Richmond Street, between Cambria Street and Ann Street. The entrance to a moving picture theatre stood at 2926. Across Richmond Street, from 2901 to 2947, stood six three-story stores and nine dwellings. The Richmond Presbyterian Church stood from 2927 to 2931. The U.G.I. Company testing station stood at 2943 Richmond Street. A large, single home stood at 2937; the home had its own rear entrance on Drain Street, which exited to Ann Street.

On the 2800 (2806 to 2817) block of Ann Street—between Melvale Street to the east and Richmond Street to the west—stood nine dwellings and two stores, at the corner of Melvale Street. A store stood at 2949 Richmond Street, on the corner of Richmond and Ann Streets.

Today, a Philadelphia municipal parking lot is located beneath I-95. Emery Street consists of mostly garages with a few homes. The abandoned rail yard parallels I-95 from Cumberland Avenue (Station 357) to Ann Street (Station 396+00).

Recommendations

Historic Archaeological Potential

No Potential

Piers 7P N7 through 7P N30 and 7P S22 through 7P S26

There is no potential for intact archaeological deposits at these pier locations. The piers will be placed partially within the Philadelphia and Reading Railroad yard, which was located to the east of Richmond Street and within Richmond Street. Historic disturbance here is significant; therefore, no intact industrial features are expected (see Figures 7.1a and 7.1b).

Low Potential

Piers 7P N1 through 7P N6, 7P N31 through 7P N33, 7P S1 through 7P S21, 7P S27 through 7P S35, and the Ann Street Abutment

The remaining pier locations have a low potential for historic archaeological deposits. Given the intense late-nineteenth-to-early-twentieth-century construction and the construction of I-95 in the area, there is a low potential for intact historic archaeological deposits. The Port Richmond neighborhood was created after the Philadelphia and Reading Railroad port and rail yard were built in 1842. At various times, all of the row homes and shops were constructed between 1860 and 1940. These properties were built after the Philadelphia Streets and Sewer Department laid out a street grid and provided services. No deep shaft features would be expected. However, there is the possibility that basements were not cleaned out prior to the construction of I-95.

Precontact Archaeological Potential

Low Potential

Piers 7P N1 through 7P N6, 7P N31 through 7P N33, 7P S1 through 7P S21, 7P S27 through 7P S35, and the Ann Street Abutment

Given the results of soil profiles, the intense late-nineteenth-to-early-twentieth-century construction, and the construction of I-95, there is a low potential for intact precontact archaeological deposits in this area.

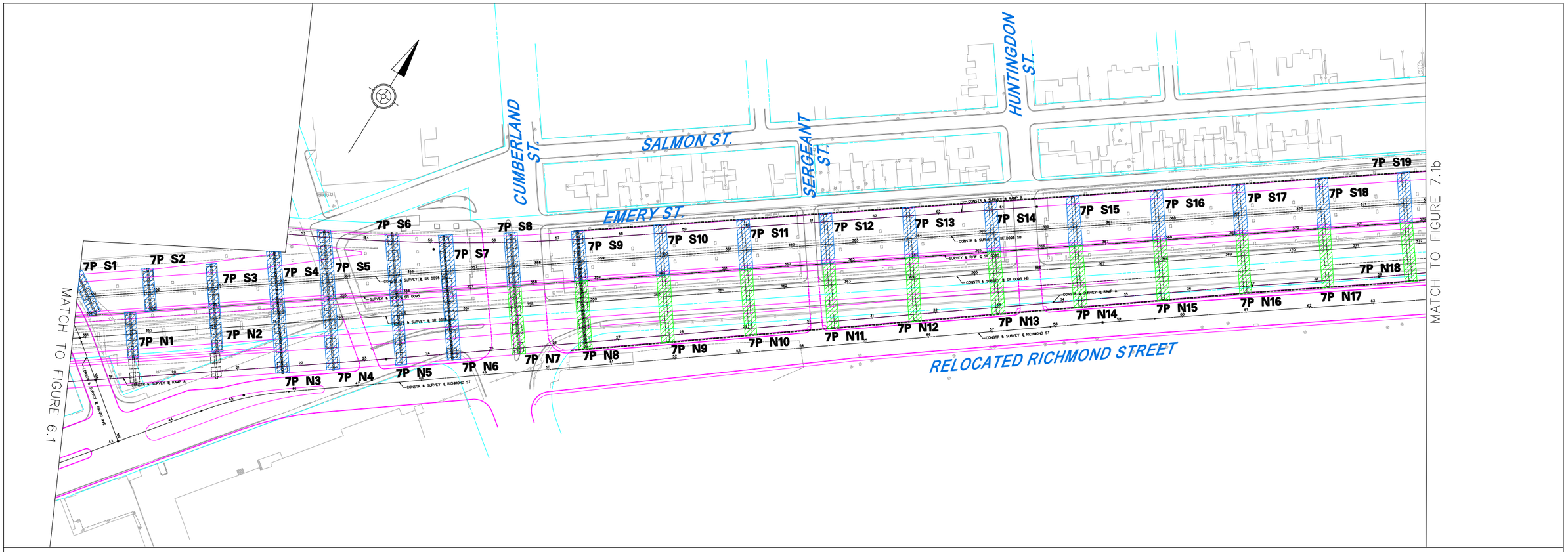


FIGURE 7.1a
SECTION 7 - STATION 351+00 TO 396+00 (NORTH SIDE OF GIRARD AVENUE TO ANN STREET)

LEGEND:

- NO POTENTIAL
- LOW POTENTIAL
- HIGH POTENTIAL
- PROPOSED EDGE OF PAVEMENT/SHOULDER
- PROPOSED FOUNDATION

INTERSTATE 95/GIRARD AVENUE
INTERCHANGE PROJECT
PHASE Ia ARCHAEOLOGY REPORT
JANUARY 2004

100 0 100 200
SCALE IN FEET

URS

Figure 7.1a Section 7, Archaeological Potential, Stations 351+00 to 396+00 (North Side of Girard Avenue to Ann Street).

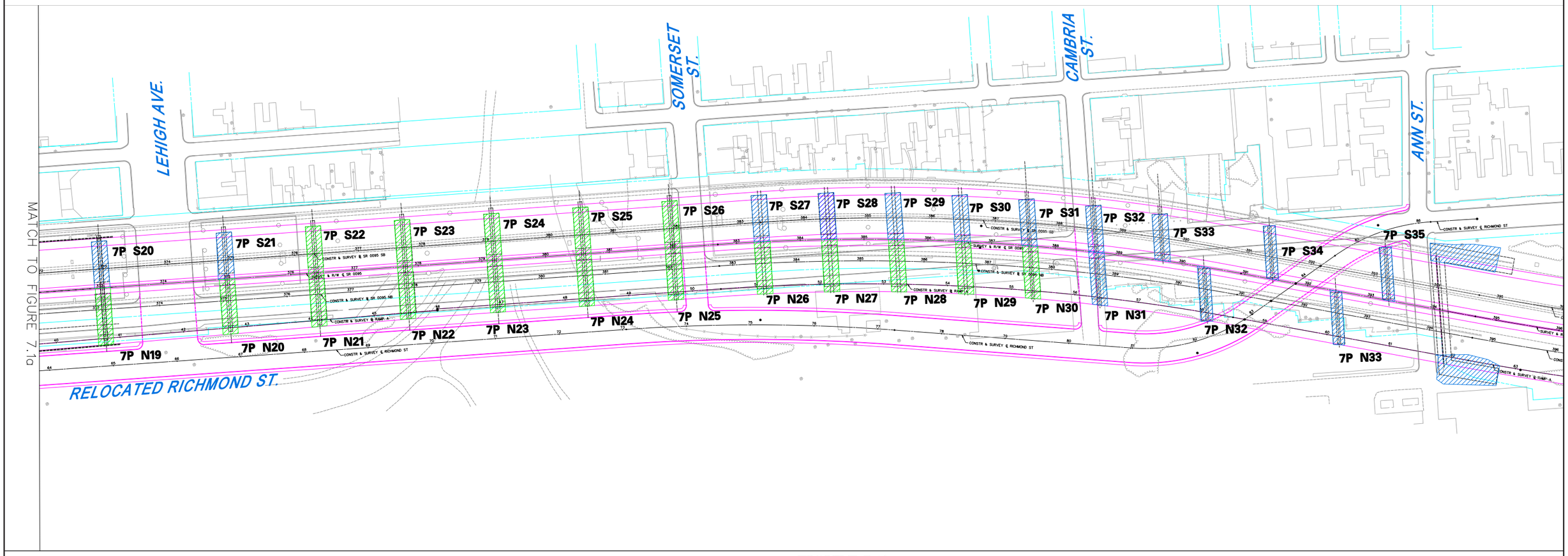


FIGURE 7.1b
SECTION 7 - STATION 351+00 TO 396+00 (NORTH SIDE OF GIRARD AVENUE TO ANN STREET)

LEGEND:

- NO POTENTIAL
- LOW POTENTIAL
- HIGH POTENTIAL
- PROPOSED EDGE OF PAVEMENT/SHOULDER
- PROPOSED FOUNDATION

INTERSTATE 95/GIRARD AVENUE INTERCHANGE PROJECT

PHASE Ia ARCHAEOLOGY REPORT

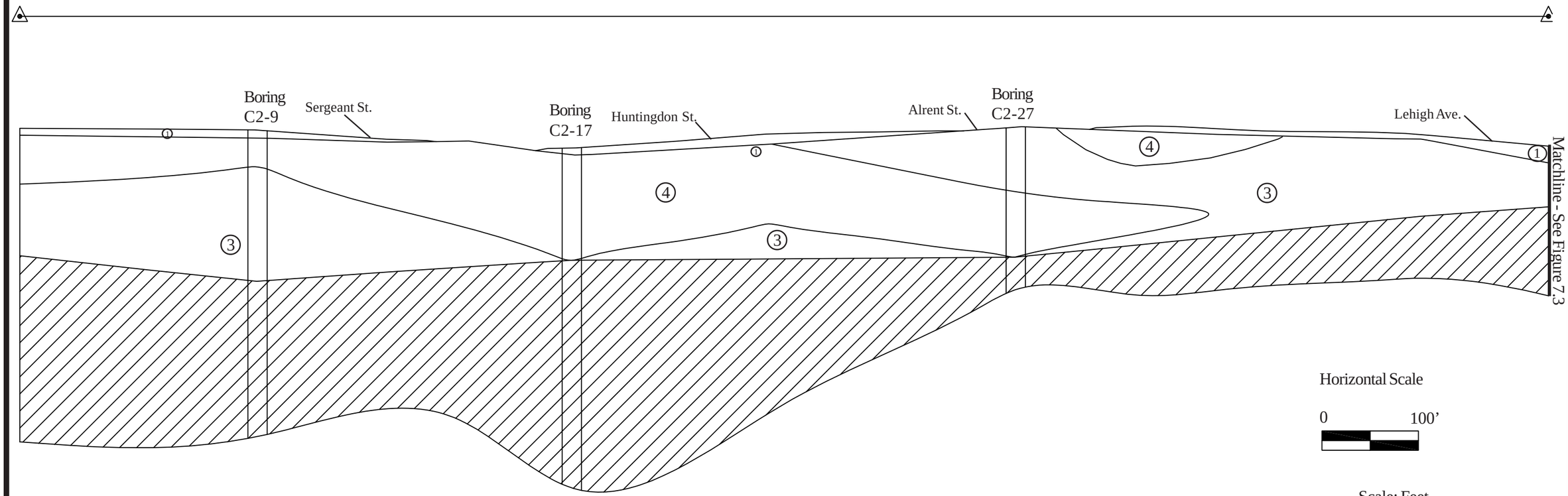
JANUARY 2004

100 0 100 200
SCALE IN FEET

URS

Figure 7.1b Section 7, Archaeological Potential, Stations 351+00 to 396+00 (North Side of Girard Avenue to Ann Street).

SECTION 7

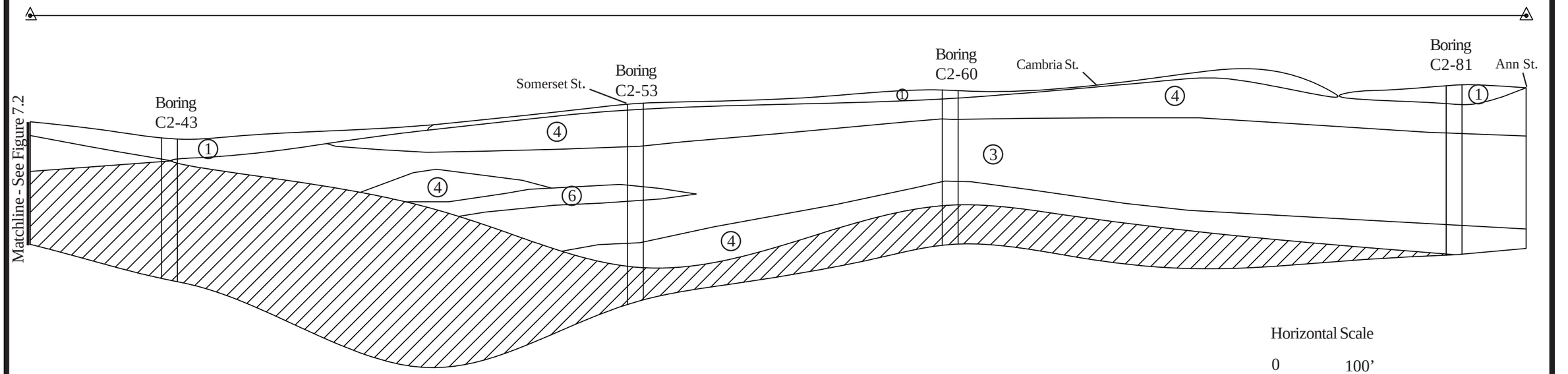


KEY	
	Bedrock Mica Schist
	Datum = +40 Feet AMSL

SOIL KEY	
1	Anthropogenic Soil Fill Horizon with Differential Amounts of Brick, Coal Ash, etc.
3	Stratum of Stone or Gravel with Sand and Silt
4	Stratum of Silt and Sand with or without Coarse Fragments

Figure 7.2 Section 7, Soil Profile, Stations 358+00 to 375+00, Cumberland Street to Lehigh Avenue.

SECTION 7



KEY	
	Bedrock Mica Schist
	Datum = +40 Feet AMSL

SOIL KEY	
1	Anthropogenic Soil Fill Horizon with Differential Amounts of Brick, Coal Ash, etc.
3	Stratum of Stone or Gravel with Sand and Silt
4	Stratum of Silt and Sand with or without Coarse Fragments
6	Organic Muck/Silt

Figure 7.3 Section 7 (Continued), Soil Profile, Stations 375+00 to 394+00, Lehigh Avenue to Ann Street.

Plate 7.1 Girard Avenue, East of I-95.

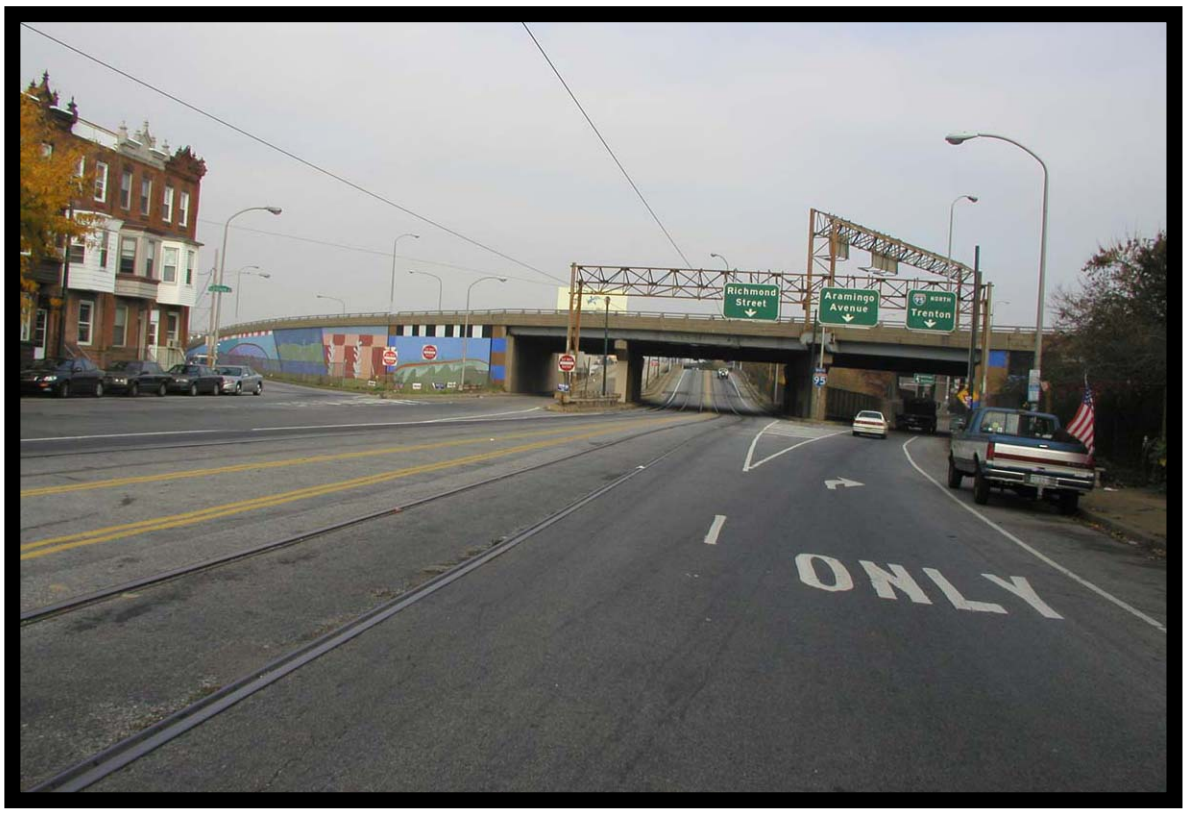


Plate 7.2 Girard Avenue, West of I-95.

Plate 7.3 York Street, East of I-95.

Plate 7.4 Cumberland Street, East of I-95.

Plate 7.5 Cumberland Street, West of I-95.

Plate 7.6 Sergeant Street, East of I-95, Facing East.

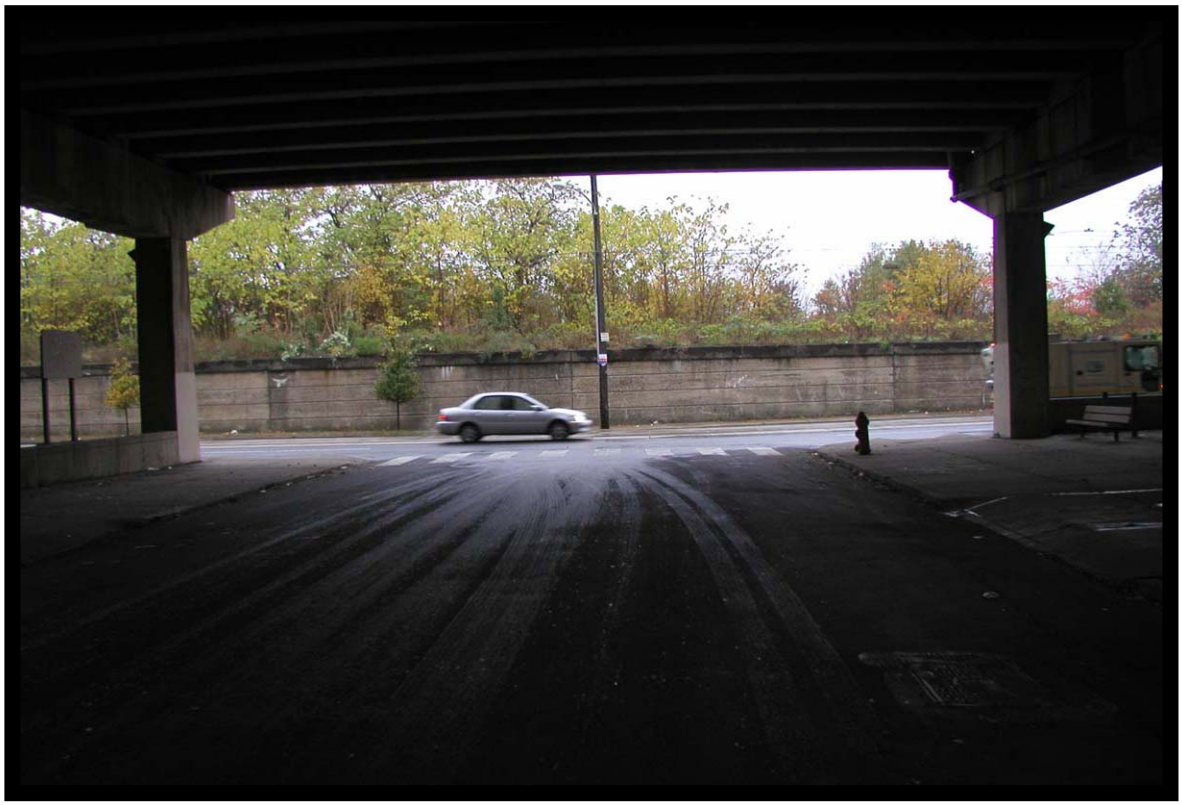


Plate 7.7 Huntingdon Street, East of I-95, Facing East.

Plate 7.8 Huntingdon Street, East of I-95, Facing West.

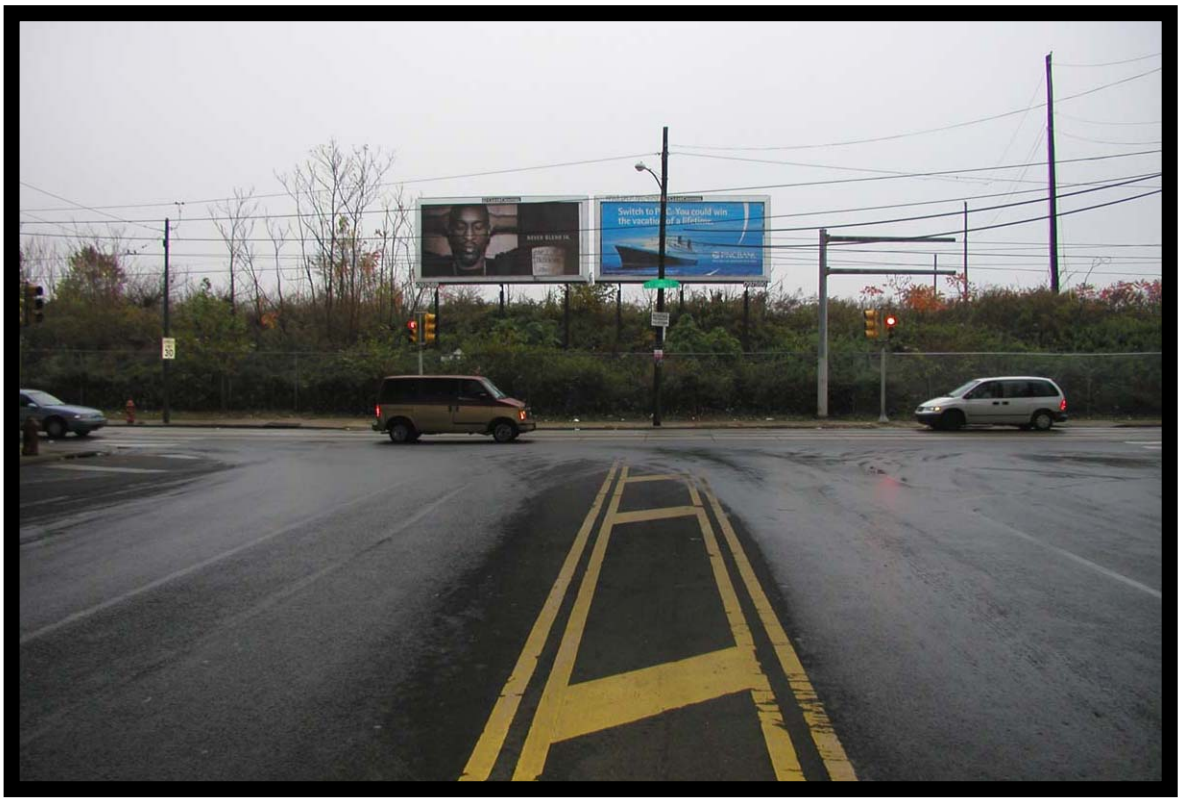


Plate 7.9 Lehigh Avenue, East of I-95, Facing East.

Plate 7.10 Lehigh Avenue, West of I-95.

Plate 7.11 Somerset Street, East of I-95, Facing East.

Plate 7.12 Somerset Street, West of I-95.

Plate 7.13 Ann Street, East of I-95.

Plate 7.14 Ann Street, West of I-95.

Summary and Phase IB/II Work Plan

The following table summarizes the archaeological sensitivity for each section.

Archaeological Sensitivity by Sections

Section	Location and Station	Historic Archaeological Potential High/Low/None	Precontact Archaeological Potential High/Low/None	Number of Areas where subsurface will be disturbed
1	**Race Street to the South Side of Spring Garden Street (Stations 249-273)**	None	None	0
			Subtotal	**0**
2	**South Side of Spring Garden Street to Ellen Street (Stations 273 - 289)**			
	Spring Garden Street (Station 273, Northeast, Southwest, and Northwest)	Low	None	3
	Spring Garden Street (Station 273, Southeast)	High	None	1
	Fairmount Avenue (Station 278)	High	None	4
	Brown Street (Station 282)	High	Low	4
	Ellen Street (Station 288, Southeast)	Low	Low	1
	Ellen Street (Station 288, Southwest)	High	Low	1
			Subtotal	**14**
3	**Ellen Street (Station 289) and East Allen Street (Station 297)**			
	3P N1 to 3P N4	Low	Low	4
	3P S1 to 3P S7	Low	Low	14
	East Allen Street (Station 297) and Frankford Avenue (Station 304)			
	3P N5 to 3P N12	High	High	9
	3P S8 to 3P S12	High	High	10
			Subtotal	**37**
4	**Northeast Side of Frankford Avenue to the South Side of Palmer Street (Station 304 -324)**			
	Frankford Avenue, Northeast (Station 304)	High	Low	1
	Shackamaxon Street (Station 309)	High	Low	2
	Marlborough Street (Station 315)	High	Low	2
	Columbia Street (Station 319)	High	Low	2
	Palmer Street (Station 324)	High	Low	2
			Subtotal	**9**

Archaeological Sensitivity by Sections (Cont'd)

Section	Location and Station	Historic Archaeological Potential High/Low/None	Precontact Archaeological Potential High/Low/None	Number of Areas where subsurface will be disturbed
5	**North Side of Palmer Street to Berks Street (Sections 325 - 333)**			
	Piers 5P N1 and 5P N2 and Palmer Street, Northwest (Stations 326 and 327)	High	Low	6
	Pier 5P N3 and Montgomery Avenue, Southwest and Northwest (Station 329)	High	Low	4
	Pier 5P N4 and 5P N5 (Stations 330 and 331)	High	Low	3
	Pier 5P N6 and Berks Street, Southwest, Northeast and Northwest (Stations 332 and 333)	High	Low	4
			Subtotal	**17**
6	**Berks Street to the South Side of Girard Avenue (Stations 334 - 351)**			
	Aramingo Avenue, Southeast and Southwest (Station 339)	High	Low	1
	Piers 6P NS1 through 6P NS3 (Stations 340 to 343)	Low	High	3
	Piers 6P NS4 (Station 345) and Abutment (Station 346)	Low	Low	2
	Ramp E Piers (6P E1 to 6P E2) (Stations 28 and 29).	Low	High	2
	South side of Girard Avenue and Ramp A (Station 351)	Low	Low	1
	Ramp B Piers 6P B2 to 6P B5 (Stations 48to 53)	Low	Low	4
	Ramp B Pier 6P B1(Station 46)	Low	High	1
			Subtotal	**14**
7	**North Side of Girard Ave to North Side of Anne Street (Stations 351 - 396)**			
	Piers 7P N7 to 7P N30 and 7P S22 to 7P S26	None	None	29
	Piers 7P N1 to 7P N6, and 7P N31 to 7P N33, 7P S1 to 7P 21 and 7P S27 to 7P S35 and Ann Street, Northeast and Northwest	Low	Low	41
			Subtotal	**70**
			TOTAL	**161**

As the table indicates, 161 locations will experience subsurface disturbance: 29 locations have no potential to contain intact archaeological deposits; 67 locations have a low precontact or historic archaeological sensitivity; and 65 locations have a high archaeological sensitivity toward either precontact or historic deposits. It is recommended that the 29 locations with no potential remain

untested. Conversely, it is recommended that all 65 high sensitivity locations be subjected to testing. However, a staged approach is recommended and discussed below within high-sensitivity APEs. The remaining 67 low-sensitivity locations will be sampled after the high-sensitivity locations are tested. In this way, knowledge gained from the nearby areas of high sensitivity will direct the low-sensitivity sampling strategy. It is expected that at least one third of the low-sensitivity locations will be tested; these locations mostly pertain to Section 7. Archaeological monitoring is recommended in Sections 2, 4, 5, and 6 at locations where retaining walls will be constructed.

It was cost prohibitive and impractical to perform fieldwork at every location of anticipated ground disturbance, until a preliminary and final design of this undertaking is complete. URS engineers are progressing toward a preliminary design. Given the urban setting, the archaeological subsurface testing for the I-95, Section GIR project will be guided by a developed Programmatic Agreement (PA). The PA stipulates that Phase IB archaeological testing will occur at each test location when an archaeological site is identified. If no site is identified, then the study of that location will be considered complete. If a site is identified, then fieldwork will continue to a sufficient level to determine if the site is eligible for the National Register of Historic Places. The PA will also call for monitoring during the construction of retaining walls. This decision is based on the fact that minimal wall construction activity will disturb the subsurface to a depth of three to five feet, which will occur mostly in fill areas.

Furthermore, if a site is identified and intact historic or precontact deposits are excavated and sampled, then a National Register of Historic Places decision process will direct any future work while the site is protected. The National Register decision meetings are important, as they will expedite the PA process and provide significant cost savings. The National Register decision makers will be PENNDOT District 6 and the PHMC, in consultation with URS. Depending on the potential significance of the site, the National Register decision meetings can occur via telephone conference with digital images, or consist of actual site visits. Although avoidance of impacts to National Register-eligible resources is the preferred result, treatment of these sites will most likely include one of the following outcomes: mitigation of the site in the form of more fieldwork samples, intensive background research, and detailed laboratory treatment of the material remains; or—if the Phase IB/II effort provided enough of a field sample to adequately mitigate the site—detailed laboratory treatment of the material remains and intensive background research. Overall, this staged approach by section and level of effort will ensure that this complex project is carried out in an efficient and timely fashion.

The general Phase IB/II archaeological field, laboratory, report production, and archaeological monitoring methods follow. The Phase IB/II research design that will guide the field excavations was presented in the introduction to this report. Specific Phase IB/II work plans will be developed for each section. The sectional work plans will discuss other factors that will influence the Phase IB/II excavations, including the size of the test area, hazardous materials, and utilities. Extended existing piers and abutments will entail smaller test areas, while larger test areas will involve new piers and abutments on new locations. A health and safety plan will discuss the presence or absence of hazardous materials and guidelines for safe excavations; utility mark outs will note which areas to avoid.

Phase IB/II Identification and Evaluation of Historic and Precontact Archaeological Resources

The following work plan addresses the need for additional archaeological investigations within the APE associated with the proposed I-95/Section GIR highway improvements conducted by PENNDOT District 6-0. Implementation of the additional archaeological testing will follow the Programmatic Agreement for the project, which is in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended; 36 CFR Part 800 (particularly sections 800.4, 800.5, and 800.9); as well as the PHMC, Bureau of Historic Preservation's (BHP) *Guidelines for Archaeological Investigations* (1991). Work will also be in accordance with PENNDOT's Directive 430-92-29, dated March 18, 1992.

Field and Laboratory Methods

Phase IB/II evaluation efforts will be conducted within areas requiring piles driven down to bedrock to support abutments and piers as part of the engineering design work. The objectives of the Phase IB/II effort will be to (a) identify any archaeological sites; (b) define the area limits of the site and cultural affiliations of the components represented; (c) determine the density and distribution of intact archaeological deposits within the study area; and (d) identify the types of retrievable archaeological remains. This framework will also serve for evaluating the National Register eligibility of any identified site. The research issues presented in the historic and precontact research designs in the report introduction will be used to guide the fieldwork and will serve, in part, as the criteria for evaluating a site's National Register eligibility; i.e., a site's potential to provide data useful in addressing these issues will serve as one measure of its eligibility or non-eligibility.

Prior to subsurface testing, URS will employ a certified industrial hygienist to provide an evaluation of each area's potential contamination. URS will also develop any health and safety plans (HASPs) that may be required in order to conduct fieldwork. If human burials are noted during any of the above investigations, PENNDOT, PHMC/BHP, and federally recognized tribes will be notified immediately and work in that area will cease. No human remains will deliberately be exposed. Treatment of human remains will follow the appropriate federal and state regulations.

The proposed investigations will involve the removal of as much of the existing fill as possible via machine. The purpose of this work will be to expose building foundations and any other features located within the project APE. Where possible, a toothless bucket (cemetery bucket) will be employed to minimize damage to buried archaeological remains. Further sampling will be conducted via hand-excavated units. All exposed features will be cleared by hand, mapped, and photo-documented. The proposed excavations will focus on exposing the "footprints" of the uncovered structures, sampling in-filled basements and shaft features (such as privies, wells, or cisterns), and sampling front and rear yard deposits, if present. The standard excavation unit will measure 5 x 5 feet, although the exact number and configuration(s) of units will depend on the size of the tested area.

Deep excavations (i.e., penetrating deeper than four feet below ground surface) will be conducted in accordance with OSHA regulations. Where possible, the excavations will be stepped back; in more confined areas, shoring will be employed. Any necessary air monitoring will be conducted in accordance with the project HASP.

Excavation of units and features will be conducted by natural soil strata, unless such strata cannot be clearly identified. In the latter case, 0.35-foot arbitrary levels will be applied to excavation. All soil from the units and features will be screened through ¼-inch-mesh hardware cloth. Soil samples may be taken from large features (such as privies) and water screened. It is URS' experience that water screening generally provides a more complete recovery of artifacts for such features; it also results in less damage to materials relative to dry screening. However, drainage conditions and restriction in the project area—and the absence of a reliable water source—make the use of water screening unfeasible. Therefore, when appropriate, large samples of soil will be water screened at URS' laboratory. Flotation samples will be retrieved from each intact domestic deposit within cellars and features. The size of the flotation samples will be based on the size of the features and deposits.

A standard URS unit excavation form will be completed for each unit in addition to feature forms, when applicable. Plan views and profiles will be taken and drawn for all units and features. Black-and-white photographs and color slides will be taken of each unit and feature.

Artifact Analysis

Any artifact in need of conservation will be removed from the collection for separate processing. Artifacts will be analyzed in terms of type of material, form, function, and temporal attributes (Noël Hume 1969; South 1977; Miller and Sullivan 1991). Detailed analyses will include the identification of the terminus post quem (TPQ) artifacts for each context, cross-mending of ceramic and glass sherds to establish time relationships between contexts, minimal vessel counts, research on the dating of ceramic and glass vessels (as well as other types of datable artifacts), generation of mean beginning and end dates for assemblages, and establishing the average CC index value (Miller 1991) for ceramic assemblages dating from 1780 to 1880. This information will be used to establish which contexts and strata come from the same periods of time, as well as which assemblages represent primary versus secondary deposits. When possible, this information will be used to help associate different contexts to known occupants at the sites or historical events within the community. Historic artifacts will be cataloged according to established typologies. Specific analyses will include chronological studies based on artifact type, form, and manufacturing attributes. Given the urban context, it is anticipated that large quantities of material, particularly architectural debris, may be located during testing. Architectural material—such as brick, mortar, stone, and window glass—will be sampled and the remainder will be weighed and discarded.

Floral and faunal remains from commercial and residential contexts will be analyzed in terms of genus, species, and elements. If possible, butchering practices will also be examined.

Precontact artifacts will be cataloged in terms of material type, form, function, and, if possible, cultural affiliation. Specifically, debitage will be analyzed in terms of amount of cortex, size

categories, and raw material. Lithic tools will be analyzed in terms of type and raw material. Ceramics will be cataloged based on inclusions, surface treatment, rim forms, and, if possible, vessel type.

Reporting

A Phase IB/II archaeological report following PHMC/BHP guidelines will be prepared. This report will provide details of the methodology and assumptions of the researchers, an environmental and cultural history background overview, the results of the research, and the analysis of the collected data. The report will be fully illustrated with maps, photographs, and drawings. The report will include a detailed bibliography and a catalog of the recovered artifacts. If a site is identified within the project area, the primary function of this report will be to evaluate the potential National Register eligibility of archaeological deposits and identified features, evaluate the impacts upon the site that will result from the proposed undertaking, and present recommendations for addressing the impacts in terms of treatment measures (e.g., mitigation through data recovery).

The report will be arranged as follows:

- Management Summary
- Introduction
- Research Designs
- Previous Investigations
- Historical Research
- Fieldwork, Methods, and Results
- Artifact Description and Analysis
- Summary and Conclusions
- Appendices

URS will submit five copies of a draft report presenting the results of the fieldwork and analyses to PENNDOT. When it is determined that the report is technically adequate and complete, PENNDOT will send one copy with original photographs to the PHMC and one copy to the FHWA for review. URS will also provide copies for interested, federally recognized tribes. Once all partners approve the report, URS will submit five copies to PENNDOT; four of these copies will contain original photographs.

Archaeological Monitoring

All retaining wall construction within Section 2, 4, 5, and 6 and one pier that will be placed in the middle of Girard Avenue (Section 6) will be archaeological monitored. Monitoring, if needed, will be determined and guided by the results of any future Phase IB/II archaeological testing at the high and low potential APEs within Sections 2, 4, 5, and 6. The retaining walls will be constructed to a depth of three to five feet and extend across areas that mostly consist of fill. It is proposed that the removal of the existing fill be monitored and that any features exposed be recorded. In order to insure that archeological resources are not overlooked, an archeological monitor will be provided during the construction phase of this project. The monitor will observe construction localities listed above and will record all archeological resources, or suspected resources, uncovered during construction activities. Recordation will include vertical and horizontal location of all resources encountered. As in the machine testing described above, URS will clean and document any features exposed during the installation of the retaining walls. Any features excavated during monitoring will contribute to the research design. The monitor will also maintain drawings, photographs and descriptions of all encountered resources. The monitor will maintain an up to date log of all monitoring activities. The log will include the date, time and duration of all monitoring episodes, accompanied with a description of the activity being monitored.

If archaeological resources are encountered, the archaeological monitor will have the right to stop construction activities. If work stoppages occur, the construction contractor may relocate to another area where archaeological monitoring is not required in order to allow the monitor to record the resources. Once recordation of the resources has been completed, the monitor will notify the construction contractor that work may be resumed. The contractor should plan, schedule and execute his work in a manner such that work stoppages will not result in a total shutdown of this work. Monitoring results will be submitted as an addendum to the report mentioned above.

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Appendix A: Archaeological APE Letter

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093

February 1, 2001

Department of Transportation
Attn: Susan L. McDonald, Acting Director
Bureau of Environmental Quality
P.O. Box 3790
Harrisburg, PA 17105-3790

Re: ER# 0 -8007-101-A
Archaeolo ical Area of Potential Effect
S.R. 0095, Section GIR
Philadelph a County

Dear Ms. McDonald:

The Bureau for Historic Preservation (the State Historic Preser ation Office) has reviewed the above named project in accordance with Section 106 of the Na onal Historic Preservation Act of 1966, as amended in 1980 and 1992, and the regulations (36 C R Part 800) of the Advisory Council on Historic Preservation. Our comments are as follow :

You propose to define the Area of Potential Effect (APE) for th s project to all areas where ground disturbance will occur as a result of the construction of his project. In our opinion, the APE should also include all equipment staging and storage are s, since these activities may also result in disturbance to the ground surface. With this addition, e will concur with your proposed APE for this project.

If you would like to discuss this matter, please contact Mark St ffer at (717) 783-9900.

Sincerely,

K. W. Carr By

Kurt W. C r, Chief
Division o Archaeology & Protection

cc: Catherine Spohn, PennDOT District 6-0
J.W. Smith, PennDOT Bureau of Design
M. Garman

Appendix B: Resume

Education

M.A./1991/Temple University/Anthropology
B.A./1981/Temple University/Anthropology

Professional

Register of Professional Archaeologists (RPA Certification)
American Cultural Resource Association (Board Member)
Pennsylvania Archaeological Council, (Board Member)
Philadelphia Archaeological Forum, (Treasurer)

Experience

Mr. Tull has fifteen years of experience in archaeological and historic architectural investigations throughout the Eastern United States. For URS over the past 10 years, he has managed and supervised the full range of cultural resources studies that are required in obtaining federal and state permits, and for developing federal and state planning and environmental documents. Mr. Tull has also managed open-end contracts involving general cultural resource services and has managed numerous multi-million dollar data recovery programs. He is a Registered Professional Archaeologist and specializes in prehistoric ceramic analysis.

2001 Vice President/ Office Manager, URS Corporation
1998 to 2000 *Operations Director, URS Corporation. Key projects include:

Pennsylvania Department of Transportation, District 6-0. Principal Investigator for I-95, Section GIR, Phase IA archaeological sensitivity study which is a site-specific study to guide, locate, and identify archaeological resources within an urban environment throughout the project area. Given the urban setting, the archaeological subsurface testing for the I-95/GIR project will be guided by a developed Programmatic Agreement (PA).

New Jersey Department of Transportation Open End Contract for Cultural Resources Statewide. Program Manager for cultural resources surveys to identify archaeological and Historic Architectural resources within projects' area of potential effect (APE) and also determine if more detailed investigations are required. Contract also includes mitigation efforts and public outreach. Various on-call projects include U.S. Route 130 over Crafts Creek Bridge, Florence Township, Burlington County. This investigation includes two principal components: 1) a historic architectural survey and evaluation of any structures over 50 years of age located within the project's APE; and 2) a historic road survey of a three-mile segment of Route 130. U.S. Route 9 and Tilton Road, City of Northfield, Atlantic County. This investigation will include three principal components: 1) a historic architectural survey and evaluation of any structures over 50 years of age located within the project's APE; 2) public involvement with consulting/interested parties, per Section 106 regulations; and 3) a background and literature search of the archaeological site files. Conducted for the New Jersey Department of Transportation.

US Army Corps of Engineers, Pittsburgh Division, Leetsdale, Pennsylvania. Project Manager

for the archaeological data recovery at site 36AL480, Area 1. Responsible for all administrative aspects of the project, including management of all subconsultants, and served as the main point of contact with the Government. Also monitored production for compliance with the schedule, budget, and the Government's requirements. Additional responsibilities included attending Government meetings and serving as the project's Ceramic Analyst. Conducted for the US Army Corps of Engineers, Pittsburgh District.

Dominion Transmission Greenbrier Pipeline Project. Archaeological and Historic Architectural surveys were conducted along a 300-mile pipeline corridor that stretches across three states (West Virginia, Virginia, and North Carolina). Geomorphological investigations will be conducted at nine major river crossings. Evaluations and mitigation efforts will be conducted for numerous historic properties and archaeological sites. Coordination with several state and federal agencies including three SHPO's, several State Forests, the National Park Service, and reporting to the Federal Energy Regulatory Commission. Contributed to local public meetings held at several locations throughout all three states. Conducted for Dominion Transmission, Inc.

New Jersey Department of Transportation Route 18 Archaeological Data Recovery. As the corporate technical lead on the Route 18 Highway Extension Project, managed data recovery efforts within the eighteenth century town of Raritan Landing conducting all meetings and coordinating the general contractor. Public outreach efforts include a video, permanent museum display, a web site, and a public report targeted for broad readership. Conducted on-site field tours, presented papers to local interested groups, e.g., The Holland Society of New York and NJDOT staff, and assisted local high school students in the creation of an amateur video. Conducted for the New Jersey Department of Transportation.

New Jersey Department of Transportation Route 21 Freeway Extension. The Route 21 Freeway Extension constructed through the towns of Clifton and Passaic involved a multi-year, Phase III data recovery of six (6) archaeological sites – 4 prehistoric, and 2 nineteenth century industrial and domestic sites - and completion of HABS/HAER documentation of the Dundee Canal industrial historic district. As part of the public outreach component of the project, poster displays, a walking tour brochure, prehistoric public report for broad readership, and a high school history unit was developed. Conducted for the New Jersey Department of Transportation.

Maryland State Highway Administration Indefinite Quantities Contract. Program Manager on various on-call projects – The largest being a Phase Ib survey associated with the proposed Intercounty Connector north of Washington, D.C. in Montgomery and Prince George's County, Maryland. Involved the testing of over 30 properties with historic standing structures and the sample survey of over 30 miles of proposed highway corridors on new location and over 90 miles along existing roadways. Contacted and logged via mailing and phone calls over 2,000 property owners prior to testing. Conducted for the Maryland State Highway Administration.

Delaware Department of Transportation Open End Contract for Cultural Resources Statewide. Program Manager for cultural resources surveys to identify resources within projects' area of potential effect (APE) and also determine if more detailed investigations are required. Contract also includes mitigation efforts and public outreach. Various on-call projects including several bridge replacements BR 447, 350, 9 and Market Street, and roadway

intersection designs at prehistoric Paleoindian through Late Woodland - Beech Ridge Site. Conducted for the Delaware Department of Transportation.

Germantown Avenue Bridge Replacement. Phase I/II archaeological investigations were conducted at two historic archaeological sites, which were identified during the investigation. The archaeological deposits recovered from the Paul site (36PH106) dated between 1805 and 1825 and deposits at the Dewees site (36PH107) dated between 1750 and 1770. HAER documentation of the Germantown Avenue Bridge was conducted prior to its replacement. A museum display will be housed at the Chestnut Hill Historical Society. Conducted public meetings for Near Neighbor group. Conducted for the City of Philadelphia, Pennsylvania.

Riversdale Mansion, Riverdale, Maryland. Phase II testing evaluated the significance of the historic garden area within the grounds of Riversdale Mansion using Ground Penetrating Radar, test units, and trenches; Phase III work involved the investigation of the interior area inside of an extant dependency building, as well as subsurface structures consisting of additional dependencies (wash house, smokehouse, water tower, privy, and a garden wall) dating to the early 1800s. Archaeological work needed to assist with the reconstruction of the dependency. Open House full day tours were conducted at the extant mansion and the ongoing excavations with artifact displays. Conducted for the Maryland National Capital Park and Planning Commisson.

Route 202, Section 400 Highway Improvements. The Phase I/II and data recovery of the eighteenth century King of Prussia Inn, wagon shed and barn was conducted in preparation for the relocation of the Inn to a new site. HABS documentation of the Inn completed prior to the move. Identified nine prehistoric sites in Valley Forge National Park along Valley Creek in preparation for stream enhancements. Phase III efforts at a wetlands site identified the Wilson Tract farmstead which exposed evidence of African American occupations from the early nineteenth century. As part of the public outreach component of the project, a museum display, and two historic public reports were developed along with a 50-page booklet and digital copy of the reports accessible from a web site. Conducted for the Pennsylvania Department of Transportation.

Open-End Contract for completion of Categorical Exclusion Documents. Conducted archaeological survey and evaluations and historic architectural survey and mitigations at twenty locations in nearly every county throughout New Jersey. The most notable Phase I examples include, historic architectural and archaeological surveys in association with scores of intersection improvements. These projects involved surveys within rural settings and highly urbanized locations. Five of the projects, located in Monmouth, Middlesex, Burlington, and Cape May counties, were conducted concurrently and included assessments of the National Register eligibility of standing resources and archaeological sites. A sample of Phase II archaeological evaluations carried out include the Williams-Shoemaker Site at the intersection of Route 50 and 47, Tuckahoe, in Cape May County, and the A.J. Lackner and the Steffens sites located on Route 206 at the entrance to Stokes State Forest, in Sussex County. A Historic Architectural Survey of Statewide Motor Vehicle Inspection Stations helped NJDOT expedite National Register evaluation of 13 stations located throughout the state when facility upgrades were immediately needed. Conducted for the New Jersey Department of Transportation.

1993 to 1998 *Senior Archaeologist, URS Greiner Woodward Clyde. Key projects include:

Phase I / II Archaeological Survey for Dominion Energy and Consolidated Natural Gas,PA-2 Site, Armstrong County, Pennsylvania. Principal Investigator for Phase I / II investigations Site 36AR469, a late eighteenth century dwelling in Armstrong County, PA. Conducted for Dominion Energy and Consolidated Natural Gas.

Phase IA Investigations at Alley Creek, Bronx, New York. Principal Investigator for Phase IA archaeological investigations on the proposed Alley Creek drainage area improvements, Borough of Queens, New York. This involved surface reconnaissance of the proposed sewer and catchment modification areas. Phase IB survey was recommended in several locations.

Phase I Survey, Wallingford Park and Ride, Wallingford, Pennsylvania. Principal Investigator Phase I survey of proposed park and ride site containing remains of historic period estate with landscaping features. Project conducted for the Pennsylvania Department of Transportation, District 6-0.

Route 206 Widening and Climbing Lanes Project, Sussex County, New Jersey. Principal Investigator for Phase I and II archaeological investigations. Project area contained remnants of late nineteenth century domestic and farmstead sites within Stokes State Forest and Delaware Watergap National Recreation Area. Conducted for the New Jersey Department of Transportation.

Richboro Road Bridge Replacement, Bucks County, Pennsylvania. Principal Investigator for Phase I and II archaeological testing at Richboro Road Bridge Replacement Project within Tyler State Parks Bucks County, Pennsylvania. Project area contained nineteenth century farmstead and Archaic and Woodland prehistoric site. Conducted for the Pennsylvania Department of Transportation, District 6-0.

Maryland Route 2/4 Interconnector, Calvert County, Maryland. Principal Investigator for the Phase I Calvert County Maryland Route 2/4 interconnector survey, which consisted of over 7 miles of new roadway. Daily coordination with highway survey crews was necessary to complete this fast track project. Conducted for the Maryland State Highway Administration.

Baltimore/Washington International Airport, Anne Arundel County, Maryland. Principal Investigator for Phase I archaeological survey of proposed hiker-biker trail adjacent to Baltimore/Washington International Airport. Project conducted for the Maryland State Highway Administration.
Principal Investigator, Phase I survey of a proposed parking lot within the northern portion of Baltimore/Washington International Airport, Anne Arundel County, Maryland. Project conducted for the Maryland Aviation Administration.

Old Betzwood Bridge Replacement, Montgomery County, Pennsylvania. Principal Investigator for Phase II study for the Pennsylvania Department of Transportation. Phase II archaeological testing of bridge replacement project area, which was located in Valley Forge National Historic Park. Project area contained remnants of nineteenth century industrial village.

1979 to 1993 *Archaeologist, Temple University, Philadelphia, Pennsylvania.

Excavation of an historic Revolutionary War site in Langhorne, Pennsylvania, under the direction of Dr. Michael Stewart.

Created databases to be used as a template for examining the distribution and nature of prehistoric sites in the Delaware Valley using a relational database.

Assisted in the archaeological survey and excavation of the Snodgrass Farm Site in Langhorne, Pennsylvania, under the direction of Dr. Michael Stewart.

Assisted in a field survey within Lebanon County, Pennsylvania, for a gas pipeline, under the direction of Dr. Patricia Hansell.

Investigated, mapped, and researched settlement patterns of prehistoric floodplain sites at the Office of the New Jersey Heritage and the Pennsylvania Historic and Museum Commission.

Participated in the Pinelands archaeological site survey in Atlantic County, New Jersey, under the direction of Dr. Anthony Ranere and Dr. Patricia Hansell. Conducted for the Pinelands Commission.

Assisted in the excavation of the prehistoric Gravely Run Site in New Jersey, under the direction of Dr. Anthony Ranere.

Participated in the excavation and survey of the prehistoric Pidcock sites in Bucks County, Pennsylvania, under the direction of Dr. Jacob Gruber and Dr. Anthony Ranere from Temple University.

Publications

1995 Historic Accounts Can Help in Prehistoric Archaeological Explanation in the Middle Delaware Valley. *Bulletin of the Archaeological Society of New Jersey* 50.

1993 Archaeological Investigations at the Pidcock Sites, Bucks County, Pennsylvania. *Pennsylvania Archaeologist* 63 (1).

1991 *Archaeological Investigations at the Pidcock Sites (36BU154-155) Bucks County, Pennsylvania*. M.A. thesis, Department of Anthropology, Temple University. Philadelphia, Pennsylvania.

1990 *From the Forks to the Falls: Prehistoric Settlement Patterns in The Middle Delaware Valley Floodplain*. Department of Anthropology, Temple University. Philadelphia, Pennsylvania.

Papers

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