June 2005

Prepared for:

PENNDOT
District 6-0

Addendum
to the
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

Prepared by:

URS

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Prepared for

Pennsylvania Department of Transportation
Engineering District 6-0

Prepared by

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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 addendum to the 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. Fieldwork at every location of anticipated ground disturbance was both cost prohibitive and impractical; thus, a preferred alternative was needed for this undertaking, and 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.

However, a staged approach is recommended and discussed in the Summary. The remaining 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 addendum to the I-95, Section GIR, Phase IA archaeological sensitivity study (ER 01-8007-101) follows that reports site-specific study to guide, locate, and identify archaeological resources within an urban environment throughout two additional sections within the project area (Tull 2004). Fieldwork at every location of anticipated ground disturbance was both cost prohibitive and impractical; thus, a preferred alternative was needed for this undertaking, and 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 to include this addendum 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.

As supporting documentation for the PA, this Phase IA addendum study restates the research design that ranks both historic and precontact archaeological resources for the entire project area as presented in Tull (2004) for ease of review. 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 addendum report explains which historic lots are most likely to contain information (i.e., part of the archaeological record) important to Philadelphia history. The areas that potentially contain precontact archaeological resources, buried beneath deep modern fills, are also included in this report. Just as the approved Phase IA report did, this addendum 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, detour routes, construction staging areas etc. 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 report and addendum and be involved throughout the duration of the project. URS has provided PENNDOT with 18 copies of a project description and location map for tribal coordination of federally recognized tribes with an interest in Pennsylvania.

UNDERTAKING

Overall 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. The sections that cover this portion of the undertaking were presented in Tull (2004). The detour routes and relocation of Richmond Street are covered in this addendum. Richmond Street will be relocated to the east of its present location between Girard Avenue and Ann Street and the temporary detour route will be directed through the Port Richmond rail yard between Richmond Street and Allegheny Avenue. 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) and the conclusions and recommendations of the I-95, Section GIR, Phase IA archaeological sensitivity study (ER 01-8007-101) (Tull 2004). The archaeological APE is confined to those areas where ground disturbance will occur as a result of project construction. These areas include the relocation of Richmond Street and detour routes.

REPORT ORGANIZATION

The organization of this report follows the original reports presentation and methodology; it is organized into sections based on types of highway design. In this case Section 8 covers relocated Richmond Street and Section 9 covers the proposed Detour Routes. 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	*Location*
• Section 8	North Side of Girard Avenue to Ann Street
• Section 9	Richmond Street through the former rail yard to Allegheny Avenue

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 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.

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 addendum to the Phase IA study: the test-boring logs of the Pennsylvania Drilling Company of Pittsburgh, Pennsylvania; test-boring logs created by Sprague and Henwood, Inc.; 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*
• C-1 (S6496, S6502, S6499)	Section 8
• C-2B1 (S-5014)	Section 8
• C-2A (S-5016)	Section 8
• C-2B2 (S-5017)	Section 8

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 are repeated here from Tull (2004), again for ease of review.

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. 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 an 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 an 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 into 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 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, leatherworks, 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 then 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 1690). 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, which was 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. Northern Liberties home became home to several tanneries, a carpet factory, Deringer's pistol works, and Haig's earthenware manufactory (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, with 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, and large warehouses were being built to store and receive and dispatch merchandise (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), although 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 Street.
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 Third and Willow streets, 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).

The neighborhood continued to grow in the late-nineteenth century through the early-twentieth centuries. 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," from which present-day Port Richmond derives its name. 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 together 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, however, was largely a failure. A limited number of wharves and warehouses were built, and 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 light of this, the archaeologist can assist in re-creating 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, then to 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 or 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 related 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, 8, and 9	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 re-create 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.

Other research issues that will be examined include the definition of occupational duration, group size, and regional interaction associated with the site. 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 on 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 noncontemporaneous 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; for example, 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 technique, 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, the approximate appearance of the area prior to any historic contact should be able to be reconstructed. 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 nor drive any species into extinction. Therefore, if success is measured by stability, then the southeast Pennsylvania Woodland Indians would rank high.

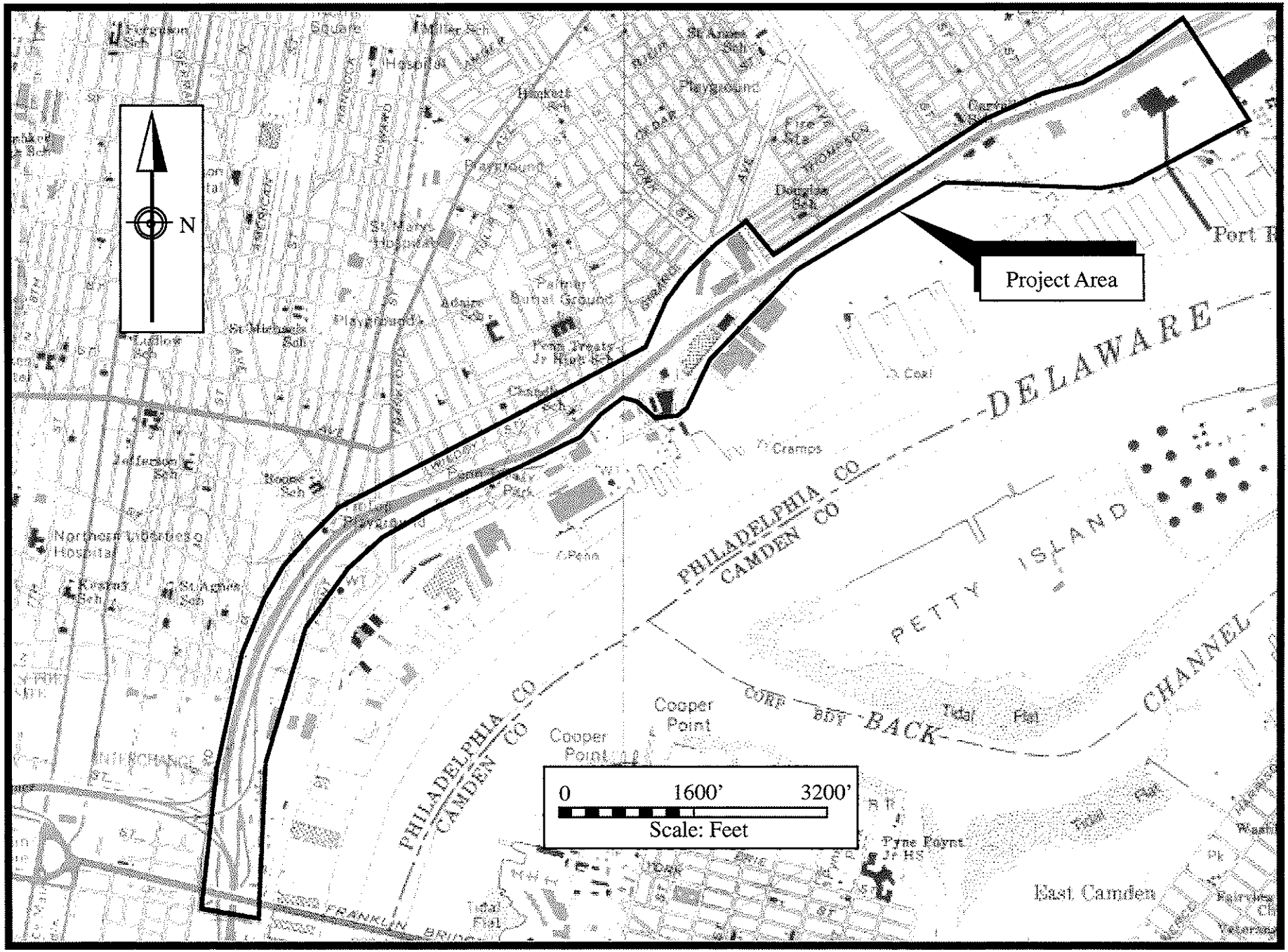


Figure I.1 I-95, Section GIR, Archaeological Project Location (Source: Camden USGS QUAD).

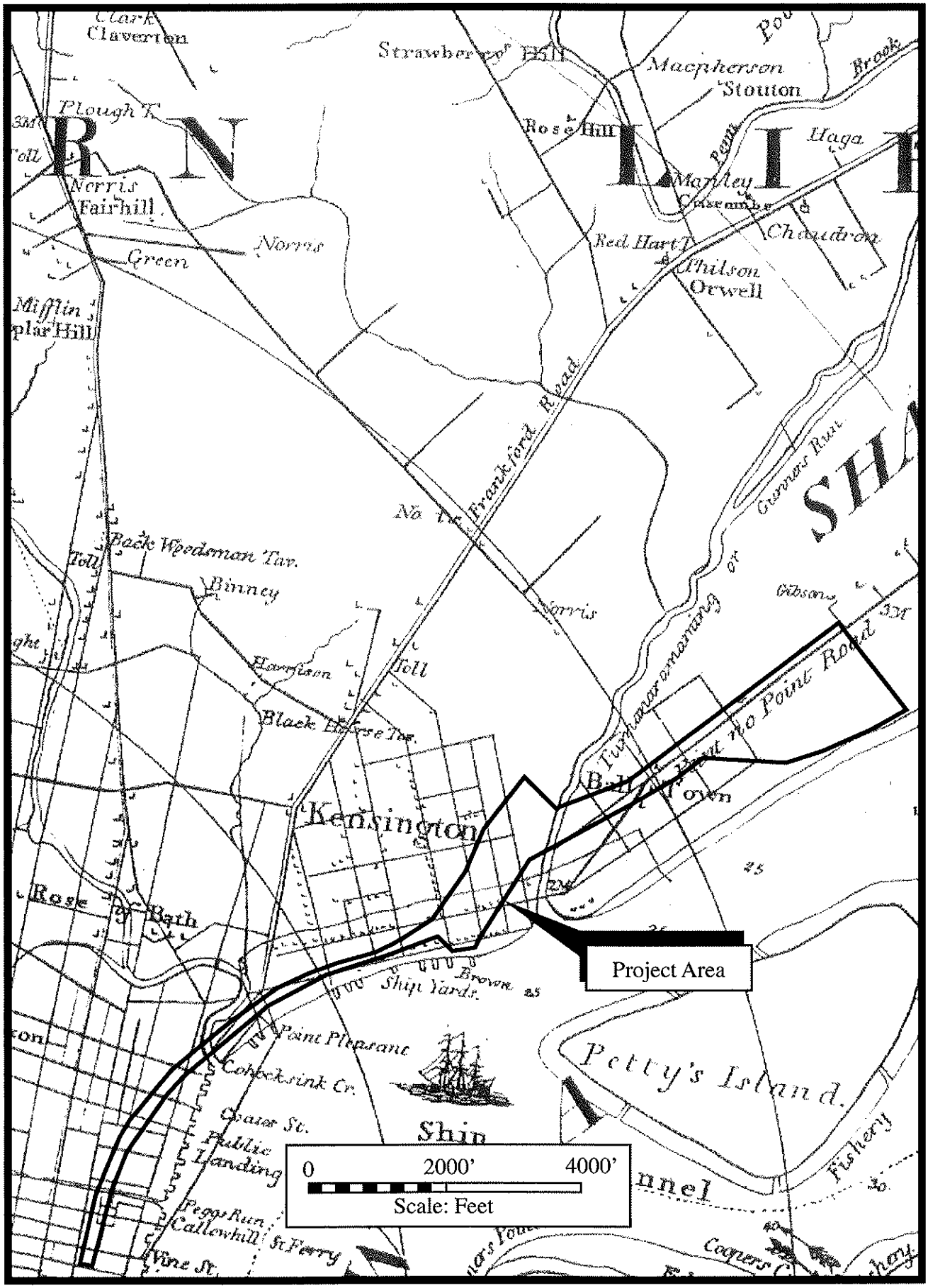


Figure I.2 Location of I-95, Section GIR, Archaeological Project Area at the Beginning of the Nineteenth Century (Source: Hills 1809).

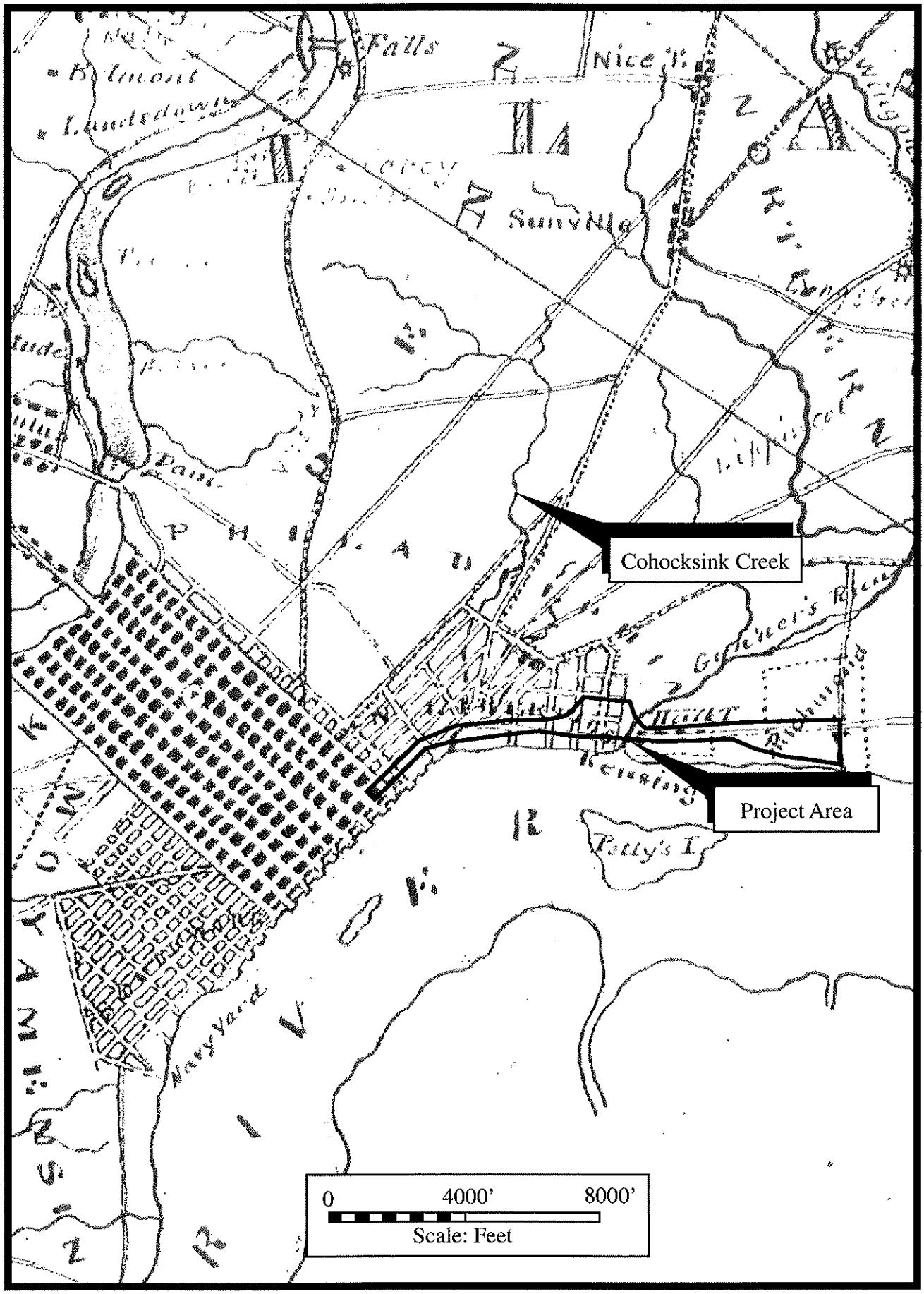


Figure I.3 I-95, Section GIR, Archaeological Project Area in the 1820s (Source: Troost 1826).

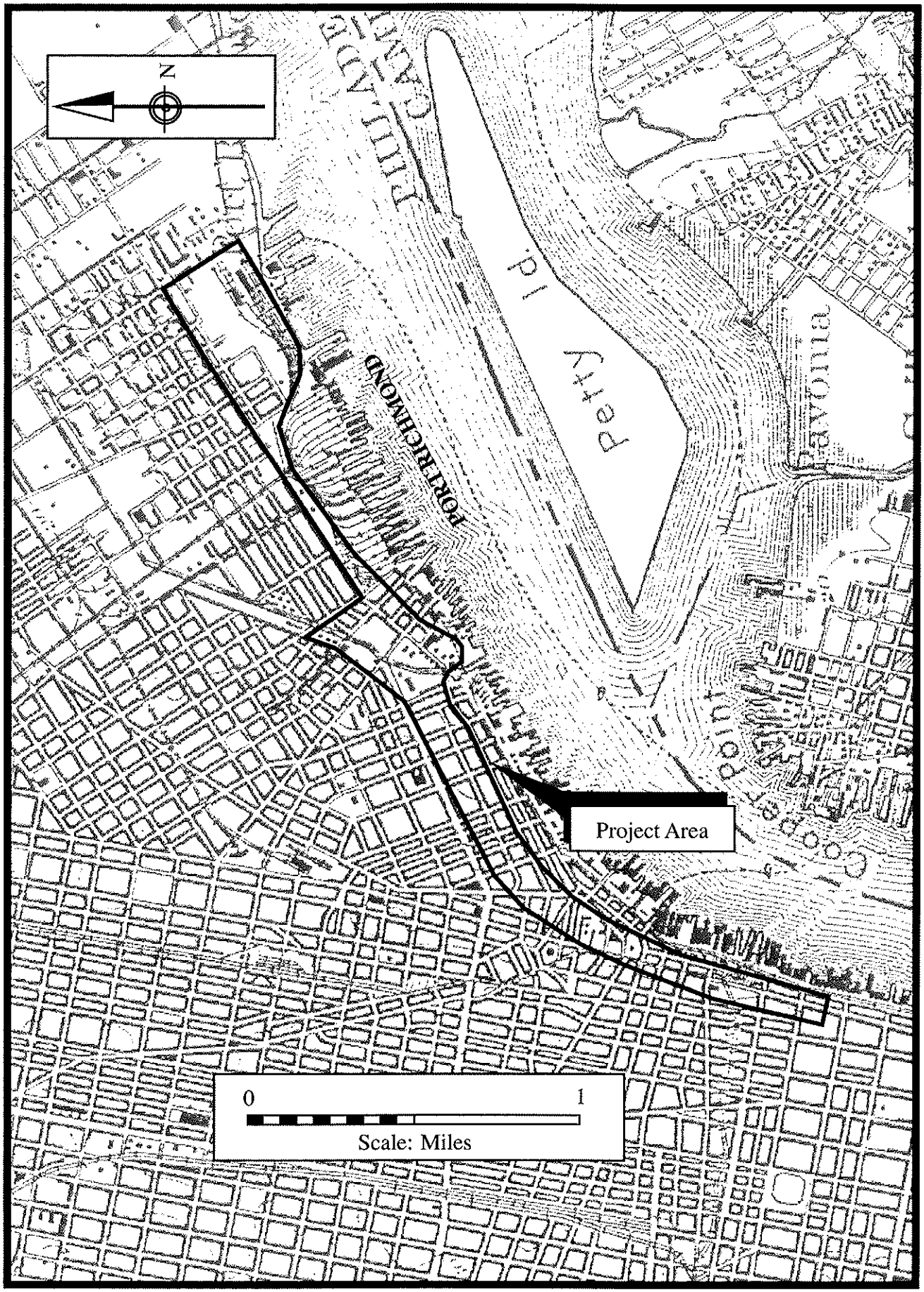


Figure I.4 I-95, Section GIR, Archaeological Project Area in 1894 (Source: USGS 1908).

SECTION 8:
RELOCATED RICHMOND STREET
NORTH SIDE OF GIRARD AVENUE TO
NORTH SIDE OF ANN STREET

UNDERTAKING

The Pennsylvania Department of Transportation District 6-0 (PENNDOT) proposes to improve capacity, operation, and access on I-95 between Vine Street and Girard Street Interchanges. Richmond Street will be relocated to the east between Girard Avenue and Ann Street (Figure 8.1; also see Plates 8.1 to 8.3).

SITE-SPECIFIC ENVIRONMENTAL DATA

A) Relocated Richmond Street between Girard Avenue and Cumberland Street

Soil-test boring data for the I-95 right-of-way between Girard Avenue and Cumberland Street was collected from original construction plans Section C-1. The soil profiles from south to north (C1-74, C1-77, C1-80, C1-83, C1-85, and C1-90) are similar, with varying depths of fill (ranging from 7 feet to 1 foot), capping brown silt and sand from 6 feet at C1-74 to 1 foot at C1-90; medium-to-coarse sand ranges from 10 to 20 feet thick before reaching mica schist bedrock. The soil-profile schematic (Figure 8.2) best exemplifies the soil-boring results.

B) Relocated Richmond Street between Cumberland Street and Somerset Street

The soil profile in the vicinity of Cumberland Street to Lehigh Avenue 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 contained one foot of ash fill, capping 8 feet of brown silt with very fine sand overlaying medium brown, wet sand for another 8 feet. Eleven feet of medium gray and brown sand containing small gravel overlays 3 feet of medium brown sand and gravel, resting on decomposed mica schist (Figure 8.3).

The representative soil profiles between Lehigh Avenue and Somerset Street were taken from Section C-2A (soil borings C2-43, C2-49, and C2-53). The soil-profile schematic (Figure 8.4) best exemplifies these soil-boring results. Specifically, soil boring C2-37 at Station 373+00 contained one foot of concrete and cinders fill capping 3 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.

C) Relocated Richmond Street between Somerset Street and Cambria Street

The soil profile from Somerset Street to Cambria Street was developed from Section C-2B1 soil boring C2-60. The soil-profile schematic (see Figure 8.4) best exemplifies these soil-boring results.

D) Relocated Richmond Street between Cambria Street and Ann Street

The soil profile from Cambria Street to Ann Street was developed form Section C-2B1 soil borings C2-71 and C2-81. The soil-profile schematic (see Figure 8.4) best exemplifies these soil-boring results. Specifically, soil boring C2-71 contained 1.5 feet of black cinders fill capping 3 feet of brown, fine sand and gravel, overlaying 6 feet of brown, fine sand. Three feet of brown, fine sand and gravel overlays 9 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.

SITE-SPECIFIC HISTORICAL DATA

Historical maps of the area were consulted (Hopkins 1875; Smedley 1862) to determine the nature of prior land use. The Philadelphia and Reading Railroad Company purchased an open and picturesque section of the waterfront known as Ball's Shore about 1837 for its coal terminal—Port Richmond (Figure 8.5). Builders used a cofferdam that allowed them to excavate the river's bottom down to gravel, thus, providing a stable foundation for piers and wharves. They then filled the shoreline as far west as Frankford Avenue up to an elevation that would permit rail cars to have direct access to the piers. Coal began moving off the rail cars and onto ships in 1842. The coal wharves were located between Cumberland Street and Cambria Street. Their marine terminal was so successful that the railroad company purchased adjoining river frontage north of the original terminal area in 1848 and more in 1852, bringing their total river frontage to 4,230 feet (John Milner Associates 1995:12-14).

Between 1848 and 1862, the newly acquired sections of waterfront witnessed extensive filling to create piers and wharves (Hopkins 1875; Smedley 1862). By 1852, the Philadelphia and Reading Railroad had a 20-stall engine house and machine shop in the marshy area south of Allegheny Avenue and laid a track along the waterfront to access these facilities. The engine house was demolished by 1886. The Philadelphia and Reading Railroad established a shipyard at Port Richmond between William Street (now Cambria Street) and Allegheny Avenue in 1874. The railroad's efforts to build its own fleet of iron steamships to transport coal fell victim to the nationwide economic depression of 1873. By 1880, the shipyard was reported to be in poor condition; its buildings were demolished around 1890. Storage tracks covered the 225-acre area that had once been occupied by the shipyard and repair shops. The rail yard had 85 miles of track that could accommodate 5,600 railroad cars (John Milner Associates 1995:12–15) (Figure 8.6).

In the 1920s, the renamed Reading Railroad expanded their port facilities to include 12 piers, a 2.5 million bushel grain elevator, 4 ore docks, a coal dumper, and the best heavy lifting equipment on the Atlantic seaboard. It could handle millions of tons of coal, ore, grain, scrap iron, and other products. In the mid-1950s, the Reading's promotional material could still boast

that Port Richmond was the world's largest privately owned railroad tidewater terminal. However, more modern and efficient facilities were already siphoning off business. The Port Richmond Terminal closed in 1976 and its facilities were demolished (Baist 1888, 1895; John Milner Associates 1995:16; Reading Company 1958:34-37).

A) Relocated Richmond Street between Girard Avenue and Cumberland Street

William Cramp established a shipyard on the Delaware River waterfront around 1830. His business expanded from wooden sailing ships to iron clad vessels just before the Civil War. Eventually, the William Cramp & Sons Ship and Engine Building Company employed as many as 6,000 workers to build steel hulled ships and steam engines on a 32-acre site. The firm was the premier maker of modern ships in the United States' naval program in the 1890s. While ship construction ceased in 1927, the facility was resurrected during the Second World War (Dixon 1989a, 1989b; Galaxy Publishing Company 1875:20–21). The proposed alignment of Relocated Richmond Street passes through the site of the Cramp & Sons factory, in particular the sand house, pattern storage, and moulding shop sections of the factory (Sanborn 1919; Figure 8.7).

B) Relocated Richmond Street between Cumberland Street and Somerset Street

Port Richmond, the Reading Railroad marine terminal and rail yard, occupied the waterfront between Cumberland Street and Allegheny Avenue. The proposed alignment of relocated Richmond Street was the site of trackage and structures associated with the operation of the rail yard. These structures include the Cumberland Street freight station, an office building, a storage building, and a water tank (Figure 8.8).

C) Relocated Richmond Street between Somerset Street and Cambria Street

Port Richmond, the Reading Railroad marine terminal and rail yard, occupied the waterfront between Cumberland Street and Allegheny Avenue. The proposed alignment of relocated Richmond Street was the site of trackage and structures associated with the operation of the rail yard. These structures include office buildings and storage buildings. The Pennsylvania Warehousing and Safe Deposit Company owned a three-story brick factory building at 2821-2851 Richmond Street [the southeast corner of Richmond Street and Cambria Street]. This structure was determined to be ineligible for the National Register of Historic Places in 1994 (PHMC Cultural Resources Database; Figure 8.9).

D*) Relocated Richmond Street between Cambria Street and Ann Street*

By 1862, a mixed residential and commercial use neighborhood developed on Philadelphia and Reading Railroad property north of the coal terminal on the east side of Richmond Street. Most of this development was focused on the blocks between William (now Cambria) Street and Ann Street. The area lying south of William Street was devoted to trackage (Baist 1895; Hopkins 1875, 1886; Smedley 1862).

On the block bounded by Cambria (formerly William Street) and Ann Street, Richmond Street and the former site of Melvale Street, the relocated Richmond Street will traverse the site of a densely built nineteenth-century Port Richmond neighborhood. Seven three-story stores and the

three-story Seamen's Home fronted 2805 to 2821 Cambria Street. Fifteen two- and three-story dwellings fronted 2910 to 2940 Melvale Street. A 20-foot wide alley, Drain Street, bisected the eastern end of the block for a distance of 140 feet. Five two- and three-story dwellings and one three-story store (at the corner) fronted 2806 to 2816 Ann Street. Richmond Street was Port Richmond's main street. The Richmond Presbyterian Church was located at 2927 to 2931 Richmond Street. Eight three-story dwellings, a two-story dwelling, five three-story stores, a two-story store, and the U.G.I. Company fronted 2901 to 2947 Richmond Street (Figure 8.10).

ARCHAEOLIGICAL RECOMMENDATIONS

Historic Archaeological Potential

Low Potential

A) Relocated Richmond Street, Girard Avenue to Cumberland Street: This section of the relocated Richmond Street was once occupied by industrial buildings belonging to the William Cramp & Sons Ship & Engine Building Company. Historic disturbance here is significant; therefore, few intact industrial features are expected.

B) Relocated Richmond Street, Cumberland Street to Somerset Street: This section of the relocated Richmond Street skirts the edge of the former Port Reading rail yard. Historic disturbance here is significant; therefore, few intact industrial features are expected.

C) Relocated Richmond Street, Somerset Street to Cambria Street: Relocated Richmond Street will impact the former Pennsylvania Warehousing and Safe Deposit Company, a three-story brick factory building at the southeast corner of Richmond Street and Cambria Street. Office and storage buildings that were associated with the Reading Railroad once occupied this section of relocated Richmond Street. This structure was determined to be ineligible for the National Register of Historic Places in 1994 (PHMC Cultural Resources Database).

High Potential

D) Relocated Richmond Street, Cambria Street to Ann Street: This section of the relocated Richmond Street route has a high potential for historic archaeological deposits. It was the site of mixed residential and commercial occupation in the Port Richmond neighborhood. 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.

Precontact Archaeological Potential

No Potential

In the former Port Richmond Marine Terminal and Rail Yard: The detour routes will only affect the rail yard to a depth of 2 to 3 feet; the former Port Richmond marine and rail terminal was excavated down to gravel during the nineteenth century. Thus, there is no potential for intact precontact archaeological deposits in this area.

Low Potential

Outside of the former Port Richmond Marine Terminal and Rail Yard: Given the intense late-nineteenth to early-twentieth century construction, as well as and the construction of I-95, there is a low potential for intact precontact archaeological deposits in this area.

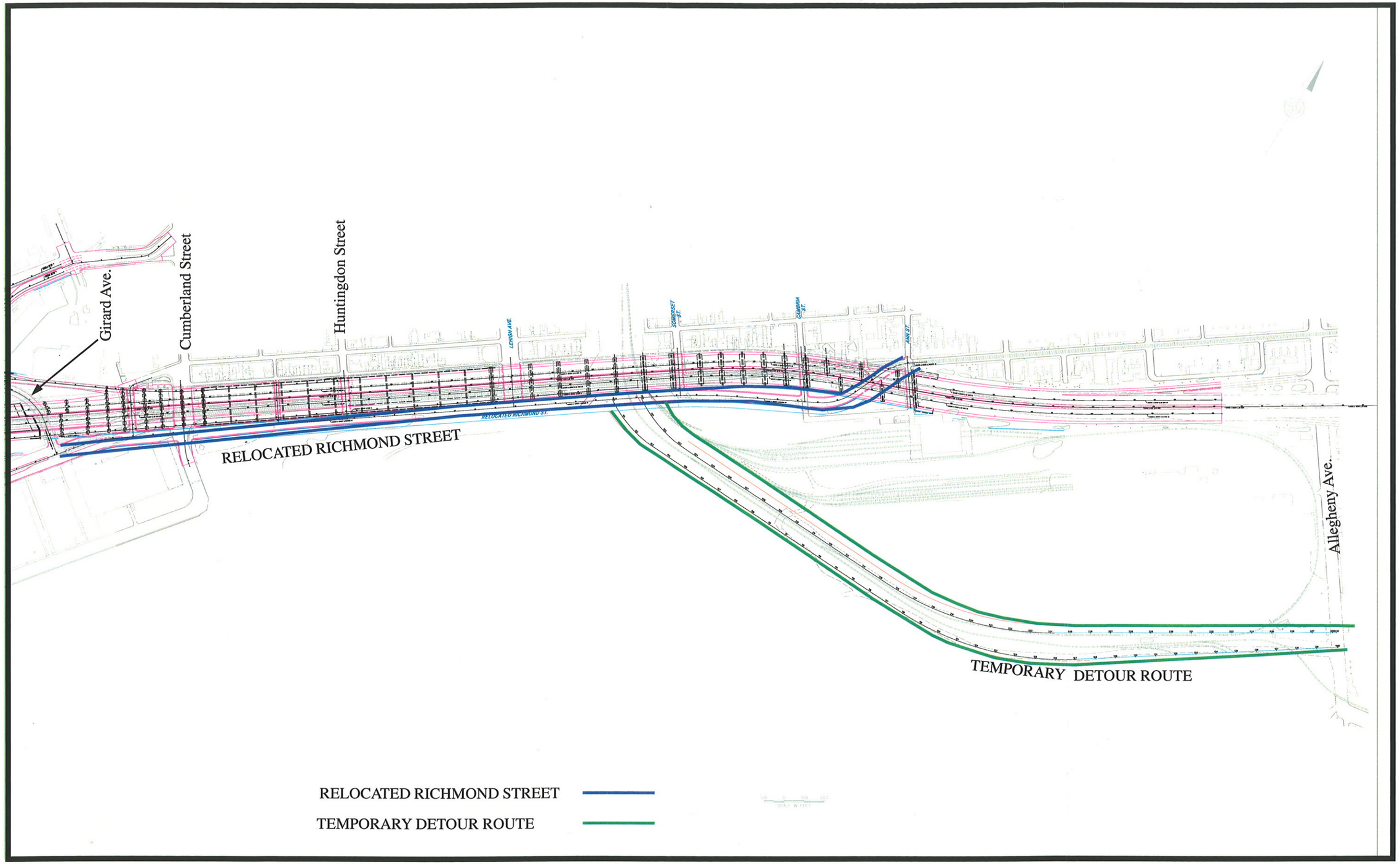
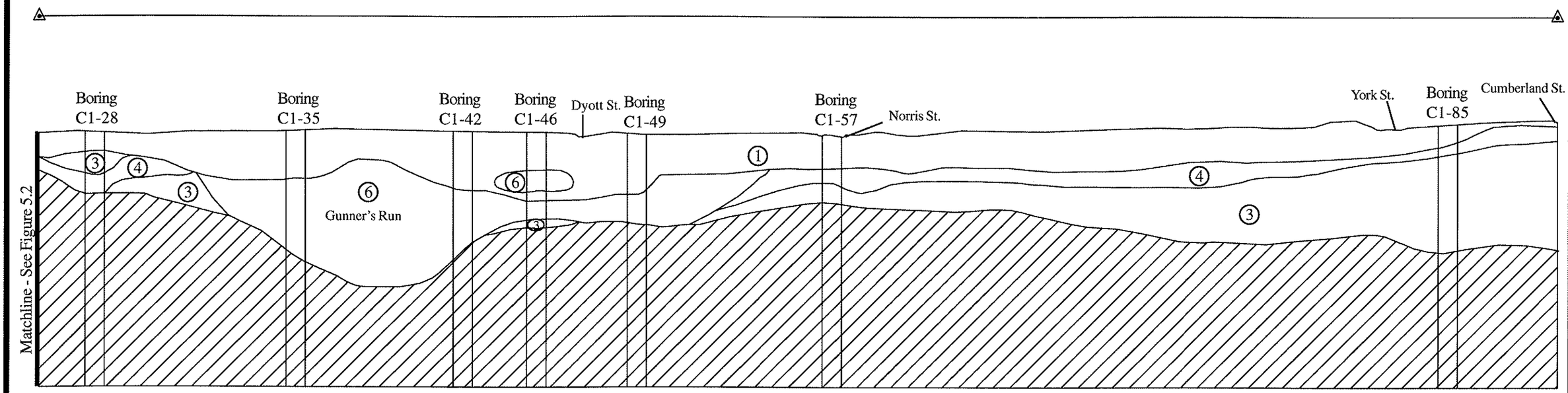


Figure 8.1 Location of Relocated Richmond Street and Temporary Detour Route.

SECTION 8



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

Horizontal Scale

0 100'

Scale: Feet

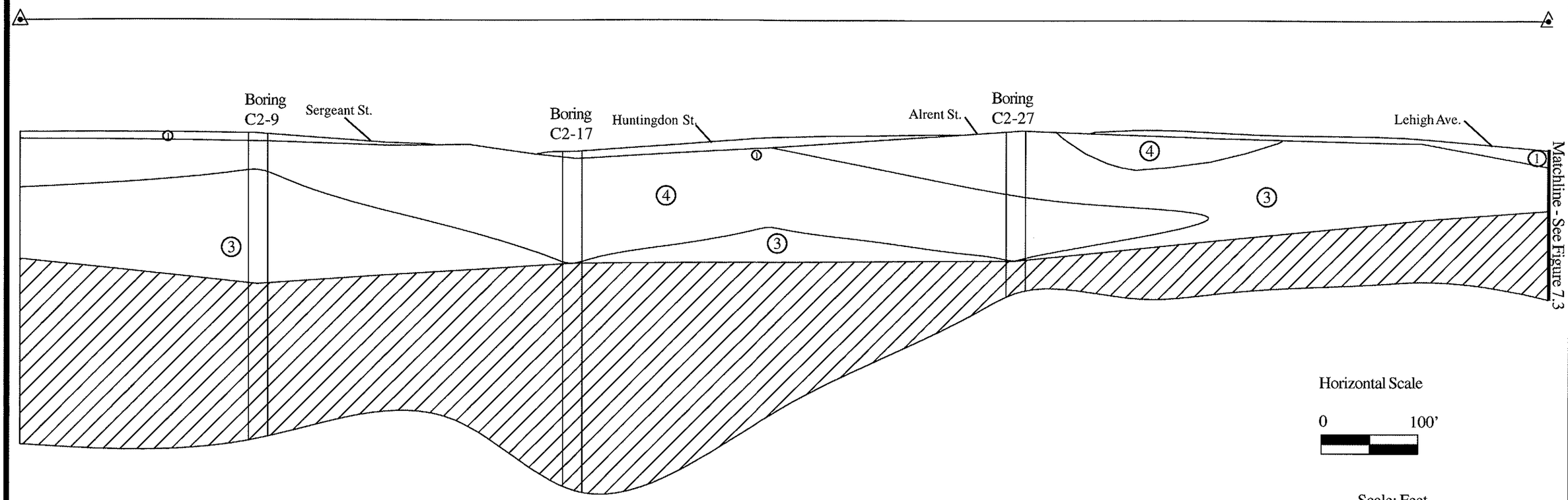
0

20'

Vertical Scale

Figure 8.2 Section 8, Soil Profile, Berks Street to Cumberland Street.

SECTION 8



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 8.3 Section 8 (Continued), Soil Profile, Cumberland Street to Lehigh Avenue.

SECTION 8

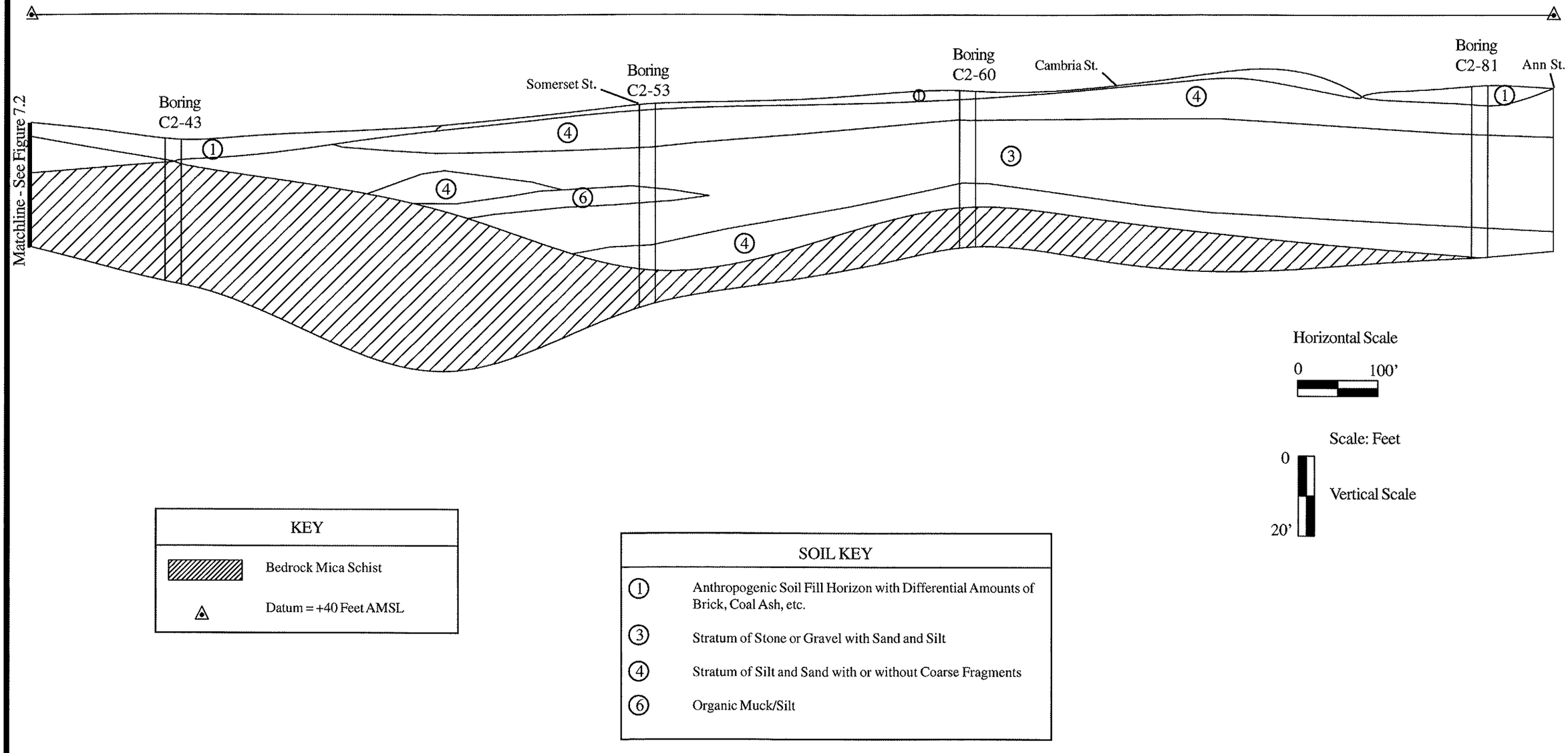


Figure 8.4 Section 8 (Continued), Soil Profile, Lehigh Avenue to Ann Street.

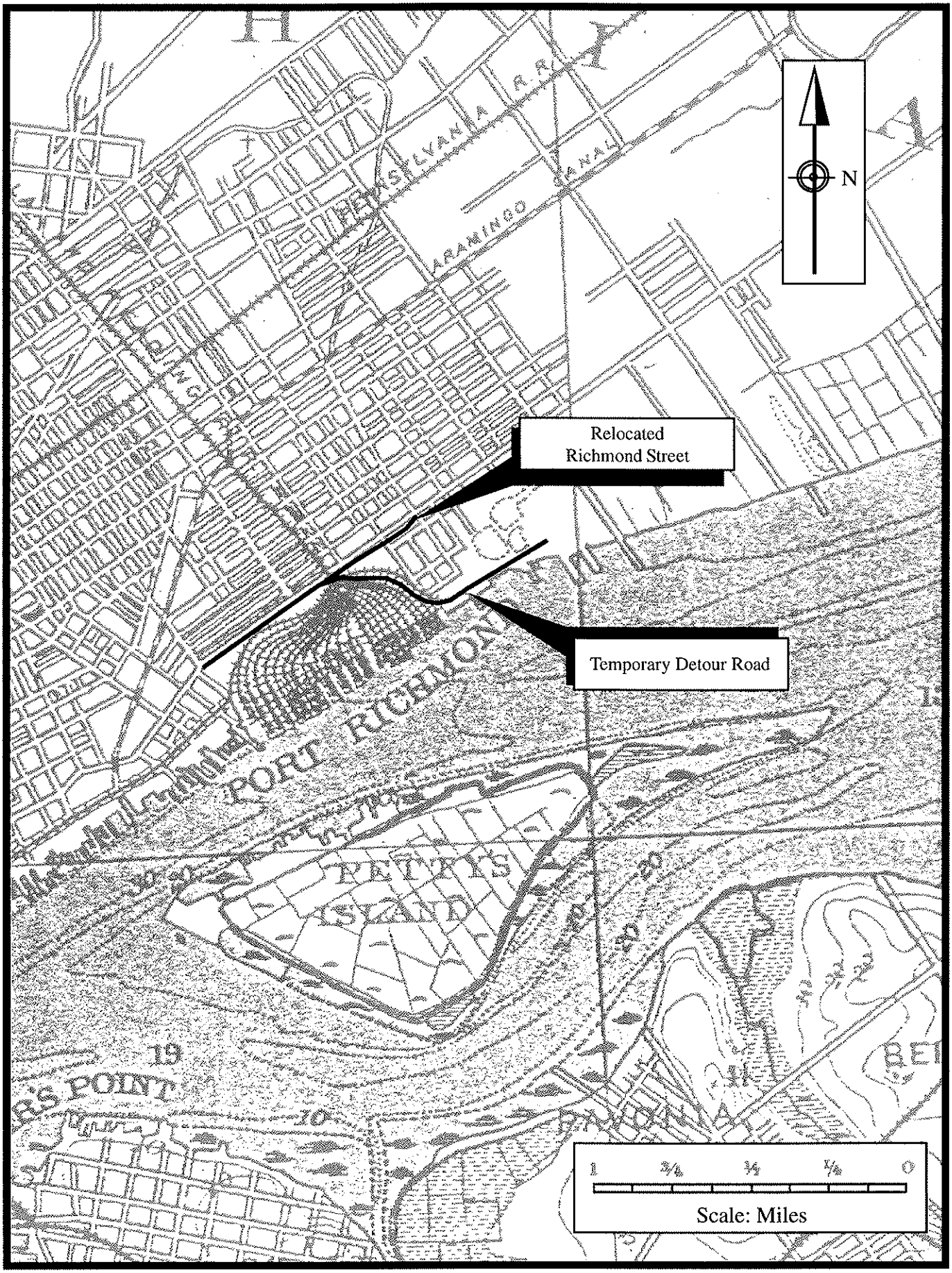


Figure 8.5 I-95 Section GIR, Detour Routes in 1887 (Source: Geological Survey of New Jersey, 1887).

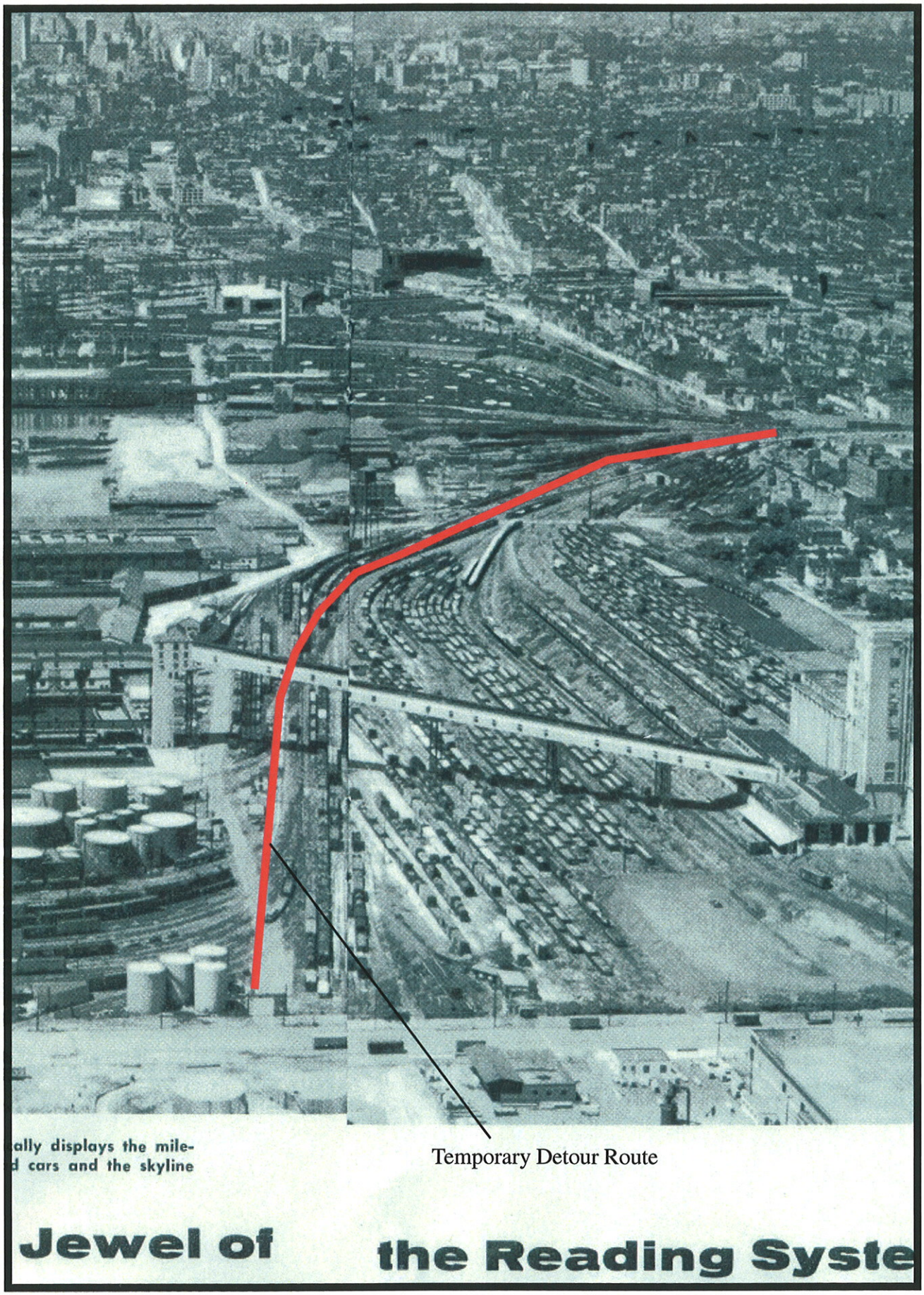


Figure 8.6 Port Richmond Marine Terminal and Rail Yard As It Appeared In the 1950s. (Source: The Reading Company, 1958).

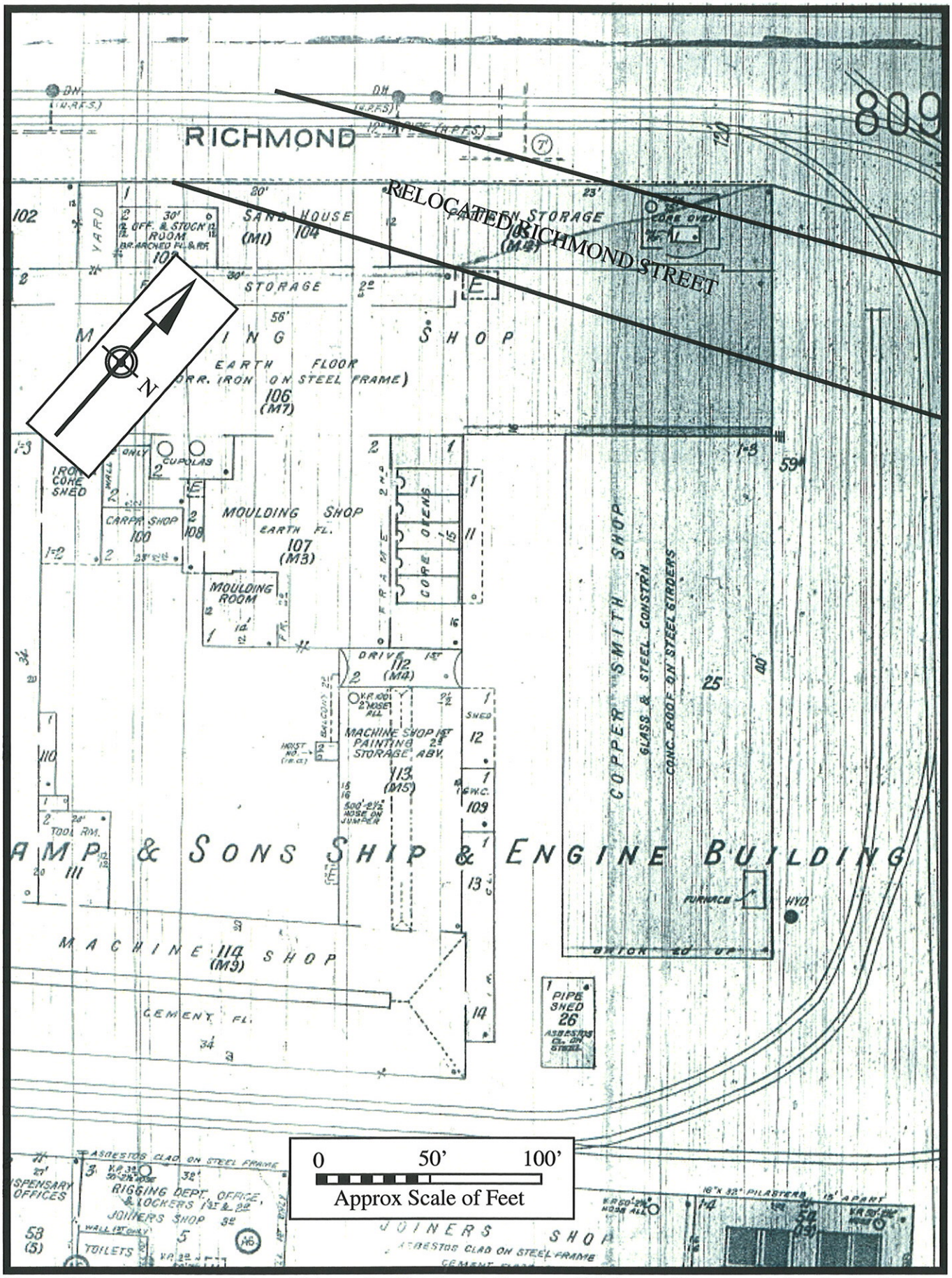


Figure 8.7 Cramp and Sons Shipyard at Southeast Corner of Richmond Street and Cumberland Street. (Source: Sanborn 1919).

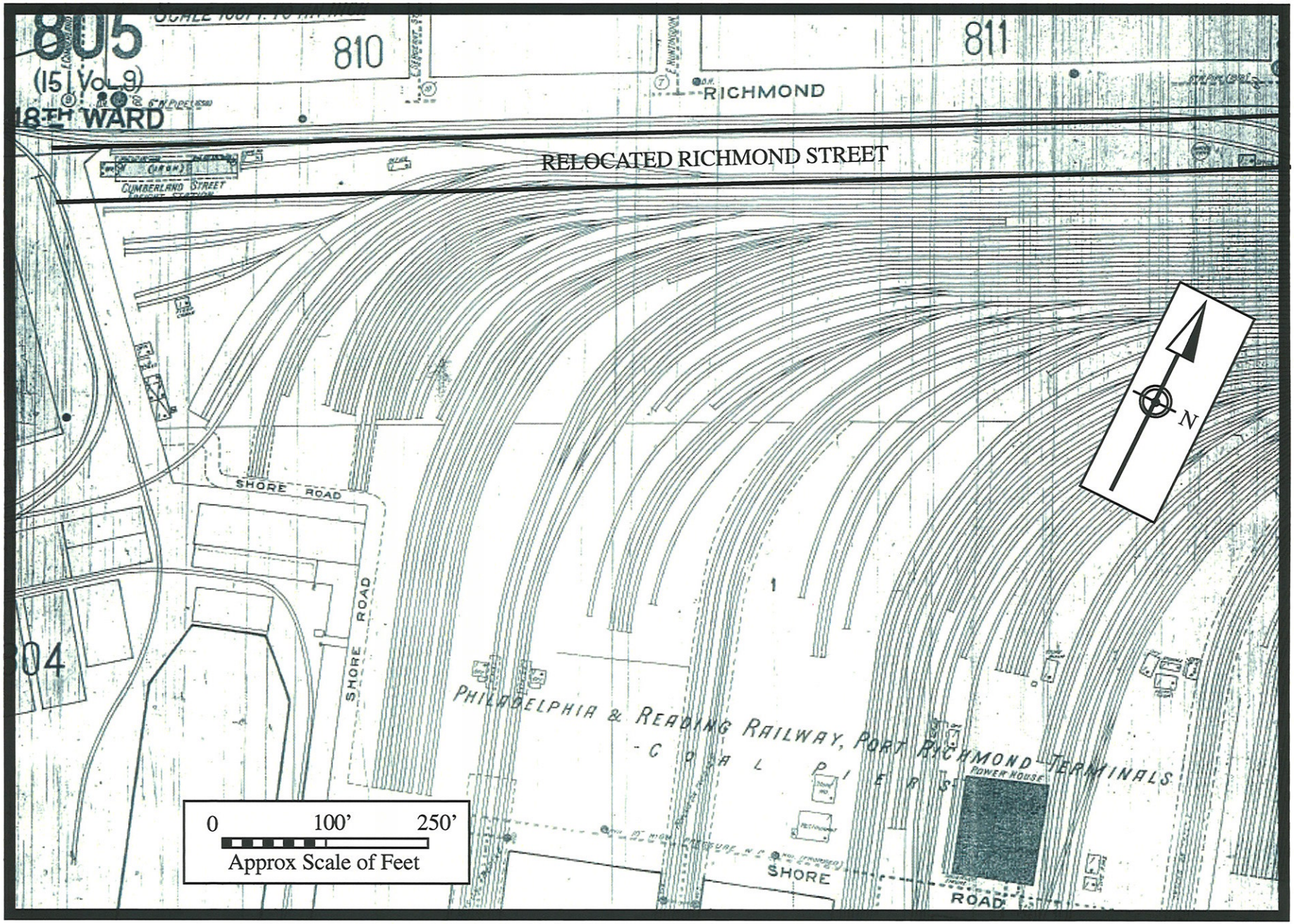


Figure 8.8 Relocated Richmond Street Between Cumberland Street and Lehigh Avenue in 1919 (Source: Sanborn 1919)

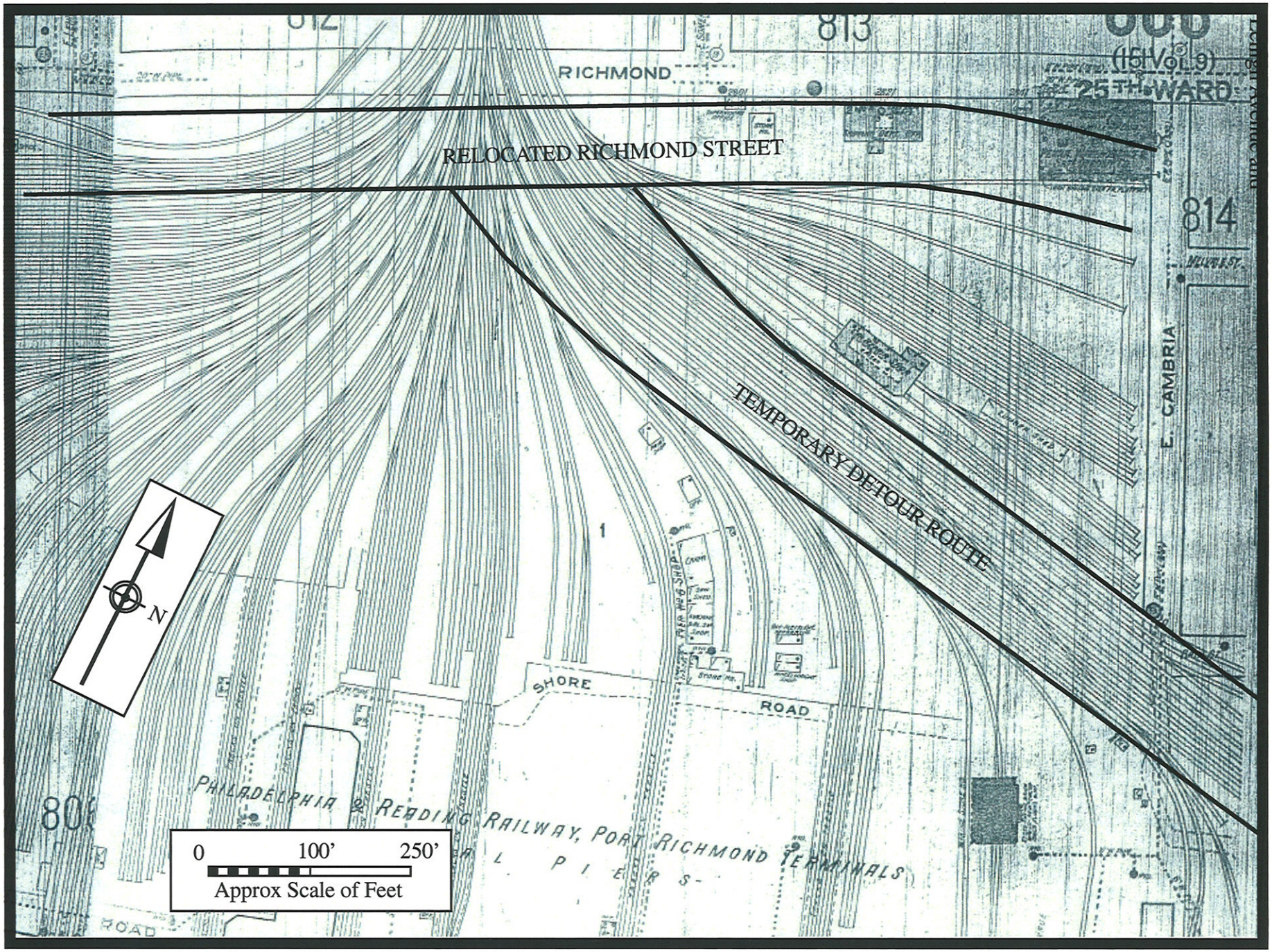


Figure 8.9 Relocated Richmond Street Between Lehigh Avenue and Cambria Street in 1919 (Source: Sanborn 1919.)

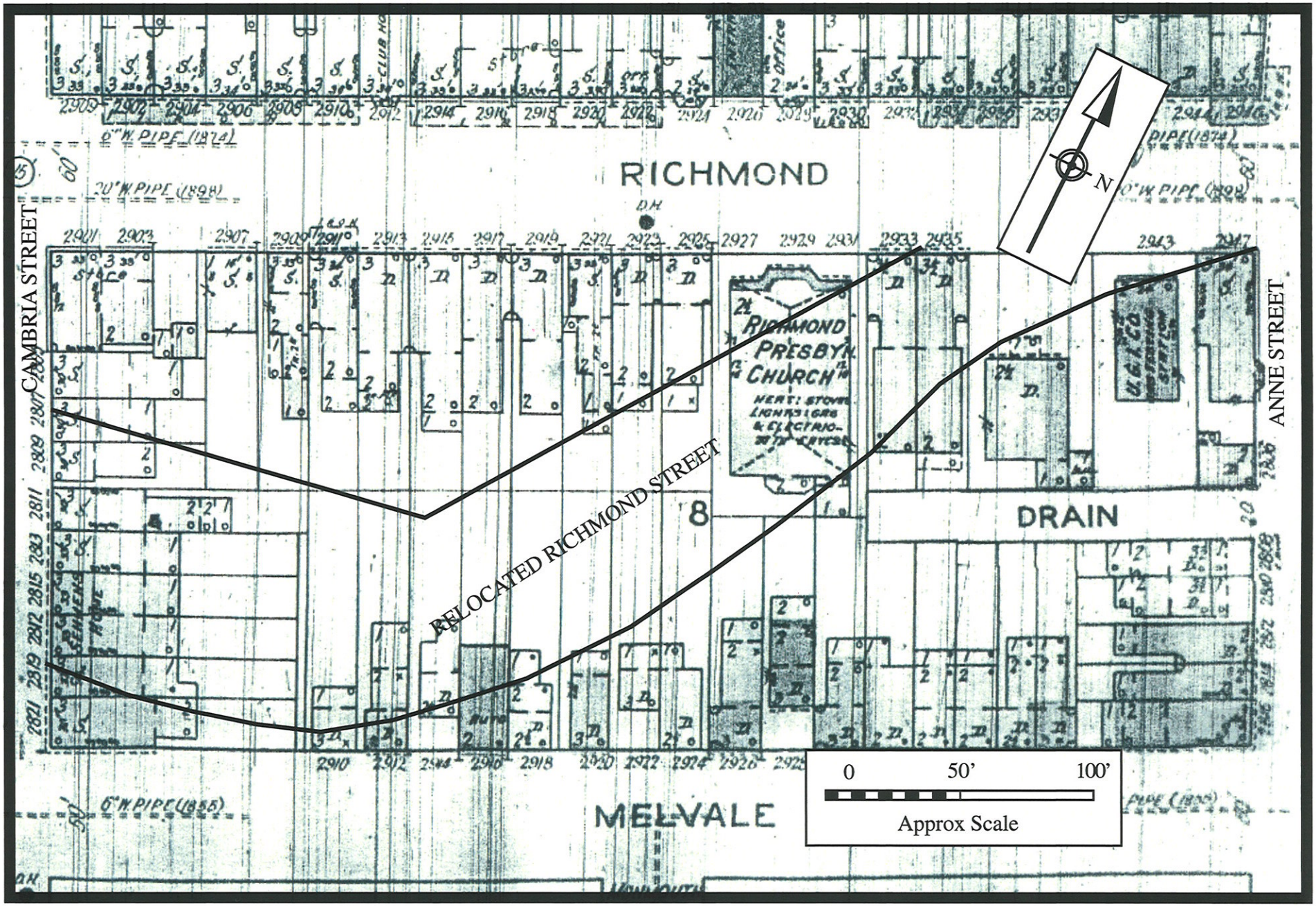


Figure 8.10 Relocated Richmond Street Between Cambria Street and Ann Street in 1919 (Source: Sanborn 1919)

Plate 8.1 Intersection of Cumberland Street and Richmond Street Looking South.

Plate 8.2 Intersection of Somerset Street and Richmond Street Looking South.

Plate 8.3 Intersection of Ann Street and Richmond Street Looking South.

SECTION 9:
TEMPORARY DETOUR ROAD THROUGH THE FORMER PORT RICHMOND RAIL YARD FROM RICHMOND STREET TO SOUTH SIDE OF ALLEGHENY AVENUE

UNDERTAKING

The undertaking includes a temporary detour route at the northern end of the project area between the Girard Street Interchange and Allegheny Avenue. The detour route, Section 9, will be constructed to a depth of 2 to 3 feet and laid out from Richmond Street through the former Port Richmond rail yard to Allegheny Avenue (Figures 9.1; also see Plates 9.1 to 9.3).

SECTION-SPECIFIC ENVIRONMENTAL DATA

Historical maps of the area were consulted (Hopkins 1875; Smedley 1862) to determine the nature of prior land use. The Philadelphia and Reading Railroad Company (later the Reading Railroad Company) established its marine terminal, Port Richmond, on this section of waterfront about 1837 (see Figure 8.2). Builders used a cofferdam that allowed them to excavate the river's bottom down to gravel, thus, providing a stable foundation for piers and wharves. The shoreline was filled as far west as Frankford Avenue up to an elevation that would permit rail cars to have direct access to the piers.

SECTION-SPECIFIC HISTORICAL DATA

Detour Route Beginning on Richmond Street Through the Former Rail Yard to Allegheny Avenue

The proposed Temporary Detour Road will be located on the site of trackage in the former Port Richmond rail yard. The detour route will not impact any historical structures (Figures 9.1, 9.2; also see Figure 8.6).

ARCHAEOLOGICAL RECOMMENDATIONS

The temporary detour route follows former active rail lines located within the former Port Richmond Rail Yard. The detour route will involve shallow construction (2–3 feet), which is expected to expose only rail ballast. During the original construction of the rail yard, fill was deposited on top of river gravel. Given these factors there is no potential for precontact archaeological deposits or for historic archaeological deposits.

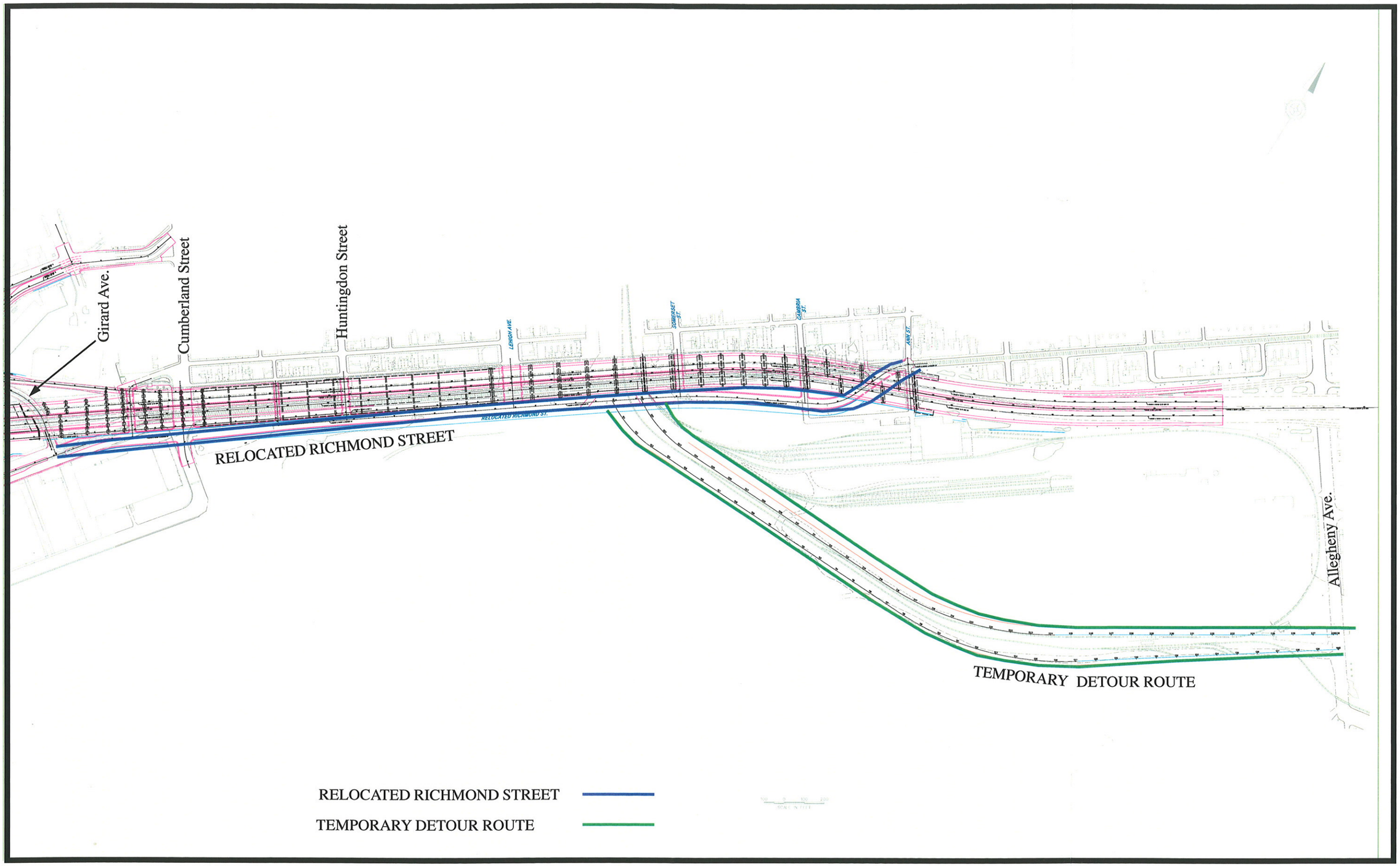


Figure 9.1 Location of Relocated Richmond Street and Temporary Detour Route.

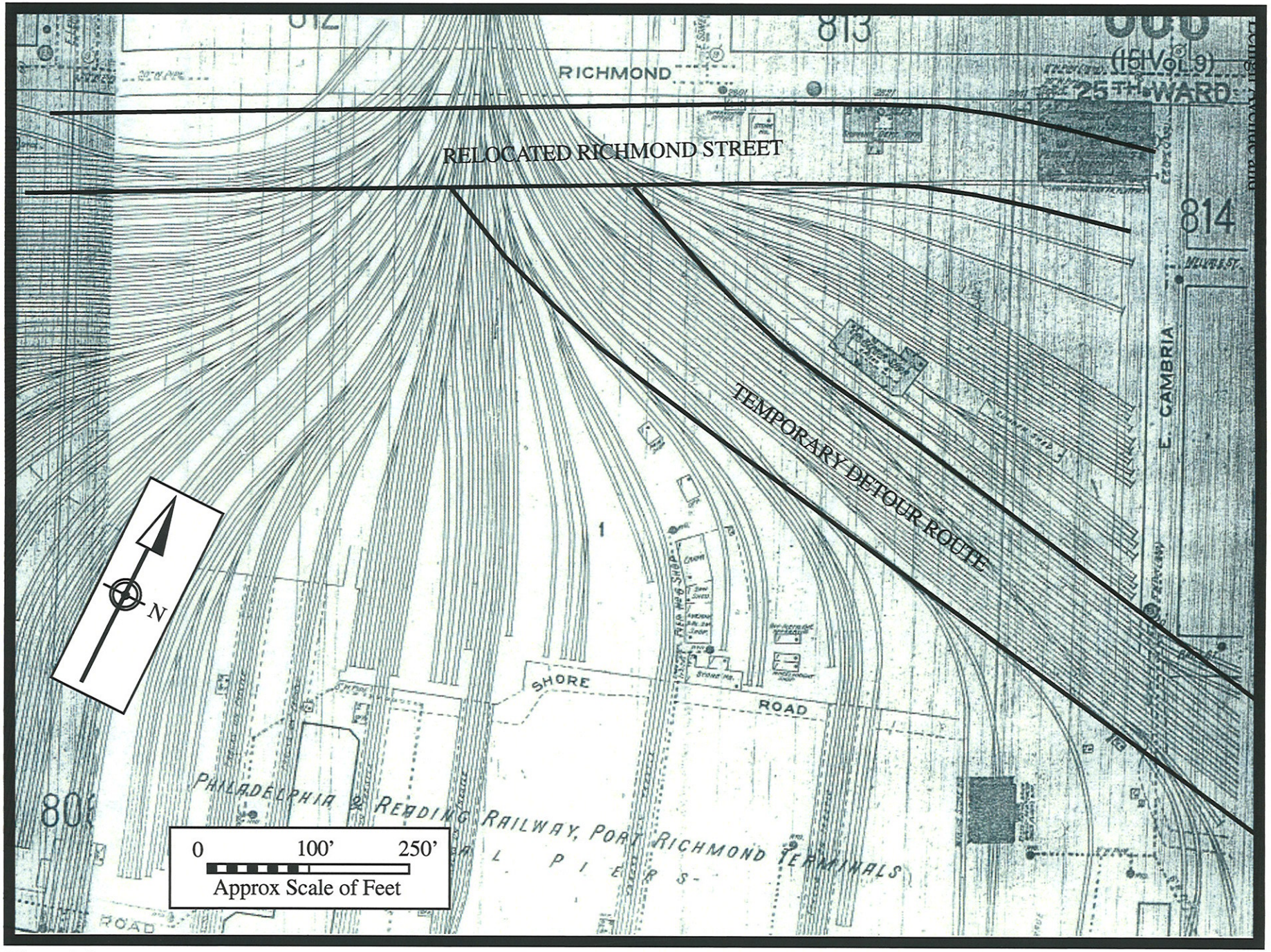


Figure 9.2 Temporary Detour Route Through the Port Richmond Rail Yard (Source: Sanborn 1919.)

Plate 9.1 Tracks near the Intersection of Lehigh Avenue and Richmond Street Looking East.

Plate 9.2 Tanks on Allegheny Avenue Looking South.

SUMMARY AND PHASE IB/II WORK PLAN

Table 1 restates the summary of the archaeological sensitivity designations for Sections 1 through 7 (Tull 2004). Table 2 summarizes Sections 8 and 9. The use of a Programmatic Agreement (PA) to guide Phase IB/II work is reiterated from Tull (2004).

Table 1. Archaeological Sensitivity by Sections

SECTION	LOCATION AND STATION	HISTORIC ARCHAEOLOGICAL POTENTIAL HIGH/LOW/NONE	PREHISTORIC 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**

As Table 1 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.

Table 2 Archaeological Sensitivity by Sections (discussed in Addendum)

Section	Location	Historic Archaeological Potential High/Low/None	Precontact Archaeological Potential High/Low/None	Number of Areas where subsurface will be disturbed
8	**Relocated Richmond Street Girard Avenue to Ann Street**			
	Girard Avenue to Cumberland Street	Low	Low	
	Cumberland Street to Somerset Street	Low	None	
	Somerset Street to Cambria Street	Low	None	
	Cambria Street to Ann Street	High	Low	
9	*Temporary Detour Road Richmond Street to Allegheny Avenue*	Low	None	

Table 2 indicates the relocation of Richmond Street as broken out into areas. The only high potential area for historic archaeology potential is from Cambria Street to Ann Street. This area will be subject to Phase IB/II testing as described below. The remaining low potential areas will be sampled after the high-sensitivity area is tested. It anticipated that at least one-third of the low-sensitivity locations would be tested.

It is 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 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 in order to determine if the site is eligible for listing on 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 3–5 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 be 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 PA 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; that is, a site's potential to provide data useful in addressing these issues will serve as one measure of its eligibility or noneligibility.

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 4 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 (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 on the site that would result from the proposed undertaking, and present recommendations for addressing those 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, 8, and 9. The retaining walls will be constructed to a depth of 3–5 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 Phase IA SHPO 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

July 16, 2004

Department of Transportation
Attn: Dean A. Schreiber, P.E., Director
Bureau of Design
P.O. Box 2966
Harrisburg, PA 17105

RE: ER# 01-8007-101-F
Phase IA Archaeological Sensitivity Report
I-95/Girard Avenue Interchange, S.R. 0095,
Section GIR, City of Philadelphia

Dear Mr. Schreiber:

The Bureau for Historic Preservation (the State Historic Preservation Office) has reviewed the above named report in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980 and 1992, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation as revised in 1999. Our comments are as follows:

We agree that Phase IB testing is warranted for many portions of this project area, as recommended in this report. It is our understanding that this work will be carried out in stages. Please provide a copy of the proposed Programmatic Agreement for this project for our review and comment.

Please provide three additional copies of this report for our files and for distribution to the other report repositories. We appreciate your cooperation.

If you have any questions or comments regarding our review of this report, please contact Mark Shaffer at (717) 783-9900.

Sincerely,

K. W. Carr by

Kurt W. Carr, Chief
Division of Archaeology & Protection

cc: Catherine Spohn

Appendix B: Resumes of Key Personnel

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

2003 *Whose Trash is this? One Primary Well Deposit: Two Possible Sources from Households Terminated in 1867b and 1869*. Presented at the 36th Annual Meeting on Historical and Underwater Archaeology, Providence, Rhode Island January 18, 2003.

1997 *Cultural Change in a Floodplain Setting During the Woodland Period - A View from the Dundee Site, Passaic, New Jersey*. Presented at the 64th Annual Meeting of the Eastern States Archaeological Federation Conference held in Mount Laurel, New Jersey, November 7, 1997.

1997 *Maryland's Unknown Eastern Piedmont: A Land Formation Based Prehistoric Site Location Model*. Presented at the 27th Annual Meeting of the Middle Atlantic Archaeological Conference held in Ocean City, Maryland, March 8, 1997.

1996 *A Tenant's Trash: Basement Fill from Port Kennedy, Pennsylvania from the Last Quarter of the Nineteenth Century*. Presented at the 29th Annual Meeting for Historical Archaeology Conference on Historical and Underwater Archaeology held in Cincinnati, Ohio, January 1996.

1994 *Archaeological Investigations at the Pidcock Sites, Bucks County, Pennsylvania*. Presented at the 24th Annual Meeting of the Middle Atlantic Archaeological Conference held in Ocean City, Maryland, April 9, 1997.

Poster

2001 *Conceptualizing Everyday Life in Northern New Jersey's Distant Past*. Presented at the 66th Annual Meeting of the Society for American Archaeology held in New Orleans, Louisiana, April 18, 2001.

Education:

B.A., Archaeology, Douglass College, Rutgers University, 1979.

Professional:

Society for Industrial Archaeology
New Jersey Archaeological Society
National Genealogical Society

Experience:

Ms. Wuebber has over 20 years experience researching, analyzing, and writing contextual and site-specific histories for industrial, military, transportation, commercial, and residential properties in the Northeast, Mid-Atlantic, Southeast, and Midwest.

1999 to Present *Research Historian,
URS Corporation, Florence, New Jersey.

Phase IA Documentary Study, East Side Access Ventilation Shaft, 38th Street, New York, New York. Conducted documentary, cartographic and photographic research of a proposed site for a ventilation shaft in a 25 x 100-foot lot. The purpose of the study is to provide information on the nature, location, and extent of intact and original soil surfaces within the project area and the depth of 20th-century fills above these surfaces. This information is needed in order to determine if proposed construction activities will extend to a depth that will encounter the historic and/or prehistoric surfaces that may contain archaeological resources. Conducted for the MTA New York City Transit/Long Island Railroad.

Cultural Resources Assessment, 1440 Story Avenue, Bronx, New York. Conducted documentary, cartographic and photographic research of a 12-acre site proposed for a warehouse complex. The study provided information on the potential for the presence of archaeological resources with in the site. Conducted for the MTA New York City Transit.

Phase IB Archaeological Field Investigations 101-117 Worth Street, New York, New York. Conducted documentary, cartographic and photographic research Principal Investigator for a Phase IB archaeological investigations of mid 19th to mid 20th century foundation remains and yard areas.. The Phase IB investigation consisted of both machine-excavated test trenches and hand-excavated test units, as well as monitoring of construction activities within a 150 x 260-foot site in lower Manhattan. The test trenches were utilized to determine the presence or absence of early intact surfaces, foundations, and/or shaft features within the project area. Test units were then used to further investigate potential intact surfaces and features encountered during trench excavation. The archaeological monitoring of construction activities afforded a wider exposure of the project area than otherwise provided by the excavation of test units and test trenches. The investigation identified two sections of intact stonewalls associated respectively with the

Broadway Tabernacle Church (1835 – 1857) and a late-nineteenth-century commercial building, along with the truncated remains of a mid-nineteenth-century well and a buried Holocene surface. Conducted for AKRF, New York, New York

U.S. 130, Craft's Creek Bridge, Burlington County, New Jersey. Conducted intensive documentary, cartographic, and photographic research. For the New Jersey Department of Transportation.

Route 21 Cultural Resources Mitigation, Passaic County, New Jersey. Researched and wrote walking tour brochure for an ethnically diverse industrial neighborhood in Passaic. For the New Jersey Department of Transportation

Phase I Archaeological and Historic Architectural Survey of a section of State Route 9, New Castle County, Delaware. Conducted documentary, cartographic, and photographic research. For the Delaware Department of Transportation.

King of Prussia Inn, S.R. 0202, Section 400, King of Prussia, Montgomery County, Pennsylvania. Conducted documentary, cartographic, and photographic research for the ca.1719-1952 King of Prussia Inn. For the Pennsylvania Department of Transportation.

Phase I/II Archaeological Surveys for Proposed the Route 54 Truck Climbing Lanes between Boyd and Elysburg in Northumberland County, Pennsylvania. Conducted general background research on the Route 54 project corridor and site specific historic research on three areas selected for Phase II excavation. For the Pennsylvania Department of Transportation, District 3.

Phase I Investigation for Proposed Electric Generating Facility in Cass Township, Muskingum County, Ohio. Compiled archaeological and historical background data and wrote historical context for the project area. For the Dominion Resources, Inc. and Consolidated Natural Gas (DRI-CNG).

1983 to 1999 Louis Berger. Projects include:

Georgetown Incinerator Site, Square 1189, Washington, D.C. Intensive historical research for the eastern half of a block located along the historic waterfront area. For Millennium Partners of Washington, D.C., Inc.

Edison National Historic Site, West Orange, New Jersey. Ethnographic overview and assessment for the Thomas Edison National Historic Site. For the U.S. National Park Service.

Randolph BRF 0241(29) Project, Bridge Number 42, Vermont Route 12, Town of Randolph, Orange County, Vermont. Phase I archaeological and historical investigations of industrial sites in the village of Randolph, Vermont. For the Vermont Agency of Transportation.

Philadelphia, Pennsylvania, Metropolitan Detention Center. Intensive historical investigation of half a city block in Center City, Philadelphia. For the U.S. Department of Justice, Federal Bureau of Prisons.

New Jersey Route 21(2N), City of Newark, Essex County, New Jersey. Phase II historical investigations for Route 21(2N) bridge replacement and roadway improvements. For the New Jersey Department of Transportation.

Rowland's Mills (28Hu475), New Jersey Route 31 Dualization, Readington Township, Hunterdon County, New Jersey. Phase II archaeological and historical investigations of a nineteenth-century milling community. For the New Jersey Department of Transportation.

East Creek Sawmill Site (28CM20), Cape May County, New Jersey. Phase II historical and archaeological study. Conducted historical research to identify property ownership and develop historical context for interpretation of mill remains dated circa 1782 to 1913. For the Federal Highway Administration and the New Jersey Department of Transportation.

Survey and Evaluation of Historical and Archaeological Resources at the Former United States Coast Guard Station, City of Gloucester, Camden County, New Jersey. Phase I and II investigations of a former Coast Guard Station and U.S. Immigration Detention Center. For the U.S. Coast Guard Maintenance and Logistics Command Atlantic, Governors Island.