Archaeological Assessment
Sybil's Cave
Frank Sinatra Drive
City of Hoboken, Hudson County
New Jersey

May 2012



SYBIL'S CAVE, AT HOBOKEN, N. J.





Richard Grubb & Associates, Inc.
Cultural Resource Consultants

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EXECUTIVE SUMMARY

This report presents the results of an Archaeological Assessment of Sybil's Cave, a mid-nineteenth century recreational grotto located on the west side of Frank Sinatra Drive in the City of Hoboken, Hudson County, New Jersey. This assessment was undertaken in support of broader planning efforts targeted at improving public access to the cave and providing historic interpretation of the site. The assessment included background research into the history of Sybil's Cave in order to develop a more complete understanding of its physical development and a survey of existing conditions. The primary goal of this work was to evaluate the likelihood of the survival of archaeological deposits that could contribute to the understanding and appreciation of the cave as an important example of mid-nineteenth century commercial landscape folly in the sublime and picturesque tradition. This report also provides management recommendations with regard to further archaeological work that should be considered as efforts to improve accessibility and interpretation of the site progress.

A review of cultural resources surveys at the New Jersey State Historic Preservation Office and site files at the New Jersey State Museum confirmed that no registered prehistoric or historic period archaeological sites are proximate to Sybil's Cave. However, Sybil's Cave is individually eligible for listing on the State and National Registers of Historic Places under Criterion A, for its association with recreation and entertainment during the mid-nineteenth century.

The assessment determined that there is a strong likelihood for significant archaeological resources to be preserved within the footprint of the cave. It also found that there is a potential for historically related archaeological deposits and features to survive within adjacent areas particularly beneath the adjacent parking area and nearby Frank Sinatra Drive. The area within the cave, however, was assessed to have the highest degree of archaeological sensitivity. In particular, the cistern in the center of the cave is suspected to contain refuse deposits of potential archaeological significance. Excavation of the cistern should be supervised by a qualified archaeological professional. Due to the documented disturbance of the ground surface around the cave during the historic period, the area is assessed as having a minimal likelihood to contain in-situ archaeological remains of a prehistoric context. In addition, the historic graffiti evident on the walls of the cave should be photographically documented and a detailed map of the cave should be prepared prior to any additional work undertaken within the cave footprint. Any ground disturbing activities within or adjacent to the cave or underneath the adjacent portions of Frank Sinatra Drive should be monitored by a professional archaeologist.

In order to better insure the long term preservation of this resource and to foster increased public awareness of its historic significance, Richard Grubb & Associates recommends that Sybil's Cave be formally nominated to the National and State Registers of Historic Places under Criteria A, C, and D.

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SECTION 1.0 INTRODUCTION

Sybil's Cave is an artificial grotto excavated into the hillside located on the west side of Frank Sinatra Drive in the City of Hoboken, Hudson County, New Jersey (Figures 1.1 and 1.2). Due to its proximity to the burgeoning metropolis of greater New York City, the cave and the surrounding pleasure grounds were a renowned and well-frequented commercial attraction throughout much of the nineteenth century. This archaeological assessment was sponsored by the Hoboken Historical Museum & Cultural Center which is seeking to incorporate archaeological research in their planning for the development and interpretation of Sybil's Cave. The project was funded by a Garden State Historic Preservation Trust Fund Historic Site Management Grant that is administered by the New Jersey Historic Trust.

The assessment included background research into the history of Sybil's Cave in order to develop a more complete understanding of its physical development and a site visit to document existing conditions. Specifically, this assessment was targeted at determining if archaeological evidence related to the construction and operation of the cave by its proprietors or significant remains left behind by the thousands who visited the attraction in the years between circa 1835 and circa 1920 may survive and could yield knowledge which could expand our understanding of this historic site. Management recommendations have been provided with regard to overall site sensitivity from an archaeological perspective and the need for additional investigations.

Lauren J. Cook, MA, RPA served as Principal Investigator for the project and drafted this report with Damon Tvaryanas and Laura Cushman. Paul McEachen was the project manager. Allison Gall and Lauren J. Cook conducted background research. Lauren J. Cook and Patricia McEachen produced the report graphics. Richard Grubb was quality control manager. Paul McEachen and Christina Dunn edited and formatted the report. Copies of this report and all field notes, photographs, and project maps are on file at Richard Grubb & Associates (RGA) headquarters in Cranbury, New Jersey.

The archaeological assessment was performed in accordance with the New Jersey State Historic Preservation Office's (HPO) *Guidelines for Preparing Cultural Resources Management Archaeological Reports* (Historic Preservation Office 1994). This project was overseen by a Principal Investigator meeting the National Park Service's professional qualification standards set forth in 36 CFR 61 (Appendix A).

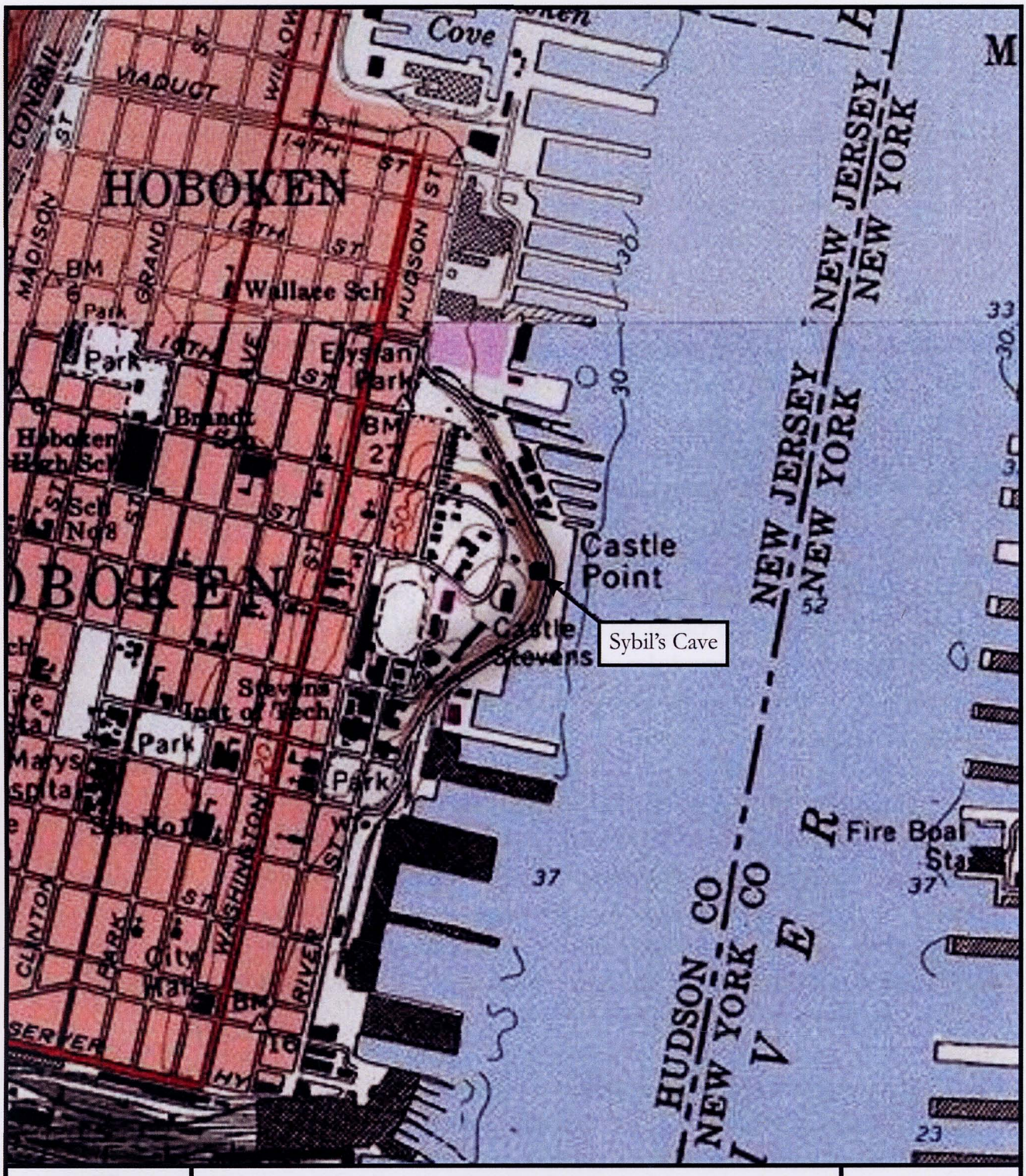


Figure 1.1:

U.S.G.S. Map
(from U.S.G.S. 7.5′ Quadrangles:
1981 Jersey City, NJ-NY and 1995 Weehawken, NJ).

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Figure 1.2:

County Map
(from 2005 Hagstrom Map Company, Inc.,
Street Map of Hudson County, New Jersey).

SECTION 2.0 ENVIRONMENTAL SETTING

Sybil's Cave stands at an elevation of approximately 10 feet above sea level and is located in the Palisades Sill region of the Piedmont Lowlands Physiographic Province (Figure 2.1). The Piedmont Lowlands in this area are dominated by the Palisades, a high ridge of north-south trending traprock that forms the western edge of the Hudson River Valley. Areas east of the Palisades, such as the project site, are characterized by Precambrian and Paleozoic metamorphic rocks, principally softer gneiss, schist and limestone that have eroded preferentially, leaving the harder traprock as the uplands (Wolfe 1977:252). The cave is located approximately 100 feet to the west of the Hudson River at the foot of the eastern slope of Castle Point, a hill on the campus of Stevens Institute of Technology.

Bedrock in the vicinity of the cave consists of serpentinite of the Manhattan Prong group (€Zs). These rocks originated during the Late Proterozoic (Precambrian) and Cambrian eras, approximately 660-550 million years ago (Drake et al 1996). Bedrock in the area is discussed in more detail below. Bedrock is overlain within the project site by late Wisconsonian Rahway till (Qr). Till consists of poorly sorted or unsorted material deposited by glaciers as they receded. In areas underlain by serpentinite, as is the project site, Rahway till appears as a silty sand to sandy silt till with 5-35 percent pebbles, cobbles, and boulders. Color ranges from reddish yellow to brown to grayish brown to gray. Areas at the foot of the hill are characterized as Holocene tidal marsh and estuarine deposits (Qm), but it appears that any such deposits in the area were reworked and subject to extensive historic filling (Stone et al. 2002:15-16, 26).

After the retreat of the glaciers, life returned slowly to the denuded landscape (Pielou 1998). Over the 13,000 or so years since the glaciers receded from northern New Jersey, as the environment became warmer and wetter, the predominant vegetation underwent a succession from tundra to pine-spruce forest, to pine forest, and then oak-hemlock, oak-hickory, and finally oak-chestnut-birch-pine (Heusser 1998:220). There is little or no intact forest in Hudson County, but elsewhere in northern New Jersey, similar environments, exhibiting shallow soils over bedrock, are characterized by chestnut oak vegetation communities (Collins and Anderson 1994:94-98).

No detailed soil information is available for locations within Hudson County (Web Soil Survey 2010). A generalized soils map for Essex and Hudson Counties shows the area as wetland soils (Figure 2.2; U.S.G.S. 1993); however, it is probable to say that soils within the park adjacent to Sybil's Cave consist of urban udorthents, composed of fill and made land, as well as deposits that have been reworked and redeposited in the course of landscaping activities on the property. Most

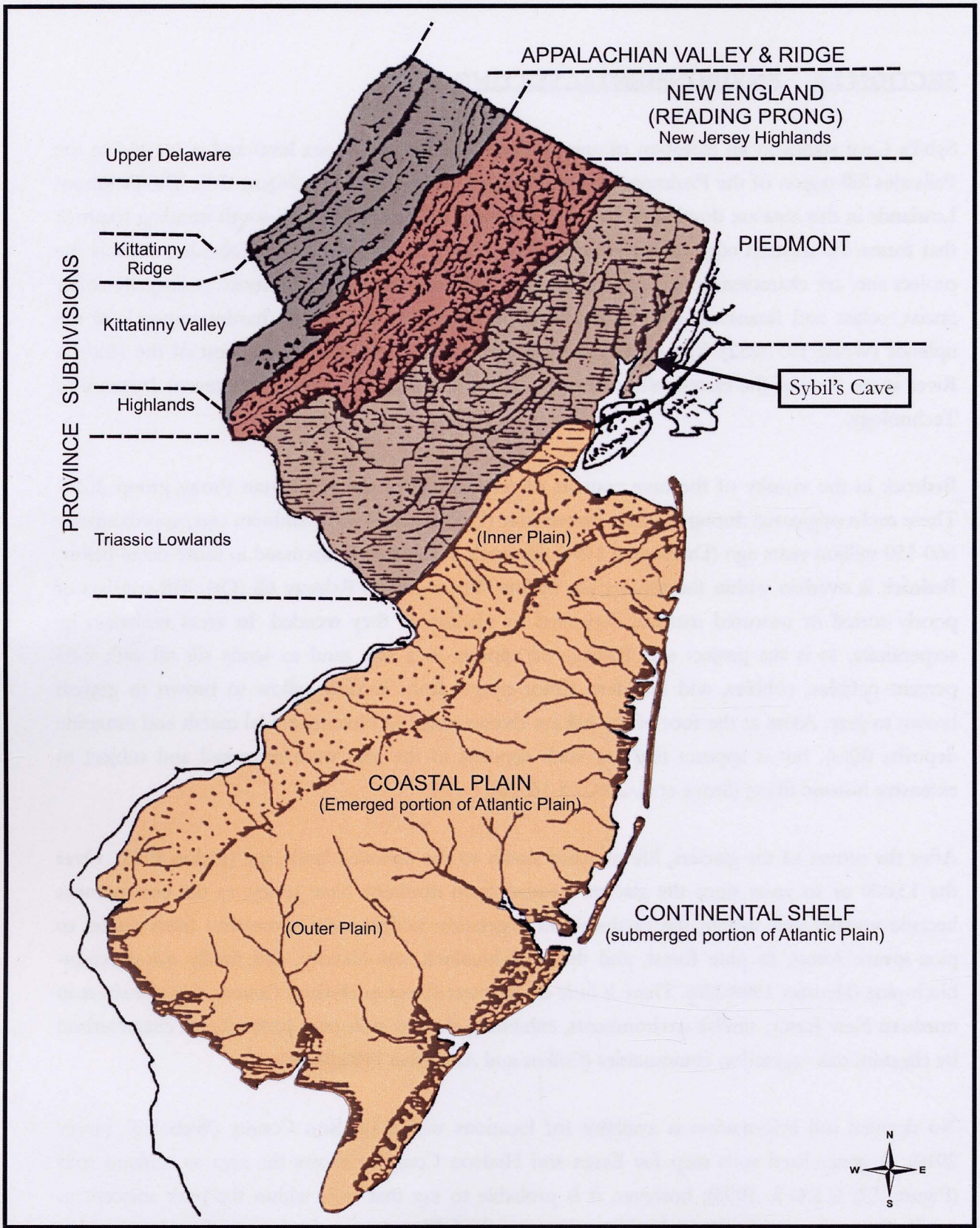


Figure 2.1:

Physiographic Provinces Map
(adapted from Wolfe 1977).

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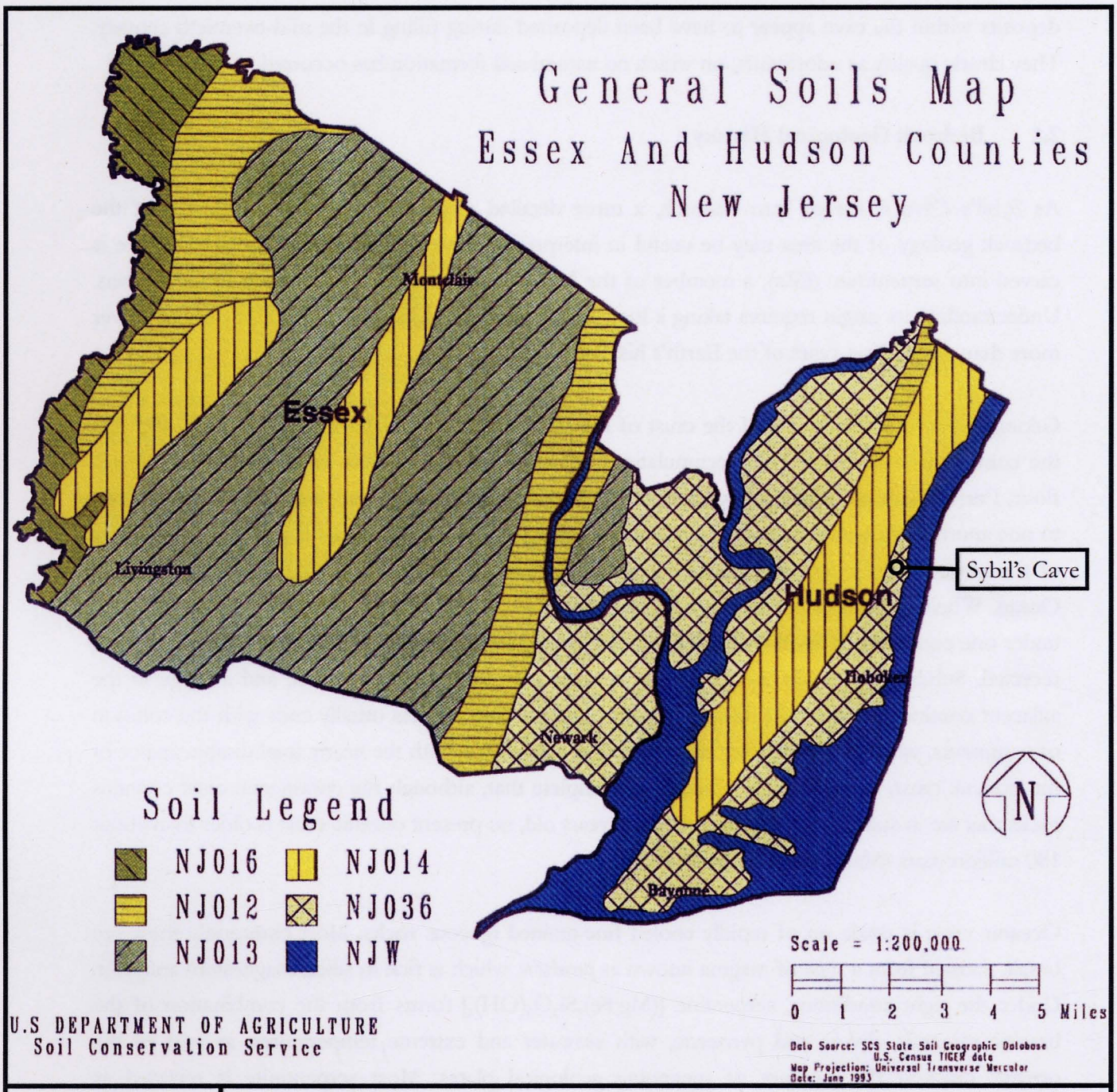


Figure 2.2:

Soils Map
(from 1993 United States Department of Agriculture, General Soils Map, Essex and Hudson Counties, New Jersey).

deposits within the cave appear to have been deposited during filling in the mid-twentieth century. They clearly qualify as udorthents, on which no natural soil formation has occurred.

2.1 Bedrock Geological History

As Sybil's Cave is carved into bedrock, a more detailed discussion of the development of the bedrock geology of the area may be useful in interpreting the cave and its history. Sybil's Cave is carved into serpentinite (€Zs), a member of the Manhattan Prong geological series of formations. Understanding its origin requires taking a long view of history to look at events that occurred over more than 600 million years of the Earth's history.

Geologists have determined that the crust of the Earth floats on molten rock, or magma, and that the continents compose thicker accumulations of crust than the oceanic crust that forms the sea floor. Further, it is now understood that the continents are continually but slowly moving in relation to one another. When continents separate and break apart, new oceanic crust is formed in the center of the ocean. This is presently occurring at the *divergent plate margin* in the center of the Atlantic Ocean. When continents collide with one another, the oceanic crust is generally *subducted,* pushed under one continent or another, deep beneath the surface, where it is melted back into magma and recycled. Subduction usually results in the formation of a deep ocean trench, and a bulge in the adjacent continental crust that forms a mountain range. The process usually ends with the collision of continents, which can form very large mountain ranges, and with the nearly total disappearance of the oceanic crust. In fact this recycling is so complete that, although the continental crust contains rocks that are in some cases well over a billion years old, no present oceanic crust is older than about 180 million years (Maley 2005:37, 40).

Oceanic crust is made up of rapidly cooled fine-grained igneous rocks. Most commonly these are basalt, formed from a type of magma known as *peridotite,* which is rich in silica, magnesium and iron. Under the right conditions, serpentine [$(Mg,Fe)_3Si_2O_5(OH)_4$] forms from the combination of the basaltic minerals olivine and pyroxene, with seawater and extreme temperatures, as part of the oceanic crust at the juncture of separating geological plates. Most serpentinite is recycled as continents collide (American Geological Institute 1976:322; Maley 2005:61-63).

In the late Precambrian Era all of the continental crust on earth was combined into a single large land mass known as the Grenville supercontinent. About 660 million years ago, the Grenville supercontinent began to break up. Rifts opened in the continent, and as the pieces drifted apart, oceans began to form in the spaces between them. One of the edges of continental crust was in the approximate location of the present East Coast of North America. The ocean that formed adjacent

to it, in the approximate relative position of the present Atlantic Ocean, is known to geologists as the Iapetus Ocean.

The serpentinite within the project site was formed during the opening of the Iapetus Ocean, which began about 660 million years ago and ended when the continents began to drift back together again, about 550 million years ago. When that occurred, the oceanic crust ruptured in the middle of the Iapetus Ocean. The process of subduction resulted in the formation of a large arc of volcanic islands that separated the Iapetus Ocean into two parts - referred to as the Western Iapetus Ocean and the Eastern Iapetus Ocean. This island arc began to accumulate mass - volcanic flows and pieces of plowed up oceanic crust. The Western Iapetus Ocean continued to close, until about 460 million years ago, during the Ordovician Period, when the island arc collided with North America. The collision created an enormous mountain range the size of the Himalayas that reached from Newfoundland to Alabama. The event is known as the Taconic Orogeny; the Taconic Mountains in eastern New York are a pale remnant of the range that was formed by the collision. Other remnants are the Green Mountains of Vermont, the Berkshires in Massachusetts, the New Jersey Highlands, and the Manhattan Prong. And also among those remnants are fragments of the Iapetus Ocean floor, the best example of which is the serpentinite that underlies Hudson County, New Jersey, and nearby Staten Island. This serpentinite is naturally exposed on the surface in a few locations, including along the Hoboken waterfront and Staten Island, but occurs in road cuts and excavations on the Cross-Westchester Expressway, near New Rochelle, and on Manhattan Island along 11th Avenue in the West 50s (Isachsen et al 2000:16-18; Schuberth 1968:98-99).

SECTION 3.0 HISTORIC CONTEXT

Research on Sybil's Cave was conducted to provide a historic context, to locate previously identified cultural resources in or near the cave, and to determine the probability for previously unidentified cultural resources within an appropriate historic context. Research was conducted at the HPO in Trenton to identify archaeological and historic resources within or near the cave that are listed in or eligible for the National or State Register of Historic Places, and to review previously conducted cultural resources surveys. Site files at the New Jersey State Museum (NJSM) in Trenton were examined to identify the location of registered archaeological sites. Historic maps and atlases were examined at the New Jersey State Library in Trenton. Secondary-source research was conducted at the Free Library of Philadelphia. These research efforts also heavily relied on materials in possession of the Hoboken Historical Museum and the Hoboken Historical Collection of the Hoboken Public Library.

3.1 History of Sybil's Cave

The historic record is not clear exactly when Sybil's Cave was first excavated. Various sources suggest dates in the early to mid-1830s (Eckler 1976:46). The consensus seems to be that the cave was originally excavated as a component of "Elysian Fields," a private park developed by the illustrious Stevens family of Hoboken, who controlled the rights to much of the land in Hoboken and nearly all of the land in the vicinity of the cave throughout much of the nineteenth century. Colonel John Stevens, the progenitor of the Hoboken branch of the family, had purchased over 500 acres of land at Hoboken in 1784 and by 1792 had erected a house, popularly known as "Stevens Castle," high on the bluff overlooking the Hudson River (Hayden 2005:2-6). Projecting eastward into the Hudson River, this bluff was afterwards known as "Castle Point." Sybil's Cave is hollowed into cliff near the base of the promontory.

Although Sybil's Cave is generally believed to be a landscape confection, it has been posited that the existing grotto represents an enlargement of a natural spring. It has also been suggested that Sybil's Cave originated as an industrial operation. A. Ross Eckler's article "History and Legends of New Jersey Caves" (Eckler 1976:46) indicates that the "Castle Point Mine" was an alternate name for the feature. Geological information on the serpentinite of Castle Point describes it as "containing locally abundant magnetite where fresh" (Drake et al 1996). Magnetite is an iron ore, and the Stevens family is known to have had interests in iron mining elsewhere in New Jersey. It would not be surprising if they at least prospected the ore on their own property. If the cave were a repurposed mining feature, it might account for the confusion about its original construction date. No hint of the excavation, however, appears on 1817 survey of the core of Colonel Steven's "Country Estate" (Figure 3.1).

In any event, if there was iron ore in the Castle Point mine it was not sufficient to warrant an expansion of the excavation, and the property was soon put to other purposes. As early as 1804, Edwin Augustus Stevens, the son of Colonel John Stevens III, the progenitor of the Hoboken branch of the family, offered to make the family's private grounds around the estate available to purchasers to help entice settlement (Foster 1976a: 174). Visitors soon took advantage of the semi-public nature of Stevens' property, and by 1824 the ferries to and from Hoboken yielded, in Stevens' words, "an immense income, which [was] rapidly increasing as the population of the city and adjacent country increase[d]" (Winfield 1895: 34). Throughout the nineteenth century, many pleasure grounds and amusement parks were controlled by railroad and steamboat interests who invested in these recreational destinations to drive up business on their transportation lines. The Stevens family of Hoboken was famously involved in the early development of the steamboat.

E.A. Stevens set about improving his lands and a portion of the riverfront with a walkway to entertain the crowds and was met with immediate success. Over time the demand from New Yorkers to visit Stevens' shores grew so great, and his profits from the ferry service increased so much, that by 1824 he thought of turning over the entire shoreline to the City of New York:

> ...as a place of general resort for citizens, as well as strangers, for health and recreation. So easily accessible, and where in a few minutes the dust, noise, and bad smells of the city may be exchanged for the pure air, delightful shades and completely rural scenery, through walks extending along the margin of the majestic Hudson to an extent of more than a mile. (Winfield 1895: 34)

His proposal also called for the erection of pavilions, "for affording every accommodation and refreshment, and also adequate protection against sudden showers of rain" (Winfield 1895: 35). For these structures he advocated the use of the best architectural styles, noting that "perhaps nothing could have a more powerful tendency to civilize the general mass of society...in such promiscuous assemblages of the rich and poor, in situations where nature and art are made to contribute so largely to the embellishment of every scene presented to their view" (Winfield 1895: 35-36). But when New York showed no interest in the envisioned park, an undeterred Stevens developed it himself (Hayden 2005:3-1).

At the ferry landing on the southern end of Hoboken, passengers emerged onto a wide lawn lined with elm trees. Stevens extended the waterfront path, now called the River Walk, around the base of Castle Point to the level ground at the property's north end. In 1826, a visiting traveler on a tour through North America noted that "the beautiful walk extending for two miles along the Hudson is kept in the finest order, and commands a noble view of the city on the opposite shore" (Winfield

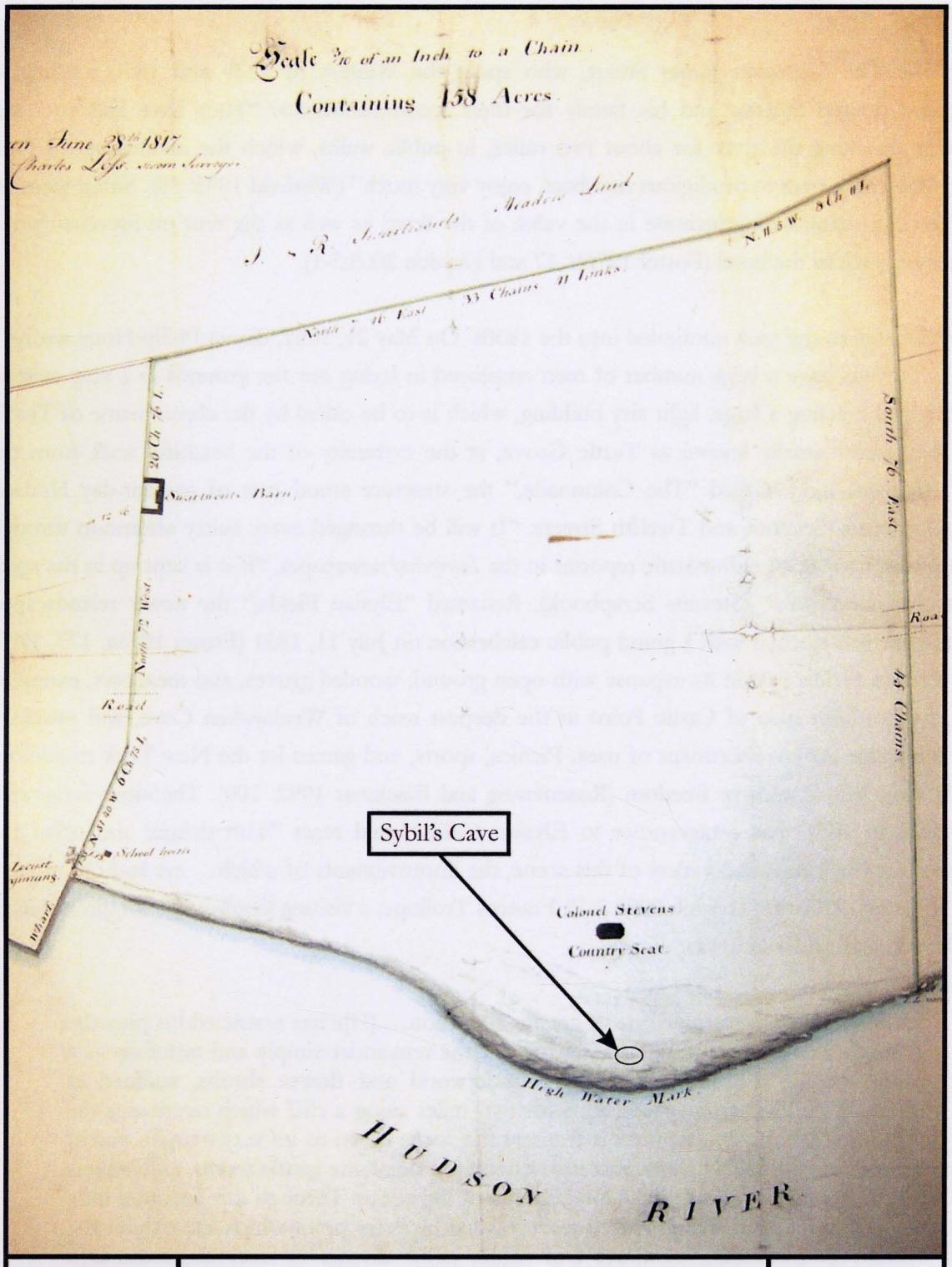


Figure 3.1:

1817 Charles Loss, *Map of Col. Stevens Country Seat at Hoboken, June 28, 1817.* Stevens marked off the bounds of his private grounds from the rest of the estate (Source: New York Historical Society, New York, New York).

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1895: 55). The Scotsman James Stuart, who spent the Winters of 1829 and 1830 residing in Hoboken, praised Stevens and his family for their accomplishments: "They have laid out their property adjoining the river for about two miles, in public walks, which the inhabitants of New York, who come over in prodigious numbers, enjoy very much" (Winfield 1895: 55). Stuart went on to note the corresponding increase in the value of the ferry, as well as the rent on Stevens-owned businesses, such as the hotel (Foster 1976b: 17 and Hayden 2005:3-1).

Improvements to the park continued into the 1830s. On May 21, 1831, diarist Philip Hone wrote: " Messrs. Stevens have a large number of men employed in laying out the grounds in a very tasteful manner, and erecting a large, light airy building, which is to be called by the classic name of Tivoli, near the place formally known as Turtle Grove, at the extremity of the beautiful walk from the ferry" (Stevens n.d.). Called "The Colonnade," the structure stood east of present-day Hudson Street, between Eleventh and Twelfth Streets. "It will be thronged every sultry afternoon through the summer," wrote an enthusiastic reporter in the *Intrepeiad* newspaper, "if it is kept up in the spirit of its commencement" (Stevens Scrapbook). Renamed "Elysian Fields," the newly relandscaped private park was opened with a grand public celebration on July 11, 1831 (Foster 1976a: 177, 1977: 138). Elysian Fields, vast in its expanse with open ground, wooded groves, and meadows, extended from the northern base of Castle Point to the deepest reach of Weehawken Cove, and provided welcome space for an assortment of uses. Picnics, sports, and games let the New York multitudes stretch their legs in relative freedom (Rosenzweig and Blackmar 1992: 100). Theodore Sedgewick Fay wrote in 1831 that a newcomer to Elysian Fields could react "with delight and upon the softness, the brightness and variety of this scene, the improvements of which… are laid out in great taste" (Foster 1976b: 18; Hayden 2005:3-1). Frances Trollope, a visiting Englishwoman, pronounced it a "little Eden" and said it was:

> hardly possible to imagine one of greater attraction….[H]e has restricted his pleasure grounds to a few beautiful acres, laying out the remainder simply and tastefully as a public walk….a broad belt of light underwood and flower shrubs, studded at intervals with loft forest trees, runs for two miles along a cliff which overhangs the matchless Hudson: sometimes it feathers the rocks down to its very margin, and at others leaves a pebbly shore, just rude enough to break the gentle waves, and make a music which mimics softly the loud chorus of the ocean. Through this beautiful little wood, a broad and well-gravelled terrace is led by every point which can exhibit the scenery to advantage; narrower and wilder paths diverge at intervals, some into deeper shadow of the woods, and some shelving gradually to pretty coves below. (Trollope 1832: 343-345)

By 1832, Samuel Lorenzo Knapp estimated that as many as 20,000 visitors a day descended on Hoboken during the summer season, calling it "a most delightful retreat for a summer's day" (Foster 1976b: 17-18; 23).

No mention of Sybil's Cave or a grotto occurs in any of the accounts of the Elysian Fields written during its earliest years suggesting that the folly was not incorporated into the park's landscape until the mid-1830's. Perhaps the first notice occurred in 1838 when *The Family Magazine* published an image (Figure 3.2) of the cave's entrance (replete with a table for the sale of mineral water) and the described attraction as being "one of the curiosities of the far-famed Hoboken, opposite the City of New York." The following year *the American Magazine of Useful and Entertaining Knowledge*, editied by no less an eminent literary figure than Nathanial Hawthorne, also published an image of the cave (Figure 3.3) along with the following description,

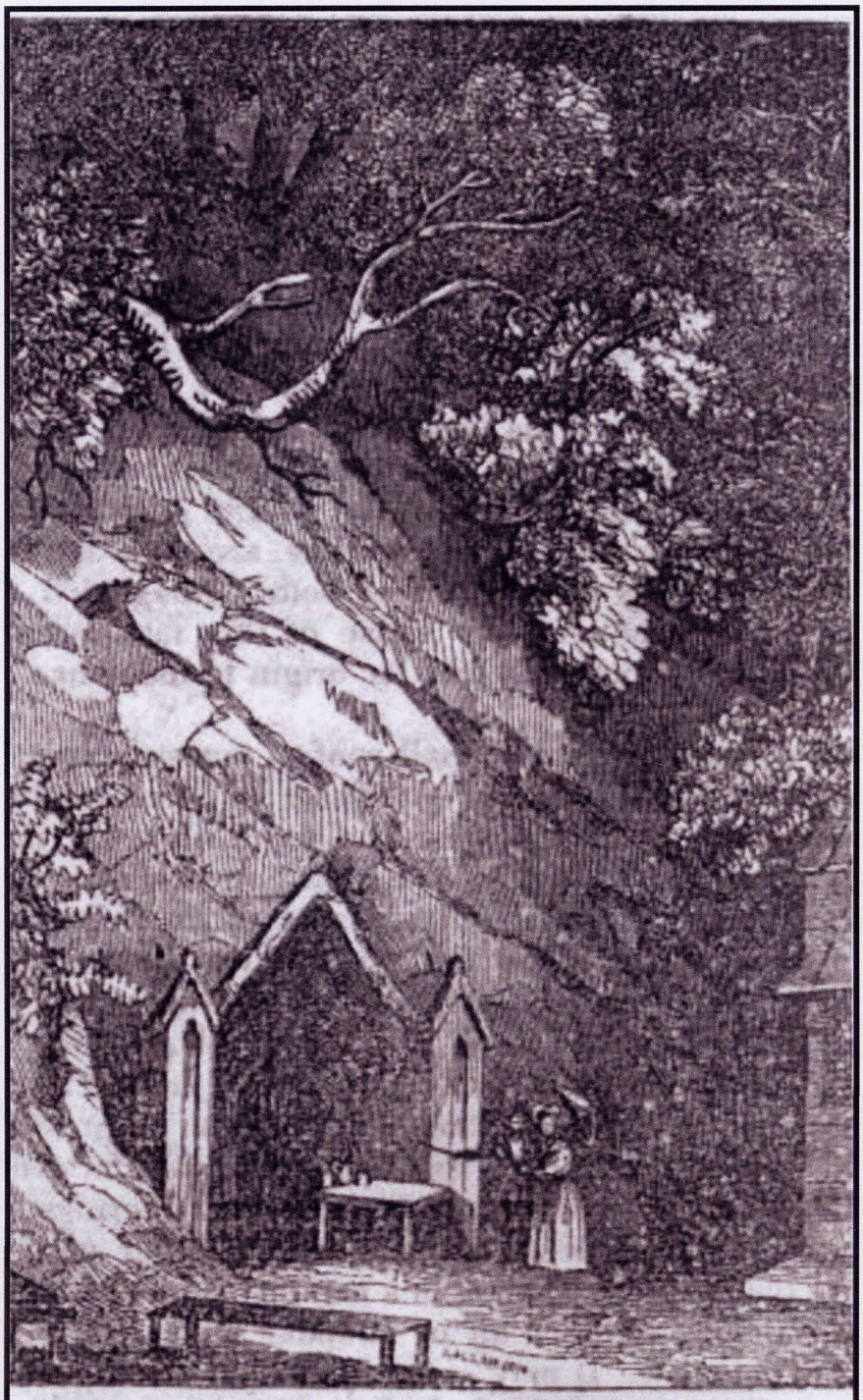
"The Sybyl's Cave as it is designated, is hewn from, and excavated through the solid rock to the depth of thirty feet, and as our readers will perceive it is fashioned in the Gothic Style, after a design of its accomplished proprietor. About five feet within the interiour of the Cave, there is a spring of water slightly impregnated with magnesis, which is a pleasant and healthy beverage; and many thousand glasses of it were sold at a trifling price during the last Summer."

The American Magazine and a later description published in *Gleason's Pictorial Magazine (1852)* both attributed the conceptualization and the design of the grotto to "W. L. Stevens, Esq."

Probably the earliest cartographic depiction of Hoboken to show the cave is J.F. Douglas' Topographical Map of Jersey City of 1841 (Figure 3.4) which labels a "Grotto" at the base of Castle Point. "Sybil's Cave" appears as a dark recess in the base of the bluff at Castle Point on Wade and Groome's "Panorama of the Hudson River" of 1845 (Figure 3.5).

In Classical mythology, the Elysian Fields, located at the western ends of the earth, were the part of the underworld reserved for the souls of the virtuous and heroic. While there were at least ten Sybils (or "Sibyls"), the one most closely associated with a cave is likely the Cumaean Sybil, a prophetess who operated the Cumaean Oracle in an artificial cave near Naples, described in Book 6 of the Aeneid:

> *A spacious cave, within its farmost part,*
> *Was hew'd and fashion'd by laborious art*
> *Thro' the hill's hollow sides...* (Vergil, *Aeneid* VI:60-63)



THE SYBIL'S CAVE—HOBOKEN.

Figure 3.2:

"The Sybil's Cave- Hoboken" published in the *Family Magazine or Monthly Abstract of General Knowledge,* 1838.



Figure 3.3:

"The Sybyl's Cave, Hoboken:" published in the *American Magazine of Useful and Entertaining Knowledge,* 1839.

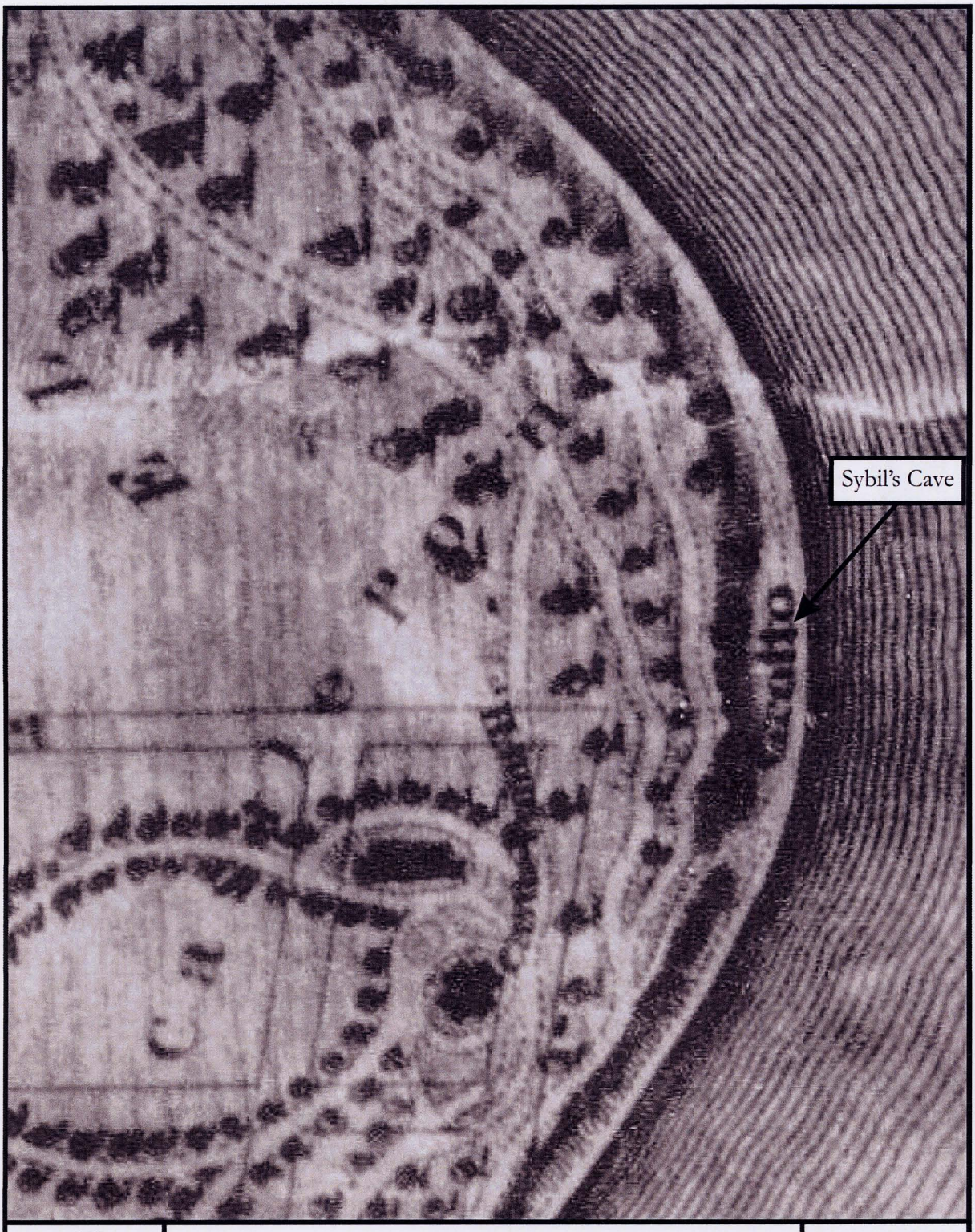


Figure 3.4:

1841 L. F. Douglas', *Topographical Map of Jersey City, Hoboken, and the Adjacent Country* showing the location of Sybil's Cave.



Figure 3.5:

1845 William Wade's, Wade and Groome's Panorama of the Hudson River from New York to Albany.

By selecting classical names for the park and its attractions, the Stevens family was utilizing a common vocabulary that would emphasize the pastoral nature of the surroundings and evoke a sense of past that would establish Elysian Fields (Figure 3.6) as a much needed retreat from the rapidly expanding city visible on the horizon just across the river.

Writer Lydia Maria Child described the pleasure grounds in 1841 as "a nook of Paradise, before Satan entered." At "the beautiful promontory near Sybil's cave…the steep, well wooded bank descended to the broad bright Hudson…the sparkling water peeps between the twining boughs, like light through the rich tracery of Gothic windows; and the cheerful twittering of birds alone mingles with the measured cadence of the plashing waves" (Child 1845:32, quoted in Srebnick 1995:3-4).

Child reflected on the pastoral qualities of Elysian Fields precisely because the contrast between rural Hoboken and urban New York was brought into focus by the unsolved death of Mary Cecilia Rogers, a young employee of a cigar shop in Manhattan. Rogers left her home on July 25, 1841. On July 28, her body was found floating in the Hudson off of Elysian Fields, north of Sybil's Cave. It appeared that she was the victim of either homicide or a botched abortion, which later evidence indicated may have occurred at "the Nick Moore House," a tavern kept by a Mrs. Frederick Loss, north of Elysian Fields (Srebnick 1995: 15-19, 29-32). The events were the subject of intense speculation in the press for some time. Edgar Alan Poe would take the facts of the story and transfer them to Paris as the subject of his serialized novel, *The Mystery of Marie Roget,* one of the earliest works of detective fiction. Though there was never any evidence that Rogers met her end at, or even near Sybil's cave, the tragedy has since been indelibly associated in the popular mind with the gothic character of the cave.

There are a number of other graphic sources depicting Sybil's Cave as it existed during the nineteenth and early twentieth centuries. The problem is that many of them are not well dated, and many are also derivative.

An engraving of the cave and its arch made by W. G. Jackman after an original by Régis François Gignoux is believed to depict the cave as it appeared at some point between 1842 and 1848. This illustration (Figure 3.7) shows the bluff of Castle Point, a path along the shore, the cave entrance, and uprights that resemble those that were part of the entrance. The view is to the north. No other structures or evidence of development are shown, with the exception of the remains of a wharf or breakwater along the shoreline, which is probably intended to emphasize the picturesque qualities of the landscape; such elements are commonly found in European shoreline scenes and seascapes. A second engraving (Figure 3.8) shows the cave from a similar vantage point. In this view, the entrance



Figure 3.6:

1855 William Wood's, *Map of Jersey City, Hoboken, and Hudson Cities* showing the location of Sybil's Cave.



Figure 3.7:

Regis Francois Gignoux, "View up the Hudson from Sibyl's Cave Hoboken" (engraved by William G. Jackman) showing Sybil's Cave c. 1842-1847.



Figure 3.8:

"Die Sybillen Grotte Bei Hoboken am Hudson" from "Sibyl's Cave,--- Hoboken"in *Ladies Wreath and Illustrated Annual* of 1848-9.

arch is complete. To the right (east) of the cave is a two-story, three bay clapboard building fronted by a colonnaded porch. There are scattered trees in the open area in front of the cave. Three trees support tables, at which patrons sit (see Figure 3.8). The picturesque quality of the landscape is imparted by the ruins of wharves, a fortuitous shipwreck, and the looming Palisades in the distance. Originally published in the mid-1840s in either the original German edition of "Meyers Universum" or in a later version printed in New York, this view was re-published in the magazine *Ladies' Wreath* in 1848.

An engraving from *Gleason's Pictorial Magazine*, published on June 19, 1852, (Figure 3.9) shows the cave and its entrance arch, the refreshment building, and tables both built around trees and freestanding. The refreshment concession apparently offered both table service and service inside the building and patrons may be seen through the windows. A stand within the cave was probably where glasses of water from the spring were sold. Several patrons may be seen there. Many of the people in view are strolling along the paths. One notable inaccuracy is the path shown leading northwards up to the top of Castle Point, in reality this path led to the south, beginning at a point behind the viewer. Pencil sketches in a notebook in the collection of the Hoboken Historical Museum probably show the cave as it appeared in the 1860's. Although undated, the sketches are signed by an "S. Schuster." A "Sigusmund Schuster" is listed as a teacher of drawing at New York City Public School 24 and 25 by D.T. Valentine's *Manual of the Corporation of the City of New York* in 1862 (Valentine 1862:268). The first image (Figure 3.10) appears to show the main "gothic" arched entrance way fronted by a pair of rustic circular seats. To the left of the main entrance, the drawing shows a secondary doorway. A later map of the cave (see Figure 3.20, below), seems to suggest that the cave may have originally had two entries. The second image (Figure 3.11), labeled "Restaurant near Sybil's Cave" shows the same building that appears to the right of the cave in both Figures 3.8 and 3.9.

Throughout the 1840's, 1850's, 1860's, and 1870's, the Steven's family holdings in Hoboken remained a popular recreation destination for harried New Yorkers seeking a quick respite outside of the city limits. During this period the "Fields" were the stage for many spectacles and events. In addition to hosting P.T. Barnum's "Grand Bufflo Hunt," Indian war dances and ox roasts, Elysian Fields also hosted large sporting events. Horse races were regularly held at the Steven's trotting grounds. The first baseball game played under organized rules, between the Knickerbocker Baseball Club and the New York Nine, took place at the fields on June 19, 1846 and the New York Yacht Club, located near the northern end of Elysian Fields, hosted the America's Cup Race, the first international yachting competition (Hayden 2005).



SYBIL'S CAVE, AT HOBOKEN, N. J.

SYBIL'S CAVE, HOBOKEN, N. J.

Hoboken is beautifully situated in New Jersey, on the Hudson River, directly opposite the south end of New York City, and is, together with Staten Island, the quickest resort of the New Yorkers. You take the ferry at the foot of Barclay Street, Canal Street, or Christopher Street, and in five minutes you are in the country. Thousands visit this "paradise of Gotham," daily. The shore is wild and rocky; it is beautifully laid out into walks, promenades and parks, overshadowed by the richest foliage. It has one or two churches, several first-rate hotels, and contains a thousand or more regular inhabitants; it also possesses a very large ship yard. The whole is owned by W. L. Stevens, Esq., to whom belongs the immortality of not only making, but keeping the finest spot adjacent to any city in the world. Sybil's Cave, Hoboken, is one of the principal attractions of the place. No one visits Hoboken without seeing it. It is hewn out and excavated from a solid rock to the depth of thirty feet. In the middle is a spring of pure and sparkling water, thousands of glasses of which are sold daily in the summer, for a penny per glass. The cave was designed by the owner, W. L. Stevens, Esq. In the engraving, Hudson River and Weehawken are seen in the distance. The small building adjoining is a place for refreshments.

Figure 3.9:

"Sybil's Cave at Hoboken, N.J."
(1852, *Gleason's Pictorical Drawing Room Companion*).



Figure 3.10:

Sigusmund Schuster's"Sybil's Cave on the Hudson" c. 1865.

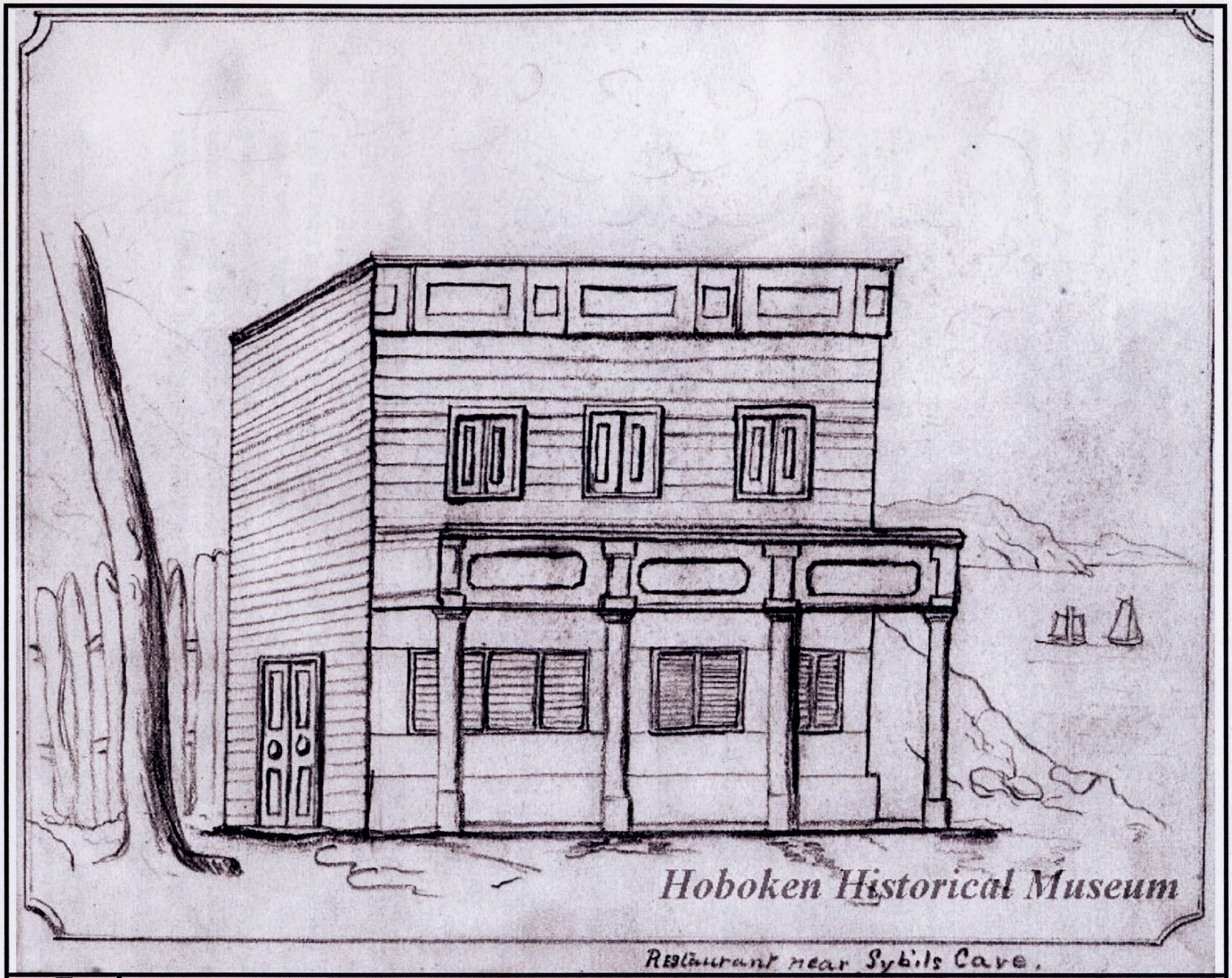


Figure 3.11:

Sigusmund Schuster's "Restaurant near Sybil's Cave" c. 1865
(Schuster c. 1865)

According to an August 9, 1934 article in the Hoboken Dispatch, around 1880, the water in the spring was found to no longer be potable and the cave was closed as a tourist attraction. Capitalizing on the notoriety and fame of the location, a Fred Eckstein opened an eating and drinking establishment on the site offering "Old World Ambiance." A new building was erected in front of the cave. Within this building a "heavy iron plated sliding door" was utilized to close the cave entrance which was utilized for cold beer storage. Tables and chairs were placed along the waterfront between the buildings to create a European beer garden layout (Hoboken Reporter 2004).

Several photographs of the cave and its environs in the 1880s survive. The first photograph -a post-card dated 1880 and produced by E.F. Walter, a Hoboken photographer (Figure 3.12), shows a number of patrons seated at tables facing the harbor. The view is to the northwest, taken from a pier. The refreshment building can barely be seen through the trees and awnings; a sign advertises "Lager Beer." There is a series of open frame structures and awnings to the west of the path. There is a row of tables along the water side of the path, with a lamp on a post. The water's edge appears to be composed of artificial rip-rap, indicating that the surface had been filled out.

The Stevens family was responsible for the deposition of much, if not all, of this fill. Following the death in 1838 of Colonel Stevens, his heirs formed, and the New Jersey State Legislature authorized, the Hoboken Land & Improvement Company (HL&I) with full powers:

> to improve all such lands as they are hereby authorized to own or purchase, by laying out that portion of the same which lies north of fourth Street in the village of Hoboken, into lots, streets, squares, lanes, alleys, and other divisions; of leveling, raising, and grading the same, or making thereon all such wharves, workshops, factories, warehouses, stores, dwellings, and such other buildings and improvements as may be found or deemed necessary, ornamental, or convenient. (New Jersey Legislature 1838: 92)

The act also granted the company the rights "to purchase, fill up, occupy, possess, and enjoy all land covered with water fronting and adjoining the lands that may be owned by them" (New Jersey Legislature 1838: 94). Riparian rights - claims to land under water - played their own role in shaping the waterfront. The HL&I charter of 1838 granted the company all rights to fill the lands under water, but the State's inherent claim to such lands in the 1860s forced the HL&I to secure a lease for the riparian rights in 1885 (Hayden 2005).

The HL&I served as a kind of real estate holding company for the Stevens family and became the principal force behind all future development in Hoboken. Between 1840 and 1870, the company



Figure 3.12:

Postcard view of "Cybil's Cave and River Walk in 1880. Hoboken, N.J." Published by E.F. Walter.

focused its efforts south of Eighth Street, leaving the open spaces to the north in pastoral form. Following the death of Edwin Stevens in 1868, Stevens Castle and its grounds were transformed into the Stevens Institute of Technology in accordance with the stipulations of his will. Industrialization of the Elysian Fields shoreline also began in earnest following Edwin's death. One of the more significant changes to the waterfront in the vicinity of the cave occurred in 1884 when the HL&I launched a new ferry service from Hoboken's Fourteenth Street and built new shops between Ninth and Tenth Streets to service the boats (Shaw 1884: 1218; Brush 1891; Hayden 2004:4-1).

As the century progressed, increasing development along the Hoboken waterfront whittled away at Elysian Fields. By 1884, an historian could look back on the days when the Elysian Fields and River Walk were "visited by thousands, especially on Sundays," and note that "now, all is changed. The great increase of population has encroached on the Fields until they have almost disappeared" (Shaw 1884:1207). Most of that development appears to have occurred north of the Sybil's Cave, where areas adjacent to the water were flatter. Castle Point remained focused on recreation.

A photograph from this time period, also taken by E.F. Walter, shows the waterfront in the vicinity of the cave as it appeared in 1885 (Figure 3.13). The layout of tables, and their orientation to the river is clear. The view was taken in winter. The trees are bare of foliage, and no patrons sit at the tables that line the edge of the Hudson and fill the area between the base of the bluff and the riverfront pathway. The lanterns have been taken in for the season, and their bare poles may be seen along the water's edge. There are no awnings, so the restaurant/refreshment building and an open frame structure to the northeast of it may be clearly seen. The arch at the entrance of the cave can be barely seen to the left of the refreshment building. The corner of another building may be seen at the far left edge of the view.

Eckstein's establishment appears during its heyday as a cluster of buildings on the water's edge on a Sanborn-Perris Map Company Insurance map of 1891 (Figure 3.14). The map also shows that the dark shadow of a building on the top of the Castle Point bluff shown in the photograph of 1885 towering over Eckstein's complex was a laundry building constructed to service Stevens Institute.

In 1897, the character of the site was forever changed when the Hoboken Manufacturers' Railroad, also known as the Hoboken Shore Road, was built along the axis of River Road (now Frank Sinatra Drive). The railroad ran down the center of the street, on street rail, flush with the pavement, and was in use until 1977 (Flagg 2000:126-127). The railroad operated about a mile and a half of track from a junction with the Erie Railroad in Weehawken, south to the Port of New York Authority



Figure 3.13:

Postcard view of "Castle Point & River Walk in 1885, Hoboken, N.J."
Published by E.F. Walter.

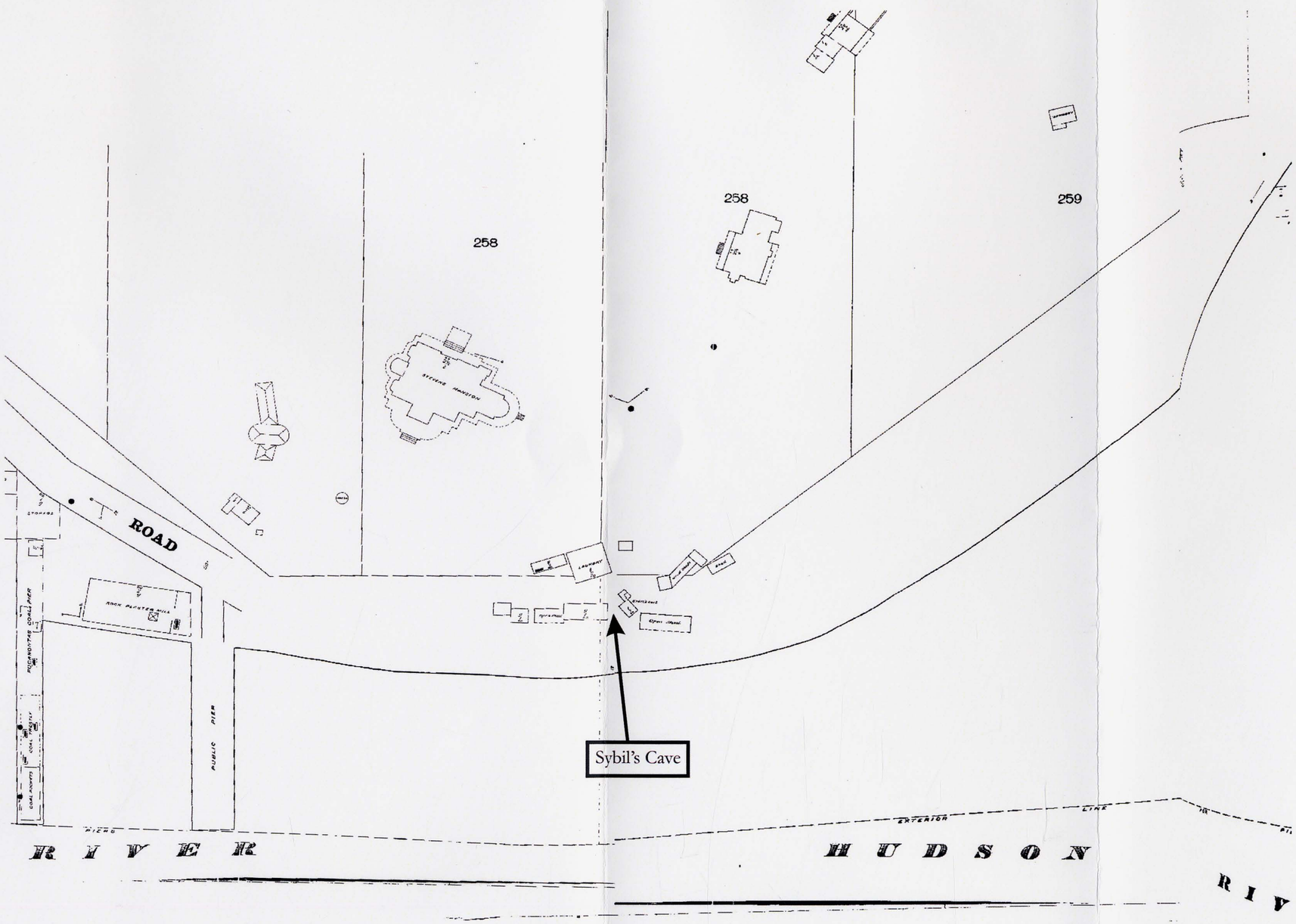


Figure 3.14:

1891 Sanborn-Perris Map Company's Fire Insurance Maps of Hoboken, New Jersey.

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Pier at First Street in Hoboken, with a yard at Sixth Street, and a car float bridge and associated yard at Eleventh Street. By the 1950s, the railroad operated on two tracks adjacent to the cave site (U.S. Army Corps of Engineers 1954:12; Hayden 2005).

The opening of the railroad truly marked the end of Sybil's Cave as a recreational destination. By 1909, even the waterfront at the foot of the point had been wharfed out to accommodate the sand and gravel dock of the building materials concern of "Chas. S. Schultz" (Figure 3.15). According to newspaper accounts, now overlooking the railroad and recently constructed docks, Eckstein's restaurant had degraded into a tavern servicing dockworkers and other similar lower class clientele (Julius Durstewitz Archive, Hoboken Historical Museum, December 1937). A 1906 Sanborn Map Company insurance map updated to 1938 (Figure 3.16) appears to show that the old restaurant building and the adjacent building fronting the cave still stood at that date. However, this was probably not in fact the case. The buildings were demolished in 1936 or 1937 after much of their infrastructure had been stripped out by firewood scavengers (Hoboken Reporter 2004). The Sanborn Map Company had clearly collected its update data just before the demolition of the buildings. The map shows that the building at the southern end of the complex was being utilized at that time as an automobile garage. The building directly fronting the cave is depicted as being vacant while the 1830's restaurant building was being utilized as a dwelling. The Sanborn map also shows that by this date two sets of railroad tracks ran in front of the cave before branching into three sets and a siding immediately to its north.

A photograph, probably dating to 1937, shows the mouth of the cave and the entrance arch following the demolition of the building that had obscured it for so many years (Figure 3.17). Two men stand in under the arch. The western (left) upright of the arch is relatively intact, while the right upright has been damaged, and its carved facings are gone. The greater part of the roof of the arch is present, though the central finial shown in the engravings is missing. The roof of the arch was clearly anchored to the rock, and did not depend exclusively on the uprights for support. Similar photographs in the Hoboken Historical Museum collections (not shown here) are dated 1937. An article concerning the "rediscovery" of the cave appeared in the *Hudson Dispatch* on December 14, 1937 (Hudson Dispatch 1937). The accompanying photograph depicts a group of boys exploring the cave (Figure 3.18). It is notable that in this photo, the floor of the cave is clear of debris.

The entrance to Sybil's Cave was still open in the early 1940s, when a visitor described it as "a small tunnel littered with serpentine fragments, cans, bottles, and other trash." The Sanborn Map Company's 1951 update of its 1906 insurance maps of Hudson County shows no evidence of the cave of any buildings surviving below the Castle Point bluff in its vicinity (Figure 3.19); however, the

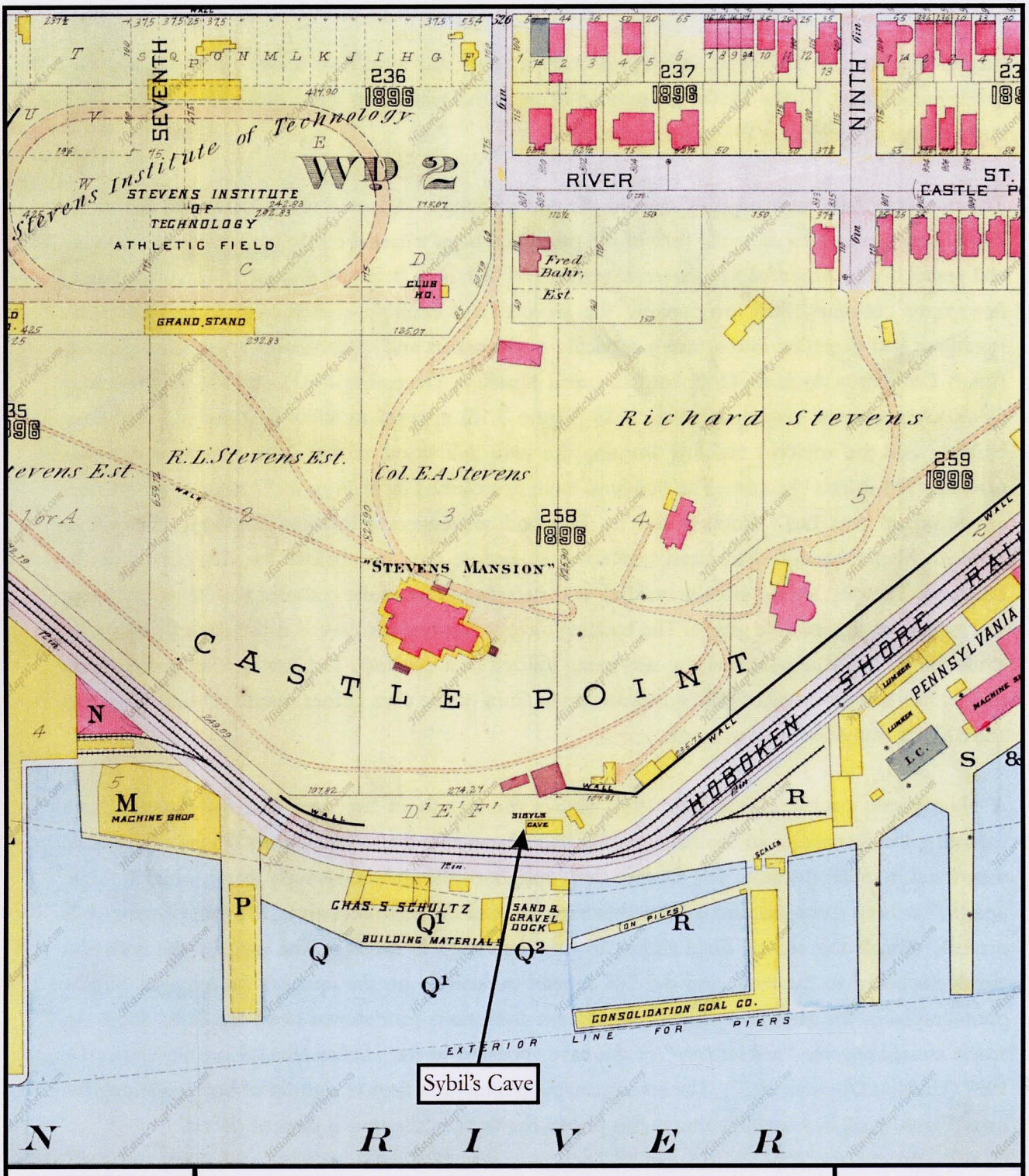


Figure 3.15:

1909 G.M. Hopkin's *Atlas of Hudson County, New Jersey* (updated 1938).

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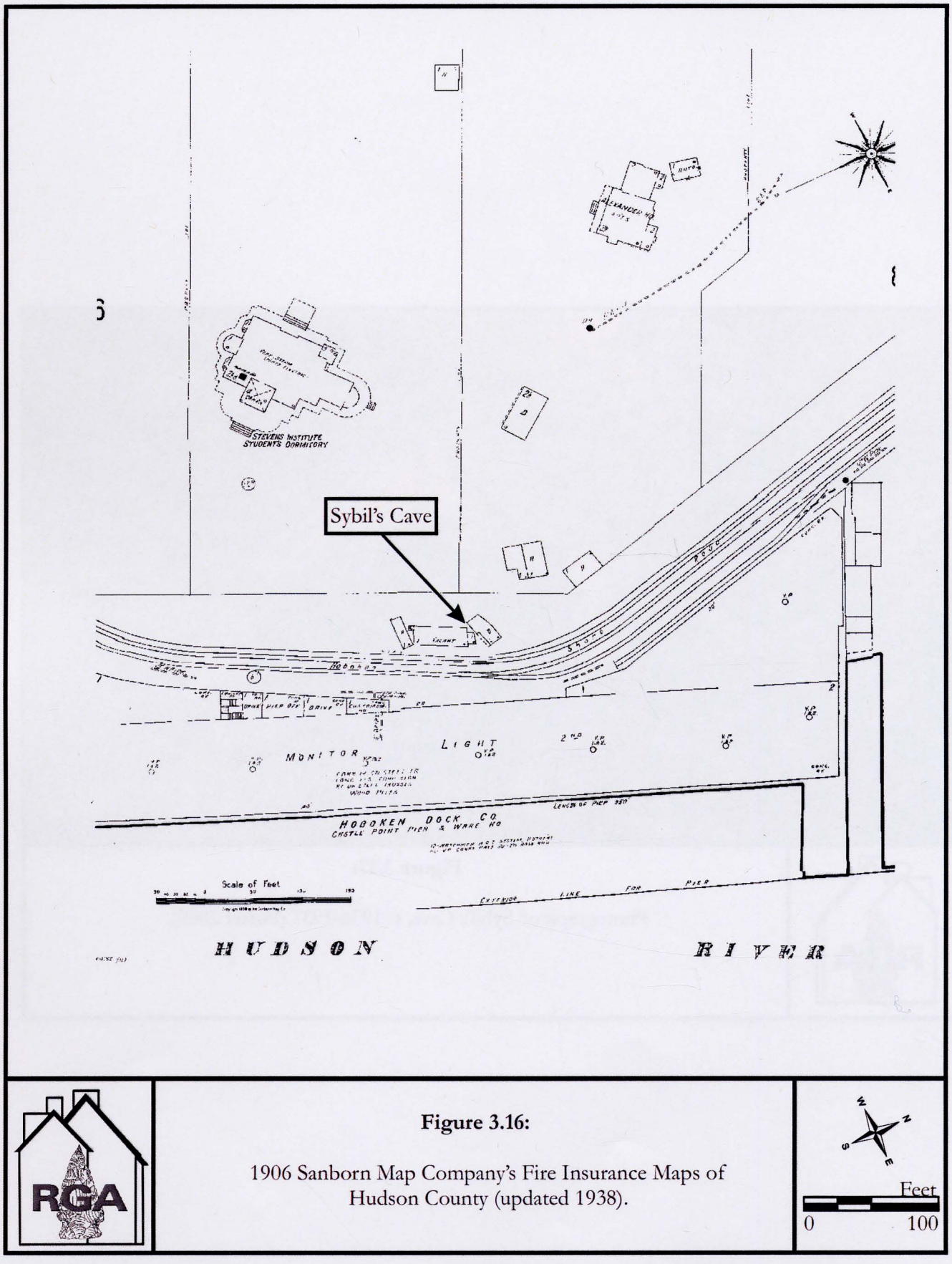


Figure 3.16:

1906 Sanborn Map Company's Fire Insurance Maps of Hudson County (updated 1938).



Figure 3.17:

Photograph of Sybil's Cave, c. 1936-1937 (Foster 2009).

DISPATCH, UNION CITY, N. J., TUESDAY, DECEMBER 14, 1937

Young Explorers 'Rediscover' Sybil's Cave



They're flocking to see Sybil's Cave in Hoboken, at foot of Castle Point along River rd., again, just as crowds came to inspect it in the old days. Historically famous as the place where Hendrik Hudson landed when he sailed up the river he discovered 367 years ago, and as the locale of Edgar Allen Poe's poem, "Marie Roget"—based on the finding of the body of Mary Rogers, slain sweetheart of a sailor, in the vicinity—it is again open to public view.

This photo shows boys "exploring" the cave's dark recesses. Many flocked there yesterday after reading of the "reopening" in Hudson Dispatch.

For more than 50 years it was a "private" cave, but the building over its entrance has been demolished. Once it was a popular restaurant and resort, but changing times caused its abandonment.

Figure 3.18:

"Young Explorers 'Rediscover' Sybil's Cave" from the Hudson Dispatch, December 14, 1937.

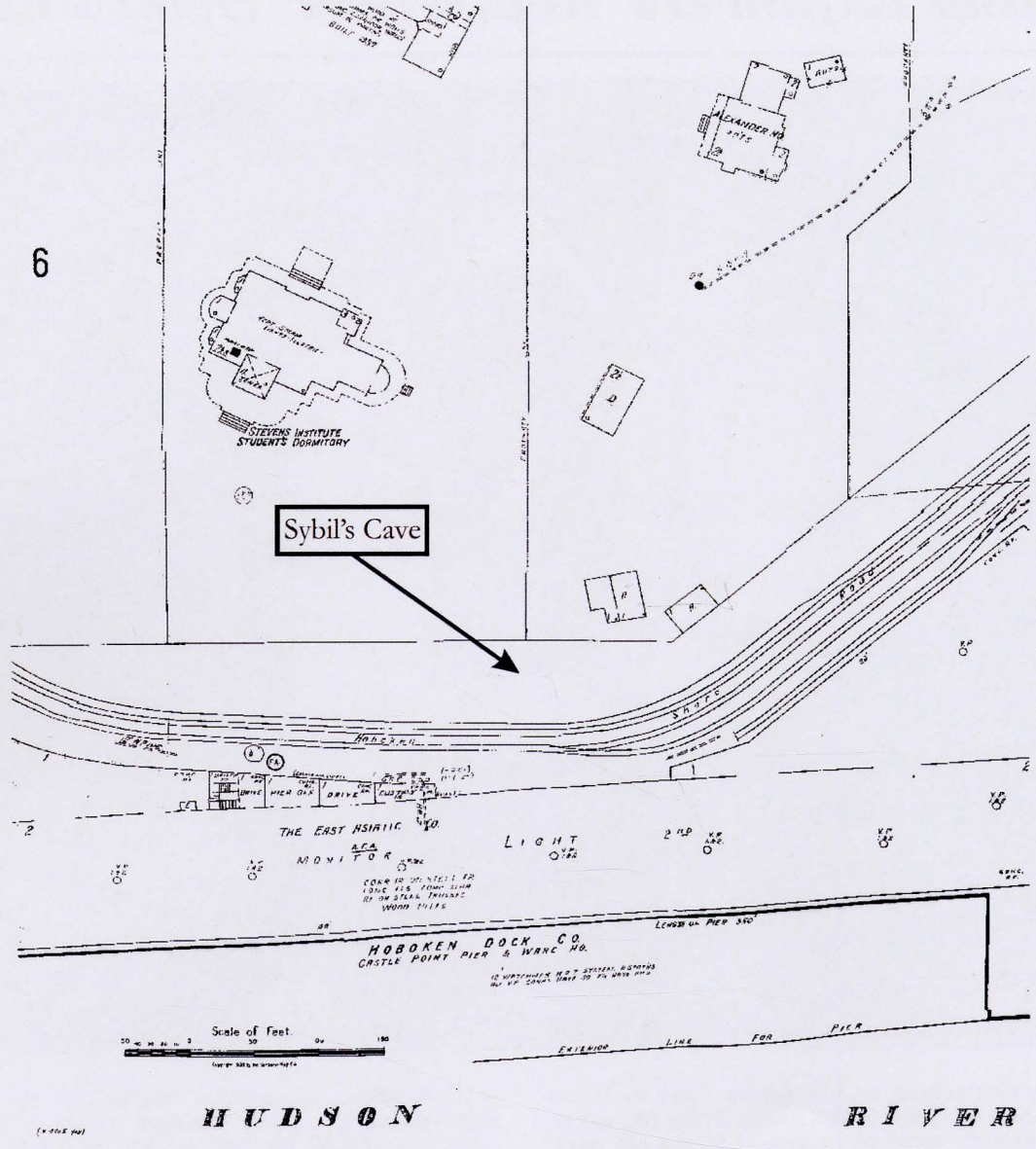


Figure 3.19:

1906 Sanborn Map Company's Fire Insurance Maps of Hudson County (updated 1951).

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cave was still open as in 1952, the cave was visited and mapped (Figure 3.20) by John Fisher, a local spelunker with the "Cave Exploration Service of New Jersey". Fisher noted that the entrance to the cave was partially blocked by a rock fall (Eckler 1976:46).

In 1976, the cave was apparently still accessible to anyone who took the effort to search for it. "Anyone who is interested in visiting this historical relic can easily find it at the base of the Serpentine outcrop on which Stevens Institute is now located. It is located at the level of a railroad siding between Eighth and Ninth Streets" (Eckler 1976:46). The cave was the property of Stevens Institute, and its dimensions were given as 20 feet by 17 feet (Dalton 1976:15). An undated photograph in the collections of the Hoboken Historical Museum shows the cave entrance in its latter days, as simply a hole in the ground (Figure 3.21). It is evident that considerable fill had been deposited around and over the cave's mouth, some of which is still present on the floor of the cave near its mouth.

Sybil's Cave was relocated by Daniel Gans and Robert Foster in 2004 when it was briefly opened and then covered again. In 2007, a major exploration and clearing took place (Figure 3.22). In the course of these explorations, several items, including a twentieth century bottle and a no parking sign, were recovered from within the cave. The most significant of these items were several carved pieces of serpentine that were part of the original fabric of the entrance arch. Figure 3.23 shows the largest of the recovered fragments, and its position in the entrance arch. Note that that the fragment is just as likely to be from the right side of the arch, which is missing in the historical photograph.

3.2 Site-Specific Research

New Jersey State Museum Site Files

An examination of standard references and site files at the NJSM and the HPO, and review of published references (Skinner and Schrabisch 1913; Cross 1941) indicated that there are no known archaeological sites within one mile of the project site.

Cultural Resources Surveys

Examination of the records at the HPO indicates that 12 cultural resources surveys have been conducted for projects within one half mile of the project site. In addition, as mentioned above (see Section 3.1), exploration of the cave took place in 2004 and 2007.

Waterfront-related projects have produced the largest number of projects, beginning with the U.S. Army Corps of Engineers drift survey in the early 1980s, which inventoried waterfront resources in

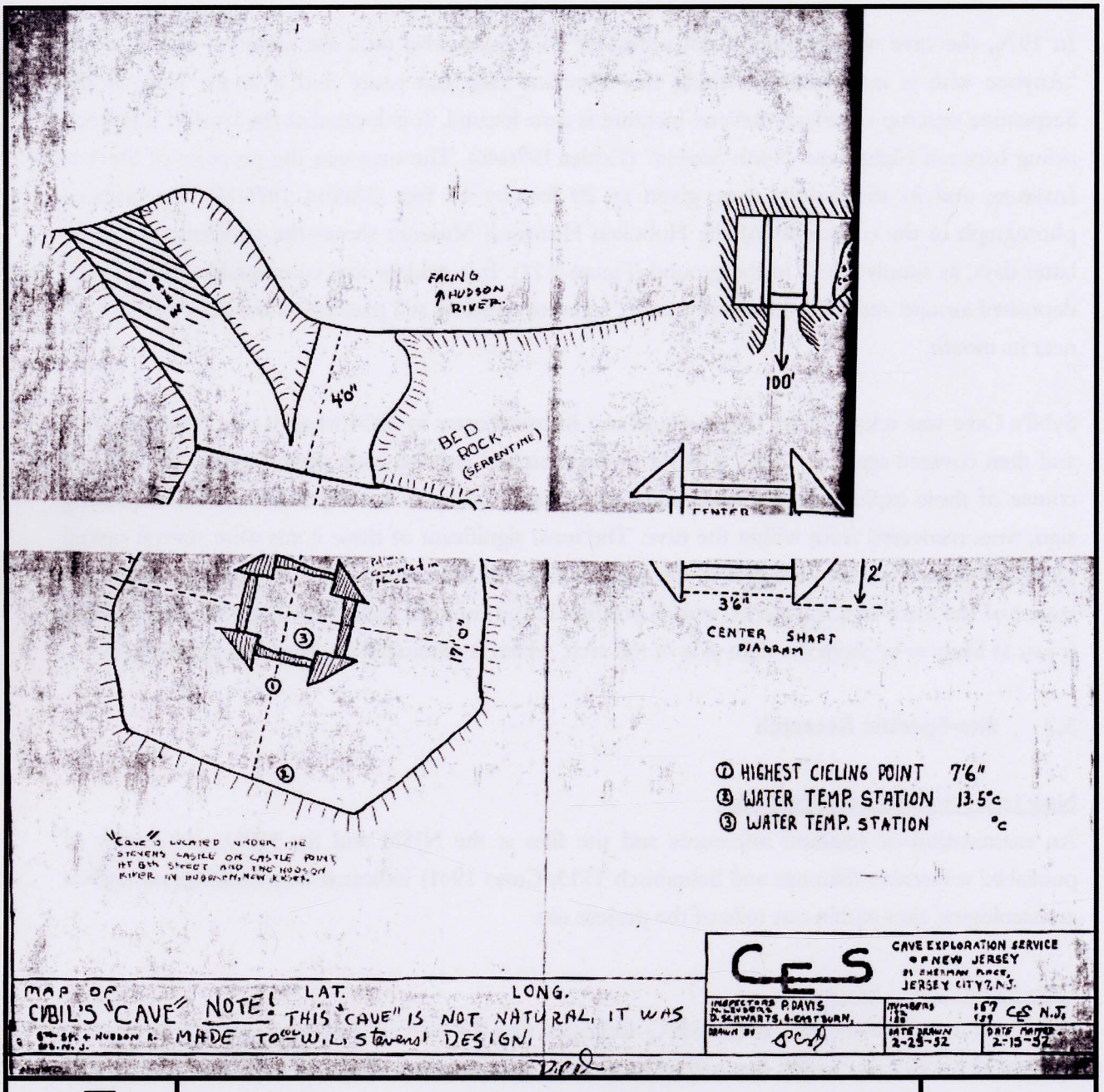


Figure 3.20:

Cave Exploration Service of New Jersey's "Map of "Cybil's Cave" in 1952.

Not to Scale



Figure 3.21:

Undated Photograph of Sybil's Cave
(Hoboken Buildings & Real Estate Collection, Hoboken Historical Museum).



Figure 3.22:

Photograph of Sybil's Cave in 2007 (Foster 2009).





Figure 3.23:

Carved Serpentine fragment recovered in 2007 (A) and original location of recovered fragment (B).

the vicinity of the project site (Marshall 1981). A survey conducted in support of planning for New Jersey Transit's ferry operations identified Castle Point as the location of an aboriginal settlement (Hobokan, or Hobokan-hackinge), and indicated that the bluffs along the waterfront on the point were sensitive for the presence of prehistoric resources, although the area had been much altered in the nineteenth and twentieth centuries (Hunter Research 1992). Work in support of a Waterfront Development Permit Application at the Maxwell House site, north of the project site, led to the identification of a variety of potential resources on that site (Cook and Modica 2003). Archaeological monitoring of demolition and construction on the site recorded a variety of waterfront and railroad-related resources (Cook 2006). Reports for several Waterfront Development Permit projects are present in the HPO files (Rothe Partnership 1988; Potomac-Hudson Environmental 2007), but it does not appear that these projects considered archaeological resources.

Sewer projects have also resulted in a substantial body of work in the vicinity of the project site. Early survey work led Herbert Kraft (1979:10) to observe that the Palisades area of the state was virtually devoid of known prehistoric sites. A Phase IB sewer survey did not encounter archaeological resources in the vicinity of the project site (Rutsch and Leo 1979). A Phase IA survey for a combined sewer outfall project on the Hoboken waterfront (Pennington 1996) identified shoreline areas along Castle Point as having potential to contain prehistoric resources. Subsequent monitoring of construction at the H3 and H4 sewer outfalls, south of the project site, determined that the area had been subject to considerable filling, reworking, and disturbance as a result of nineteenth and twentieth century development (Cook 2004).

Two telecommunications projects have been conducted in the vicinity of the project site (Zerbe et al. 2002; Carmelich et al. 2003). One of these project was on the property of Stevens Institute of Technology (Carmelich et al. 2003), but as neither project addressed archaeological resources, it does not add to our understanding of the project site.

National/State Register of Historic Places

According to the records at the HPO, no archaeological properties listed on or determined eligible for listing on the National Register of Historic Places (NR) lie in, or within one-half mile of, the project site. In 2009, the Hoboken Historical Museum filed a Preliminary Application for Certification of Eligibility with the HPO (Foster 2009). Consequently, Sybil's Cave was determined eligible for listing on the National and State Registers of Historic Places under Criterion A (COE: 5/13/2009; Saunders 2009). Sybil's Cave falls also within the limits of the Stevens Historic District (SHPO Opinion: 2/28/91).

SECTION 4.0 RESULTS

4.1 Assessment of Archaeological Sensitivity

The waterfront between the Castle Point bluff and the Hudson River has been worked and reworked many times over the past two centuries. These reshaping activities began with the initial carving of Sybil's Cave out of the rough bluff face in the 1830's and have continued as recently as the 2007 date of the excavations that re-exposed the cave and the landscaping effort that created the pocket park that now stands to its fore. Over the course of this period, buildings, roadways, walkways, piers and railroad beds have been added to the landscape and then subsequently removed from it. The natural topography of the river bank has been reshaped through grading in some places and raised by the application of fill in others. Over time the deposition of fill has also shifted the river margin considerably further to the east of its pre-modification location. Clearly, each successive reinterpretation of the landscape has eliminated some evidence of past human use, but it remains unclear to what extent the archaeological record has been wiped clean. Significant archaeological data can survive even in the most densely built up and manipulated of urban environments.

Clearly, there is no potential for prehistoric archaeological resources to survive within the cave, as it is not a natural feature and dates no earlier than the Stevens family ownership of the property on which it was located. The area surrounding the cave lies within the historic floodplain of the Hudson River. Prior to the degradation of the riverfront ecosystem during the later nineteenth and early twentieth centuries, this was a rich environment offering direct access to river and its copious supply of fish and nearly limitless beds of oysters. In addition to the brackish waters of the Hudson River, the area also offered a fresh water source in the form of the mineral spring which would have flowed from the rock at the current location of Sybil's Cave. Prior to the settlement of the surrounding lands by persons of European decent, the riverbank below the Castle Point bluff would have offered an excellent location for food procurement and processing camps. It can be anticipated to have been exploited extensively by indigenous aboriginal peoples.

Due to the extent to which historic alteration of the landscape can be expected to have altered the ground surface in the vicinity of the cave, it is unlikely that extensive prehistoric archaeological resources survive intact. This does not preclude the possibility that isolated pockets of undisturbed soils containing evidence of prehistoric utilization survive in deeply buried contexts or along the margins of the most historically manipulated areas outside of Sybil's Cave.

During the most recent phase of ground disturbances, which were monitored by personnel from RGA, other than the cave, little archaeological evidence relating to the historic use of the property as a recreational facility was encountered. The most significant evidence that was unearthed was several fragments of the original proscenium entrance arch to the cave. However, little else was identified that could be directly tied to this period of the cave's past. Subsequent to the clearing of the cave's interior, the area fronting the cave has once again been reworked and turned into a landscaped park. The grading of the area, construction of park pathways, curbing and other infrastructure and the planting of trees and other vegetation, was not monitored by archaeologists. It is unclear to what extent these activities may have disturbed archaeological remains related to earlier periods of use.

Although no evidence of the survival of historic archaeological resources, such as foundation remains or evidence of historic landscape features, was observed during the brief window that the archaeological monitoring of the re-excavation of the cave offered, the possibility still exists that such resources survive in the forecourt of the cave beneath the depth of the most recent disturbance. Any surviving remains historically associated with the original restaurant/refreshment building or with the later buildings and improvements associated with Fred Eckstein's period of proprietorship or with the final episode of the use of the site as a dockworkers' tavern and boarding house could possess archaeological significance depending on their type, extent, and integrity. Clearly, the most significant archaeological resource identified during these investigations is Sybil's Cave. The cave has been evaluated as being a New Jersey and National Register of Historic Places eligible resource associated with recreational development and tourism in the early nineteenth century. In addition to its basic form, the cave also shows evidence of the techniques employed in its original construction, and displays graffiti carved into its walls.

4.2 Archaeological Reconnaissance

Sybil's Cave consists of an artificial grotto excavated into the hillside located on the west side of Frank Sinatra Drive in Hoboken, Hudson County, New Jersey (see Figures 1.1 and 1.2; Plate 4.1). The adjacent park area has been graded and planted with shrubs, and is surrounded by a decorative fence (Plate 4.2). A decorative entrance, similar in scale and style to the historical entrance to the cave, has been built in the park (Plate 4.3). The area on the hillside above and around the cave consists of exposed bedrock. Several retaining walls above the cave entrance buttress the grounds of the Stevens Institute of Technology campus (see Plate 4.1; Plate 4.4).



Plate 4.1:

Overall view of Sybil's Cave, looking northwest.
Photo view: Northwest
Photographer: Lauren J. Cook
Date: March 12, 2010



Plate 4.2:

Sybil's Cave, looking north.
Photo view: North
Photographer: Lauren J. Cook
Date: March 12, 2010



Plate 4.3:

Sybil's Cave entrance, looking northwest.
Photo view: Northwest
Photographer: Lauren J. Cook
Date: March 12, 2010



Plate 4.4:

Wall above Sybil's Cave, looking northwest.
Photo view: Northwest
Photographer: Lauren J. Cook
Date: March 12, 2010

A field visit to the cave was conducted on March 12, 2010. The entrance to the cave is 8.83 feet wide at the floor and 5.5 feet high. Traces of brickwork, probably associated with the entrance arch, were noted at the eastern end of the entrance. The cave measures approximately 20 feet by 17 feet (Figure 4.1). The ceiling arches to a height of 4.6-5.6 feet. Four columns are present near the center of the cave. These appear to be a mix of bedrock that was not excavated when the cave was built, and rough masonry that was cemented or mortared in place (Figure 4.2). Indistinct graffiti, probably left by cave visitors, is present on the southwest column. There is a carved reservoir, or cistern, approximately 2.4 x 2.6 feet, in the floor between the four columns. This reservoir was reportedly designed to collect groundwater that filters into the cave through cracks in the bedrock, and appears to be permanently filled with water. An arch has been carved into the bedrock above and between the two columns closest to the entrance (Plate 4.5). This decorative detail echoes the entrance arch that formerly stood outside the cave's entrance. Tool marks are visible there and in other locations within the cave (Plate 4.6) The floor of the interior of the cave, to the left and right of the entrance, has up to several feet of soil and rocks piled up (Plates 4.7 and 4.8). This material appears to have entered the cave when the entrance was filled.

A geophysical report indicated that the cave would need structural stabilization in order to be opened to the public. The possibility exists that there is ongoing spalling of the cave's ceiling. Further engineering studies were recommended (Cheema and Pehrman 2011). An analysis of the water within the cistern revealed the presence of coliform bacteria in amounts that render it unsafe for drinking, but there is no indication that contact with it constitutes a health risk (Miller 2011; Cheema and Pehrman 2011).

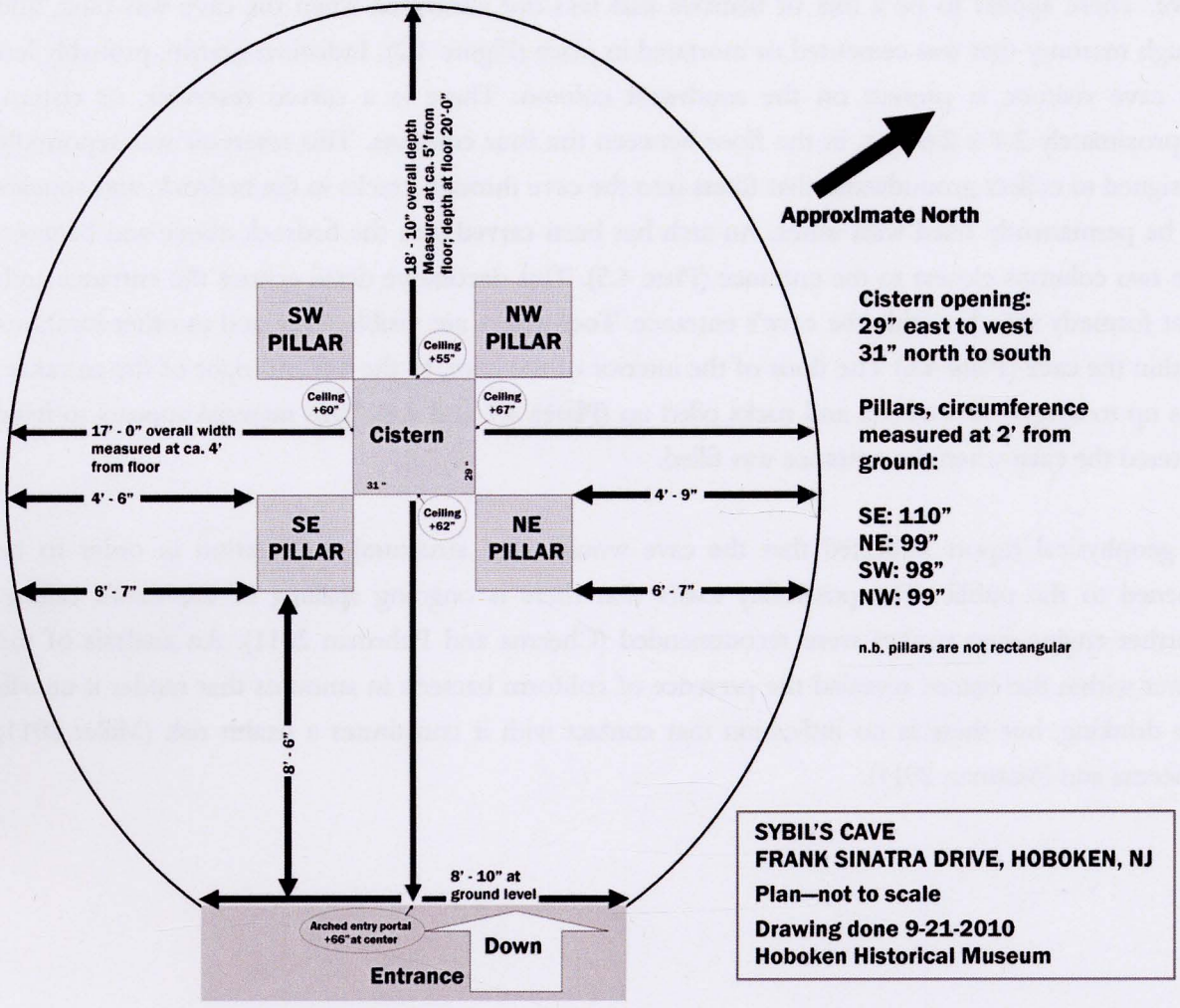


Figure 4.1:

Measured Sketch of the Interior of Sybil's Cave
(Hoboken Building & Real Estate Collection, Hoboken Historical Museum).



Figure 4.2:

Interior of Sybil's Cave, looking northwest
(Photo: G. Paul Burnett, *New York Times*, June 27, 2007).



Plate 4.5:

Carved arch within Cave, looking northwest.
Photo view: Northwest
Photographer: Lauren J. Cook
Date: March 10, 2010



Plate 4.6:

Sybil's Cave looking southwest from cistern.
Photo view: Southwest
Photographer: Lauren J. Cook
Date: March 12, 2010



Plate 4.7:

Fill within Cave, looking west from entrance.
Photo view: West
Photographer: Lauren J. Cook
Date: March 12, 2010



Plate 4.8:

Fill within Cave, looking north from entrance.
Photo view: North
Photographer: Lauren J. Cook
Date: March 12, 2010

SECTION 5.0 CONCLUSIONS AND RECOMMENDATIONS

A preliminary determination of the likelihood that significant cultural resources occur within any given area is based upon a review of environmental and historical data and a close visual inspection of the project site. In light of available information it is deemed likely that areas both within the footprint of the cave and surrounding are sensitive for the presence of significant archaeological resources. The area surrounding area the cave has been assessed to possess a low to moderate sensitivity with regard to its likelihood to contain significant prehistoric archaeological resources (Figure 5.1). Archaeological investigation of the area is far more likely to yield important information about the recreational use of the cave as a landscape folly and mineral spring in the years between circa 1835 and circa 1885 and the later utilization of the site as a beer garden, dockworkers' tavern and boarding house between circa 1885 and circa 1930. Accordingly, further archaeological work is recommended to be conducted in conjunction with the present project, as detailed below.

A detailed map of Sybil's Cave should be prepared prior to any additional work. This would be difficult using ordinary cartographic techniques. However, 3D Laser Scanning Technology, which is capable of rapidly processing millions of data points, should provide a cost-effective and accurate means of mapping the complex interior of the cave, and the Hoboken Historical Museum may wish to investigate its use for that purpose. Data gathered from such a survey could be used to generate a 3-dimensional model of the cave, using 3-D printers that would prove useful in interpreting the site to museum visitors. Graffiti is evident in places on the walls of the cave. Some of these may date to later periods in the history of the cave, but all of them should be photographically recorded and located to the fullest extent possible and located on plans of the cave.

There is potential for significant archaeological resources and deposits in the cistern in the center of the cave. The cistern (or reservoir) appears to be permanently filled with water. There is high potential for resources within the cistern dating from the entire period of the cave's use. Preservation of organic materials, such as bone and wood in such an environment, is expected to be excellent. The Hoboken Historical Museum has been very careful not to disturb any deposits that might exist at the bottom of the cistern. Dewatering and excavation of the cistern should not occur until the Hoboken Historical Museum has engaged the services of a qualified conservator to preserve any material that might be present.

Other deposits within the cave, except for those that may be present directly on the stone floor of the cave, do not appear to be archaeologically significant. Photographs from 1937 clearly show that there were no deposits of soil on the floor of the cave near the mouth at that time. This indicates

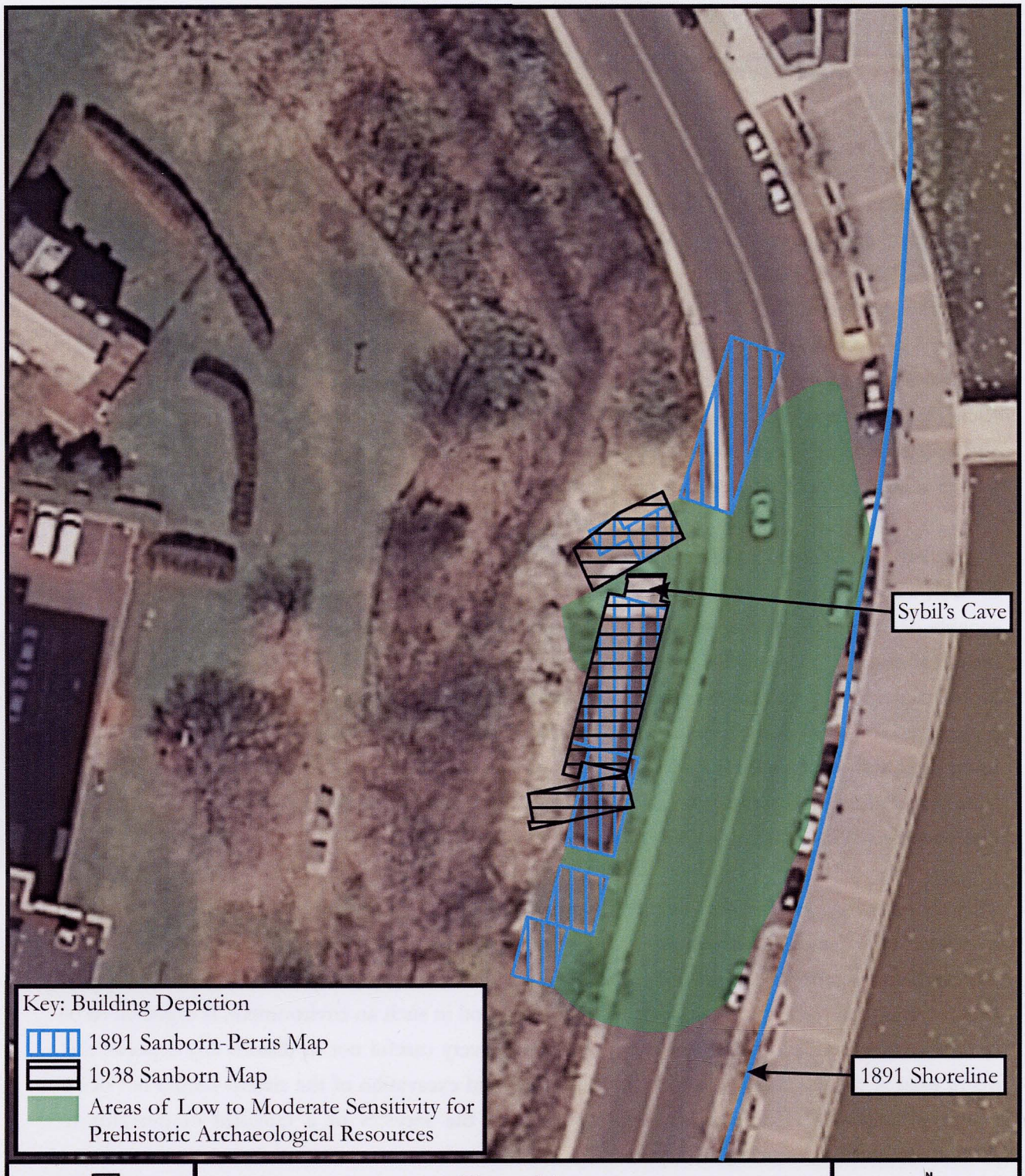


Figure 5.1:

Sybil's Cave: Map of projected archaeological sensitivity.

that the deposits presently on the floor in that area, which may approach several feet in thickness, clearly postdate the 1930s, and thus should not, in themselves, be considered significant. It is possible, however, that these deposits may contain additional fragments of the entrance arch and other materials of potential interest. Removal of these deposits should entail examination of any sizeable fragments of serpentine for any evidence of carving or working, tool-marks, etc. These, and any bricks in the fill, should be saved, along with any other artifacts that are present (such as the bucket seen in Plate 4.7).

Removal of deposits within the cistern should be conducted by archaeological professionals in consultation with qualified archaeological conservators with experience in conservation of waterlogged items. Removal of deposits elsewhere within the cave should be monitored or supervised by a qualified archaeological professional.

Considerable information on the historic development of the zone between the cave and the Hudson River was gathered during the research phase of this project and has been utilized to produce mapping that shows areas within the zone that may possess historic archaeological sensitivity. The archaeological investigations conducted to date have not been sufficient to determine the degree to which these areas may have been impacted by previous episodes of ground disturbance, therefore, archaeological monitoring is recommended in the event that any future site improvement activities take place that could impact any archaeological deposits that may survive. Nineteenth and early twentieth century archaeological deposits within and immediately adjacent to the footprints of structures formerly associated with the recreational and restaurant/tavern use of the property (see Figure 5.1) would be of particular interest along with any construction data and floor plan information with regard to these no longer extant historic buildings and the original ornamental cave gateway arch.

Sybil's Cave is a unique historical and archaeological resource. In recognition of this, the cave has been determined by the New Jersey Historic Preservation Officer to be individually eligible for listing in the National Register of Historic Places under Criterion A. It may also have the potential to be a contributing resource to the National Register-eligible Stevens Historic District. It is recommended that Sybil's Cave be formally nominated to the New Jersey and National Registers of Historic Places under National Register Criteria A, C and D. Listing Sybil's Cave on the New Jersey and National Registers will provide the resource with broader recognition of its historic significance and an expanded measure of protection.

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APPENDIX A: QUALIFICATIONS OF KEY PERSONNEL

LAUREN J. COOK
Registered Professional Archaeologist
517 South 27th Street
Philadelphia, PA 19146
(215) 545-1655
Cell (508) 789-7533
cookrpa.com

EDUCATION

Ph.D. Candidate	Boston University	Archaeology	
M.A.	Boston University	Archaeological Studies Concentration, New World Historical Archaeology Specialization, Industrial Archaeology	1990
B.A.	Providence College Liberal Arts Honors Program	Anthropology	1980

PROFESSIONAL CERTIFICATION

1999	Registered Professional Archaeologist
1990	Society of Professional Archaeologists (certified in Field Research, Historical Archaeology, and Documents Research)
1992	OSHA-certified 40-hour Hazardous Waste Operations (HAZWOPER) course
1994	OSHA-certified 8-hour Site Supervisor's course
2010	OSHA-certified 8-hour Health and Safety Refresher Course
1999	Lead and Asbestos Safety Course
2004	American Red Cross CPR for the Pro Rescuer training
2004	American Red Cross First Aid training

Mr. Lauren Cook is a Registered Professional Archaeologist with more than 30 years of experience in archaeology and cultural resources management. He has specialized in the historical and industrial archaeology of the Northeast and Mid-Atlantic. In addition to being a Registered Professional Archaeologist, Mr. Cook exceeds the Secretary of Interior's standards for prehistoric archaeology, historical archaeology, and history. He has conducted or supervised archaeological or historical research in all six New England states, New York State and New York City, New Jersey, Pennsylvania, Maryland, Virginia, Georgia, Florida, and Arizona. He is the author or co-author of 11 professional publications, more than 100 cultural resources reports, and more than 30 presentations to professional audiences and community groups.

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Damon Tvaryanas, Principal Senior Historian (36 CFR 61)

Years of Experience
With this firm:
2011-Present
With other firms: 20

Education
M.S. 1993
University of
Pennsylvania
Historic Preservation

B.A. 1991
New York University
Fine Arts

Professional Training
OSHA 40-Hour
Training 2000-Present

OSHA 8-Hour
Confined Space
Training

Professional Experience Summary:

Damon Tvaryanas is Principal Investigator, Principal Senior Historian on projects performed by RGA. Mr. Tvaryanas' technical and managerial responsibilities include project management, the direction of cultural resource investigations, including historical architectural surveys, preservation plans, historic structure reports, National Register of Historic Places nominations, Historic American Building Survey/Historic American Engineering Record documentation, the development of historic interpretive signage, displays and publications, and the preparation of reports and proposals. Mr. Tvaryanas provides technical oversight to project staff to ensure that all cultural resources investigations are technically complete and comply with Section 106 of the National Historic Preservation Act, NEPA, Section 4(f), and cultural resource regulations.

Representative Project Experience:

Archaeological Overview and Assessment Study, Bombay Hook National Wildlife Refuge, Kent County, DE (Sponsor: USFWS) Undertook a detailed program of historical research targeted at developing a comprehensive land use history of the 16,000 acre Bombay Hook Federal Wildlife Refuge. Produced an inventory of identified historic architectural resources and identified potential archaeological resources within the refuge boundaries.

Pennington Park World War Memorial, Passaic County, NJ (Sponsor: FEMA) Directed primary and secondary source research and architectural evaluation and concluded that the World War I monument met Criterion C as an architecturally and artistically significant example of a major World War I commemorative monument.

Historic Architectural Assessment, Brandywine Substation Expansion, New Castle County, DE (Sponsor: Delmarva Power & Light Company) Directed a historic impact assessment in connection with the proposed expansion of an existing electrical substation within the boundaries of the National Register-listed Brandywine Village Historic District

Historic American Engineering Record Documentation (HAER) of County Route 571 Bridge over Main Branch of Toms River, Ocean County, NJ (Sponsor: Ocean County, NJ) In accordance of HAER quality standards, documented existing conditions and setting of a bridge, spillway and dam within the Rova Farms National Register listed Historic District.

Proposed Champluvier Gathering Line, Tuscarora Township, Bradford County and Susquehanna County PA (Sponsor: Appalachia Midstream Services, LLC) Undertook historic research in connection with the suspected location of a burial plot along the alignment of a proposed natural gas gathering line in north-central Pennsylvania. Detailed historical research proved that the suspected burial plot had never been used for the interment of human remains.

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Cultural Resource Consultants

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Laura D. Cushman, Archaeologist

Years of Experience
19

Education
BA 1991
Muhlenberg College
Social Science

Professional Societies
Archaeological Society of New Jersey

Professional Experience Summary:

Laura D. Cushman has extensive experience in applying Section 106 of the National Historic Preservation Act, as amended, and other relevant state and municipal laws. Ms. Cushman has served as a project archaeologist on all phases of archaeological investigations on both prehistoric and historic sites in New Jersey and Pennsylvania.

Representative Project Experience:

Dead River Road Wireless Site, Somerset County, NJ (Sponsor: Verizon Wireless) Project Archaeologist for an archaeological assessment of a proposed wireless telecommunications facility in Warren Township. Ms. Cushman concluded that the APE-Archaeology had a low sensitivity for prehistoric and historic cultural resources. She co-authored a report presenting the results of the assessment.

Camden Lanning Square Elementary School, Camden County, NJ (Sponsor: Schools Construction Corporation) Project Archaeologist for a cultural resources investigation of the Camden Lanning Square Elementary School in the City of Camden. Ms. Cushman conducted background research and a site visit for the initial assessment of the project site. The results of the assessment indicated a high sensitivity for pre-1860 historic cultural resources on the project site, and a Phase I survey was recommended. Ms. Cushman was the crew chief for the subsequent fieldwork, and drafted a report meeting the requirements of the HPO.

Evesham Township Board of Education Transportation Facility, Burlington County, NJ (Sponsor: Evesham Township Board of Education) Project Archaeologist for a proposed bus maintenance facility and associated parking lot in Evesham Township. Phase I and II archaeological investigations resulted in the identification and evaluation of a portion of prehistoric site 28-Bu-106. The project did not proceed to mitigation level as no significant prehistoric features were encountered. She co-authored a report presenting the results of the assessment.

Wager's Farmstead Site, Montgomery County, PA (Sponsor: Vesterra Corporation) Project Archaeologist for Phase I through Phase III archaeological investigations at the Wager's Farmstead Site (36-Mg-307). The archaeological investigations resulted in the identification of numerous cultural features dating from the eighteenth through twentieth centuries. Ms. Cushman catalogued and performed a minimum vessel analysis on the material recovered, photographed artifacts, produced graphics, performed data entry, and co-authored a report presenting the results of the investigations.

APPENDIX B: ANNOTATED BIBLIOGRAPHY

Authors:	Lauren J. Cook, M.A., R.P.A., Damon Tvaryanas, M.A., Laura D. Cushman
Title:	Archaeological Assessment, Sybil's Cave, Frank Sinatra Drive, City of Hoboken, Hudson County, New Jersey
Date:	May 2012
RGA Database Title:	Sybil's Cave
RGA Project No:	2010-069
State:	New Jersey
County:	Hudson
Municipality:	City of Hoboken
U.S.G.S. Quad:	Weehawken, NJ
Drainage Basin:	Hudson River, New York Bay, Atlantic Ocean
Regulation:	New Jersey Historic Trust Grant
Project Type:	Recreational: Park
Project Sponsor:	Hoboken Historical Museum & Cultural Center
Client:	Hoboken Historical Museum & Cultural Center
Level of Survey:	Archaeological Assessment
Cultural Resources:	Sybil's Cave (COE: 5/13/2009); Areas of archaeological potential associated with Sybil's Cave