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DRAFT DESIGN REPORT

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Louis Berger

" 151st Street Pedestrian Bridge "

APPENDIX C

Cultural Resource Study

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ABSTRACT

This report presents the results of a cultural resource (historic architectural and archaeological) assessment conducted as part of an Environmental Assessment Report for a new pedestrian bridge to cross over the Henry Hudson Parkway (Route 9A) and the Amtrak rail line from West 151st Street to Fort Washington Park. This work was performed for New York State Department of Transportation (NYSDOT) by The Louis Berger Group, Inc. (Berger). The objective of the study was to record the presence of previously recorded cultural resources and to develop a cultural resource contextual background for the project area. This cultural resource assessment was conducted in accordance with paragraph 14.09 of the New York State Historic Preservation Act of 1980.

A review of the historic properties on file at the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) indicates that four prehistoric sites are documented within a one-mile radius of the project area. Additionally, archival research has shown that the project area has been severely disturbed by the construction of the Hudson River Railroad. The twofold process of creating fast land, combined with the significant leveling of the existing terrain has in all likelihood, removed any culture-bearing soils within the project area. On the basis of these conditions, the project area was judged to possess a low potential to contain previously undocumented archaeological resources.

The project area contains three architectural/engineering resources over 50 years of age that may be eligible for listing on the National Register of Historic Places (NRHP). These resources include Riverside Park, the Henry Hudson Parkway and an abandoned pedestrian bridge (BIN 2245240). Since the proposed improvements within the project area may create an adverse effect on historic architectural resources that may possibly be eligible for listing on the NRHP, further cultural resource investigations will be necessary to comply with paragraph 14.09 of the New York State Historic Preservation Act of 1980. A third architectural resource over 50 years of age, the existing pedestrian bridge on the project site is owned by New York City and, due to its deteriorated and unsafe condition, has been scheduled for demolition by the New York City Bureau of Bridges.

TABLE OF CONTENTS

Chapter
Page

ABSTRACT

LIST OF FIGURES

LIST OF PLATES

1.0 INTRODUCTION

1.1 Purpose of Study

1.2 Project Setting

1.3 Proposed Impacts

1.4 Study Area

1.5 Scope of Work and Project Personnel

2.0 PREHISTORIC BACKGROUND

2.1 Introduction

2.2 Paleo-Indian Period

2.3 Archaic Period

2.4 Woodland Period

2.5 Proto-historic Period

2.6 Historic Period

2.7 Prehistoric Archaeological Sites Within a One-Mile Radius
of the Project Area

3.0 HISTORIC BACKGROUND

3.1 History of Manhattan and Washington Heights

4.0 ARCHITECTURAL SURVEY

4.1 Background Research

4.2 Field Survey

4.3 Architectural Survey Findings

5.0 EVALUATIONS AND RECOMMENDATIONS

6.0 REFERENCES CITED

APPENDIX A: RESUMES OF KEY PERSONNEL

LIST OF FIGURES

<i>FIGURE</i>	<i>Page</i>
1 Overview of the Project Area	
2 Study Area	
3 Project Area in 1776	
4 Project Area in 1851	
5 Project Area in 1867	
6 Bird's-Eye View of the Project Area in 1879	
7 Project Area in 1879	
8 Project Area in 1893	
9 Project Area in 1909	
10 Project area in 1939	
11 Project area in 1951	

LIST OF PLATES

- 1 Bridge in context with Riverside Park and Henry Hudson Parkway, view southwest
- 2 Bridge, east and north elevations, view west
- 3 Bridge, south and east elevations, view northwest
- 4 Bridge as seen from Riverside Park 151st Street Overlook, view southwest
- 5 Riverside Park 151st Street Overlook and stairs to bridge, visible at left, view north
- 6 Riverside Park 151st Street Overlook and Riverside Drive, view west
- 7 Riverside Park stonework supporting sidewalk along Riverside Drive, opposite bridge, view east
- 8 Project area as seen from 156th Street showing Henry Hudson Parkway, rail line, Riverside Drive, and Riverside Park, view south
- 9 Project area from 151st Street Overlook showing bridge in trees at left and exit from Henry Hudson Parkway to Riverside Park, view west
- 10 Henry Hudson Parkway and Riverside Drive from 153rd Street, view north

LIST OF TABLES

- 1 Previously Identified Archaeological Sites within One-Mile of the Project Area

1.0 INTRODUCTION

This report details the results of a Phase IA historic and cultural resource investigation to address potential impacts from creating a new pedestrian bridge to cross over the Henry Hudson Parkway (Route 9A) and the Amtrak rail line from West 151st Street to Fort Washington Park in Manhattan, New York (Figure 1). This study included background and archival research, an architectural survey of the project area, and a pedestrian survey of the areas of potential effect (APE). The purpose of the study was to provide an assessment of the project area's potential to contain prehistoric or historic cultural resources, to identify archaeological resources within the project area, and to provide a preliminary evaluation of the age, integrity, and extent of those resources. This report has been produced for NYSDOT by The Louis Berger Group, Inc. (Berger).

1.1 PURPOSE OF STUDY

The purpose of this project was to develop a contextual study of the proposed project area and to document the presence of cultural resources, both prehistoric and historic, within the project area. The cultural resource specialists who performed this work satisfy the qualifications specified in 36CFR66.3(b)(2) and the archaeologists who conducted the research are certified by the Register of Professional Archaeologists (RPA).

1.2 PROJECT SETTING

Manhattan belongs to the Seaboard Lowland section of the New England province. The New England Upland province is composed of moderately rough, rolling land with smoothly rounded hilltops. The bedrock is very old metamorphic rock, although some valleys are underlain with limestone. New York City, Manhattan Island, is the point where the New England province meets the Atlantic Coastal Plain. The island of Manhattan is largely a protrusion of granite, rising a few hundred feet from sea-level. The southern tip and center of the island are virtually solid granite, while areas in Greenwich Village and Chelsea are composed of softer soil. The strength of the bedrock found throughout Manhattan has permitted the construction of the city's numerous skyscrapers.

1.3 PROPOSED IMPACTS

NYSDOT is planning to construct a new pedestrian bridge at 151st Street, over the Henry Hudson Parkway, with a touch down on the south side of the entrance to Fort Washington Park. Currently, an inaccessible and non-functioning pedestrian bridge (BIN 2245240) exists at West 151st Street and crosses over the Amtrak rail line but stops in mid-air at the eastern edge of the Henry Hudson Parkway. This bridge was constructed in 1927, as evidenced by its builder's plate. The 1927 bridge apparently replaced two earlier pedestrian bridges, possibly of wood construction, that spanned the tracks at 151st Street and 152nd Street. The present bridge was closed in 1937 with the completion of the Henry Hudson Parkway which took the land under the staircase leading down from the west end of the bridge. NYC DOT is currently in the process of removing the existing and non-functioning pedestrian bridge. The existing 151st Street Pedestrian Bridge was not evaluated by the cultural resource study presented here as such responsibility remains with NYC DOT.

1.4 STUDY AREA

The study area was defined as the area of the existing access ramp at 151st Street and Riverside Drive, extending 65 meters north or south of the existing pedestrian bridge at the east approach, to a touchdown point on the west side of the Henry Hudson Parkway (Figure 2).

1.5 SCOPE OF WORK AND PROJECT PERSONNEL

The contextual study of cultural resources within the project area described in this report consisted of historic and archaeological background research on the project area and its immediate vicinity and an architectural survey of the project area. Background research was performed at the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) on Peebles Island, New York and

maps and other documents at the New York State Library, in Albany. An additional document search was conducted at the Landmarks Preservation Commission and the New York Historical Society Library, both in Manhattan. All work for this investigation was conducted in July 2004.

Zachary Davis, RPA, Senior Archaeologist, served as Project Manager for the project. Historic architectural resources were evaluated by Senior Architectural Historian Rich Casella. The archaeological assessment was conducted by archaeologists Gerard Scharfenberger, RPA and Kristofer Beadenkopf, RPA while background research was conducted by Mr. Beadenkopf, Mr. Scharfenberger, Mr Bill Weir, and Ms. Tracy Neumann. Mr. Scharfenberger, Mr. Casella, Mr. Beadenkopf, and Mr. Davis composed the report. Mr. Davis assembled the report graphics.

2.0 PREHISTORIC BACKGROUND

2.1 INTRODUCTION

To assess the potential for prehistoric archaeological resources in the project area, studies and reports that review prehistoric period settlement and culture history were consulted. In addition, state site files were examined for information on the location and distribution of archaeological sites recorded in the vicinity of the project area. The following overview of prehistoric occupations and land use in the project vicinity provides a basis for determining the expected nature and distribution of prehistoric archaeological sites within the project area, as well as a context for assessing the potential significance of any resources discovered.

There is scant evidence in New York City of the Native Americans who occupied the area for thousands of years. When Native Americans first inhabited the New York City area, sea levels may have been 300 feet lower than present levels and the Atlantic shore had regressed approximately 60 to 90 miles from its modern position (Kraft 1977). Therefore, areas that are presently underwater would have been dry land available for habitation by Native American populations. Sea levels reached their approximate levels between 5,000 and 2,000 years before the present (BP). Three major periods are commonly used to describe the prehistoric cultures of New York: Paleoindian, Archaic, and Woodland.

2.2 PALEO-INDIAN PERIOD (11,000 - 10,000 BP)

The earliest recognized aboriginal occupation of New York dates to the Paleo-Indian period (11,000 to 10,000 years before present [BP]). Paleo-Indian occupation is characterized by the use of distinctive fluted lanceolate points. These projectile points, along with scrapers, graters, wedges, burins, bifacial knives, and flake tools, form the typical Paleo-Indian toolkit, found throughout the continental United States. While such fluted points have been identified in New York City, the largest numbers of these have been located in the Delaware River drainage, and western New York State. Almost all of these are surface finds (Marshall 1982; Ritchie 1969:22-30).

During this period the environment of the Coastal Plain was different from that of today. The present environment of New York was not established until after 3000 BP (Sirkin 1977). Preserved pollen remains and associated radiocarbon dates suggest a gradual warming trend that brought about the retreat of the Pleistocene glaciers beginning around 17,000 BP. The general pattern of ecological succession suggests a predominantly herbaceous vegetation following glaciation (mosses, lichens, and sedges). This was succeeded by open parkland vegetation, and then by mixed forest zones, with pine and spruce predominating, at about 13,000 BP. In central New Jersey, pine had begun to dominate sometime after 12,000 BP, and this transition roughly coincided with the beginning of the Paleo-Indian period. During the Paleo-Indian period the sea level was lower than its present level, and as a result the New York's shoreline lay some 50 miles east of its current position (Marshall 1982).

Paleo-Indian subsistence patterns emphasized hunting and gathering by small, highly mobile bands, with the primary prey being mega fauna, such as the now-extinct mastodon. Recent evidence, however, points to a somewhat broader-based economy, with fishing and foraging for vegetal foods playing a more important role (Gardner 1974, 1981, 1989). As Lee and Devore (1968) point out, the paucity of cultural-material remains of this period may serve to inflate the importance of hunting, particularly since vegetal foods generally leave little trace in the archaeological record.

Two models for Paleo-Indian settlement patterns have been proposed. According to Gardner (1979), the predominance of cryptocrystalline lithic material in the production of fluted projectile points may have influenced the pattern of settlement. He states that groups may have been restricted to a territory with a radius of 30 to 70 miles, with movements being cyclical around known sources of cryptocrystalline material. A second model, proposed by Custer et al. (1983), suggests that the groups were not limited to settlement in areas that possessed large outcrops of cryptocrystalline material, but could make serial use of relatively abundant, yet small, secondary sources of the fine-grained material such as pebbles and cobbles while engaging in other subsistence activities.

The location of known Paleoindian sites suggests a preference for high, well-drained ground, located near streams or wetlands, offering vantage points for observing game. It is probable that many Paleoindian sites were situated on what is now the continental shelf, which has been submerged as a result of rising sea levels since the retreat of the Wisconsin glacier (Edwards and Merrill 1977). Paleoindian economy was dominated by game hunting, an adaptation to the open forest environments and colder climate of the time. Scattered surface finds of fluted points have been made in New York City, mostly from Staten Island (Boesch 1997: 10). The only documented Paleoindian site in New York City is the Port Mobil Site, located on the western shore of Staten Island, which has produced fluted points, unfluted trianguloid points, scrapers, knives, borers, and graters (Brennan 1977; Eisenberg 1978).

2.3 ARCHAIC PERIOD (10,000 - 3000 BP)

The ecological changes brought about by the warmer Holocene climates subsequently encouraged population migrations and the development of new subsistence strategies which characterize the Archaic period, dating from 10,000 to 3000 BP. Compared with the Paleo-Indian period, a wider variety of artifact types was used during the Archaic. This suggests that a greater diversity of subsistence and technological activities were pursued, although hunting still appears to have been the major focus. The Archaic in New York is commonly divided into three sub-periods, Early, Middle, and Late, based on changes in material culture and subsistence patterns. A fourth sub-period, the Terminal Archaic or Transitional period, has also been defined for at least the northern portion of the state and adjoining areas of New Jersey and Pennsylvania (Kraft and Mounier 1982a).

The Early Archaic period (10,000 to 8000 BP) is characterized by corner-notched, stemmed, and bifurcate-stemmed projectile points (Broyles 1971; Coe 1964). Several Early Archaic components have been identified in the region, including the Old Place, Ward's Point, and Richmond Hill sites on Staten Island (Ritchie and Funk 1973: 38-39). Numerous locations on the Coastal Plain have yielded diagnostic artifacts of the Early Archaic, often found in association with Paleo-Indian artifacts (Berger 1988). Although the transition from the Late Paleo-Indian to the Early Archaic period was marked by a change in projectile point morphology, it has been suggested that such a shift does not necessarily indicate a new way of life (Gardner 1974). These researchers have argued that Late Paleo-Indian populations and Early Archaic peoples continued the same basic adaptation, and that change in projectile point morphology implies merely a technological rather than an economic shift.

The environment, however, did undergo a dramatic change. With the retreat of the glaciers, the New York climate experienced an increase in temperature. The park tundra that supported the large grazing animals gave way to a boreal forest with pine trees and increasing numbers of oak trees (Sirkin 1977). The large game headed north, following the glacial retreat, and deer, moose, elk, bear, and small mammals filled the niche that was left vacant.

Settlement patterns during this cultural period appear to represent the same preferences for site location as in the Paleo-Indian period (Berger 1986: III-19). In the Coastal Plain, settlement may have expanded into the estuarine environments, as seen in Maryland. It has also been suggested that the relative scarcity of Early Archaic sites in New Jersey could be due to the retreat of the large game, with the aboriginal population following the herds north and leaving the Coastal Plain relatively unpopulated.

Middle Archaic remains, dated 8000 to 6000 BP, are extremely rare in the region, possibly the result of unclear typological definitions for this period. So little is known about the Middle Archaic occupation of New Jersey that it is often linked with either the Early or Late Archaic (Kraft and Mounier 1982a). Traces of this period that have come to light suggest the exploitation of a broader resource base than in earlier periods. In addition, a change in lithic material preferences occurred, with a greater reliance on argillite. Models of settlement for the Middle Archaic suggest two types of sites. The first type reflects large group activities that are situated to maximize proximity to a variety of resources. Such sites would be located on floodplains and low terraces of major rivers and streams,

and in association with marsh, swamp, and estuarine environments. A second site type recognized for the Middle Archaic reflects small group activities such as forays from base camps or staging areas. These sites would be located in a wider variety of environmental settings (Berger 1986: III-21-22).

Sites associated with the Late Archaic period (6000 to 4500 BP) are more common compared to those of earlier periods, leading to the inference by some researchers of an increase in aboriginal populations at this time. In some instances, Late Archaic base camp sites appear to represent occupations of longer duration. A variety of narrow-bladed notched and stemmed projectile points, including Lackawaxen, Poplar Island, Lamoka, and Sylvan types, are diagnostic of the Late Archaic period. Tool assemblages from Late Archaic sites also include atlatl weights, ground stone and pecked-stone implements, heavy and light woodworking tools, net sinkers, and food-grinding implements (Kinsey et al. 1972; Kraft 1975). Milling stones and other food-grinding implements attest to an increased reliance on gathered wild plants; net sinkers, stone-boiling features, and faunal remains indicate the importance of fishing and shell fishing.

During this time period the climate continued its warming trend and became somewhat drier, reaching a period of maximum climatic oscillation at approximately 6000 BP and lasting until 3000 to 4000 BP. The dominant vegetation was fully temperate deciduous forest, with an increase in hickory and pine and a concomitant decrease in oak in the relatively drier conditions. This combination produced a more open forest with a higher carrying capacity. Around 3950 BP on the Coastal Plain of New Jersey, alder and birch also made their first appearance (Carbone 1976; Curry and Custer 1982; Sirkin 1977). In addition, the maximum rise in sea level produced a change in topography with an increase in swamps and marshes.

Models for Late Archaic settlement suggest three alternatives. The first is a central-based wandering system wherein a fixed base camp is occupied on a semi-sedentary basis. Seasonal or constant forays to other camps would occur, with the base camp periodically or seasonally abandoned and reoccupied during later parts of the annual cycle. A second settlement pattern involves a shifting base camp location. This alternative model suggests that base camp locations would shift when local resource bases became depleted or as seasonal resources became available in other areas. The third alternative model proposes restricted wandering within a given territory, with periodic group consolidation at changing base camp locations as resource availability allowed (Berger 1986: III-27).

The Terminal Archaic or Transitional period (3000-2700 BP) is characterized by distinctive technologies that included production of soapstone vessels and a variety of broad-bladed projectile points types. The appearance of soapstone or steatite vessels and artifacts during this period provides evidence of interregional trade and also suggests increased residential stability, since stone bowls are items not easily transportable from site to site. Terminal Archaic remains in New York are commonly associated with shell middens, which represent an intensification of coastal-oriented economies.

2.4 WOODLAND PERIOD (3000 BP - AD 1600)

The Woodland period (2700 BP to Contact, circa 1600) is identified by the manufacture and use of ceramics. This period is divided into three subperiods—Early, Middle, and Late—that are characterized by distinctive projectile point types and ceramic styles. The earliest ceramics found in coastal New York are grit-tempered wares similar to Vinette I. Middle Woodland ceramics include shell-tempered wares with cord and net impressions, and Late Woodland ceramics include various collared vessels with incised, dentate, and cordmarked decoration. The Woodland period is also associated with horticulture; the earliest evidence of domesticated plants occurring in the Middle Woodland.

The Early Woodland (1150 BC to AD 1) is traditionally distinguished from the preceding Late Archaic period by the introduction of ceramic vessels. Trends toward greater sedentism and subsistence specialization begun during the Terminal Archaic continued, and were eventually accompanied by experimentation with cultigens. The earliest ceramics are termed the Marcey Creek and Ware Plain types and consist of flat-bottomed, straight-sided vessels with lugs or handles. These are thought to have been followed by the Vinette I conical-based, coarse-gritted, coil-constructed vessels, the interiors

and exteriors of which are covered with the marks of cord-wrapped paddles (Kraft 1975; Williams and Thomas 1982). The Early Woodland Meadowood projectile point is also fairly widespread on sites of this period in New York.

Settlement pattern models for the Early Woodland period generally conform to those presented for the Late Archaic. Two models have been proposed for the Early Woodland period. The first model suggests the occupation of base camps in proximity to zones of maximum resource availability. Forays by small groups would leave these camps to exploit available resources, but would not extend outside the major environmental zone in which the base camp was situated. The alternative model, which is more strongly supported by the current data, suggests that seasonal fusion and fissioning of groups at specialized procurement and processing sites occurred. Such consolidation might take place during runs of anadromous fish. Afterward, groups would split and move into a variety of environments on forays. Later group fusion would follow in other areas to exploit other seasonal resources (Berger 1986: III-30).

During the Middle Woodland period (AD 1 to 700), coarse cord marked pottery was replaced by net-impressed and, at least at the Abbott Farm Site near Trenton, New Jersey, zoned ceramics. Rossville, Fox Creek, and Jack's Reef are the predominant projectile point types recognized. Pestles, hammer stones, and anvil stones are important processing implements recovered from sites of this period, while the presence of net sinkers attests to the continued exploitation of fish resources (Stewart 1985; Williams and Thomas 1982).

Settlement patterns during this period appear to reflect a continuation of those postulated for the preceding Late Archaic and Early Woodland periods, although there is evidence of increasing sedentism and the occupation of semi-permanent base camps (Berger 1986: III-32). In general, the location of Middle Woodland sites is similar to that discussed for the Late Archaic/Early Woodland, with an emphasis on riverine and estuarine/coastal areas.

The Late Woodland period (AD 700 to 1600) is well represented throughout New York. The largest sites are usually located on major rivers, and probably represent base camps that may have been occupied during most of the year. Smaller sites are abundant on tributaries and are also located near natural springs. These sites probably functioned as temporary or seasonal camps. The practice of hoe-type horticulture was well established, although hunting, gathering, and fishing continued as major subsistence activities. Hickory nuts and acorns were important wild foods, as were butternut and blueberries. Freshwater mussels have been found in large quantities in many of the shell pits and middens on the terraces of the Upper Delaware River (Kinsey et al. 1972; Kraft and Mounier 1982b).

Except for stylistic changes, the Late Woodland stone toolkit remained similar to that of earlier periods and reflects the functional diversity associated with exploiting a broad resource base. The utilization of a wide range of lithic materials coincided with sedentary settlements and the exploitation of immediately available resources. Diagnostic artifacts of the Late Woodland period are triangular points, collared and collarless ceramic vessels bearing incised geometric motifs and cord marking, and a variety of ground-stone and chipped- and pecked-stone tools (Berger 1986: III-8).

At least two models, which are similar to those discussed for the Late Archaic period, have been proposed for Late Woodland settlement patterns. The first model proposes base camps that were settled on a year-round basis, with small group forays leaving those camps seasonally or as needed. During the Late Woodland, these forays do not appear to be as frequent as during earlier periods. The second, and more firmly supported, model suggests that base camps were broken up on a seasonal basis and groups moved to other camps for limited amounts of time as resources were exploited. Differing degrees of group fusion and fissioning would occur away from the base camp (Berger 1986: III-39-40).

2.5 PROTO-HISTORIC PERIOD (AD 1525-1600)

During the last half of the sixteenth century the initial impacts of European contact began to manifest itself in a growing demand for European trade goods. This period is so defined by the presence of

small amounts of European made artifacts that appear in the assemblages of Native American sites (Tuck 1971). It is supposed that the European trade goods had reached the Native Americans as the result of intertribal exchanges coming from the various European sources along the northeast coast.

2.6 HISTORIC NATIVE AMERICAN PERIOD (AD 1600-1783)

At the time of European contact, the New York City area was occupied by various Algonquian-speaking groups. These populations maintained loosely structured, autonomous bands that resided in small dispersed settlements. The territories of the various Native groups that have been distinguished linguistically are uncertain, partly due to the lack of fixed "tribal" boundaries. Increased contact with European traders and settlers resulted in the breakdown of traditions and increased reliance on European goods in exchange for land and furs (Goddard 1978; Kraft 1986).

Bolton (1922:176) suggested that the East River offered good fishing; however, many parts of Manhattan Island lacked abundant fresh water that would have attracted aboriginal habitation. According to Bolton (1920:15-16), the Mareckawick group of the Canarsee occupied Ward's Island, Blackwell's Island and Governor's Island in the East River.

Parts of Manhattan that are particularly sensitive for prehistoric resources include portions of Harlem, Washington Heights, and Inwood that were occupied by the Reckgawawanc, who were part of the Unami branch of the Lenape who occupied northern New Jersey (Bolton 1920:17-19). A related group of the Matouack, who occupied the whole of Long Island, were the Rockaway group in the area of Newtown and Jamaica in Queens (Bolton 1920).

2.7 PREHISTORIC ARCHAEOLOGICAL SITES WITHIN A ONE-MILE RADIUS OF THE PROJECT AREA

As part of the evaluation process, this sensitivity study has surveyed published and unpublished resources housed in a variety of locations. Research was conducted at the site maps and files of the New York State Museum (NYSM) in Albany, and the New York State Office of Parks, Recreation and Historic Preservation (NYOPRHP) on Peebles Island, New York.

The site files at the NYSOPRHP revealed four documented archeological sites within a one-mile radius of the project area. None of these archaeological sites are located within the current project area. These archaeological sites are described in Table 1. Additionally, an examination of early twentieth-century surveys of Manhattan uncovered a number of sites distributed throughout the island. Among these are five sites situated on or near the northern tip of the island. The site closest to the project area is located in Fort Washington Park and is described as a "fishing station" (Bolton 1934:135). Other archaeological sites along the northernmost tip of the island include Dyckman at Hudson River, described only as a very ancient site consisting of shells, ash, stone implements, bear bones and elk horns; Muscoota, described only as a ceremonial site; Shorakappok, described as a village site, and Marble Hill, described as a temporary site where natives waited for low tide (Bolton 1934:135).

Table 1 - Previously Identified Archaeological Sites within One-Mile of the Project Area

SITE NUMBER	SITE NAME	USGS QUAD.	SITE TYPE	ARTIFACTS/FEATURES	SOURCE
OPRHP					
A016-01-0117	Jeffrey's Hook	Central Park	Prehistoric/Historic	Deposits of shell and coal (Prehistoric), outwork of Fort Washington and small standing lighthouse (Historic)	Cohn 1976
A061-01-0126	Oblien's House	Central Park	1691-1777	-	Cohn 1976
NYSM					
4067	-	Central Park	Prehistoric	Shell midden	Parker 1922
7250	-	Central Park	Prehistoric villages	Fishing station and shell midden along cove, now destroyed by George Washington Bridge construction	Parker 1922 Roberts 1998

3.0 HISTORIC BACKGROUND

3.1 HISTORY of MANHATTAN and WASHINGTON HEIGHTS

European eyes first gazed upon the island of Manhattan in 1609, when Henry Hudson sailed up the river that now bears his name. Although this and other earlier voyages had been made to the region, permanent European settlement began in the metropolitan area in the 1620s. The land was claimed by the Netherlands and was under the direct control of the Dutch West India Company, a chartered company founded in 1621 to control trade with, among other locations, the New Netherlands (present-day New York and New Jersey). As a chartered company, the Dutch West India Company was granted a trading monopoly and governing privileges for the lands under its jurisdiction. In 1624, 30 families were settled by the Company in New Netherland at various locations, none of which were on Manhattan Island or Long Island, in a dispersed settlement pattern that was designed to strengthen the Company's territorial claims. When Peter Minuit assumed control of New Netherland in 1626, he recognized the hazards of a dispersed population pattern and concentrated the colonists on Manhattan, after his famous purchase of the island from the Native American inhabitants.

The settlement on Manhattan, called New Amsterdam, grew slowly throughout the middle years of the 17th century, while on Long Island, villages were established by both the Dutch and the English in what are now the boroughs of Brooklyn and Queens. These villages were originally chartered by the West India Company and their patents were confirmed by the British after the English usurpation of the colony in 1664.

After 1664, New Amsterdam became New York and the names of the outlying Long Island villages also changed or became anglicized. Many prominent Dutch families with roots extending to the first days of settlement began to speak English, read English books and intermarry with English families (Burrows and Wallace 1999:78).

The inhabitants of New Amsterdam/New York were engaged in trade and maritime industries, for the most part, along with other occupations common to town dwellers (bakers, brewers, tavern keepers, government officials, etc.). In contrast, the people who lived in the Long Island villages and areas in the northern reaches of Manhattan were primarily farmers who raised crops and animals for their own use and to sell in the markets of the town. The government of New Amsterdam established set times and places for markets as early as 1648 for the "relief of the farmers who often come to the strand with divers articles, such as Beef, Pork, Butter, Cheese, Turnips, Carrots, Cabbage, and other country produce" but whose customers, since most did not live in sight of the beach, were not aware of their arrival (Stokes 1915:vol 2, 345). Fishing was an occupation of both town and country people but a regulated market place for fish was not established until 1691 (De Voe 1970:109-110).

The settlement of northern Manhattan was slower and less concentrated than that of southern Manhattan. Early attempts at establishing a settlement in upper Manhattan were thwarted by high mortality rates, limited available labor, indifference of the central government and the ever-present threat of Indian uprisings (Heitert 2004:32). By the middle of the 17th century, the Dutch finally managed a toehold in the area. The residents of "Nieuw Haarlem" as it was called during the Dutch occupation, eventually melded into a rural society that stood in stark contrast to the larger, more urbanized population downtown. The rich agricultural land of northern Manhattan produced a multitude of crops that included tobacco, wheat, buckwheat, peas, maize, rye, and flax. Other pursuits within the area included the raising of cattle and the harvesting of salt hay from the marshy perimeter (Heitert 2004:32). One of these farms belonged to Jochem Pieters, who owned a large tract of northern Manhattan along the Hudson River, which encompassed the project area (Stokes 1915, vol. 5:82-83). Ethnically diverse, this multi-lingual community consisted of French, Dutch, Danish, Walloon, Swedish and German settlers. By 1658, two blocks had been laid near present-day 125th and 126th Streets. This was soon followed by a "wagon road" oriented north/south designed to link Nieuw Haarlem with Nieuw Amsterdam (Burrows and Wallace 1999:70).

The settlement on Manhattan continued to be concentrated at the southern tip of the island for most of

the 18th century. The east side of the island was preferred because the shoreline was much more gentle, in contrast to the steep shores of the west side that made landing and unloading more difficult, and because the East River was less likely to freeze than the Hudson during the winter months.

The second half of the eighteenth century saw the area of northern Manhattan emerge as a coveted retreat for well-to-do British families desiring to escape the crowded, often times disease-ridden conditions of the urban core (Heitert 2004:34). Surviving examples from this period include the Morris-Jumel Mansion, built in 1765 and the Dyckman house, built in 1785 on the site of an earlier building that burned during the Revolutionary War (Dolkart and Postal 2004:213-215). By the time of the American Revolution, a fort had been built overlooking the Hudson River in the vicinity of 183rd Street. The construction of this structure, known as Fort Washington, was begun on June 20, 1776 as a complement to Fort Lee, which was situated directly across on the New Jersey side of the Hudson River. These forts were designed to deny enemy ships access to the upper Hudson Valley (Burrows and Wallace 1999:229). Its location on the highest point in Manhattan, approximately 238 feet above the river, seemed to offer a superior advantage to the Continentals. Unfortunately, Fort Washington fell into the hands of the British less than five months after its construction and remained an enemy fortress until the end of the war. The 1776 Sauthier Map (Figure 3) depicts the fort as a five-bastioned complex just west of the main road that connected the north and south ends of the island. This road was the forerunner of the modern-day Broadway. A battery was situated west of the fort on a peninsula known as Jeffrey's Hook. After the war, the earthen walls of the fort slowly disappeared and the area became known as Washington Heights.

Prior to the fall of Fort Washington, a small but important skirmish took place near the project area. This battle, known as the Battle of Harlem, occurred on Sept. 16, 1776. A band of Connecticut rangers engaged a column of British soldiers between what is now 130th and 155th Streets. At the height of the battle, 5000 American troops surrounded the British on three sides. This forced the British soldiers, who had not been killed or wounded, to retreat into what is now the northwest corner of Central Park. While not a meaningful tactical victory, it proved a welcome psychological boost to the Continentals morale and showed that it was possible to defeat the powerful British army. This was critical to the war effort, given the disheartening losses in Long Island and Kip's Bay just a few weeks earlier.

As stated previously, the initial settlement of Manhattan was concentrated at the tip of the island throughout the 18th century, although farms and villages, most notably Harlem, were located farther north. The populations of Manhattan and Long Island grew steadily throughout the 18th century, but there was little change in the occupations of their inhabitants. The variety of occupations increased when industrialization began in the 19th century. This industrialization put pressure on existing available land for commercial expansion along the southern tip of Manhattan. To increase available property in the city's core, the shoreline was filled and made land eventually extended three blocks further east into the river. Commerce and prime residential areas thus stayed concentrated at the heart of the city until after the Revolutionary War.

After the Revolutionary War, various factors (in particular rapid population growth, increasing industrialization, the domestic revolution with its consequent separation of the home and the workplace, and construction of roads) led to the expansion of Manhattan. Some houses were built in the area between present-day 14th and 59th streets at mid-century, but growth did not accelerate until after the Civil War. The main shopping areas, which are good indicators of concentrated populations, "moved progressively uptown from 14th Street in the 1870s to 23rd Street in the 1890s, and, in the early part of the 1900s, to 34th Street" (Goldstone and Dalrymple 1976:172). The Upper East and West Sides remained largely undeveloped until the first decades of the 20th century.

Although the majority of development on Manhattan progressed in a linear fashion northward from the established southern portion of the island, the earlier settlements already located on the northern half of the island also experienced steady growth. Much of this development along the upper west side can be traced to the establishment of the Hudson River Railroad in September of 1849. This undertaking was

a testament to both engineering ingenuity and corporate will. The forbidding terrain along a major river proved a formidable challenge for the construction of a rail line. However, the necessity clearly outweighed the obstacles. River travel, while fast and dependable, was interrupted for three to four months a year when the river froze. As a result, a group of prominent businessmen that included Matthew Vassar, D.B. Lent and A.J. Coffin joined forces and obtained a charter for the railroad on May 12, 1846 (Smith 1882). The opening of the Hudson River Railroad was the catalyst for accelerated development of the area. A rail depot and hotel located just south of the project area were among the first structures related to the new line.

By the middle of the 19th century (Figure 4), the street grid in the vicinity of the project area was fully established and numerous dwellings and commercial establishments were present (Dripps 1851). The Trinity Church and Cemetery, founded in 1842 on a portion of the farm owned by James Audubon, occupied a four block area bounded by 155th Street to the north, 10th Avenue to the east, 153th Street to the south and the Hudson River Railroad to the west. The 152nd Street Railroad Depot was situated along the shore of the Hudson River. The Hudson River Railroad Hotel was located on the southwest corner of 152nd Street and 12th Avenue. A private residence owned by an R.F. Carman is present on the south side of 153rd Street near 12th Avenue. An updated Dripps Map from 1867 (Figure 5) depicts the Hudson River Railroad hotel as the Depot Hotel that occupies the entire west end of the block between 151st Street and 152nd Street. Development of the area by this time was still concentrated north and east of the Trinity Cemetery and by 1868, the area was known as Carmansville. The 1879 Galt and Hoy Map (Figure 6) shows a significant increase in the number of structures along the western shore of upper Manhattan and depicts the area between 143rd Street and 153rd Street as being largely undeveloped, with a cluster of structures just south of 143rd Street west of Tenth Avenue and north of 153rd Street along the east side of Tenth Avenue. Several boat slips are present extending west of the Hudson River Railroad at 153rd Street, 154th Street and 155th Street. The 1879 Bromley Map (Figure 7) depicts the former Depot Hotel as Riverside House and a school fronting Eleventh Avenue between W. 151st Street and W. 150th Street. Paper streets extend west of the Hudson River Railroad with lot numbers assigned to the paper block extensions.

The Brooklyn Bridge was one of the factors that fostered the creation of Greater New York in 1898. The opening of the Brooklyn Bridge in 1883 increased the pace of new construction for households and industries and fostered rapid population growth. Before the construction of the bridge, it was said that in winter, when the East River was iced and the weather bad, it took longer for passengers to get from Brooklyn on the ferry than it did for rail passengers to go from Albany to Manhattan. The political consolidation of the boroughs of the Bronx, Brooklyn, Queens, and Richmond with Manhattan soon increased their physical interconnections. In addition to the Brooklyn Bridge, Brooklyn and Manhattan were linked by the Williamsburg Bridge, which opened in 1903; the Manhattan Bridge in 1909; and subway lines created between 1905 and 1913. Bridge and tunnel construction was slightly later in Queens. The Queensboro Bridge opened in 1909; the Pennsylvania Rail Road Long Island Tunnel under the East River carried trains from 1910; and subway lines were extended to Queens in the 1920s. The Triborough Bridge which connected Manhattan, the Bronx, and Queens opened in 1936 and in 1939, the Whitestone Bridge between the Bronx and Queens and the Queens Midtown Tunnel were both completed, greatly increasing automobile access between Manhattan and Long Island.

As was the case with the outer boroughs of Brooklyn and Queens, development in Manhattan also followed the construction of roads and later railroads and subways. The road systems that exist in present-day New York City bear evidence to city planning as well as to spontaneous development. Planned street grids were laid out over the entire island of Manhattan in 1811 and are only interrupted where there were already existing roads. Greenwich Village, for instance, has its own anomalous street layout, and the streets below Wall Street still follow the original ones laid out by the surveyors of the Dutch West India Company. The streets in upper Manhattan were more symmetrical, however, they did incorporate some of the few early roads and farm paths that existed in the eighteenth century.

Landfilling in northern Manhattan along the eastern bank of the Hudson River also occurred, albeit at a much later date than along the southern tip. A review of maps from the eighteenth century to the early

twentieth century shows the steady progression of the shoreline westward, particularly after the establishment of the Hudson River Railroad. The 1893 Sanborn Insurance Map (Figure 8) depicts a one-story structure known as the Audubon Yacht Club west of the railroad at the end of West 153rd Street and a series of bath houses just to the south. A canoe club and several indeterminate structures are situated west of the railroad depot, and 12th Avenue now extended down to West 151st Street. Two pedestrian bridges are pictured over the railroad tracks: one at West 152nd Street and the other at West 151st Street. Interestingly, the map shows five "paper streets" which indicates a plan to extend the shoreline further west. By this time, the blocks (Blocks 2098 and 2099) bounded by West 153rd Street, West 151st Street, 12th Avenue and the Boulevard (formerly 11th Avenue and presently Broadway) were only partially developed with semi-attached and unattached dwellings interspersed with empty lots. The block (Block 2097) bounded by West 151st Street, West 150th Street, 12th Avenue and the Boulevard (formerly 11th Avenue and presently Broadway) has several buildings that are part of the Hebrew Orphan Asylum complex fronting the Boulevard. The remainder of the block is vacant at this point.

The 1909 Sanborn Insurance Map (Figure 9) shows perhaps the most profound changes to the area to date. The construction of Riverside Drive and Riverside Park along the eastern edge of the Hudson River Railroad necessitated the annexation of various sized portions of the west ends of Blocks 2097, 2098 and 2099. As a result, a number of the structures present on the 1893 Sanborn Map were demolished for the new roadway. The eastern portions of these same blocks saw increased development, with a number of additional or expanded buildings. The foot bridges over the railroad tracks were still in place providing access from Riverside Park to the river edge. The 1939 Sanborn Insurance Map (Figure 10) illustrates yet another major change to the area with the construction of the Henry Hudson Parkway adjacent west of the Hudson River Railroad. A park is depicted west of the Henry Hudson Parkway service road and a well-defined bulkhead line now borders the river. By this time, the pedestrian bridge at 151st Street appears to have its modern configuration with a north-oriented series of steps for exiting on the west side. The 1951 Sanborn Insurance Map (Figure 11) shows no further changes to the shoreline, however, by this time, Blocks 2097, 2098, and 2099 were fully developed.

4.0 ARCHITECTURAL SURVEY

4.1 BACKGROUND RESEARCH

Berger personnel reviewed survey files at the New York Office of Parks Recreation and Historic Preservation (NYOPRHP) and the New York City Landmarks Preservation Commission (LPC) for information concerning previously documented resources within the study area and historical background data that might be useful in the formulation of the historic context and evaluation determinations for the present study. Site file searches indicated that no properties that have been listed in or have been previously found eligible for listing in the National or New York Register of Historic Places lie within the project area.

Background research conducted for the purpose of obtaining data necessary to complete the historic context was performed at the NYOPRHP on Peebles Island, New York, LPC, and the New York Public Library.

4.2 FIELD SURVEY

The field survey consisted of the documentation of all resources 50 years of age or older within the study area. The architectural surveyor assigned a temporary number to each surveyed resource and marked its location on project maps. Documentation involved taking at least one 35-millimeter black-and-white photograph of each resource. The surveyor also noted building materials, condition, setting, approximate date of construction, integrity, and other pertinent data, all of which were recorded in survey field notes. Whenever possible, property owners, tenants, and any other interested parties were consulted to gather additional information concerning the history of the resources. In addition to individual properties, the field survey sought to learn whether any of the properties within the architectural APE were also part of any historic districts that would have potential to meet National Register criteria.

4.3 ARCHITECTURAL SURVEY FINDINGS

During the week of August 23, 2004, a reconnaissance-level field survey of buildings and structures within the proposed project Area of Potential Effect (APE) was conducted by the project architectural historian. In addition to the abandoned pedestrian bridge that is under the jurisdiction of NYC DOT, two architectural/engineering resources over 50 years of age and therefore potentially eligible for listing on the National Register of Historic Places have been identified within the study area: (1) Riverside Park, northern section, built prior to 1909; and (2) Henry Hudson Parkway, completed 1937. No historic districts were identified by the field survey.

(1) Riverside Park

Riverside Park in Manhattan is a narrow strip of land, running along the bank of the Hudson River from 68th Street to 158th Street. Nearly four miles long and an eighth of a mile wide, the park consists of 323 acres that vary from steep, densely treed and planted walking paths, to open shore-side playing fields.

The so-called northern section of Riverside Park, in which the 151st Street Pedestrian Bridge is located, features a steep embankment between the railroad tracks and Riverside Drive retained by high stone retaining walls with stairs, overlook viewing platforms and broad sidewalks (see Photos 1, 5-7). The massive circular overlook platform is wrapped in a stone stairway leading to the entrance to the pedestrian bridge. A triple arch arcade with elaborate stonework supports the sidewalk between the overlook and a second stone staircase leading down to the open area at the entrance to the bridge.

A plan for the creation of a riverside park up the west side of Manhattan along the steep banks of the Hudson River was proposed in 1865 by William R. Martin, a New York parks commissioner. The park

was approved by the legislature in 1866, and the first land was acquired in 1872. Fredrick Law Olmstead, the famed landscape architect of Central Park, laid out the conceptual plan for the Park and Riverside Drive. Between 1875 and 1910 the detailed design and construction of the Park and Drive was completed by a variety of architects and designers including Calvert Vaux and Samuel Parsons. The landscape was extensively altered and sculpted by excavation and fill, and the construction of monumental stone retaining walls, architectural features and statues. The section of the Park between 72nd Street and 125th Street was designated a New York City Scenic Landmark in 1980 (Riverside Park Fund 2004).

(2) Henry Hudson Parkway

The Henry Hudson Parkway runs 11.1 miles from 72nd Street to the Bronx-Westchester Border. In the vicinity of 151st Street, the Parkway is a six-lane divided highway. An exit for Riverside Park is located on the southbound side of the Parkway opposite 151st Street (see Photos 1, 8-10).

Robert Moses proposed the Henry Hudson Parkway in 1927 as part of a major series of improvements known as the "West Side Improvements." The work included the construction of the Parkway through Manhattan, further improvements to Riverside Park with exits from the Parkway to access those improvements, construction of the Henry Hudson Bridge to carry the Parkway into the Bronx, and continuation of the Parkway through the Bronx to meet the Saw Mill River Parkway (Henry Hudson Parkway Scenic Byway Initiative 2004).

Like other parkways of the time, the geometry, landscaping and architecture of the bridges and overpasses of the Henry Hudson were designed within strict aesthetic guidelines. The successful integration of the engineering, architectural and aesthetic elements of the Parkway, Riverside Drive and Riverside Park resulted in a linear park and highway system that is unique to New York and the perhaps the country as well.

5.0 EVALUATIONS AND RECOMMENDATIONS

A contextual study of the project area's cultural resources has been conducted at the site of the proposed pedestrian bridge replacement in Washington Heights, Borough of Manhattan, New York. A thorough examination of all available documentary and cartographic resources indicate that the project area consists of fill soils deposited over time for the various transportation arteries constructed during the nineteenth and early twentieth centuries. As mapped by the NYSHPO, this site is not within an archaeologically sensitive area. In addition, the various construction episodes have also resulted in massive disturbances to the stratigraphy that resulted from early landfilling undertakings including the construction of the existing pedestrian bridge. Therefore, the project's study area possesses little potential for intact, significant archaeological resources. Berger recommends that no further archaeological investigations are required for the proposed project.

In addition to the abandoned pedestrian bridge that is under the jurisdiction of NYC DOT, the architectural survey identified two architectural/engineering resources within the study area that may be eligible for listing on the National Register of Historic Places. Further cultural resource studies are required to determine if such resources are eligible for listing on the NRHP. HABS-HAER style recordation of the resources may be required prior to the implementation of the proposed project to document any historic architectural resources identified as eligible for listing on the NRHP. The existing pedestrian bridge at the project site is scheduled for demolition by the New York City Bureau of Bridges.

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APPENDIX A: KEY PERSONNEL

ZACHARY J. DAVIS
The Louis Berger Group, Inc.
Senior Archaeologist

EDUCATION

- # Interdepartmental Doctoral Program in Anthropological Science, State University of New York at Stony Brook
- # M.A., Anthropology, State University of New York at Stony Brook, 2000
- # M.A., Archaeology, Institute of Archaeology, University of London, 1994
- # B.A., Archaeological Studies, Boston University, 1993

PROFESSIONAL REGISTRATIONS

- # Register of Professional Archaeologists (RPA)

TECHNICAL TRAINING

- # 40-Hour H&S for Hazardous Waste Operations and Emergency Response meeting the training requirements of 29 CFR 1910.120. Emilcott Associates, Inc., March 15, 2004.
- # Trenching and Excavation Safety—OSHA Construction Industry Standards, Subpart P (29 CFR 1926.650-652). Emilcott Associates, Inc., February 19, 2004.
- # Introduction to Section 106 Review (Ralston Cox, instructor), February 20-21, 2002
- # Introduction to GPS using the Trimble Pro XR Training Class (Mike Popoloski, instructor), March 19, 2001.

PROFESSIONAL AFFILIATIONS

- # Society for American Archaeology
- # Geological Society of America
- # Paleoanthropology Society of America
- # Society for Archaeological Sciences
- # Archaeological Society of New Jersey

PROFESSIONAL EXPERIENCE

Mr. Davis's background includes archaeological investigations at prehistoric sites dating from the Paleoindian through the Late Woodland period and historic sites dating from the seventeenth century through the early twentieth century. As Principal Investigator, he is responsible for the implementation and execution of archaeological research projects involving historic and prehistoric resources in the Northeast. His responsibilities include coordinating and supervising interdisciplinary multitask studies, planning and conducting surveys and excavations of historic and prehistoric sites and their resources, interfacing with clients and subconsultants, maintaining project schedules, and preparing research proposals and technical reports. In addition, Mr. Davis has extensive experience with lithic material analysis and Geographic Information Systems database development and analysis for cultural resources. Since joining Berger, Mr. Davis's major projects include:

- # **Phase IA Archaeological Assessment, Proposed Vent Plant Installation, West 21st Street and Sixth Avenue, New York, New York.** Principal Investigator for an archaeological resource assessment of a proposed vent plant installation, located in Chelsea. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New York City Transit.
- # **Phase IA Archaeological Assessment, Hudson Yards/Number 7 Subway Line Extension, New York, New York.** Assisted with the analysis of archaeological resource potential for 39 lots on the Westside of Manhattan. For New York City Department of City Planning and New York City Transit.
- # **Phase IB Archaeological Survey, Proposed Vent Plant Installation, Chrystie and Stanton Streets, New York, New York.** Principal Investigator for an archaeological survey consisting of a back-hoe trench excavated to assess the presence or absence of late nineteenth- and early twentieth-century front yard archaeological resources. For New York City Transit.
- # **Phase IA Archaeological Assessment, Proposed Fan Plant Rehabilitation, 52nd Street and Sixth Avenue, New York, New York.** Principal Investigator for an archaeological resource assessment of a proposed fan plant rehabilitation, located in midtown Manhattan. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New York City Transit.
- # **Phase IA Archaeological Assessment, Proposed Fulton Street Transit Center, Fulton Street and Broadway, New York, New York.** Principal Investigator for an archaeological resource assessment of the proposed downtown transit facility, located at Fulton Street and Broadway. Reviewed historic maps and documents and summarized past disturbances to the project area to calculate the project area's potential for archaeological resources. For New York City Transit.
- # **Phase IA Archaeological Assessment, New South Ferry Terminal, New York, New York.** Responsible for the archaeological resource assessment of a proposed subway terminal project in Battery Park. Required extensive cartographic research documenting the historic evolution of the Lower Manhattan shoreline. Employed GIS technology to georeference numerous historic maps in order to trace potential historic archaeological resources within the project area. Coordinated review with New York City Landmarks Commission and New York State Office of Parks, Recreation and Historic Preservation. Prepared the Archaeological Resource Management Plan, a required component of the Programmatic Agreement between SHPO, LPC, FTA and NYCT. For New York City Transit.
- # **Phase IA Archaeological Assessment, Proposed Fan Plant Rehabilitation, Lafayette and Flatbush Avenues, Brooklyn, New York.** Principal Investigator for an archaeological resource assessment of a proposed fan plant rehabilitation, located in Fort Green, Brooklyn. Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New York City Transit.
- # **Phase IA Archaeological Assessment, Proposed Vent Plant Installation, Chrystie and Stanton Streets, New York, New York.** Principal Investigator for an archaeological resource assessment of a proposed vent plant installation, located in Manhattan's Lower East Side.

Employed GIS technology to georeference historic maps to trace potential historic archaeological resources within the project area. For New York City Transit.

- # **Phase IA Archaeological Assessment, Niagara Mohawk, Hudson (Water Street) Site, City of Hudson, New York.** Principal Investigator for the Phase IA archaeological assessment of a late nineteenth-/early twentieth-century coal-to-gas generating facility located on the banks of the Hudson River. Study involves the research and analysis of past disturbances and potential for historic archaeological resources associated with the industrial use of the project area. For Blasland, Bouck and Lee, Inc.
- # **Phase I Archaeological Investigation, Sweet Brook Drainage Area, Carlton Boulevard, Annadale, Staten Island, New York.** Principal Investigator for a Phase I archaeological survey for sewage installation project along the Sweet Brook in southern Staten Island. For JRC Construction Corporation at the request of NYC DEP.
- # **Phase I Archaeological Survey, Luzerne County Road No. 9, Jackson, Lehman, and Dallas Townships, Luzerne County, Pennsylvania.** Documented the results of a previously conducted road-way survey, located along Luzerne County Road 9, designed to assess the project's potential impact on late historic period archaeological deposits. For Pennsylvania Department of Transportation Engineering District 4-0.
- # **Cultural Resource Constraints Assessment, Route 9 and Garden State Parkway, Cape May County, New Jersey.** Conducted background research on archaeological and historic architectural resources within the project corridor. Prepared GIS files for cultural resources and summary cultural resource assessment of the project corridor. For the South Jersey Transportation Planning Organization.
- # **Stage IA Archaeological Assessment, Cross Harbor Freight Improvement Project, Greenville Yards, Jersey City, New Jersey.** Co-Principal Investigator for the Phase IA archaeological assessment of the Greenville Yard. Study involved the research and analysis of past disturbances and potential for prehistoric and historic period resources. For Allee King Rosen & Fleming, Inc. in association with New York City Economic Development Corporation (NYCEDC).
- # **Cultural Resource Constraints Assessment, Route 17, Bergen County, New Jersey.** Conducted background research on archaeological and historic architectural resources within the project corridor. Prepared GIS files for cultural resources and summary cultural resource assessment of the project corridor. For the North Jersey Transportation Planning Organization.
- # **Cultural Resource Constraints Assessment, Route 22, Essex and Union Counties, New Jersey.** Conducted background research on archaeological and historic architectural resources within the project corridor. Prepared GIS files for cultural resources and summary cultural resource assessment of the project corridor. For the North Jersey Transportation Planning Organization.
- # **Cultural Resource Constraints Assessment, Route 57, Warren County, New Jersey.** Conducted background research on archaeological and historic architectural resources within the project corridor. Prepared GIS files for cultural resources and summary cultural resource

assessment of the project corridor. For the North Jersey Transportation Planning Organization.

- # **Phase IA Archaeological Assessment, East 126th Street Bus Garage, New York, New York.** Responsible for the archaeological and architectural site file review at New York City Landmarks Commission (LPC), background research, and archaeological assessment for the half block project area. For New York City Transit.
- # **Cultural Resource Eligibility/Effects Documentation for Final Scope Development of Routes 1 and 9 at North Avenue, City of Elizabeth, New Jersey.** Principal Investigator for the identification and evaluation of archaeological resources (Phase I/II) and historic architectural properties (eligibility/effect) *within the proposed project area for roadway improvements*. Also conducted all background research and prepared archaeological report. For the New Jersey Department of Transportation.
- # **Hudson Energy Project, Hudson River Bulkhead at Pier 92, Manhattan, New York.** Responsible for the archaeological and architectural site file review at New York City Landmarks Commission (LPC), background research, and field inspection of the study area from the bulkhead at Pier 92 to the ConEd substation at West 94th Street in Manhattan. For Genpower Hudson Energy.
- # **New Jersey Cellular Telecommunications.** Principal Investigator for several Phase IA Archaeological Assessments and Historic Architectural Resource assessments for proposed Nextel cell tower installation in Essex, Berger, Morris, Sussex, Warren, Hunterdon, Somerset, Middlesex and Monmouth counties. For IVI Environmental, Inc.
- # **La Tourette Park, Staten Island, New York.** Principal Investigator for a Historic Architectural Resource assessment of a proposed Omnipoint cell tower installation in Richmond County, New York. For Goodkind and O'Dea, Inc.
- # **Bradley Beach, New Jersey.** Principal Investigator for a Historic Architectural Resource assessment of a proposed Verizon cell tower installation in Monmouth County, New Jersey. For Innovative Engineering, Inc.
- # **Southern New Jersey Cellular Telecommunications.** Principal Investigator for several Phase IB archaeological assessment of proposed AT&T cell tower installations in Salem and Gloucester counties, New Jersey. For Rescom Environmental Corporation.
- # **P.S. 234-Q, Long Island City, Queens, New York.** Principal Investigator for a Phase IB archaeological assessment for a proposed New York City public school in Astoria, Queens. For Parsons Brinckerhoff, Inc and the New York City School Construction Authority (SCA).
- # **Arthur Kill Road Bus Maintenance Facility, Staten Island, New York.** Principal Investigator for a Phase IB archaeological survey for prehistoric and historic resources. For New York City Transit.
- # **Arbutus Avenue Sewer Project, Staten Island, New York.** Principal Investigator for a Phase I archaeological survey for sewage installation project along the Arbutus Creek. For JRC Construction Corporation.

- # **Two Bridges Road Bridge, Lincoln Park, Wayne and Fairfield, New Jersey.** Principal Investigator for cultural resource screening of archaeological and historic architectural properties, including five known prehistoric Native American sites, several historic residences pre-dating 1950, and the 1887 National Register-eligible steel truss bridge. Project involved assessing archaeological sensitivity for the area surrounding the confluence of the Passaic and Pompton rivers. For the County of Passaic.
- # **Interchange 142 (Garden State Parkway and I-78), Hillside, Irvington, and Union, New Jersey.** Principal Investigator for a Phase IB archaeological survey along the Garden State Parkway at Exit 142, straddling the Union/Essex County line. For the New Jersey Highway Authority.
- # **Interchange 142 (Garden State Parkway and I-78), Hillside, Irvington, and Union, New Jersey.** Contributed to the Historic Architectural Evaluation with background research on and evaluation of the Elizabeth River Park, a National Register-eligible park in Union County. For the New Jersey Highway Authority.

PREVIOUS PROFESSIONAL EXPERIENCE

- # **Calverton Naval Weapons Industrial Reserve, Calverton, New York.** Geographic Information Systems analyst. Integrated GIS analysis with lithic analysis to interpret prehistoric activity patterns.
- # **PS 56R Site, Staten Island, New York.** Lab Director. Analysis, curation, and data entry for cultural material derived from the mitigation of a primarily Late Archaic prehistoric site.
- # **Calverton Naval Weapons Industrial Reserve, Calverton, New York.** Field Supervisor. Cultural resource survey of 6,000-acre parcel with several early mid-twentieth-century buildings and several Late Archaic and Late Woodland prehistoric sites.
- # **Russian Mission, The Bronx, New York.** Lithic Analyst. Cultural resource survey of a Late Archaic/Woodland quartz quarry site.
- # **Long Island College Hospital, Brooklyn, New York.** Excavator. Monitoring heavy machine excavation of eighteenth-, nineteenth-, and twentieth-century historical archaeological deposits for the construction of a parking garage along Atlantic Avenue.
- # **Robin's Island, Southold, New York.** Field Supervisor and Lithic Analyst. Survey of 450-acre island located in the Peconic Bay, revealing several prehistoric and historic sites.
- # **Hudson Valley Rod & Gun Club, Pawling, New York.** Excavator. Mitigation of a Middle and Late Archaic prehistoric site.
- # **Umm el Tlel, Syria.** Excavator. Long-term excavations of an open-air site containing cultural material spanning from the terminal Lower Palaeolithic, through the Middle, Upper, and Epi-Palaeolithic, to the Neolithic.
- # **Abri Castanet, Sergeac (Perigord), France.** Excavator. Long-term excavations of an early

Upper Palaeolithic rockshelter in the southwest of France.

- # **Le col de Jiboui, Haut-Diois (Drôme), France.** Excavator. Salvage excavations of an open-air Middle Palaeolithic site in the French Alps.
- # **Fouilles Préhistoriques à Cagny, Cagny (Nord), France.** Excavator. Excavation of two open-air Lower Palaeolithic sites located in northern France.
- # **Spencer-Pierce-Little Farm, Newbury, Massachusetts.** Excavator. Boston University archaeological field school at a late seventeenth-century homestead.

ACADEMIC POSITIONS

Graduate Teaching Associate, Department of Anthropology, SUNY at Stony Brook. Primary Instructor: Anthropology 402, Problems in Archaeology - Landscape exploitation strategies in the Eurasian Palaeolithic.

Graduate Teaching Assistant, Department of Anthropology, SUNY at Stony Brook. Primary Teaching Assistant for Anthropology 102, Introduction to Cultural Anthropology; Primary Teaching Assistant for Anthropology 356, Urban Anthropology; Primary Teaching Assistant for Anthropology 104, Introduction to Archaeology; Primary Teaching Assistant for Anthropology 290, Ancient Science and Technology.

Graduate Teaching Assistant, Department of Anthropology, SUNY at Stony Brook. Lab Instructor for Anthropology 418, Lithic Technology; Lab Instructor for Anthropology 420, Geographic Information Systems in Environmental Analysis.

HONORS/AWARDS

- # Graduate Council commendation for excellence in teaching by a graduate student, SUNY at Stony Brook.
- # General grant for thesis research, L.S.B. Leakey Foundation.
- # Grant for thesis research, Geological Society of America.
- # Grant for thesis related research, IDPAS, SUNY at Stony Brook.
- # Travel grant to the Annual Meeting of the Paleoanthropology Society, Columbus.
- # Travel grant to the 63rd Annual Meeting of the Society for American Archaeology, Seattle.
- # Travel grant for summer fieldwork, Sigma Xi Research Foundation.
- # General research grant, IDPAS, SUNY at Stony Brook.
- # Travel grant to the 62nd Annual Meeting of the Society for American Archaeology, Nashville.

PUBLICATIONS

- # Experimental Test of Middle Palaeolithic Spear Points Using a Calibrated Crossbow. By J.J. Shea, Z.J. Davis, and K.S. Brown. *Journal of Archaeological Science* 28:807-816. 2001.
- # Quantifying Lithic Curation: An Experimental Test of Dibble and Pelcin's Original Flake-Tool Mass Predictor. By Z.J. Davis and J.J. Shea. *Journal of Archaeological Science* 25:603-610. 1998.

PAPERS PRESENTED

- # Costs and Benefits of Levallois Flake Production: An Economic Perspective on the Variability in Middle Palaeolithic Stone Tool Assemblages. Paper presented at the 65th Annual Meeting of the Society for American Archaeology, Philadelphia. 2000.
- # Levantine Mousterian Mobility Patterns: The View from Mt. Carmel, Israel. Paper presented at the 1999 Paleoanthropology Society Meetings, Columbus. 1999.
- # Experimental Test of Middle Palaeolithic Hunting Weapons: Preliminary Results. Paper presented at the 64th Annual Meeting of the Society for American Archaeology, Chicago. 1999 (with J.J. Shea and K.S. Brown).
- # The Analytical Potential of Refitting Studies: History and Synthesis of Applications. Paper presented at the 63rd Annual Meeting of the Society for American Archaeology, Seattle. 1998.
- # The PS 56R Site: A Vosburg Habitation on Staten Island, New York. Paper presented at the 62nd Annual Meeting of the Society for American Archaeology, Nashville. 1997 (with A.M. Pappalardo).

CONFERENCE SYMPOSIA ORGANIZED

- # Refitting Studies in New and Old World Lithic Analyses. Symposium organized for the 63rd Annual Meeting of the Society for American Archaeology, Seattle. 1998.

RICHARD M. CASELLA
The Louis Berger Group, Inc.
Senior Architectural Historian

EDUCATION

- # M.S., Historic Preservation, University of Vermont, 1990
- # Graduate Studies in Marine Affairs and Civil Engineering, University of Rhode Island, 1980-1983
- # B.S., Marine Geology, Long Island University, 1977

PROFESSIONAL AFFILIATIONS

- # Society for Industrial Archaeology
- # Society of Architectural Historians
- # National Trust for Historic Preservation

PROFESSIONAL EXPERIENCE

Mr. Casella conducts architectural surveys, historical context research, historic building condition assessments, National Register evaluations, and HABS/HAER recordation projects. He specializes in architectural resources of an engineering and industrial nature. Since joining Berger in 1992, Mr. Casella's major projects have included:

Historic Building and Structure Assessments:

- # **Stillwell Avenue Station Arcade, Structural and Historic Architectural Condition Assessment, Coney Island, New York.** Supervision of field inspection and report preparation of the steel and terra-cotta subway station building. For the New York City Transit Authority.
- # **Naval Underwater Systems Center, Newport, Rhode Island.** Cultural resources survey and assessment of National Register eligibility of World War II and Cold War buildings and structures at installations in Connecticut and New York. For the Northern Division, Naval Facilities Engineering Command.
- # **Pilgrim Hospital Historic Architecture Study, Islip, New York.** Architectural survey and assessment of 67 brick buildings of the former world's largest mental hospital, in conjunction with an estimated \$300 million reuse and redevelopment plan. For Reckson Associates, Inc.
- # **Naval Air Warfare Center Aircraft Division, Trenton, New Jersey.** Cultural resources survey and assessment of 100 buildings and structures associated with Cold War military research. For the Northern Division, Naval Facilities Engineering Command.
- # **Historic Architecture Assessment, I-676 Improvements, Camden, New Jersey.** Survey, assessment, and inventory of 74 inner-city buildings and structures. For the New Jersey Department of Transportation.
- # **Big Inch and Little Big Inch Pipelines, Texas to New Jersey.** Survey, assessment, inventory, and HAER documentation of buildings and structures of the World War II, War Emergency Pipeline, the world's largest pipeline of its day. For Texas Eastern Transmission Company.

- # **Marine Corps Base Camp Lejeune, Jacksonville, North Carolina.** Photographic documentation, assessment, and history of 176 military buildings at Camp Geiger, a World War II military encampment. For the Army Corps of Engineers and U.S. Marine Corps.
- # **Patuxent River Naval Air Station, Maryland.** Comprehensive survey, assessment, and documentation of entire complex comprising several hundred historic military buildings and structures. For Public Works, Patuxent River Naval Air Station.
- # **Voice of America's Bethany Relay Station, Cincinnati, Ohio.** Survey and National Register Eligibility Determination of a 625-acre World War II radio transmitting facility. For the U.S. General Services Administration.
- # **Newport Naval Base, Newport, Rhode Island, Cultural Resources Survey.** Survey and assessment of 286 military buildings and structures. For the Northern Division, Naval Facilities Engineering Command.
- # **Route 18 Bridge Replacement Over South River, Old Bridge and East Brunswick, New Jersey.** Historic architectural survey. For the New Jersey Department of Transportation.
- # **Route 21 Improvements Project, Historic Architectural Evaluation for Level of Action Assessment, Newark, New Jersey.** For the New Jersey Department of Transportation.
- # **979-981 Central Avenue, Bridgeport, Connecticut.** Survey and state-level recordation of residential building. For the Planning Department, City of Bridgeport.
- # **The Bassick Block, 1354-1366 State Street, Bridgeport, Connecticut.** Survey and state-level recordation of a large four-story brick commercial/residential block. For the Planning Department, City of Bridgeport.
- # **U.S. Route 46, Proposed Bridge Replacement and Road Improvements, Dover, New Jersey.** Phase I and II cultural resource investigations. For the New Jersey Department of Transportation.
- # **Bridge 6088, State Route 689, Smyth County, Virginia.** Phase II historical resource assessment of a closed spandrel reinforced concrete arch bridge built by the Luten Bridge Company. For the Virginia Department of Transportation.
- # **Pennsylvania Railroad Bridges and Tunnels in Pennsylvania.** State-level recordation of 65 railroad bridges, overhead highway bridges, signal bridges, and railroad tunnels. For the Consolidated Rail Corporation.
- # **Mead's Bridge, Butler County, Iowa.** Iowa Historic Property Study of a pin-connected metal truss bridge. For the Butler County Engineer's Office.
- # **Route 518, Bridge Replacement and Relocation, Montgomery Township, New Jersey.** Architectural resource investigation for Level of Action Assessment of an eighteenth-century settlement. For the New Jersey Department of Transportation.

Historic American Engineering Record (HAER) Documentation:

- # **Connecticut River Bridges, New Hampshire, Vermont.** Chesterfield-Brattleboro and Orford-Fairlee landmark steel-arch bridges and the Stratford-Bloomfield continuous plate girder

bridge. For the New Hampshire Department of Transportation.

- # **Stillwell Avenue Terminal, Coney Island, New York.** Largest elevated reinforced-concrete terminal complex in the New York system, built 1919. For the New York City Transit Authority.
- # **Cooper-Hewitt Mercury Vapor Lamp Factory, Hoboken New Jersey.** First manufacturing facility for mercury-vapor lamps, now Superfund site, for the General Electric Company.
- # **Edison Bridge, Raritan River, Perth Amboy, New Jersey.** Largest continuous plate-girder span in the United States when completed in 1938.
- # **Appomattox Bridge, Petersburg, Virginia.** A 38-span continuous concrete T-beam highway bridge built in 1925. For the Virginia Department of Transportation.
- # **Pennsylvania Railroad Transfer Bridges, Jersey City, New Jersey.** Five steel truss car-float transfer bridges built in 1904. For the Consolidated Rail Corporation.
- # **Lembeck and Betz Eagle Steam Brewery, Jersey City, New Jersey.** Industrial complex of late-Victorian brick industrial buildings. For the Jersey City Redevelopment Corporation.
- # **Camp Endicott, Davisville, Rhode Island.** Quonset huts at Construction Battalion encampment. For the Northern Division, Naval Facilities Engineering Command.
- # **Santa Fe Railway Bridge over the Mississippi River at Fort Madison, Iowa.** World's largest steel truss swing span. For Mojeski and Masters, Inc., New Orleans.
- # **Walnut Street Bridge, Harrisburg, Pennsylvania.** Longest extant Phoenix Truss bridge in America, damaged by 1996 flood. For the Pennsylvania Department of Transportation.
- # **Kellysville Bridge, Kellysville, New Hampshire.** Open-spandrel concrete arch highway bridge. For the New Hampshire Department of Transportation.
- # **Delaware State Bridge No. 21A, Milford, Delaware.** Scherzer-type rolling-lift bascule highway bridge. For the Delaware Department of Transportation.
- # **Jackson's Ferry Bridge, Wythe County, Virginia.** Riveted cantilever truss. For the Virginia Department of Transportation.
- # **Pennsylvania Railroad Tunnels and Signal Bridges, Pennsylvania.** Eight nineteenth-century railroad tunnels and two steel truss signal bridges. For Consolidated Rail Corporation.
- # **Kinsale Bridge, Westmoreland County, Virginia.** A manually operated, center-bearing swing bridge. For the Virginia Department of Transportation.
- # **Mill Creek Bridge, Kent County, Delaware.** Composite laminated timber and concrete slab deck bridge. For the Delaware Department of Transportation.
- # **Iron Truss Bridges, Virginia.** Fifteen, wrought-iron, pin-connected truss bridges built in the 19th century. For the Virginia Department of Transportation.

Historic American Buildings Survey (HABS) Documentation:

- # **Naval Weapons Station Earle, Colts Neck, New Jersey.** Recordation of several World War II military buildings. For the Northern Division, Naval Facilities Engineering Command.
- # **Veterans Memorial Home, Menlo Park, New Jersey.** *Recordation of a large Tudor Revival state home and hospital.* For the New Jersey Department of Veteran and Military Affairs.
- # **Norfolk and Western Railway Company Freight Depot, Petersburg, Virginia.** Recordation of an early-twentieth-century brick freight depot. For the Virginia Department of Transportation.
- # **The Bostwick Building, 1349-1365 State Street, Bridgeport, Connecticut.** Recordation of a large three-story commercial/residential block. For the Bridgeport Planning Department.
- # **Enfield Congregational Church, Enfield, New Hampshire.** Recordation of a nineteenth-century church. For the New Hampshire Department of Transportation.

PAPERS

- # **Railroad Tunnels of Pennsylvania.** Paper presented at the Society for Industrial Archaeology annual conference, Toronto, Canada. 1994.

GERARD PAUL SCHARFENBERGER
The Louis Berger Group, Inc.
Archaeologist

EDUCATION

- # Doctoral Program, City University of New York
- # M.A., Anthropology, Hunter College, New York
- # B.F.A., Anthropology, Rutgers University, New Jersey
- # Queens College, New York
- # Pace University, New York

TECHNICAL TRAINING

- # Trenching and Excavation Safety—OSHA Construction Industry Standards, Subpart P (29 CFR 1926.650-652). Emilcott Associates, Inc., 2004.
- # Health and Safety Training for Hazardous Waste Operations and Emergency Responses to meet the requirements of OSHA (29 CFR 1910.120)

PROFESSIONAL AFFILIATIONS

- # Monmouth County Historical Association
- # Society for Historical Archaeology
- # Society for Industrial Archaeology
- # Archaeological Society of New Jersey
- # Council for Northeast Historical Archaeology
- # Society of American Archaeology

PROFESSIONAL EXPERIENCE

Mr. Scharfenberger's background includes archaeological investigations at numerous rural and urban industrial, domestic, and military sites dating from the late seventeenth century through the twentieth century. He is responsible for the implementation and execution of archaeological research projects involving historic and prehistoric resources in the Northeast and Middle Atlantic. His responsibilities include coordinating and supervising interdisciplinary, multitask studies, planning and conducting surveys and excavations of historic and prehistoric sites and their resources, interfacing with clients and subconsultants, maintaining project schedules, and preparing research proposals and technical reports. As Material Specialist, he is responsible for overseeing all aspects of the laboratory process, including cataloging, analysis, and curation of archaeological collections. Additional duties undertaken include the analysis of small finds/architectural artifacts, ceramics, and clay pipes, and material conservation and curation for selected projects. Since joining Berger in 1995, some of his projects have included:

- # **Phase I and Phase II Archaeological Investigations, Pennrose Affordable Housing Site, Fort Lee, New Jersey.** Project archaeologist for the background research, subsurface investigations, and artifact analysis to determine whether proposed construction would impact remains of the Revolutionary War-era Fort Lee complex or other historic period resources. For Bergen County Community Development.

- # **Phase IA Archaeological Assessment, Ridgewood Station, New Jersey.** Archaeologist for the assessment of archaeological resources associated with the proposed improvements to the circa-1916 railroad station, which is listed in the State and National Registers of Historic Places. For New Jersey Transit.

- # **Archaeological Services for Proposed Wireless Telecommunication Facilities in New Jersey.** Project Archaeologist responsible for the assessment of project plans and impacts, background and site file research, development of prehistoric and historic site sensitivity assessments, Phase IB and Phase II archaeological fieldwork, and coordination with prime and SHPO.

- # **Monitoring and Rehabilitation of the Colt Gun Mill Site, City of Paterson, New Jersey.** Project Archaeologist for the monitoring of debris-removal activities, mapping, and salvage of materials at the 1836 Colt Gun Mill site. For the City of Paterson in conjunction with the National Park Service and New Jersey Historic Trust.

- # **Cultural Resource Constraints Study for New Brunswick Waterfront Development, New Jersey.** Assessed the potential for buried foundations and deposits within a multi-acre site along Route 18 historically associated with the commercial and transportation hub of New Brunswick since the mid-seventeenth century. For the New Brunswick Development Corporation.

- # **Phase I and II Archaeological Investigations, Route 47 Improvements, Glassboro, New Jersey.** Project archaeologist for the archaeological survey and evaluation of the Stanger Glassworks vicinity, which was historically significant both in the development of the glass industry in New Jersey and the growth of the town of Glassboro. For the New Jersey Department of Transportation.

- # **Raritan River Crossings Historic Context.** Preparation of the revised report in response to comments for the historical documentation of Raritan River crossings between Raritan Bay and New Brunswick. For the New Jersey Department of Transportation.

- # **Wyckoff's Mills Wetland Mitigation Bank, Middlesex County, New Jersey.** Project Archaeologist. Phase IA and Phase IB archaeological survey of proposed 50-acre wetland mitigation site situated adjacent to the Millstone River.

- # **Gateway National Recreation Area (GNRA), Sandy Hook Unit, Fort Hancock, New Jersey.** Archaeological testing and monitoring of historic munitions proving grounds and industrial crematorium, in response to proposed developments at GNRA, of unexploded ordnance sweeps. For the National Park Service, Denver Service Center.

- # **Gateway National Recreation Area (GNRA), Miller Field, Staten Island, New York.** Subsurface testing, archaeological monitoring, and analysis of circa World War I military airfield and related military objects. For the National Park Service, Denver Service Center.

- # **New Jersey Route 31, Rowland's Mills, Readington Township, Hunterdon County, New Jersey.** Field Assistant. Phase II archaeological data recovered during investigations of a

nineteenth-century mill village in central New Jersey. For the New Jersey Department of Transportation.

- # **Route 18 Bridge Replacement, East Brunswick, New Jersey.** Archaeological monitoring and mapping of nineteenth-century Morgan-Van Wickle stoneware pottery site and industrial operation. For the New Jersey Department of Transportation.
- # **New Jersey Route 21, City of Newark, Essex County, New Jersey.** Phase II archaeological evaluation of the nineteenth-century Ballantine Brewery industrial complex and analysis of features associated with manufacturing and recovered brewery artifacts. For the New Jersey Department of Transportation.
- # **Bloomfield Avenue Bridge, Verona, New Jersey.** Field Supervisor. Phase IB cultural resource survey for proposed bridge replacement. For Essex County.
- # **Route 206, Hillsborough and Montgomery Townships, Somerset County, New Jersey.** Field Assistant. Phase I archaeological survey, Route U.S. 206, Hillsborough Bypass. For the New Jersey Department of Transportation.
- # **Passaic River Bridge Replacement, Chatham, New Jersey.** Field Assistant. Phase IB cultural resource survey for proposed bridge replacement. For Essex County.
- # **Garden State Parkway, Route 78 Interchange.** Field Assistant. Phase IB testing for proposed redesigning of existing traffic circle. For the New Jersey Department of Transportation.
- # **New Jersey Turnpike/Route 1 Interchange.** Field Assistant. Phase I testing for proposed wetlands replacement project. For the New Jersey Department of Transportation.
- # **U.S. Route 9, Edison Bridge Rehabilitation and Widening, South Amboy and Woodbridge, Middlesex County, New Jersey.** Field Assistant. Phase I cultural resource survey. For the New Jersey Department of Transportation.
- # **5.46-Mile E-Loop, New Jersey Mainline, Woodbridge to Linden, New Jersey.** Field Assistant. Phase I cultural resource survey of a proposed 42-inch gas pipeline alignment. For Transcontinental Gas Pipe Line Corporation.
- # **Driscoll Bridge Rehabilitation and Improvements, South Amboy and Woodbridge, Middlesex County, New Jersey.** Field Assistant. Phase I cultural resource survey. For the New Jersey Department of Transportation.

PAST PROFESSIONAL EXPERIENCE

- # **Twin Lights Historical Site, Atlantic Highlands, New Jersey.** Field Supervisor. Cultural resource survey of early nineteenth-century lighthouses and foundation of eighteenth-century structure.
- # **Luyster House, Holmdel, New Jersey.** Principal Investigator. Archaeological survey of early eighteenth-century farmhouse.

- # **Merchants and Drovers Tavern, Rahway, New Jersey.** Field Supervisor. Cultural resource survey of late eighteenth-century tavern.
- # **Feltville Village Site, Watchung, New Jersey.** Graduate Field School sponsored by Montclair State University, Montclair, New Jersey. Circa 1840 paper mill site.
- # **Old Tennent Church Parsonage Site, Freehold, New Jersey.** Field Supervisor. Mitigation of stone-lined feature from site of early eighteenth-century structure.
- # **Old Presbyterian Burying Ground, Middletown, New Jersey.** Survey and testing of early eighteenth-century cemetery as part of the Old First Church project.
- # **Parker House, Little Silver, New Jersey.** Field Supervisor. Data recovery of late seventeenth-century farmhouse.
- # **Trinity Church, Princeton, New Jersey.** Field Supervisor. Mitigation of early nineteenth-century church during renovation and building expansion.
- # **Saratoga Square Development, Bedford Stuyvesant, New York.** Excavator. Phase III mitigation of early nineteenth-century residences, inclusive of privies and cisterns.
- # **Princeton Battlefield, Princeton, New Jersey.** Field Supervisor. Surface collection and subsurface analysis of Revolutionary War battleground. Project is ongoing and will be expanded to include extant period dwelling.
- # **Pemberton Farm, Pemberton, New Jersey.** Field Supervisor. Surface reconnaissance of Native American site and subsequent colonial dwellings.
- # **Moore's Tavern, Hightstown, New Jersey.** Field Supervisor. Final mitigation of artifacts from late eighteenth-century tavern before renovation of building and grounds.
- # **Dutch Reformed Cemetery, Holmdel, New Jersey.** Principal Investigator. Preliminary exploration of cemetery uncovered mid-nineteenth-century domestic bottle dump. Project is ongoing.
- # **Holmdel Community Church, Holmdel, New Jersey.** Principal Investigator. Total mitigation of artifacts and recording of related features prior to basement repairs. Artifacts range from the eighteenth to early twentieth century. Project is ongoing.
- # **Monmouth Battlefield Site, Freehold, New Jersey.** Excavator/Supervisor. First in a series of projects involving the restoration of the site to its battle-period landscape. The purpose of this phase is to gather, identify, and catalog any military or possible Native American artifacts before restoration work commences.
- # **Camp Vreedenburgh, Freehold, New Jersey.** Excavator. Project sought to locate and excavate a Union Army Civil War training camp. Duties included general surveying, field conservation of artifacts, and recording soil profiles.

- # **Old First Church, Middletown, New Jersey.** Excavator. Site is an early nineteenth-century church believed to be built directly over the original seventeenth-century church location.
- # **Thomas Paine Park Site, New York City.** Excavator. Project sought to locate an early nineteenth-century shot tower and any related structures.

PAPERS PRESENTED

- # The Activities of the Philadelphia Quakers As Seen Through the Small Finds They Left Behind. Vol. I. With Christy L. Roper. Paper presented at the Society for Historical and Underwater Archaeology Annual Conference, Corpus Christi, Texas. 1996.
- # The Activities of the Philadelphia Quakers As Seen Through the Small Finds They Left Behind. Vol. II. With Christy L. Roper. Paper presented at the Mid-Atlantic Archaeological Annual Conference, Ocean City, Maryland. 1997.
- # The Small Finds of the Apoquinimink North Site. With Christy L. Roper. Paper presented at the Council for Northeast Historical Archaeology Annual Conference, Altoona, Pennsylvania. 1997.
- # The McKean/Cochran Farm. Paper presented at the Society for Historical and Underwater Archaeology Annual Conference, Atlanta, Georgia. 1998.
- # Consumer Revolution and the Early Eighteenth-Century Farmer. Vol. I. Paper presented at the Society for Historical and Underwater Archaeology Annual Conference, Montreal, Canada. 1998.
- # The Consumer Revolution and the Early Eighteenth-Century Farmer. Vol. II. Paper presented at the Society for Historical and Underwater Archaeology Annual Conference, Salt Lake City, Utah. 1999.
- # The Johannes Luyster House: An Early Eighteenth-Century Dutch Farmhouse. With Dr. Richard Veit. Paper presented at the Archaeological Society of New Jersey Quarterly Meeting, Monmouth University, Long Branch, New Jersey. 1999.
- # A Day at the Beach: The Unexploded Ordnance Sweeps at Sandy Hook. Paper presented at the Council for Northeast Historical Archaeology Conference, St. Mary's City, Maryland. 1999.
- # The Johannes Luyster House: An Early Eighteenth-Century Dutch Farmhouse. Vol. II. With Dr. Richard Veit. Paper presented at the Society for Historical and Underwater Archaeology Annual Conference, Quebec City. 2000.
- # Recent Archaeology in New Jersey. With John J. Killeen. Paper presented at the New Jersey Historical Society, Newark, New Jersey, 2000.
- # People Who Live in Glass Houses: The Eighteenth-Century Stanger Glass Works. Paper presented at the Archaeological Society of New Jersey Quarterly Meeting, Ringwood State Park,

Ringwood, New Jersey, 2000 and the Society For American Archaeology Annual Meeting, New Orleans, Louisiana, 2001.

- # Logging All the Way to the Bank: Landmarking in Colonial New York. Paper presented at the Society for Historical Archaeology Annual Conference, Long Beach, California, 2001.
- # A Day at the Beach: The Unexploded Ordnance Sweeps at Sandy Hook, New Jersey. Presented at the Archaeological Society of New Jersey Quarterly Meeting, Monmouth University, Long Branch, New Jersey.
- # Recent Evidence for Broad Window in Seventeenth and Eighteenth Century America. Presented at the Council on Northeast Historical Archaeology Annual Conference, Niagara Falls, Ontario, 2001.

KRISTOFER M. BEADENKOPF
The Louis Berger Group, Inc.
Archaeologist

EDUCATION

#

M.A.A. (Masters of Applied Anthropology), Historical Archaeology, University of Maryland, 2002

#

B.A., Anthropology, Monmouth University, 1998

PROFESSIONAL REGISTRATION

#

Register of Professional Archaeologists (RPA)

TECHNICAL TRAINING

#

Trenching and Excavation Safety—OSHA Construction Industry Standards, Subpart P (29 CFR 1926.650-652). Emilcott Associates, Inc., June 2, 2004.

PROFESSIONAL AFFILIATIONS

#

Southeastern Archaeological Conference

PROFESSIONAL EXPERIENCE

Mr. Beadenkopf's background includes archaeological investigations at historic sites dating from the eighteenth century through the early twentieth century throughout the Northeast, Mid-Atlantic, and Southeast. As Principal Investigator, he is responsible for the implementation and execution of archaeological research projects involving historic and prehistoric resources in the Northeast. His responsibilities include implementing surveys and excavations, performing background and site-specific research, analysis and interpretation of archaeological data and artifacts, and preparation of technical reports. His specialties include urban and historical archaeology and public archaeology. His experience includes public interpretation at several archaeological sites, education, presentations, and creation of displays of archaeological collections and information. Projects in Stavelot, Belgium; Idalion, Cyprus; and Rio Bravo, Belize, evidence his international experience. Mr. Beadenkopf's major projects include:

- **Phase IB Archaeological Survey for the Proposed Omnipoint Wireless Communication Facility, Morristown, Morris County, New Jersey (Cell Tower Location NJ7237b).** Principal Investigator. For IVI International.
- **Phase I Cultural Resource Investigation of the Garafalo Property, Town of Bangor, Washington Township, Northampton County, Pennsylvania.** Principal Investigator. For McFall, Layman and Jordan, P.C.

- **Phase IA Cultural Resource Assessment for the Proposed Burnet-Warren Elementary School, City of Newark, Essex County, New Jersey.** Principal Investigator. For New Jersey School Construction Corporation.
- **Phase IA Cultural Resource Assessment of the Proposed Andover 2 Wireless Telecommunications Facility, State Route 206, Andover Borough, Sussex County, New Jersey.** Principal Investigator. For Innovative Engineering.
- ***Phase I Archaeological Survey of the Proposed Rye Wireless Telecommunications Facility, 615 Milton Road, Rye, Westchester County, New York.*** Principal Investigator. For IVI International.
- # ***Phase I Archaeological Investigations at the Tuckahoe Road Bridge Replacement Project, Estell Manor, Atlantic County, New Jersey.*** Principal Investigator for an archaeological survey consisting of 115 shovel test pits excavated to assess the presence or absence of prehistoric archaeological resources. For the New Jersey Department of Transportation.
- ***Phase III Archaeological Investigations in the Backyard Area of the Old Governor's Mansion, Milledgeville, Georgia.*** Principal Investigator and Historian for a complete documentation and evaluation of the historic and archaeological resources of Georgia's antebellum capitol. For Lord, Aeck, and Sargent and the Old Governor's Mansion.
- ***Phase II Archaeological Survey of the Augusta Canal Headgates Area, Columbia County, Georgia.*** Principal Investigator and Historian for a cultural resource evaluation of historic and archaeological resources. For the Augusta Canal Authority.

PREVIOUS PROFESSIONAL EXPERIENCE

Greenhouse Consultants Inc., New York, New York. Principal Investigator/Field Director. Composed technical reports and proposals, developed budgets and marketing strategies, conducted client and regulatory agency consultation.

- ***Phase IB Archaeological Testing of the Proposed Silver Lake Subdivision in the Town of Clinton, Dutchess County, New York.*** Principal Investigator for an archaeological survey to assess the presence or absence of prehistoric archaeological resources. For the Chazen Companies.
- ***Phase IA/IB Archaeological Investigations of a Classified Site in the Town of Owego, Tioga County, New York.*** Principal Investigator and Historian for a cultural resource evaluation of historic and archaeological resources. For the Chazen Companies.
- ***Phase IA/IB/II Archaeological Investigations of the Port Jervis Educational Complex, Port Jervis, Orange County, New York.*** Principal Investigator and Historian for a cultural resource evaluation of historic and archaeological resources. For McGoey, Hauser and Edsall PC.
- ***Phase IA/IB Archaeological Investigations of the Jockey Hollow Girl Scout Camp,***

Morristown, New Jersey. Co-Principal Investigator for a cultural resource evaluation of historic and archaeological resources dating to the Revolutionary War. For Paulus, Sokolowski and Sartor Engineering, PC.

- **Phase IA/IB Archaeological Investigations of the New York State Route 92 Sidewalk Expansion, Village of Manlius, Orange County, New York.** Principal Investigator and Historian for a cultural resource evaluation of historic and archaeological resources along NYS Route 92. For Barton and Loguidice, PC.
- **Phase IA Archaeological Sensitivity Investigation, Andros Hills Subdivision, Long Island, New York.** Principal Investigator and Historian for a cultural resource evaluation of historic and archaeological resources. For Bourke, Flanagan, & Asato, PC.
- **Phase IA/IB Archaeological Sensitivity Investigation and Archaeological Survey, Brookside Loop Development, Staten Island, New York.** Principal Investigator and Historian for a cultural resource evaluation of historic and archaeological resources. For FSK Construction Corp.
- **Phase IA Archaeological Sensitivity Investigation, West Street Rezoning, Tribeca North, New York, New York.** Principal Investigator and Historian for a cultural resource evaluation of historic and archaeological resources. For Parsons Brinkerhoff, New York, New York.

Southern Research, Columbus Georgia. Principal Investigator/Field Director. Composed technical reports, developed excavation plans, supervised field technicians, and conducted client and regulatory agency consultation.

- **Phase III Archaeological Data Recovery at the Site of the New Jacksonville Public Library.** Jacksonville, Florida. Principal Investigator and Co-Historian for a cultural resource mitigation of seven nineteenth-century domestic lots. For Ellis and Associates and the City of Jacksonville
- **Phase II Archaeological Testing of the 21st Century Chattanooga Waterfront Project Area South of the Riverfront Parkway, Hamilton County, Tennessee.** Principal Investigator and Historian for a cultural resource evaluation of Civil War-era historic and archaeological resources. For Hargreaves Associates for the River City Company.
- **Archaeological Investigations in the Jekyll Island Club Hotel Parking Lot, Jekyll Island, Georgia.** Principal Investigator and Historian for a cultural resource investigation of late nineteenth-century historic and archaeological resources. For the Jaeger Company for the Jekyll Island Authority.

Archaeology in Annapolis Laboratory, University of Maryland, College Park, Maryland. Laboratory Director. Composed technical reports, supervised laboratory technicians, and managed the artifact collections from twenty years of the Archaeology in Annapolis Project's excavations.

University of Maryland, College Park, Maryland. Field Director. Developed excavation plans, supervised field technicians, and conducted client and regulatory agency consultation.

Parsons Brinkerhoff, Rockville, Maryland. Excavator. Native American Woodland period camp site.

URS Greiner Woodward and Clyde, Florence, New Jersey. Excavator. Various prehistoric and historic archaeological projects.

Richard Grubb and Associates, Cranbury, New Jersey. Excavator. Various prehistoric and historic archaeological projects.

Programme for Belize Archaeology Conservation Area, Orange Walk District, Belize. Research Assistant/Excavator. Chawak But'o'ob (RB47) Post-Classic Maya domestic center.

Cultural Resource Consulting Group (CRCG), Highland Park, New Jersey. Excavator. Various prehistoric and historic archaeological projects.

ACADEMIC POSITIONS

Graduate Teaching Associate, Department of Anthropology, University of Maryland, College Park, Maryland. Co-Instructor: Anthropology 496/696, University of Maryland Field School in Urban Archaeology (2001 and 2002).

Teaching Associate, Department of Anthropology, Monmouth University, West Long Branch, New Jersey. Co-Instructor: Anthropology 315, Field Research in Archaeology (2001)

Graduate Teaching Associate, Department of Anthropology, University of Maryland, College Park, Maryland. Co-Instructor: Anthropology 240, Introduction to Archaeology (2000 and 2001).

Teaching Associate, Department of Anthropology, Montclair State University, Upper Montclair, New Jersey. Co-Instructor: Anthropology 470, Archaeological Field Methods (1998 and 1999).

University of Indianapolis, Indianapolis, Indiana. Excavator/Field School Student. Bronze Age Temple Complex in Dali (Idalion), Cyprus.

University of Liege, Liege, Belgium. Excavator. 11th-18th Century Abby Complex in Stavelot, Belgium.

PUBLIC ARCHAEOLOGY/EDUCATIONAL PROJECTS

- Public Interpreter/Designer Public Archaeology Program. Archaeology in Annapolis/UMD Banneker-Douglass Museum, Phase III. Annapolis, Maryland. July-August 2001
- Public Interpreter/Designer Public Archaeology Demonstration: Maryland Day Activity, University of Maryland College Park, Maryland. April 2001.
- Weekend Public Educator/Volunteer: South Street Seaport Museum, New York. April-July 2000.

- Public Interpreter, Public Archaeology Demonstration: Lenne Lenape Cultural Heritage Festival Sandy Hook, New Jersey. November 1997.
- Artifact Display: Dismal Swamp Lithic Artifacts CRCG Displayed in the Lobby of New Jersey Division of Travel and Tourism, Trenton. Native American Late Archaic Lithic Artifacts. June 1997.
- Public Interpreter, Public Archaeology Demonstration: Oxford Furnace, Warren, New Jersey. Warren County Heritage Festival, 19th Century Industrial (Iron Works) Complex. May 1996.

PRESENTATIONS

- One Ounce of Fact: Consumer Trends and Ethnicity in 19th Century Jacksonville, Florida. Presented at the 60th Annual Meeting of the Southeastern Archaeological Conference in Charlotte, North Carolina. November 2003.
- Archaeology: An Introduction to Our Past, Present, and Future. Presented to the 8th Grade Class of Sarah Wade School, Jacksonville, Florida. December 2002.
- Critical Archaeology in Public: Results from the 2001 Banneker-Douglass Museum/Courthouse Public Archaeology Program. Presented at the 11th Annual Graduate Student Colloquium, University of Maryland, College Park. April 2002.
- African American Archaeology in Public: Public Archaeology at the Banneker Douglass Museum Site. Presented at the 20th annual Archaeology in Annapolis Archaeological Symposium. Annapolis, Maryland. November 2001.
- Archaeology: An Introduction to Our Past, Present, and Future. Presented to the 9th Grade Ancient History Class, McClean High School, Washington D.C. October 2001.
 - Just Across the River: The University of Maryland's 2001 Archaeological Investigation of Eastport, Maryland. Presented to the Historic Annapolis Foundation. September 2001.
 - Archaeology: The Ultimate 3D Puzzle. Presented to the 6th Grade Class of Ms. Nyhus, Cherokee Grade School, Adelphi, Maryland. May 2001.
- Late Classical Period (AD 600-900) Households in the Eastern Maya Lowlands: Recent Survey Data from the Three Rivers Region of Northwestern Belize, Central America. Co-authored with Stanley L. Walling Ph.D. et al. Presented at the Student Research Conference of the *Sigma Xi* Honor Society, May 1, 1999. Originally presented at the 64th Annual Meeting of the Society for American Archaeology, Chicago, by Stanley L. Walling, Ph.D.
- Forsaken History: The Role of the Spanish Mission in the Colonization of the American

Southeast.. Defense of Senior Honors Thesis, Monmouth University, New Jersey. May 1998.

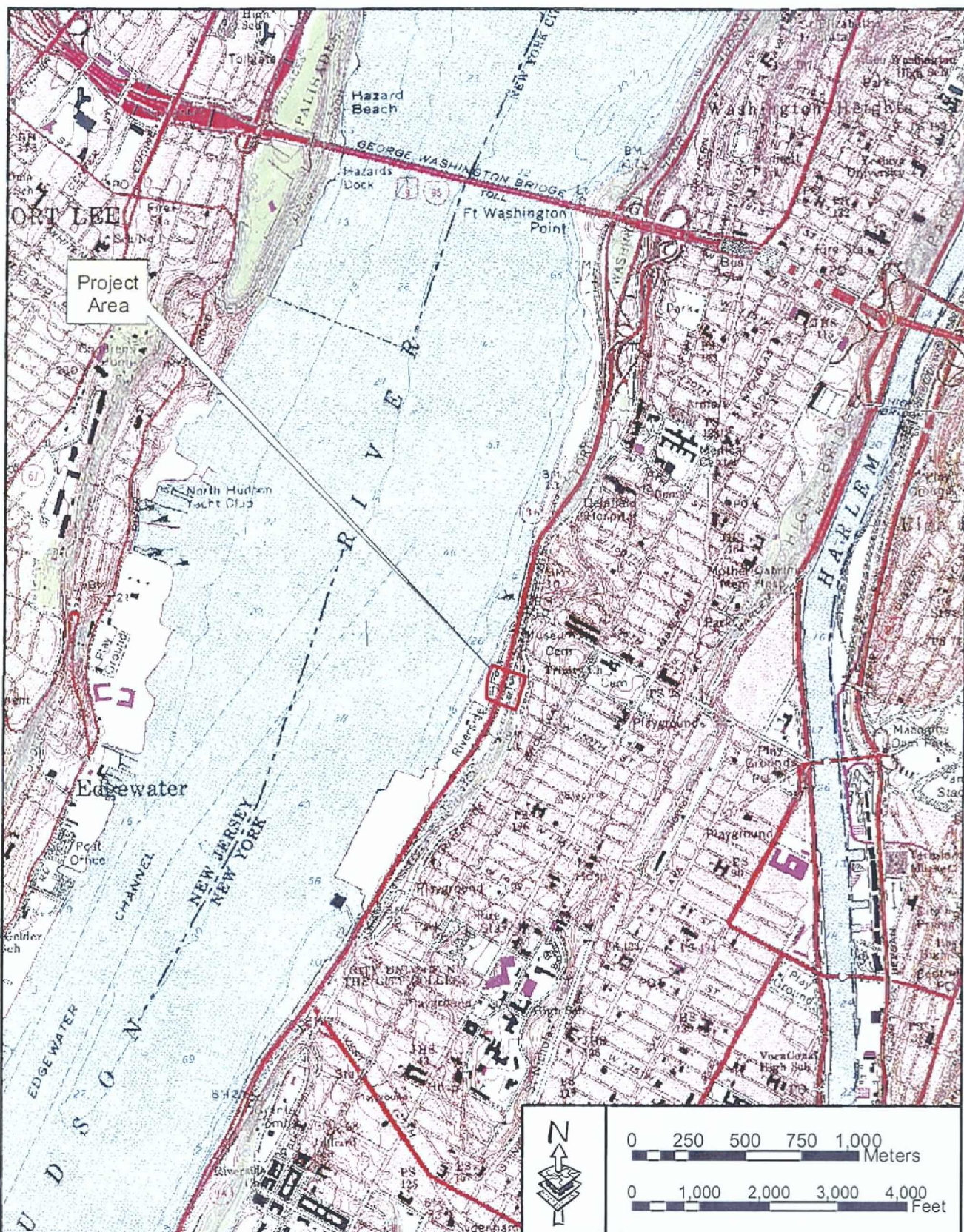


FIGURE 1: Overview of the Project Area

SOURCE: USGS 7.5' Quadrangles,
Central Park, NY-NJ, 1979

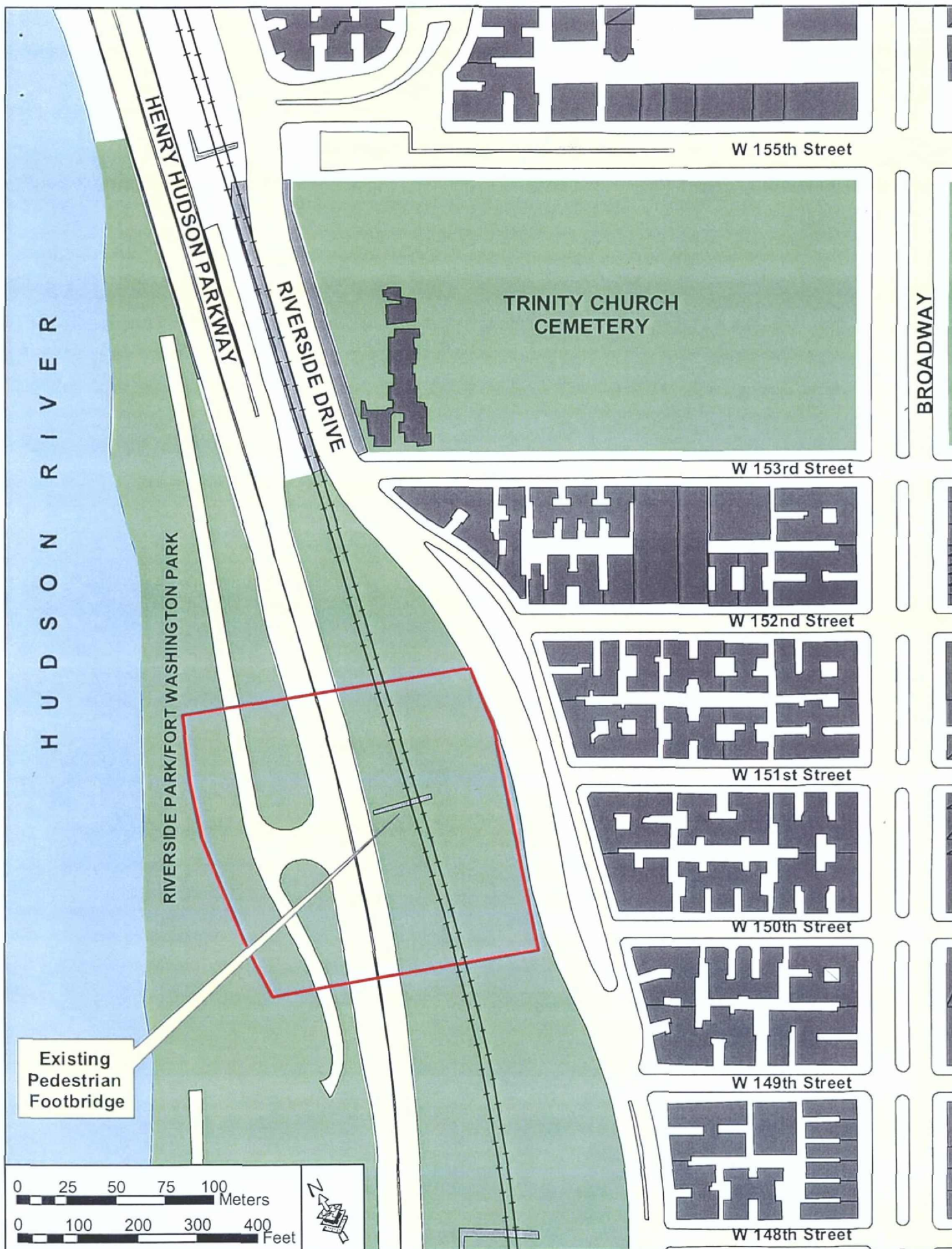


FIGURE 2: Study Area

SOURCE: NYS GI

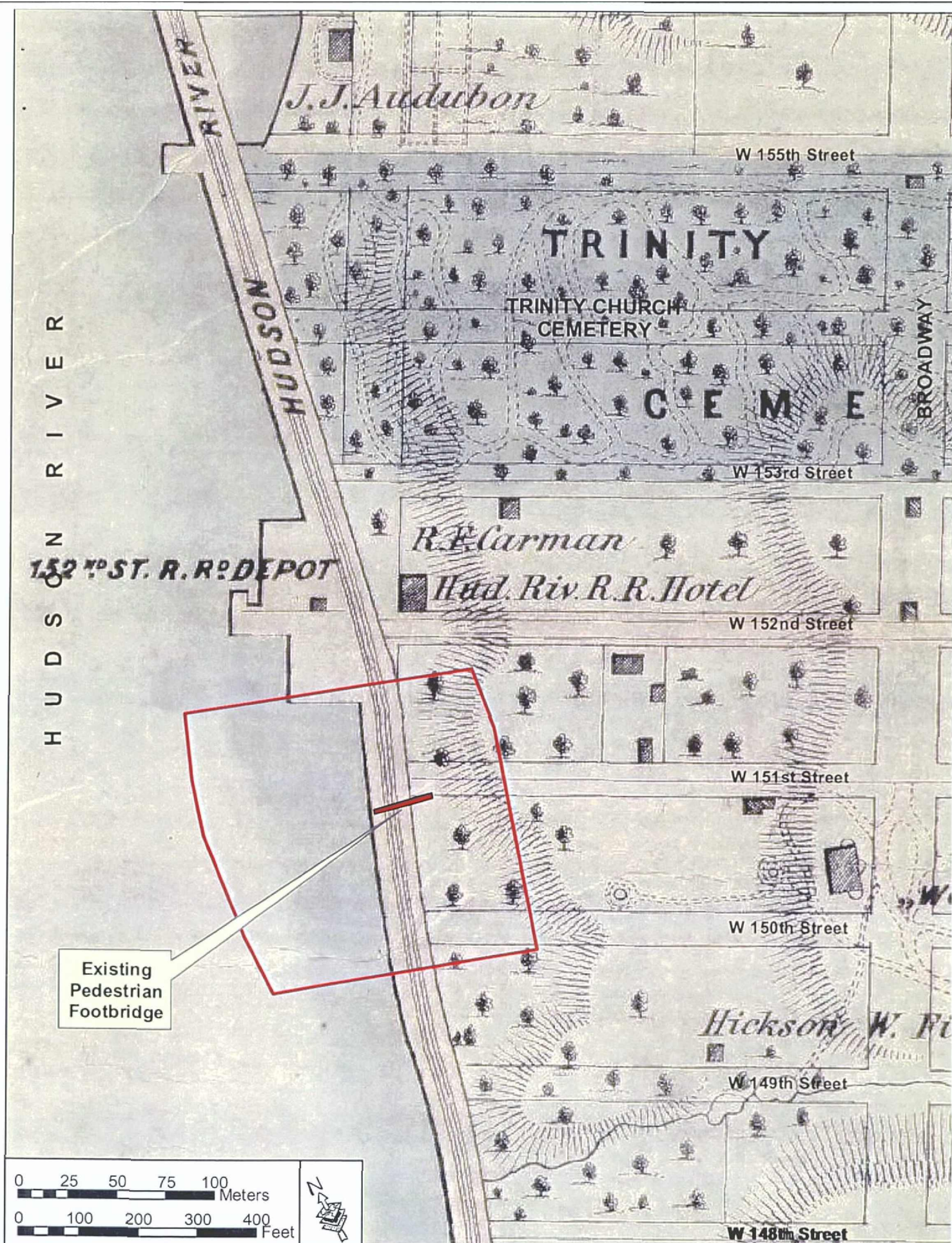


FIGURE 4: Project Area in 1851

SOURCE: Dripps 185

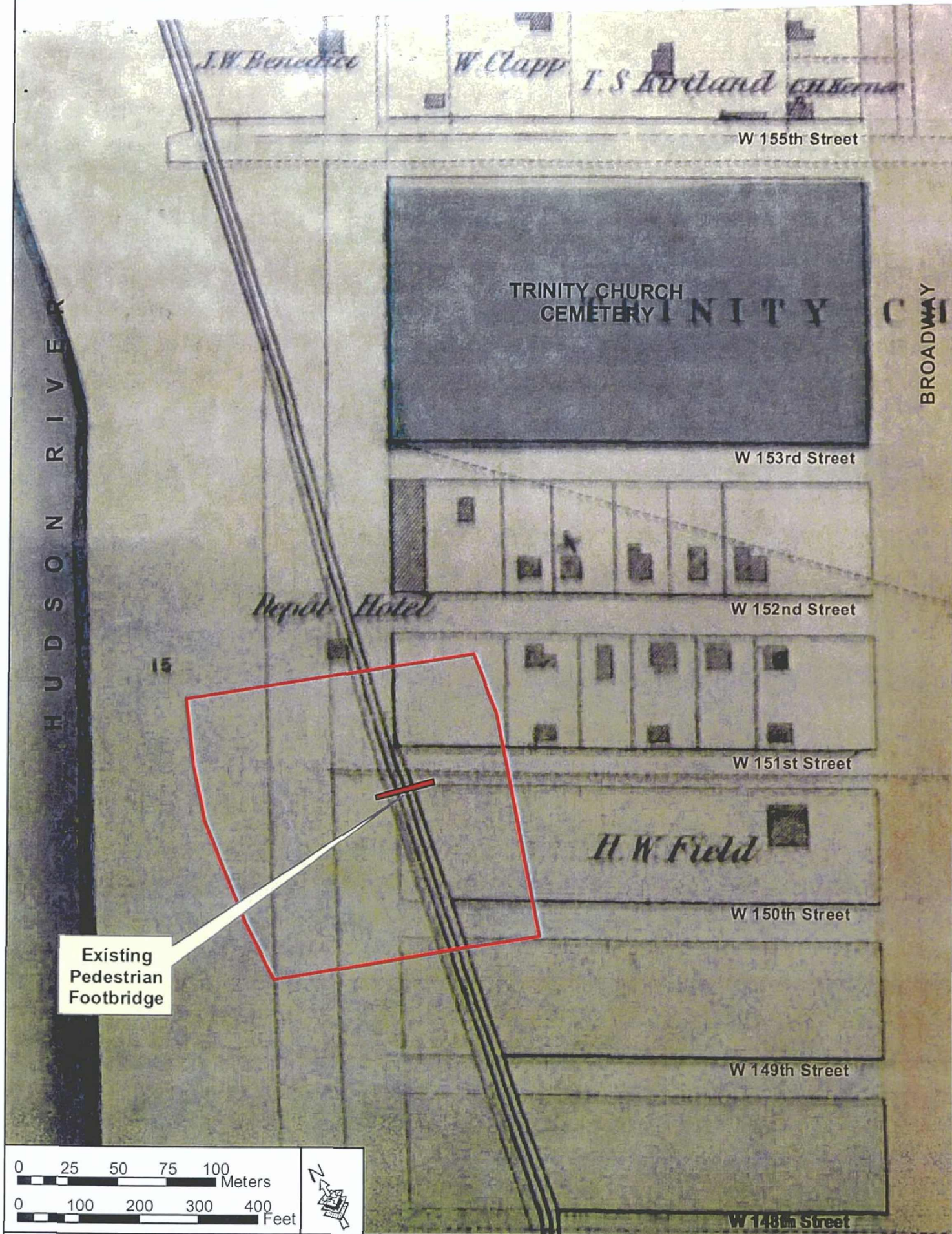


FIGURE 5: Project Area in 1867

SOURCE: Dripps 1867

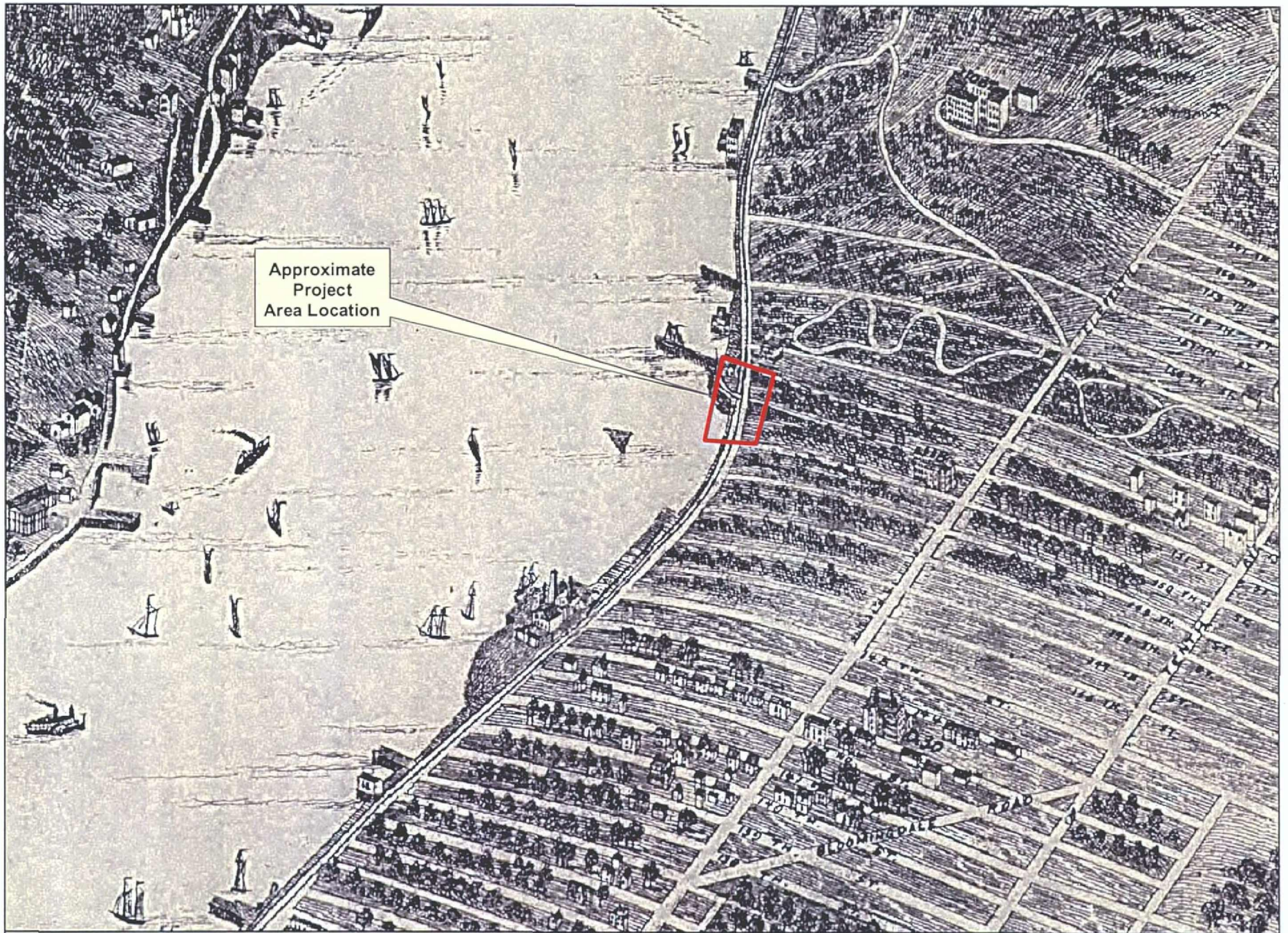


FIGURE 6: Bird's-Eye View of the Project Area in 1879

SOURCE: Galt & Hoy 1879



FIGURE 7: Project Area in 1879

SOURCE: Bromley 1875

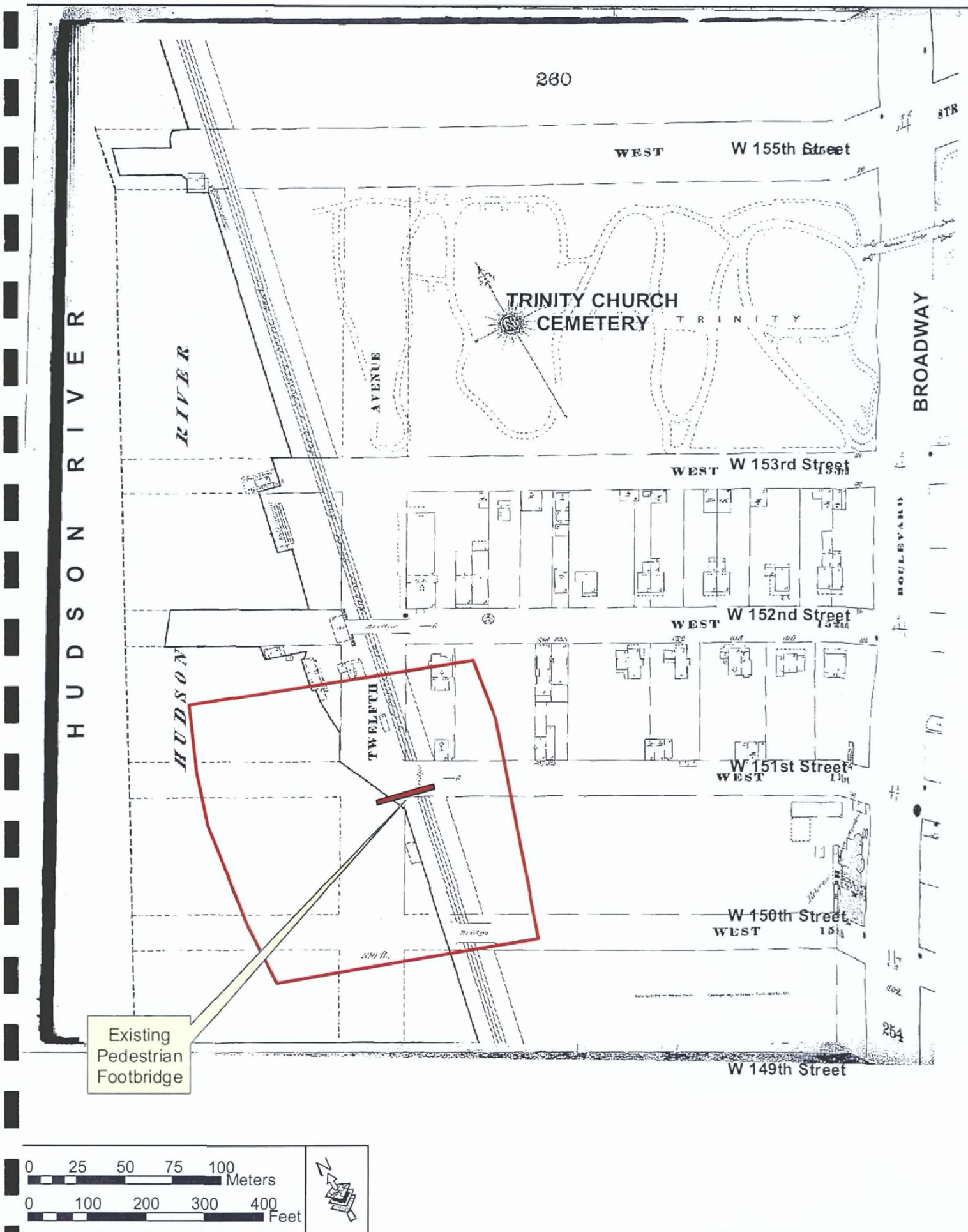


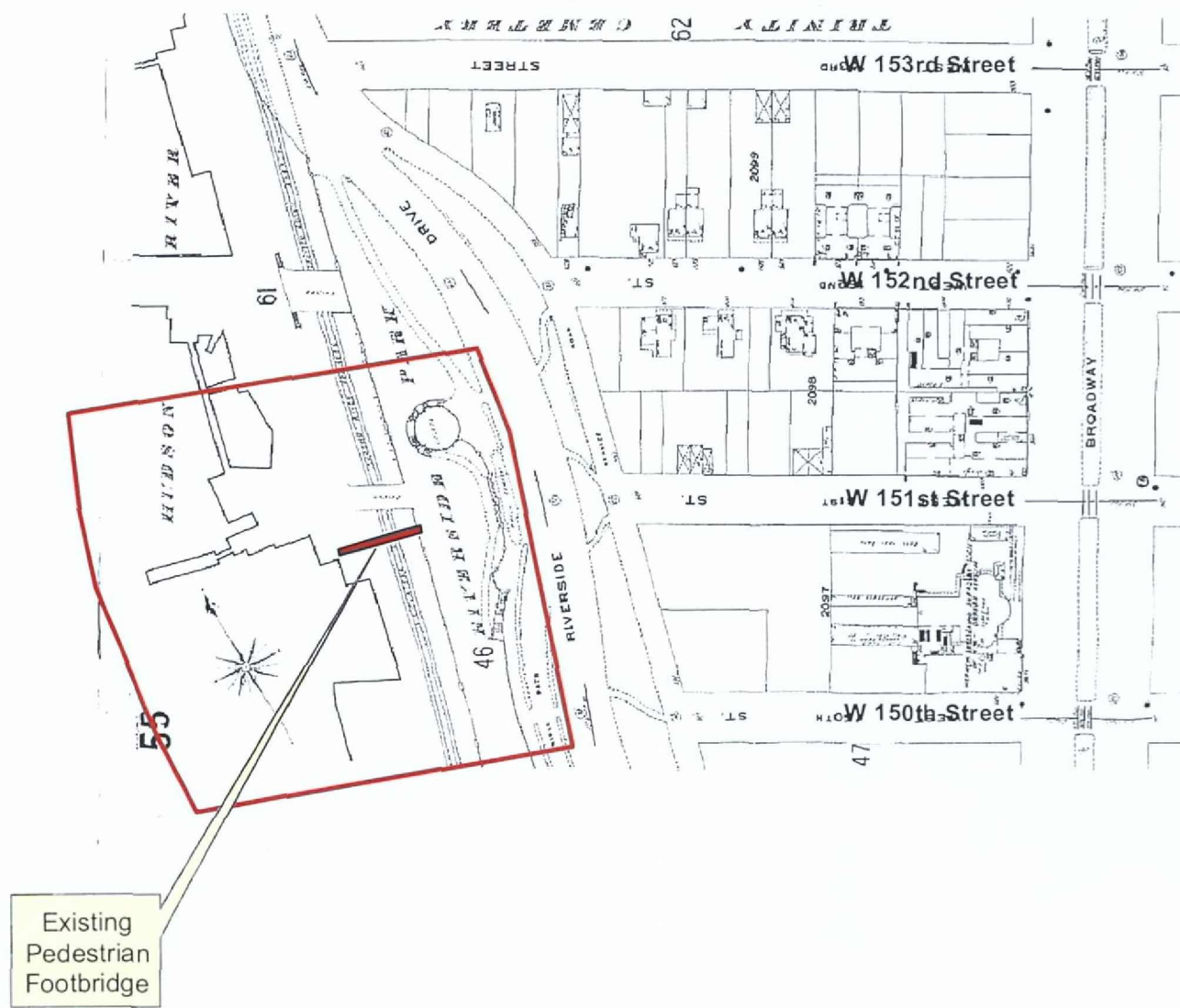
FIGURE 8: Project Area in 1893

SOURCE: Sanborn 1893

H U D S O N R I V E R

TRINITY CHURCH
CEMETERY

BROADWAY



0 25 50 75 100 Meters

0 100 200 300 400 Feet



FIGURE 9: Project Area in 1909

SOURCE: Sanborn 1909

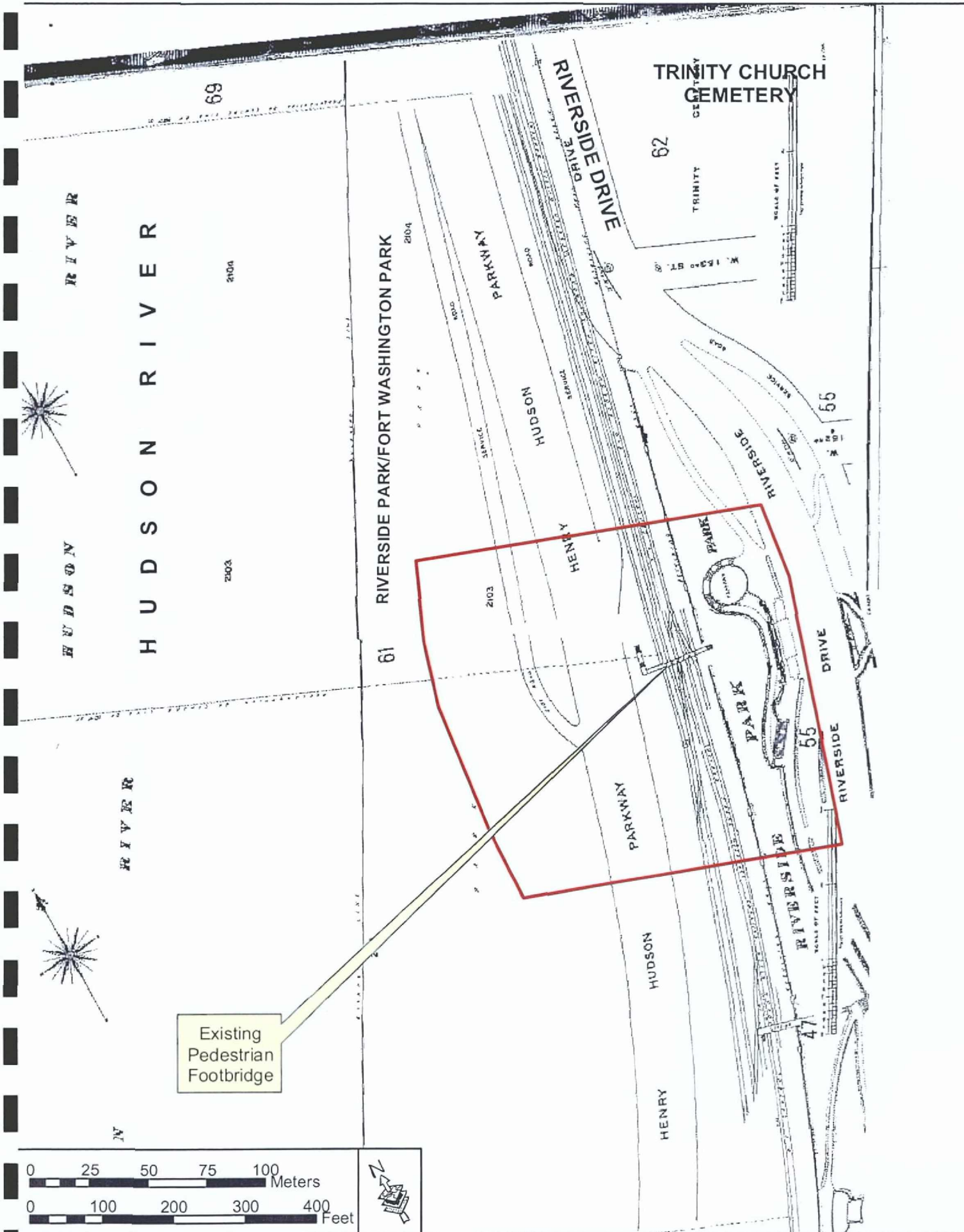


FIGURE 10: Project Area in 1939

SOURCE: Sanborn 1939

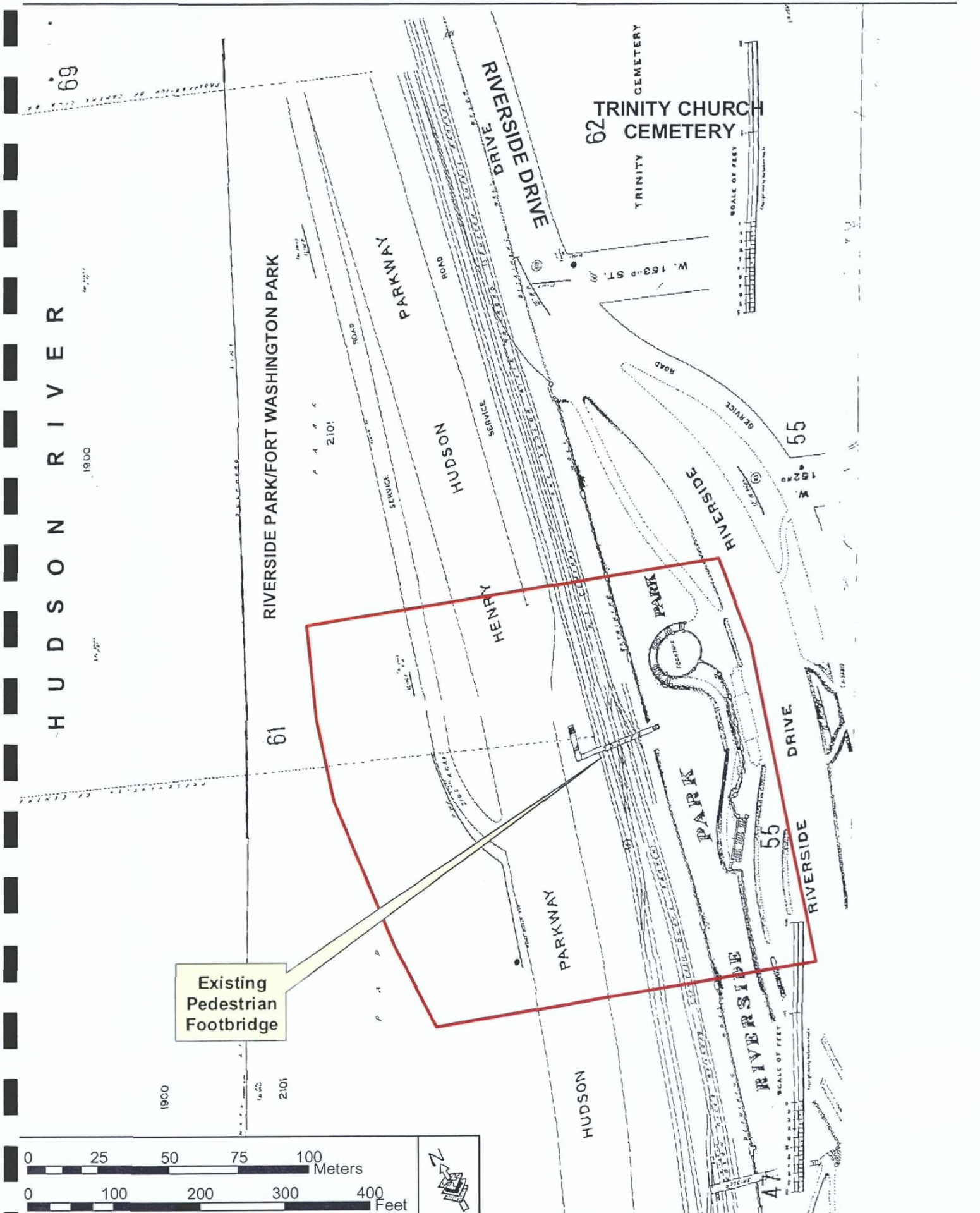


FIGURE 11: Project Area in 1951

SOURCE: Sanborn 1951



PHOTO NO. 1: Bridge in context with Riverside Park and Henry Hudson Parkway, view southwest



PHOTO NO. 2: Bridge, east and north elevations, view west



PHOTO NO. 3: Bridge, south and east elevations, view northwest

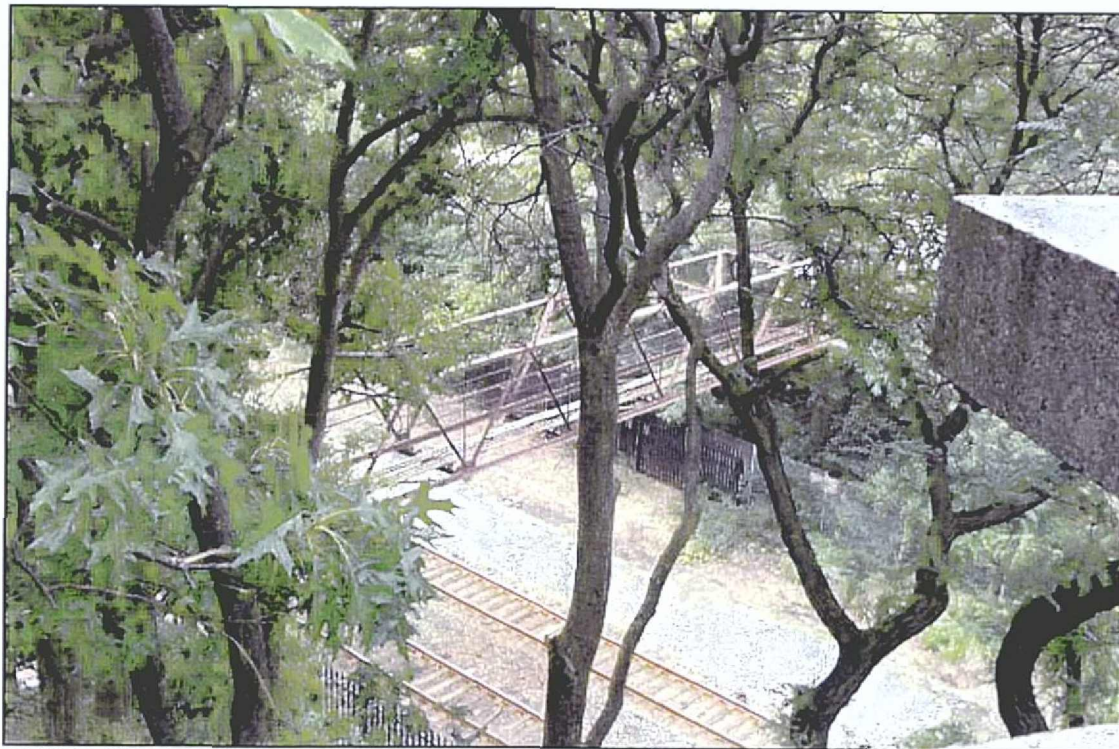


PHOTO NO. 4: Bridge as seen from Riverside Park 151st Street Overlook, view southwest



PHOTO NO. 5: Riverside Park 151st Street Overlook and stairs to bridge, visible at left, view north



PHOTO NO. 6: Riverside Park 151st Street Overlook and Riverside Drive, view west

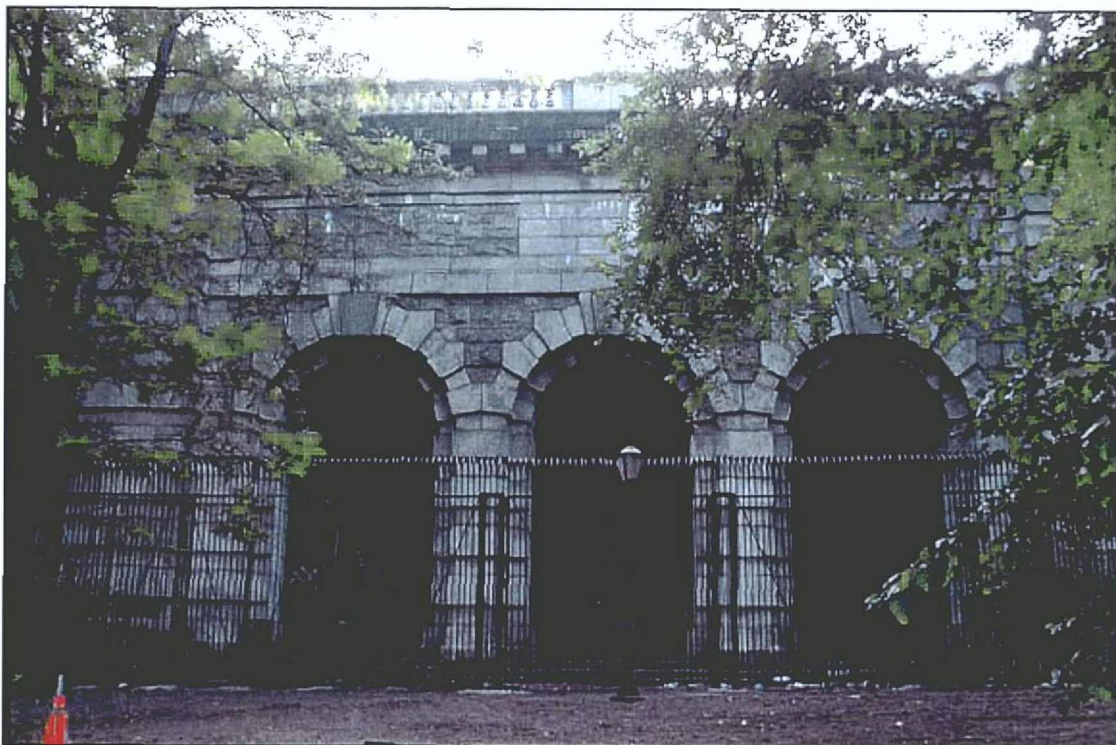


PHOTO NO. 7: Riverside Park stonework supporting sidewalk along Riverside Drive, opposite bridge, view east



PHOTO NO. 8: Project area as seen from 156th Street showing Henry Hudson Parkway, rail line, Riverside Drive, and Riverside Park, view south



PHOTO NO. 9: Project area from 151st Street Overlook showing bridge in trees at left and exit from Henry Hudson Parkway to Riverside Park, view west

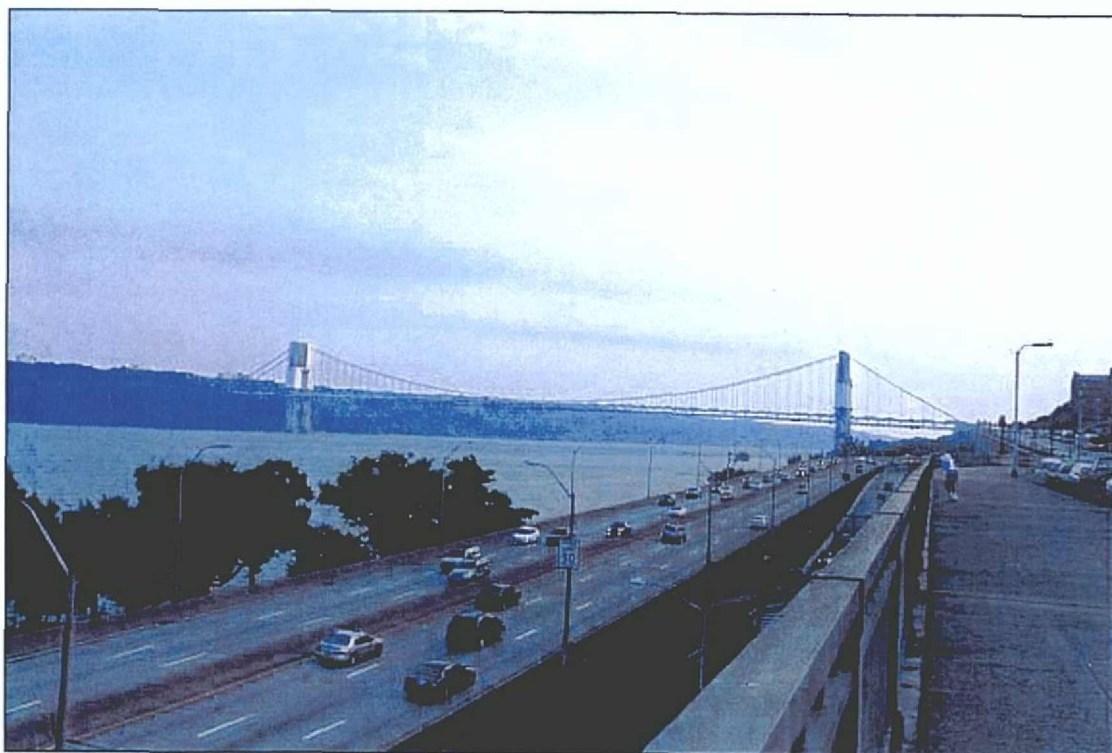


PHOTO NO. 10: Henry Hudson Parkway and Riverside Drive from 153rd Street, view north