



Date: September 28, 2018

To: Steve Elle-Pierre, New York City Department of Environmental Protection

From: Michael Bomar, Vice President, Tetra Tech

**Subject: Phase I Archaeological Documentary Study
PS313 – 235th Street Pump Station Reconstruction
Riverdale, New York**

The attached *Phase IA Archaeological Documentary Study PS313 – 235th Street Pump Station Reconstruction Riverdale, New York* report has been revised to address comments received from NYC Landmarks Preservation Commission (LPC) in its September 11, 2018 memo concerning said document. The following summarizes the report revisions addressing the LPC's comments. The revision summary is provided with the same numbers and order as the LPC's comments and includes reference to additional materials, as requested by the LPC:

1. Additional discussion concerning the Riverdale Site has been added to the report with consideration paid to other relevant archaeological reports, as identified on the LPC's website. Specifically, refer to the last two paragraphs on page 8 and to Table 2. Records Identified in the Riverdale Vicinity Utilizing LPC's Website.
2. The historical context discussion was revised to focus on the project site and not the broader region.
3. A discussion of the disturbance resulting from the original station construction, based on available records, was added to the report. Specifically, refer to new sub-section 2.5 Review of Disturbance of Current Station and Related Improvements; new Figure 4. West 248th St and West 235th St Pump Station – Plot Plans (NYC DEP 1963); and, new Figure 5. West 235th St Pump Station – Sections A-A B-B (NYC DEP 1963).
4. All instances of text stating, “contains privileged information – do not release” has been removed.
5. The credentials for the reporting archeologist and the supervising archeologist are provided in a new appendix section.

Should additional information be requested and/or any discussions needed, please let us know.

Phase IA Archaeological Documentary Study
PS313 - 235th Street Pump Station
Reconstruction
Riverdale, Bronx County, New York

Project #: NYC DEP / LA-CEQR-X

Prepared for



New York City Department of Environmental Protection
Bureau of Engineering Design and Construction

Prepared by



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August 2018
Revised September 2018

Project Summary

LPC Project Review Number: Department of Environmental Protection / LA-CEQR-X

Involved Local, State and Federal Agencies: NYC Department of Environmental Protection

Phase of Survey: Phase IA Archaeological Documentary Study

Location: Riverdale, Bronx County, New York

Project Area:

5,623 square feet within the Pump Station property boundary
3,127 square feet adjacent to the Pump Station property, exclusive of work in Palisade Avenue
33,250 square feet exclusively within Palisade Avenue

Number of Acres Surveyed:

Number of Square Meters Excavated: none
Percentage of Site Excavated: not applicable

USGS 7.5 Minute Quadrangle Maps: Yonkers

Archaeological Survey Overview

Number and Interval of Shovel Tests: not applicable
Number and Size of Units: not applicable

Results of Archaeological Survey

Number and Name of Archaeological Sites Identified: none
Number and Name of Historic Sites Identified: none
Number and Name of Sites Recommended for Phase II/Avoidance: none

Recommendations of Archaeological Documentary Study: No further archaeological investigations

Report Author: Robert M. Jacoby, M.A., RPA

Date of Report: August 29, 2018
Revised September 27, 2018

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1.0 Introduction

Tetra Tech is assisting the New York City Department of Environmental Protection (DEP) with design and design services during construction for the reconstruction/rehabilitation of the existing 235th Street Pump Station (the Project) located at 3869 Palisade Avenue, Bronx, New York (Figure 1, Photograph 1). Under provisions of the City Environmental Quality Review (CEQR) as established by Executive Order 91 [43 RCNY §§ 6-01 et seq.], the New York City Landmarks Preservation Commission (LPC) conducted an environmental review of the proposed undertaking's potential to affect historical properties listed on the National Register of Historic Places (NRHP) and State Register of Historic Places (SRHP) or on historic properties that may be eligible for listing on the NRHP or SRHP. In its environmental review dated August 9, 2018, LPC communicated to Tetra Tech its findings that the Project site may be archaeologically significant with the potential to contain previously unrecorded remains from Native American occupation (see Section 8.0). LPC recommended that Tetra Tech complete an archaeological documentary study of the Project site to clarify these findings.

The Project, identified by DEP as PS313, includes reconstruction and rehabilitation of the pump station comprising 5,623 square feet (0.13 acre) within the property boundary; removal of the existing concrete sidewalk and reconstruction of new concrete sidewalk on the west side of Palisade Avenue comprising 3,127 square feet (0.07 acre); retirement in-place of the existing 20-inch force main and installation of a new 20-inch force main from the pump station to the center of Palisade Avenue and thence approximately 990 feet southward beneath Palisade Avenue to junction with the existing 26-inch combined sewer line at 231st Street; and a new 4-inch water main from 232nd Street to the pumping station comprising 33,250 square feet of work exclusively within Palisade Avenue (Figure 2). The total area of potential effect (APE) measures 0.96 acre.

The results of Tetra Tech's archaeological documentary study are presented in this report, prepared by Robert Jacoby, M.A., RPA. Section 2.0 presents a review of available information on environmental setting, geology, soils, and prehistory pertinent to the Project location. Section 3.0 presents the results of a site visit performed August 21, 2018 to evaluate archaeological sensitivity at the Project location. Section 4.0 presents results of the documentary study and provides recommendations for construction management.

2.0 Background Review

Tetra Tech reviewed available data bases, pertinent literature, and historic cartography to evaluate the archaeological sensitivity of the Project location, and its potential to contain previously unrecorded prehistoric period archaeological remains.

2.1 Environmental Setting

Geology and Soils

The Project area is situated within the southernmost section of the New England Uplands physiographic province, a region of undulating hilly topography with well-graded to steep drainage valleys. Bedrock geology at the Project consists of Inwood marble, a heavily folded crystalline metamorphic formation derived from marine sediments and dating to the lower Ordovician to lower Cambrian periods, approximately 475 to 540 million years before the present (Baskerville 1992). The Project vicinity has been subject to at least three major glacial advances during the Pleistocene epoch, judging by the presence of

sheered bedrock outcroppings, glacial erratics, and glacial grooves on exposed bedrock surfaces (Sanders and Merguerian 1994:139). Mapped soil units at the Project site consist of Riverhead loamy coarse sand with 8-15 percent slopes and Riverhead loamy coarse sand with 15-25 percent slopes (NRCS 2018). The pump station is situated at approximately 60 feet above mean sea level (amsl) and is about 515 feet east of the Hudson River. The southern end of the Project is at 140 feet amsl. There are no mapped drainages within the Project APE.

Late Pleistocene and Holocene Climate, Vegetation, and Fauna

Researchers in the northeastern United States have inferred many characteristics of ancient climates and vegetation regimes and their durations from lakebed sediment cores (Deevey 1939, Davis 1969, Sirkin and Minard 1972). Lines of evidence drawn from these cores, including pollen assemblages, sediment stratigraphy, radiocarbon dates, and soil chemistry, indicate that climate shifts have occurred on the millennial, century, and decadal order throughout the Holocene epoch. Although broadly congruent across the region, climate patterns show considerable local variation along latitudinal and elevational gradients (Menking et al 2012, Oswald et al. 2007). In the aftermath of glacial retreat, local landscapes were dominated by cold-adapted herbaceous and shrub species in tundra-like conditions. The first appearance of boreal trees (spruce) in the region is reported around 12,290 ± 440 BP, followed by a rapid expansion of boreal forests of spruce, birch, alder, and fir (Petee et al. 1990). Increased warming resulted in the appearance of a mixed deciduous-boreal forest, including the introduction of oak (Menking et al. 2012:53).

Warm, droughty conditions prevailed for the next three thousand years to circa 8700 BP, with oak and hemlock dominating mid-latitude forests and a concomitant decline of boreal conifers (Menking et al. 2012:54). Succeeding intervals of wetter and dryer conditions lasted on the order of several hundred to more than one thousand years through the mid-Holocene (circa 7000-4000 BP). During this period, forest composition began to show zonal differentiation, with oak, hickory and chestnut dominating lowland forests, and hemlock and beech prevalent on uplands (Oswald et al. 2007:909-910). Borings in the Hackensack Meadowlands reveal the establishment of freshwater marsh by 5800 BP, an indicator of rising sea level, warming temperatures, and increased precipitation (Thieme 2003:174). Marsh sediments in southeastern New York State reflect a warm-dry interval between about 1200 to 700 BP that appears to be responsible for an increase in hickory and pine and a decline of oak (Pederson et al. 2005:245). Other significant climate shifts during the past millennium include the 200-year warming interval known as the Medieval Warming Period (circa AD 950 to 1250), the 300-year cooling interval known as the Little Ice Age (circa AD 1418 to 1697), and the current episode of global warming since around AD 1900 that most researchers link to anthropogenic activities.

The late Pleistocene environment provided important habitats for large mammals and other game potentially significant for human subsistence. Pleistocene megafauna, including mastodon, giant beaver, fossil bear, and northern species like fox, seal, moose and caribou, inhabited southeastern New York State and northern New Jersey (Funk 1972:11; Ritchie 1980:10-11; Marshall 1982:18). Faunal remains from the Dutchess Quarry Caves 1 and 8 in Orange County, New York, include caribou, flat-headed peccary, and giant beaver (Lothrop and Bradley 2012:36), and numerous mastodon remains have been found elsewhere in Orange County. By the close of the late Pleistocene, most of these megafauna genera had become extinct. The reasons for their extinction have been the subject of much speculation, centering on over-hunting by humans (Haynes 2013), climate change (Graham and Lundelius 1984; Boulanger and Lyman 2014), or a combination of the two (Grayson 2008). As late Pleistocene climate ameliorated, tundra and parkland boreal

forests were replaced by closed oak-dominated forests, caribou habitat in the northeast declined and caribou were eventually replaced by white-tailed deer (Marshall 1982:18).

Glacial retreat and sea level rise allowed rapid colonization of streams and lakes by fish during the terminal Pleistocene. Sediment cores from a pond in western New Jersey contained scales of Atlantic salmon, sunfish, yellow perch, and white sucker, from sediment dating between 12,260 and 9230 ¹⁴C yr BP (Daniels and Peteet 1998:470). A sharp and prolonged decline in the rate of sea level rise after 6000 BP led to the establishment of stable riverine conditions conducive for anadromous fish (e.g. shad, alewife, sturgeon) and catadromous eel to populate coastal and inland streams from Chesapeake Bay circa 4500 (Dent 1995:211) to southern New England circa 5000 BP (Banks 2000:211). Stable estuarine habitats around this time promoted the establishment and growth of shellfish communities (Bernstein 1993:47-50; Dent 1995:204).

Modern Climate

The combination of industry, commerce and urban growth has greatly reduced the list of extant flora and fauna in the Project area. Terrestrial fauna is limited to commensal species, including the Norway rat, squirrel, deer and skunk. Native large mammals (e.g., wolf, bear, elk) and economically important fur-bearing mammals (e.g., mink, fox, beaver, otter) were common in the Project area in the seventeenth century but have long been extirpated from the region (Wacker 1975:23, 34). The most common modern aquatic species resident in the Hudson River include white perch, striped bass, bay anchovy, American shad, alewife, and large-mouth bass, among others (PCL 2008).

The modern climate of the Project area is characterized by warm, humid summers and moderately cold winters. New York City's Central Park weather station registers a mean temperature of 76.5 °F in July and 32.6 °F in January. For the period 1980-2009, Central Park received mean annual precipitation of 49.5 inches. Recorded maximum and minimum precipitation for New York was 80.6 inches in 1983 and 26.1 inches in 1965 (NWS 2018).

2.2 Prehistoric Period Contexts

Paleoindian Period (11,000 to 8000 BC)

The earliest peopling of the study area occurred within a few thousand years after final retreat of the Laurentide ice sheet from the region, although precise timing of initial human settlement is uncertain. Varve counts from Lake Hackensack deposits indicate that northern New Jersey was ice-free circa 16,000 BC (Stanford 2010:56-57), with the Hudson River valley near present-day Albany ice-free some four thousand years later (Stanford 2010:59). The earliest securely dated Paleoindian site in the region, the Shawnee-Minisink site on the upper Delaware River, was occupied around 10,900 BC [10,937±15 ¹⁴C BP] (Gingerich 2013a:238-240). Aside from Shawnee-Minisink, there are no well-dated Paleoindian sites in the Middle Atlantic region. Paleoindian sites have been reported on Staten Island, including the Port Mobil site which contained several fluted points manufactured from non-local material and small scrapers made from locally-sourced glacial cobbles (Kraft 1986:43). Most Paleoindian finds in the region take the form of isolated fluted points.

Early Archaic Period (8000 to 6000 BC)

The adaptive strategies of groups during the Early Archaic period was more a continuation of established late Paleoindian broad-spectrum subsistence practices than a dramatic shift to new routines. Bands remained nomadic but appear to have exploited more restricted territories than their Paleoindian

predecessors, making more repetitive visits to fewer strategic locations (Anderson 2013). Biface technology shows significant modifications from Paleoindian forms, adding hafting notches to basal, corner or side positions, with blades often exhibiting serrated or beveled edges. Notched points, such as Thebes, Big Sandy, Palmer, and Kirk types, are found widely distributed east of the Mississippi River (Justice 1987). The addition of ground-stone implements to toolkits suggests that nuts and seeds had become an important component of Early Archaic diets. There are few recorded Early Archaic period sites in the lower Hudson Valley and Long Island Sound.

Middle Archaic Period (6000 to 4000 BC)

The Middle Archaic period roughly corresponds with an extended warm and dry interval during the mid-Holocene. This climatic trend established the oak-chestnut forest as the dominant vegetational cover in the region, although excessive drought conditions probably introduced grassland prairies to some inter-drainage uplands (Sassaman 2010:23). Whether tied to this environmental shift or independent of it, biface technology markedly changed from notched to stemmed forms at the onset of the Middle Archaic and include Morrow Mountain and Stanley stemmed varieties from the southeast and Stark and Neville points from New England (Justice 1987). This change of form in bifacial tools may reflect stylistic variations introduced by in-migrating groups, or a technological adaptation to a shifting resource base, or both.

Fishing and shell fishing are seen in the archaeological record toward the latter part of the Middle Archaic, as sea level rise slowed, and estuaries and riverine habitats stabilized. In the lower Hudson River, early shell middens have radiocarbon dates of circa 5170 to 4900 BC, coeval with Neville point horizon (Schaper 1989:16; Claasen 1996:104). While it appears unlikely that shellfish (or fish) had become a specialized focus of Middle Archaic subsistence, resident populations were nonetheless aware of these resources, and capable of exploiting them. The Middle Archaic is poorly represented in the region. The Dogan Point site on the lower Hudson River in Westchester County, New York, contained a basal Middle Archaic deposit of Neville points, dating roughly to 5000 BC (Claasen 1995:131).

Late Archaic Period (4000 to 1000 BC)

The Late Archaic period is characterized by increased population (as inferred by larger and more numerous sites), the onset of long-distance trade networks, and an increased focus on riverine settings for site locations. Ceremonialism grew in importance, with more elaborate, formalized burial practices and the presence of exotic raw materials as symbols of enhanced status and rank (Fiedel 1992).

Extensive shellfish middens appeared in the lower Hudson River and lower Delaware River during this period, and freshwater shellfish were probably exploited along the Raritan River and other inland drainages (Claasen 1996; Kraft 1986:78). Shell harvesting in the lower Hudson River was intensively practiced from around 3500 to 2000 BC (Claasen 1996:104). Claasen speculated that large shell middens, like those found along the lower Hudson Valley, may have fostered colonization by native plants that were of economic interest to local groups, including sumpweed, goosefoot, and gourd/squashes, encouraging scheduled visits to these locales (Claasen 1996:105). This type of scheduled visit to exploit certain high value resources may have involved forays of task groups from an aggregated base camp located nearby. Small Late Archaic period sites have been identified on Davids Island in Long Island Sound (Tetra Tech 2009), on upland near the Hutchinson River in southern Westchester County, and at the north end of Riverdale Park in the Bronx.

Early Woodland Period (1000 BC to AD 250)

The Early Woodland period marks the inception of widespread ceramic vessel use amidst a general decline in site numbers and population density across the Eastern Woodlands. Population decline may have been in response to climatic cooling that adversely affected game numbers and flora availability, or to epidemic disease (Fiedel 2001). If populations did decline at the onset of the Early Woodland period, then it is likely that the trade and alliance networks established during the Late Archaic had fragmented, disrupting steatite supply lines, and fostering its replacement with more easily obtainable clay. Ceramic technology, known but dismissed for almost a millennium in the Middle Atlantic region, was seemingly adopted to continue Late Archaic lifeways during a period of demographic and cultural crisis. Only later, did pottery's advantages (its portability, storage capability, and capacity to be shaped into many forms and designs), begin to transform cultural patterns in important ways. Evidence of Early Woodland occupations are generally absent from the Project vicinity.

Middle Woodland Period (AD 400 to 900)

The Middle Woodland period marks the appearance of the first truly large shellfish middens in southern coastal New England and Long Island (Bernstein 1993). Cross noted that shell fishing along the New Jersey coast had become a major economic enterprise during this period (1956: 194). During this period, settlement patterns have a decidedly riverine and coastal focus (Kraft 1986:105-107, Williams and Thomas 1982:122).

Trade and exchange networks flourished during the Middle Woodland, especially in areas influenced by the Hopewell tradition in the Midwest and Ohio Valley. Some Hopewellian manifestations are visible in western New York in the form of mortuary practices and artifact types of the Squawkie Hill Phase (Ritchie 1980:214-227), and while there is little evidence of this in the Hudson Valley, there are suggestions that Middle Woodland groups utilized down-the-line exchange in both directions; mid-Atlantic coast shells have been found in the Ohio Valley, and Hopewell-like platform pipes occasionally appear in the east (Stewart 1989:60-63; Stewart 1998:170-171).

Late Woodland Period (AD 900 to 1600)

Important cultural adaptations during the Late Woodland period have been archeologically recognized on a wide scale in New Jersey, and include the tending of cultigens (maize, beans, and squash), decrease in residential mobility, and use of the bow and arrow as a new and highly efficient hunting (and warring) weapon. These adaptations are perhaps all related to the region's population rise, with increased competition for resources and an intensification of local ethnic identity.

Maize agriculture was adopted by many Eastern Woodlands groups as their principal subsistence strategy between AD 900 to 1100, but its adaptation was not uniform especially in the Middle Atlantic and New England regions (Fritz 1990). Colder climate and a shorter growing season in the northeast may have proven sub-optimal for the eight-row maize that was grown effectively in the southeast and lower Midwest. Abundant fish and shellfish resources along coastal and estuarine environments may have lessened the need and desire to shift to an unpredictable labor-intensive subsistence strategy based on maize cultivation. Although some evidence of maize production dating to circa AD 990 was identified in the mid-Hudson Valley and from AD 1250 on the Housatonic River in Connecticut (Cassedy and Webb 1999), most researchers suggest that maize was not cultivated in coastal New York until as late as AD 1500, or even after initial European contact (Ceci 1990; Lavin 1988). The study area likely supported minimal maize horticulture during the Late Woodland period.

Contact Period (AD 1500 to 1700)

European mariners visited the northeast coast during the sixteenth century lured by furs, fish and other trade items. While employed by the Dutch East India Company to search for a northwest passage to Asia, the English mariner Henry Hudson sailed along the New Jersey coastline in 1609 and made the first reported contact with Native Americans in New Jersey. He noted friendly encounters with people living along the Hudson River but demonstrated an ambivalence toward them that came to characterize mutual relationships between Euro-Americans and Native Americans:

“They appear to be a friendly people, but have a great propensity to steal, and are exceeding adroit in carrying away whatever they take a fancy to” (Hudson cited in Johnson 1995:116).

Groups that Hudson and other Europeans encountered in the lower Hudson Valley were Algonquian speakers and generally divided between bands of Munsee west of the river and Mahican and Wappinger to the east.

In 1612 the Dutch established a fort on Manhattan Island to trade for furs with groups upriver. Two years later the Dutch established Fort Orange on the Hudson River near present day Albany, opening trade with the Mahican and Mohawk groups, and in 1621 formed the Dutch West India Company to regulate the increasingly profitable economic relations between settlers and Native Americans. During this period, French inroads to the St. Lawrence valley and English settlement of New England introduced intense trade competition among the three European powers in North America and exacerbated existing hostilities among Native American groups and between Euro-Americans and Native Americans (Taylor 2001).

The focus of the fur trade was in the upper Hudson Valley, involving Iroquois and Mahican groups and to interior Pennsylvania and the Ohio Valley with the Susquehannocks, and it is in these areas that abundant amounts of European goods are found in Contact period sites (Kraft 1989).

2.3 Property Specific Historic Context

The tax parcel occupied by the 235th Street Pump Station (Block 5929, Lot 1) has been partitioned from two former great estates of the colonial and early federal periods. The Manor of Philipseburg, extending from Spuyten Duyvil to the Croton River, was the estate of the Philipse family from the 1670s to the end of the Revolutionary War (Shonnard and Spooner 1900:156). The manorial system was a highly centralized pattern of land ownership and tenancy, resulting in largely self-sufficient estates that were ruled in a manner akin to a feudal lord. Within the manor, tenants cleared and farmed areas of level terrain, forming the settlements of Spuyten Duyvil, Kings Bridge, Riverdale, Yonkers, and Tarrytown. Frederick Philipse, the third and last lord of the manor, was stripped of his property by the New York State Legislature after the American Revolution because of his Tory sympathies (Atkins 1894:13).

The Van Cortlandts were a large and prominent family in New York, who began acquiring large tracts in Westchester County in the seventeenth century. Several family members intermarried with the Philipses, joining together various portions of the two estates (Reynolds 1914:1402). From 1768 to 1788, Frederick Van Cortlandt, the scion of one such Van Cortlandt-Philipse alliance, purchased land between Spuyten Duyvil and Riverdale that includes the Project Area. The property passed to Frederick’s brother Augustus and his heirs, from whom James R. Whiting acquired the parcel in 1836. In 1841, William C. Wetmore and two associates purchased Whiting’s property (Scharf 1886:759). Wetmore’s portion of the property was a long and narrow parcel extending eastward from the Hudson River to Tibbets Brook, and included the

current Project Area (Figure 3). William C. Wetmore was a wealthy and well-connected real-estate lawyer, who supported the candidacy of Stephen A. Douglas for president (*NY Times* May 23, 1860, p. 1) and testified before Congress about the sale of property to the U.S. Army (*NY Times* June 4, 1858, p. 1). The Wetmore family lived nearby in Fordham, the Bronx, and it appears from cartographic reviews that the Wetmore tract contained no residential structures during their ownership through the end of the nineteenth century. The Hudson River Railroad acquired a right-of-way along the river through Wetmore’s parcel in 1849.

By the early twentieth century, most of what was to become Riverdale Park was owned by a few wealthy families and was still largely undeveloped. Beginning in 1942, efforts to restrict residential development in the area led to the transfer of deeds to New York City, and its maintenance by the Parks Department (DeCarlo 1985:31).

The 1947 topographic quadrangle (USGS 1947) depicts the Project area minus all tree cover. Tree clearance of non-parkland in New York City for lumber, fire wood, and development was largely complete by the mid-nineteenth century; where the absence of development allowed re-growth, tree clearance may have occurred multiple times. Each cycle of tree clearance on these moderate to steep slopes lessened the likelihood that archaeological deposits, if present, would retain integrity and contain any significant information value.

2.4 Recorded Archaeological Sites

The New York State Historic Preservation Office maintains an online database of recorded archaeological sites in the state, the Cultural Resources Information System (CRIS). A review of CRIS identified three recorded prehistoric period archaeological sites located within one mile (1.6 km) of the Project area (Figure 1; Table 1).

Table 1. Recorded Prehistoric Archaeological Sites within One Mile of Project

Site #	Site Name	Site Description	Direction and Distance from Project	NRHP Status
00501.000068	Flake Site	Unattributed lithic scatter	North: 4,300 ft	Undetermined
00501.000069	Woodland Shell Midden Site	Late Woodland shell midden with lithic scatter	Southwest: 385 ft	Undetermined
00501.000072	-	Late Archaic lithic scatter and mid- to late-19 th century dump	North: 190 ft	Undetermined

The three recorded sites occupy the same general environmental and topographic landscape as the Project area, a narrow zone of wooded, moderate slopes overlooking the Hudson River to the west. No determinations of NRHP status have been established for the three archaeological sites. The nearest NRHP-listed archaeological site (00501.000073) is located approximately 5,350 feet north of the Project area. These sites were recorded during the 1987 Riverdale Park Archaeological Project survey (Boros 1989). The area immediately adjacent to the Project APE is illustrated as Study Area 1 in DeCarlo (1985; Figure 2). A series of archaeological studies at the Chapel Farm Estate Property, located approximately 6,000 feet

northeast of the Project Area, identified a locus of lithic debris interpreted to be prehistoric period quartz quarries and quartz tool workshops (Table 2). These finds, however, were determined to be highly disturbed by historic period landscaping, and thus were recommended as not eligible for NRHP listing. None of these quartz locales are mapped on CRIS. There has been no previous archaeological survey conducted within the Project APE.

Previous archaeology reports in the Riverdale vicinity were searched utilizing LPC's website. This search identified 15 records, as listed in Table 2 by title, abstract, author, date, and LPC Bibliography Identification number (Biblio ID). The most relevant report in terms of proximity to the Project is Boros 1989 (Biblio ID 1713 - *Riverdale Park Archaeological Project Collection User Guide*) which presents rather limited information on Sites 000069 and 000072 (see Table 1). These archaeological sites are the apparent reference to "the Riverdale Site" made in LPC's comments dated September 11, 2018, regarding Tetra Tech's initial report submittal (Section 8). A second report filed at LPC (DeCarlo 1985 - Biblio ID 34 - *Riverdale Park Archaeological Project Draft Report: Documentary Research & Field Strategy for New York City Department of Cultural Affairs and New York City Department of Parks and Recreation*) presents a proposal for survey in Riverdale Park that surrounds the Project Area, but makes unspecific and unmapped references to prehistoric sites identified along the Riverdale Park ridgeline. As a point of clarification, there is no archaeological resource named "Riverdale Site" referenced in these or other LPC reports nor in the CRIS online database.

At the time that the referenced documents were prepared, the 235th Street Pumping Station, Palisade Avenue roadway, and water and sewer lines along Palisade Avenue were existing. The 1985 report shows the 235th Street Pumping Station and Palisade Avenue in Figure 2 of the report and references sewer easements and pipes in the report's Site Description narrative. Several sites within the Riverdale Park Archaeological Project Study Area were identified, although none have been determined NRHP-eligible or potentially eligible. No sites were identified within the Project area of the pumping station APE nor along Palisade Avenue.

Table 2. Records Identified in the Riverdale Vicinity Utilizing LPC's Website

Title	Abstract	Author	Date	LPC Biblio ID
Stage IA Revised Cultural Resources for Chapel Farm II, Riverdale, New York	Project on the Chapel Farm II site between Fieldston Road, 253 Street, 250 Street and Iselin Avenue in Riverdale, Bronx. This report, prepared to assess the potential for archaeological sites, summarizes the history and prehistory of this area of Riverdale. The researchers conclude that the project area has a high potential for prehistoric and 19th century sites and archaeological testing is recommended.	City/Scape,Cultural Resource Consultants	June 1990	30
Cultural Resource Investigation Stage 2 and Quarry Investigation Survey, For: Chapel Farms II, Riverdale, New York.	Project on the proposed site of the Chapel Farm Estate bounded by Fieldston Road, 253 Street, 250 Street and Iselin Avenue in Riverdale, Bronx. The report details archaeological testing and research conducted on the project area that revealed a prehistoric quartz quarry and workshop- the first site of its kind in New York State. Further archaeological research is recommended to better understand this quarry site and the role it may have played in the prehistory of Riverdale.	City/Scape,Cultural Resource Consultants	March 1993	31
Riverdale Park Archaeological Project Draft Report: Documentary Research & Field Strategy, For: New York City Department of Cultural Affairs and New York City Department of Parks and Recreation. NCEQR	Project at Riverdale Park bounded by 254th Street, 232rd Street and Palisade Avenue in Riverdale, Bronx. This preliminary report examines the history of the area and the local environment beginning with the Archaic prehistoric period. It is concluded that the site has a high potential to yield historic and prehistoric deposits including the remnants of an 19th century lime kiln and 19th century dwellings. Further archaeological testing is recommended, and the suggested excavation methods are outlined.	DeCarlo, Valerie	1985	34
Archaeological Data Recovery Excavation Report Frances Schervier Home and Hospital, 2975 Independence Avenue, Borough of the Bronx, New York. For: Franciscan Health System Of New York, Inc.	Project at the Frances Schervier Home and Hospital in Riverdale, Bronx between Independence Avenue, Henry Hudson Park, Palisade Avenue, West 231st. Report on further archaeological excavations of the previously identified Revolutionary Fort I built in 1776. While researchers were unable to find any archaeological evidence of how the British occupation from 1777-1781 impacted the site, they were able to identify the architectural properties of the Fort including the construction techniques that were used.	Greenhouse Consultants, Inc.	1997	42

Table 2. Records Identified in the Riverdale Vicinity Utilizing LPC's Website (Cont.)

Title	Abstract	Author	Date	LPC Biblio ID
Archaeological/Historical Sensitivity Evaluation, Washington/Bathgate Urban Renewal Area	Project at the Frances Schervier Home and Hospital in Riverdale, Bronx between Independence Avenue, Henry Hudson Park, Palisade Avenue, West 231st. Report on further archaeological excavations of the previously identified Revolutionary Fort I built in 1776. While researchers were unable to find any archaeological evidence of how the British occupation from 177-1781 impacted the site, they were able to identify the architectural properties of the Fort including the construction techniques that were used.	Greenhouse Consultants, Inc.	1997	43
Historical / Archaeological Sensitivity Evaluation, Yeshiva of the Telshe Alumni, Campagna Mansion	Project on the Campagna Mansion for the Yeshiva of the Telshe Alumni between 249th street and Independence Avenue in Riverdale, Bronx. The report examines the extensive prehistory and history of the area including the 17th century arrival of European settlers and the 19th century annexation to New York City following the rapid population growth brought by the new railroad. Archaeological testing is recommended to identify, in particular, prehistoric sites and the remains of 19th century dwellings like the Pyne Russell House.	Greenhouse Consultants, Inc.	1998	45
Chapel Farm II, Bronx, New York, Cultural Resource Investigations Stage II. For: Robert Kahn, Kahn Associates.	Project on the prehistoric site at Chapel Farm II in Riverdale, Bronx. Previous excavations recovered prehistoric stone tools that date to the Late Archaic, but the project area had been too disturbed to date for certain. Researchers conclude that because of this disturbance it is unlikely that further excavation will yield any significant information; the report includes a review and summary of the excavations.	Historical Perspectives, Inc.	1991	64/65
Stage 1A Archaeological Assessment, Russian Federation Housing	Project in Riverdale, Bronx, between Mosholu Ave, Fieldston Ave, and W. 255th Street. While the presence of a quartz vein in the project area suggests that the site may have been important in the prehistoric period, extensive construction in the 20th century makes it unlikely prehistoric deposits were preserved. Archaeological testing is recommended, though, in those areas for which there is no record of modern construction activity.	Historical Perspectives, Inc.	1995	71

Table 2. Records Identified in the Riverdale Vicinity Utilizing LPC's Website (Cont.)

Title	Abstract	Author	Date	LPC Biblio ID
Chapel Farm Estate, Riverdale, Bronx County, New York, Field Investigation and Geological Reconnaissance.	Project on the Chapel Farm Estate in Riverdale, Bronx. Report investigates the potential prehistoric quartz quarry and tool production site on the Estate grounds. Included in the report are a detailed comparison of the Chapel Farm site to other prehistoric quarry sites in New England and an in-depth exploration of the geology of the project area. Further archaeological testing is recommended for the site's potential to elucidate previously under explored aspects of prehistoric life and tool production.	LaPorta Associates,	1993	82
An Evaluation of Prehistoric Cultural Resources at The Chapel Farm Estate Property, Bronx, New York.	Final report on archaeological excavations conducted on the Chapel Farm Estate in Riverdale Bronx. The report provides a summary of previous research on the site and provides an analysis and review of these previous studies' findings. Researchers conclude that the site was in fact a prehistoric quartz quarry where the beginning stages of stone tools were produced. Unfortunately, 19th and 20th century construction on the site make it impossible to definitely determine further details about the quarry (i.e. time period) and no further archaeological testing is recommended. The site's findings do solidify, though, the importance of the Bronx as a prehistoric source of quartz.	Sheffield Archaeological Consultants,	1994	97_A
An Evaluation of Prehistoric Cultural Resources at The Chapel Farm Estate Property, Bronx, New York.	Final report on archaeological excavations conducted on the Chapel Farm Estate in Riverdale Bronx. The report provides a summary of previous research on the site and provides an analysis and review of these previous studies' findings. Researchers conclude that the site was in fact a prehistoric quartz quarry where the beginning stages of stone tools were produced. Unfortunately, 19th and 20th century construction on the site make it impossible to definitely determine further details about the quarry (i.e. time period) and no further archaeological testing is recommended. The site's findings do solidify, though, the importance of the Bronx as a prehistoric source of quartz.	Sheffield Archaeological Consultants,	1994	97_B

Table 2. Records Identified in the Riverdale Vicinity Utilizing LPC's Website (Cont.)

Title	Abstract	Author	Date	LPC Biblio ID
Phase 1B Archaeological Field Testing, Yeshiva of the Telshe Alumni, Campagna Mansion Site, Bronx, NY	Project at 640 West 249th street, the Yeshiva of the Telshe Campagna Mansion, at the corner of Independence Avenue and West 249th Street in Riverdale, Bronx. Archaeological excavations conducted on the surrounding grounds of the New York City Landmark did not yield any historically significant deposits as the land had been heavily disturbed by construction over time; no further archaeological testing is recommended.	Historical Perspectives, Inc	2006	956
Riverdale Park Archaeological Project Collection User Guide	Description of the collection's organization	Laurie Boros et al	1989	1713
Phase 1A Archaeological Assessment Hebrew Home at Riverdale, Bronx County, New York	Project area unlikely to contain intact archaeological resources.	VHB	2016	1727

2.5 Review of Disturbance of Current Station and Related Improvements

Based on a review of construction documents obtained from DEP dated October 1963 for the construction of the pumping station and force main along Palisade Avenue, it was confirmed that the current improvements were constructed closely in accordance with actual records (Figures 4 and 5). The area disturbed for the construction of the station was approximately 75 feet x 70 feet which coincides with the current station. The station extends approximately 35 feet below grade as a cast-in-place concrete structure containing: wet-well; pump room with pumps, piping, and valves; and, an electrical room with electrical controls and distribution equipment. The building extends approximately 25 feet above grade, including access to the main roof. The area around the structure was surveyed. Utility yard piping was located and identified throughout the site including: pipes, valves, sewer manholes, and storm water structures located at the site and along Palisade Avenue. Presumably the piping, etc. was installed as part of the original construction in the late 1960's. The area encompassed by the existing pump station fence line and the Palisade Avenue roadway required excavation for the construction of the improvements, based on a review of available records.

3.0 Site Visit

A Tetra Tech staff archaeologist conducted a pedestrian reconnaissance of the Project on August 21, 2018 to evaluate the Project area's overall archaeological sensitivity. Archaeological sensitivity is a measure of a location's likelihood of containing intact archaeological deposits from which important archaeological or historical information may be obtained. An essential element of sensitivity assessment is the identification

of prior ground disturbances that may have adversely affected soil strata that could potentially contain archaeological deposits.

The 235th Street pump station, built in 1966, is situated on the valley wall at about 8 to 12 percent slope. The elevational difference between the southeastern and northwestern corners of the station property is approximately 10 feet, requiring the facility to have been constructed upon a partially raised platform of fill, probably consisting of a combination of rock and soil. Reconnaissance of the terrain around the fenced pump station revealed a somewhat hummocky ground surface, with the occasional presence of small, angular boulders (Photographs 2 and 3; Figure 2). Presently, both sides of Palisade Avenue are thickly wooded. Observations of trees common to the Project vicinity include, black cherry, black locust, tulip poplar, and silver maple; understory vegetation was predominantly wild grape and jewel weed.

The uneven appearance of the local ground surface and the presence of boulders that are not associated with bedrock outcroppings strongly suggests a history of landscape modification and recontouring at the pump station facility. Similarly, construction of Palisade Avenue appears to have incorporated grading modifications on the valley slope (Photograph 4). The installation of existing utilities beneath Palisade Avenue has likely significantly disturbed any potential archaeological remains present under the roadway. Observations of tree types and age indicate secondary growth over the past 50 years after periods of prior tree clearance. Each of these various processes of terrain modification (tree clearance, pump station construction, road construction) likely affected the integrity of potential culture-bearing soil strata within the Project APE.

4.0 Conclusions and Recommendations

4.1 Conclusions

Review of available documentary sources, actual records, and a pedestrian reconnaissance of the Project APE were conducted to evaluate the archaeological sensitivity of the APE. The review and reconnaissance indicate that previously unrecorded Native American archaeological remains are unlikely to be present within the Project APE.

The APE within the limits of the property boundary consists entirely of the existing pump station, constructed on moderate slope that was graded and filled; it is anticipated that no previously unrecorded Native American archaeological remains of a significant nature would be present here.

The APE adjacent to the pump station boundary, excluding work in Palisade Avenue, will comprise reconstructing, in-place, the existing concrete sidewalk along the west side of Palisade Avenue north of the pump station; it is anticipated that no previously unrecorded Native American archaeological remains will be affected by this work.

The APE for the proposed new 20-inch force main and new 4-inch water line will require the excavation of a trench beneath Palisade Avenue. The trench will be 3 to 4 feet in depth and will generally follow the path of the existing 3-inch water line and run parallel to the existing force main and combined sewer lines. Previous construction of Palisade Avenue and installation of utilities beneath the roadway are likely to have significantly disturbed soil strata containing any archaeological remains that may have been present.

4.2 Recommendations

No further archaeological investigations are recommended.

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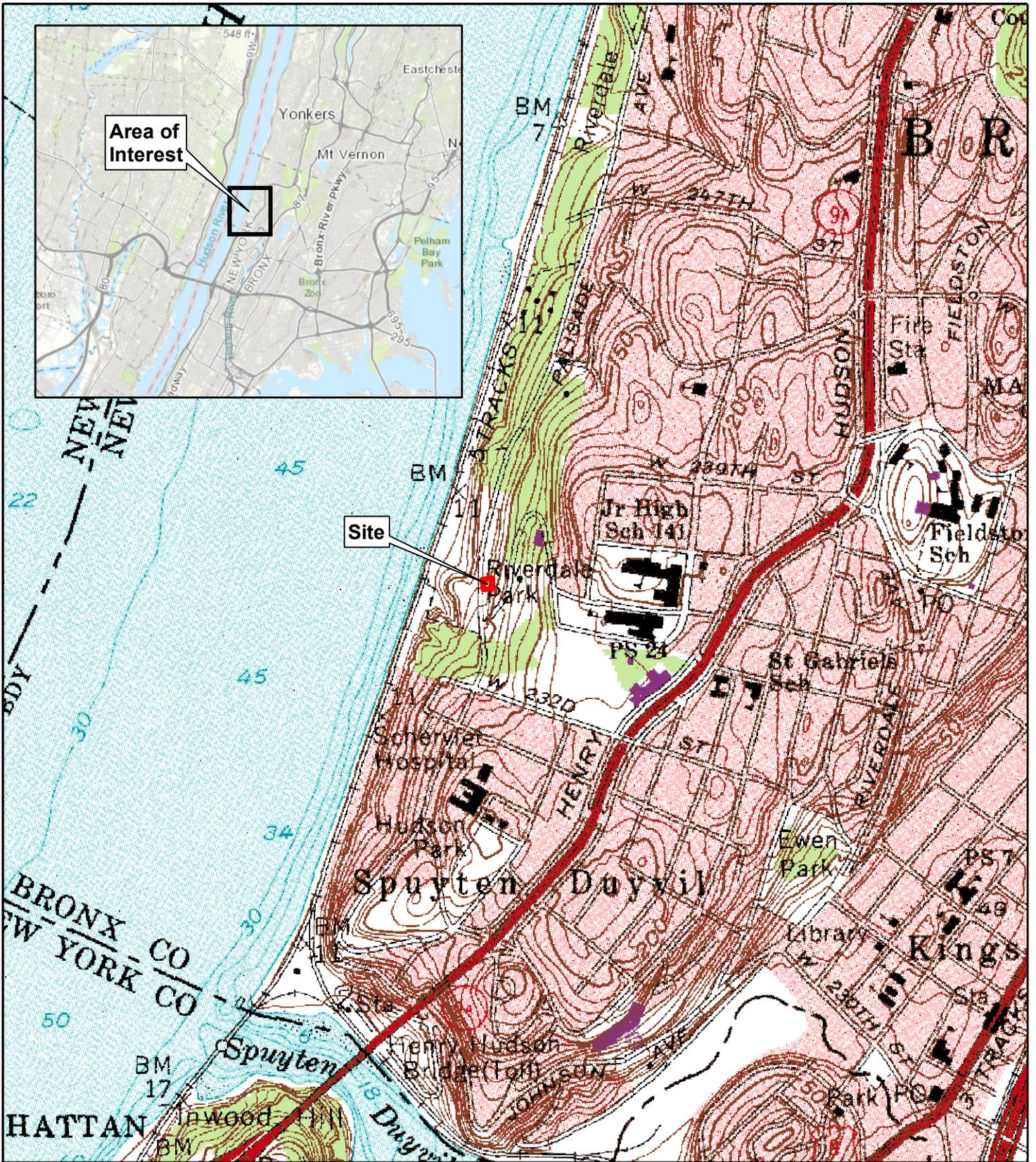
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6.0 FIGURES



Source: USGS Topo 7.5 Minute Topographic Quadrangle; Yonkers

LEGEND

Site

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Feet

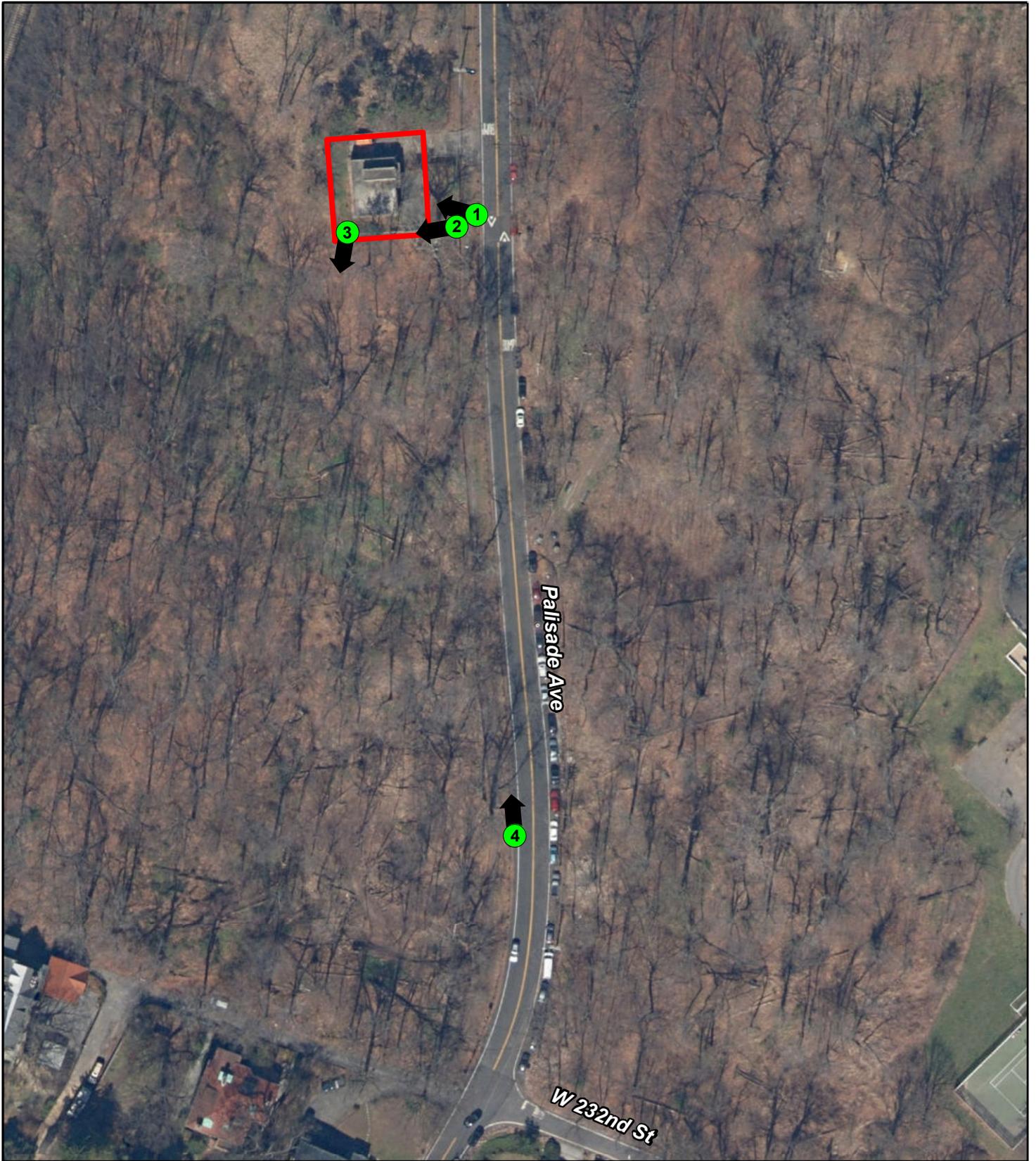
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NEW YORK CITY ENVIRONMENTAL PROTECTION
 BUREAU OF ENGINEERING DESIGN AND CONSTRUCTION
 CONTRACT PS-313 RECONSTRUCTION OF 235th STREET PUMPING STATION

SITE LOCATION MAP

FIGURE 1

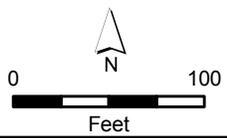
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Source: ESRI World Imagery; Bronx County 2016

LEGEND

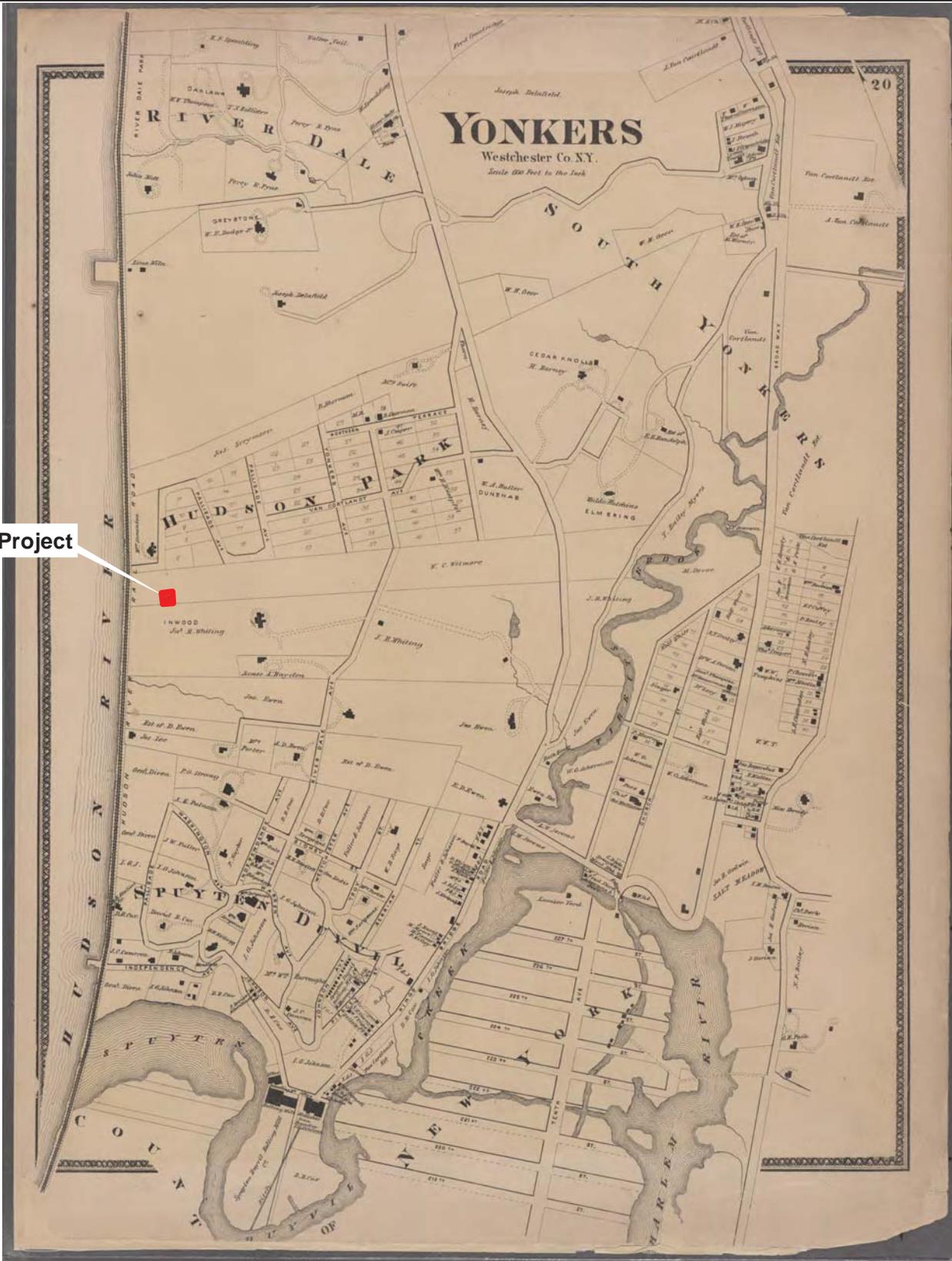
-  Photo Location and Direction
-  Project



NEW YORK CITY ENVIRONMENTAL PROTECTION
 BUREAU OF ENGINEERING DESIGN AND CONSTRUCTION
 CONTRACT PS-313 RECONSTRUCTION OF 235th STREET PUMPING STATION
 90% DESIGN SUBMITTAL SHOWING PHOTO
 LOCATIONS AND DIRECTIONS

FIGURE 2

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Project



O:\Projects\New York\1543772\00-154377-16001\GISMAPS\Figure 3 and Figure 4\Fig 3_yonkers.ai[danielle.armstrong 9/24/2018]

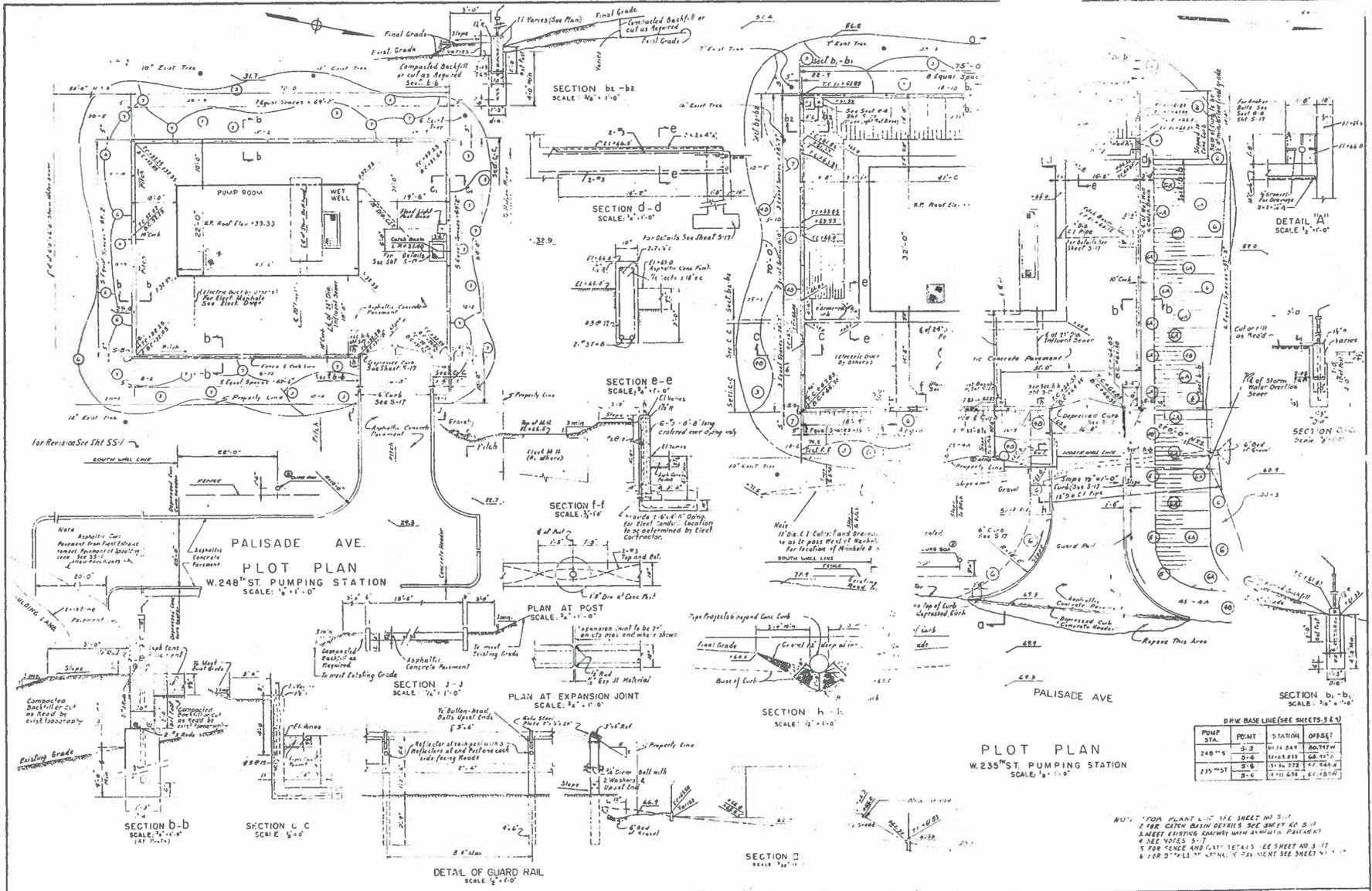
Source: Beers 1868

LEGEND
 Project



NEW YORK CITY ENVIRONMENTAL PROTECTION
 BUREAU OF ENGINEERING DESIGN AND CONSTRUCTION
 CONTRACT PS-313 RECONSTRUCTION OF 235TH STREET PUMPING STATION
 Historic Map of Yonkers, NY
 depicting Project location

FIGURE 3

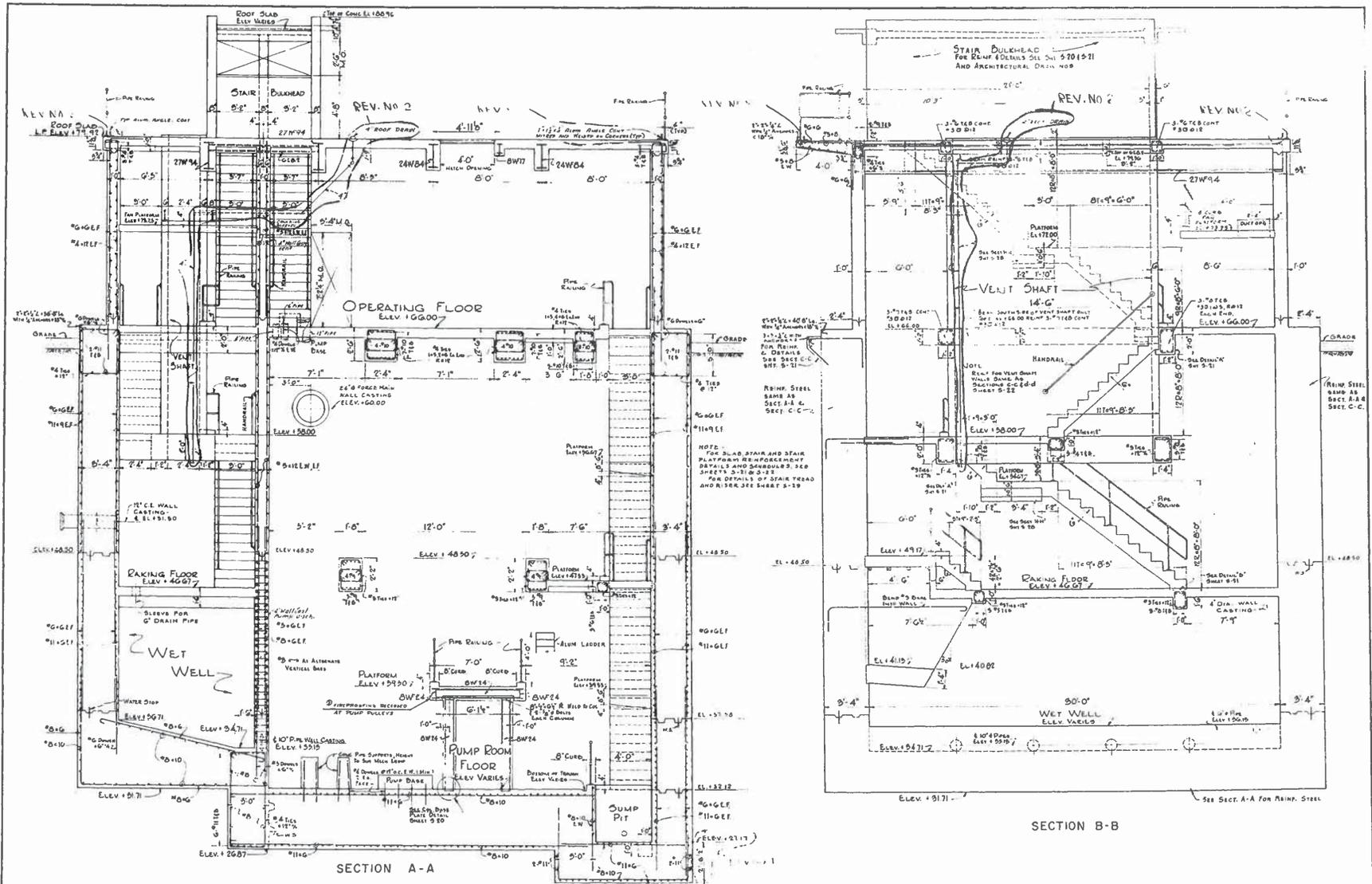


REVISIONS 1. 10/1/1963 2. 10/1/1963 3. 10/1/1963 4. 10/1/1963 5. 10/1/1963 6. 10/1/1963 7. 10/1/1963 8. 10/1/1963 9. 10/1/1963 10. 10/1/1963	SCALE 1/4" = 1'-0" @ AS SHOWN	CONTRACT NO. 6 STRUCTURES AND EQUIPMENT PUMPING STATIONS FORCE MAINS & INTERCEPTING SFWERS WEST 248 TH ST & WEST 235 TH ST PLOT PLANS - SECTIONS & DETAILS	DATE OCT 1963 SHEET 1997 S-18 OF 38
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Not to Scale

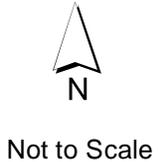
NEW YORK CITY ENVIRONMENTAL PROTECTION BUREAU OF
 ENGINEERING DESIGN AND CONSTRUCTION CONTRACT PS-313
 RECONSTRUCTION OF 235TH STREET PUMPING STATION
 WEST 248TH ST & WEST 235TH ST PUMP
 STATION — PLOT PLANS
TETRA TECH FIGURE 4

LEGEND



REVISIONS NO. DATE DESCRIPTION APPR.	SCALE 1/4" = 1'-0"	RECORD DRAWING CONTRACTOR'S NAME: NADCO PW-103 WARDS ISLAND POLLUTION CONTROL PROJECT EXTENSION RIVERDALE 2ND STAGE	CONTRACT NO 6 - STRUCTURES AND EQUIPMENT PUMP/VG STATIONS, FORCE MAINS & INTERCEPTING SEWERS WEST 235TH STREET SECTIONS	DATE: OCTOBER 1963
				SHEET: S-27 OF 38

LEGEND



NEW YORK CITY ENVIRONMENTAL PROTECTION BUREAU OF
 ENGINEERING DESIGN AND CONSTRUCTION CONTRACT PS-313
 RECONSTRUCTION OF 235TH STREET PUMPING STATION

WEST 235TH ST PUMP
 STATION — SECTIONS A-A B-B

FIGURE 5

7.0 PHOTOGRAPHS



Photograph 1. 235th Street Pump Station. View to west.

Photographer: R. Jacoby Date: August 21, 2018



Photograph 2. Terrain adjacent to 235th Street Pump Station. View to west.

Photographer: R. Jacoby Date: August 21, 2018



Photograph 3. Terrain adjacent to 235th Street Pump Station showing scattered boulders on surface. View to southwest.

Photographer: R. Jacoby Date: August 21, 2018



Photograph 4. Location of proposed 20-inch force main along Palisade Avenue. View to north.

Photographer: R. Jacoby Date: August 21, 2018

8.0 AGENCY CORRESPONDENCE



ENVIRONMENTAL REVIEW

Project number: DEPT. ENVIRONMENTAL PROTECTION / LA-CEQR-X
Project: 235 ST. PUMPING STATION RECONSTRUCTION
Address: PALISADE AVENUE, **BBL:** 2059290001
Date Received: 8/3/2018

No architectural significance

No archaeological significance

Designated New York City Landmark or Within Designated Historic District

Listed on National Register of Historic Places

Appears to be eligible for National Register Listing and/or New York City Landmark Designation

May be archaeologically significant; requesting additional materials

LPC review of archaeological sensitivity models and historic maps indicates that there is potential for the recovery of remains from Native American occupation on the project site. Accordingly, the Commission recommends that an archaeological documentary study be performed for this site to clarify these initial findings and provide the threshold for the next level of review, if such review is necessary (see CEQR Technical Manual 2014).

Gina Santucci

8/9/2018

SIGNATURE
Gina Santucci, Environmental Review Coordinator

DATE

File Name: 33557_FSO_DNP_08082018.doc

ARCHAEOLOGY

Project number: DEPT. ENVIRONMENTAL PROTECTION / 16DEP099X
Project: 235 ST. PUMPING STATION RECONSTRUCTION
Address: PALISADE AVENUE, **BBL:** 2059290001
Date Received: 9/5/2018

This document only contains Archaeological review findings. If your request also requires Architecture review, the findings from that review will come in a separate document.

No archaeological significance

Designated New York City Landmark or Within Designated Historic District

Listed on National Register of Historic Places

Appears to be eligible for National Register Listing and/or New York City Landmark Designation

May be archaeologically significant; requesting additional materials

Comments: The LPC is in receipt of the, "Phase IA Archaeological Documentary Study 235th Street Pump Station Reconstruction Riverdale, New York," prepared by Tetra Tech and dated August 2018. This report needs the following revisions:

- (1) The report should discuss the Riverdale Site which is adjacent to the project site http://s-media.nyc.gov/agencies/lpc/arch_reports/1713.pdf and consider other relevant archaeological reports in the area which can be found on LPC's website;
- (2) The historical context discussion should be particular to project the site and not to the broader region- and involve more historical research than checking maps (which we note were reviewed for LPC's initial review);
- (3) The report should include a discussion about the disturbance of the construction of the current station that is based on actual records and not just a walk-over;
- (4) Reports that are submitted to LPC are public- and, thus, the notice at the bottom of all pages stating, "contains privileged information- do not release," must be removed;
- (5) Finally, Tetra Tech is not on LPC's list of qualified archaeological contractors. Please submit information about the firm so we can verify their qualifications.



9/11/2018

SIGNATURE
Amanda Sutphin, Director of Archaeology

DATE

File Name: 33557_FSO_ALS_09112018.doc

APPENDIX A

Archeologist Credentials

REPORTING ARCHEOLOGIST

Mr. Robert Jacoby

Experience Summary

Over 35 years of experience as an archaeologist. Responsibilities have included supervision of archeological research projects involving historic, prehistoric, and urban resources. Preparation of technical reports and artifact analyses for diverse public clients including, U.S. Army, U.S. Navy, NJ Department of Transportation, Delaware Department of Transportation, Vermont Agency of Transportation, U.S. Federal Bureau of Prisons, and General Services Administration, and private clients including Equitrans, Invenergy, NextEra Energy, CPV Energy, and Ridgeline Energy, among others. Eight years of experience as geoscience specialist. Responsibilities have included perimeter air monitoring, soil and ground-water sampling, well monitoring, and third-party oversight. Clients have included TransCanada, ConEd, Keyspan, Chemtura, National Grid, Foster Wheeler, U.S. EPA, PSE&G, and City of New Rochelle, New York.

Education

MA, Historic Preservation, Goucher College, 2009
BA, Anthropology, Northwestern University, 1976

Certification

Registered Professional Archaeologist, # 17249

Training

30-Hour OSHA Construction Safety and Health Training; 2008
40-Hour OSHA Hazardous Waste Health and Safety Training; 2003
8-Hour Annual Refresher for OSHA HAZWOPER Training; 2018
American Red Cross Adult CPR; 2017
American Red Cross First Aid Basics; 2017
DOT/IATA Hazardous Materials Training; 2017
GPS Mapping; 2001
National Park Service PEPC; 2010
OSHA Supervisor Training; 2008
Trenching and Excavation Safety; 2004
Wind 101; 2008

Corporation Project Experience

Archaeologist, June-August 2018

Pine Gate Renewables LLC, PGR Solar Projects, Phase I Archaeological Survey, Providence and Washington counties, Rhode Island

Principal Investigator for Phase I archaeological assessments and investigations of five solar projects. Supervised records review, SHPO consultation, field survey, and reporting of results and recommendations. RI SHPO concurred with recommendations of No Effects to historical properties.

Archaeologist, April-June 2018

Summit Ridge Energy LLC, Solar Projects, Cultural Assessment and Phase I Survey, Illinois (four counties)

Principal Investigator for archaeological assessment of 20 solar projects in LaSalle, Lee, Madison, and Mason counties, and Phase I investigations of two solar projects in Lee County. Supervised records review, SHPO consultation, field survey, and reporting of results and recommendations. IL SHPO concurred with recommendations of No Effects to historical properties.

Archaeologist, Jan-April 2018

Glenn Springs Holdings, Inc., Remedial Design Lower 8.3 Miles of the Lower Passaic River, Operable Unit 2, Essex, Hudson, Bergen and Passaic counties, New Jersey, Phase IA Terrestrial Archaeology Study

Developed and authored prehistoric context and sea-level rise implications for Phase IA archaeological study for the Remedial Design Lower 8.3 Miles of the Lower Passaic River, Operable Unit 2 of the Diamond Alkali Superfund Site.

Archaeologist, December 2014–Present

Equitrans, Mountain Valley Pipeline Project, Phase I Archaeological Survey and Phase II Site Evaluations, Virginia (six counties)

Principal Investigator and Field Supervisor for Phase I and II archaeological investigations of 107-mile natural gas pipeline in Giles, Craig, Montgomery, Roanoke, Franklin and Pittsylvania Counties, Virginia. Conducted background research, field investigations, artifact analysis and report preparation. Assisted client in identifying and avoiding significant cultural resources in Piedmont, Blue Ridge Mountains and Appalachian Mountains settings. Investigations were conducted across 4,500 acres of private tracts, and federal tracts contained within Jefferson National Forest and the Blue Ridge Parkway. Co-author of 20 project reports. As of August 2017, the project identified 146 archaeological sites, excavated over 35,000 shovel tests, and conducted 50 Phase II investigations.

Archaeologist, August 2017

DONG/Eversource, Bay State Wind Offshore Wind Project, Rhode Island and Massachusetts

Conducted a cultural resources sensitivity assessment for two terrestrial cable route alternatives extending 25 miles in the towns of Little Compton and Tiverton, Rhode Island, and the city of Fall River, Massachusetts. Authored the report.

Archaeologist, May–June 2017

National Grid, Granite State Power Link, New Hampshire and Vermont

Conducted a cultural resources sensitivity assessment of the proposed Monroe Converter Station site, located in the Town of Monroe, Grafton County, New Hampshire, and the Norton Converter Station site, located in the Town of Norton, Essex County, Vermont. Authored the reports.

Archaeologist, April–June 2017

U.S. Army Corps of Engineers, Philadelphia District. Phase IA Cultural Resources Investigation, Beneficial Use of Dredged Material, for the Delaware River, Delaware Bay Coast, Delaware.

Conducted a Phase IA cultural resources investigation for eight proposed locations of dredge spoils along the Delaware Bay coastline. The investigation included a site file review, background research, and assessment of archaeological sensitivity. Co-authored the report.

Archaeologist, October 2014

U S Army Corps of Engineers, Philadelphia District, Phase IA Cultural Resources Investigation of Proposed Flood Control Detention Basins, Montgomery County, PA

Principal Investigator for Phase IA cultural resources investigation for 11 proposed flood control detention basins. Conducted background research, site file search, literature and historic map review for evaluation of archaeological sensitivity. Recommended Phase IB shovel testing program at 9 of 11 proposed basins. Co-authored report (in progress).

Archaeologist, March-September 2014

NTE Ohio LLC, Phase I Archaeological Survey and Phase II Archaeological Testing, Butler County, Ohio

Principal Investigator for Phase I archaeological survey and Phase II archaeological testing of proposed gas turbine power facility. Supervised research design, fieldwork, artifact analysis and report preparation. The Phase I survey investigated 75 acres through pedestrian reconnaissance and shovel testing, identified three prehistoric archaeological sites, and recommended one site as potentially NRHP-eligible. The Phase II testing of Site 33BU1071 recovered diagnostic stone tools from Early Archaic, Middle Archaic Late Archaic, Early Woodland, and Late Prehistoric periods, and excavated three pit features. The site was determined to be not eligible for NRHP listing. The Phase I and II work totaled \$125,000.

Archaeologist, March-May, 2014

Apex Clean Energy, Phase I Archaeological Survey, Vermilion County, IL

Principal Investigator for Phase I archaeological survey of proposed wind energy development. Supervised research design, field survey, and report preparation.

Archaeologist, November 2013–Present

National Grid, Phase IA Cultural Resources Assessment and Background Research, Energy Highway, NY

Field Lead for cultural resources assessment team for proposed 140-mile electric transmission line re-build across 8 counties in New York State. Lead agency is FERC. Conducted background research, site file search, literature and map review, and developed archaeology sensitivity model to organize Phase IB Work Plan. Report in progress. Co-authored report.

Archaeologist, October 2013

Dominion Resources, Inc., Phase I Archaeological Survey, Virginia Offshore Wind Technology Advancement Project, Virginia Beach, VA

Principal Investigator for Phase I archaeological survey of 28-acres for proposed demonstration project of offshore wind energy development. Lead agency is Dept. of Interior Bureau of Ocean Energy Management (BOEM). Supervised research design, field survey, and report preparation.

Archaeologist, September-December 2014

NextEra Energy Resources, Critical Issues Analyses, Wind Prospecting Project, Texas, Michigan, Massachusetts, Kentucky, Pennsylvania, Georgia

Conducted critical issues analyses for 21 proposed wind energy developments in six states utilizing available online data sources and SHPO archives.

Archaeologist, July 2013

New Hampshire Transmission LLC, Background Research and Cultural Resources Inventory, SeaLink HVDC Transmission Cable, Essex County and Suffolk County, MA

Principal Investigator for terrestrial segment of proposed HVDC transmission cable project, under review by FERC. Conducted background research, site file review, pedestrian reconnaissance, and developed archaeological sensitivity model for 16 miles of preferred and alternative routes, and 8-acre substation. Authored report.

Archaeologist, May–August 2013

Carroll County Energy LLC, Electric Power Generation Facility, Phase I background Research and Field Survey, Carroll County, OH

Principal Investigator for proposed electric power generation facility, encompassing 240 acres. Project under review by Ohio Power Siting Board. Developed archaeological research design, conducted literature and site file review, supervised field survey, and authored report. Coordinated consultations between Ohio Historic Preservation Office, Tt, and client.

Archaeologist, April–May 2013

Central Hudson Gas & Electric, Transmission Line Rebuild, Phase I Background Research and Field Survey, Dutchess County, NY

Principal Investigator for 2.4-mile transmission line re-build archaeological field survey. Developed archaeological research design, supervised field survey, and authored report. Project under review by New York State Public Service Commission. SHPO concurred with Tt report recommendations.

Archaeologist, April–November 2012

U.S. Army Corps of Engineers-Fort Worth District, Camp Swift Range Complex Remedial Investigation/Feasibility Study, Bastrop, TX

Archaeologist for unexploded ordnance RI/FS at former Camp Swift. Developed archaeological research design, sensitivity mapping, and provided cultural resources oversight. Project investigated 93 locations of potential UXO, comprising 15 acres.

Archaeologist, July 2012

US Environmental Protection Agency, Crown Cleaners, Herrings, NY

Archaeologist for Phase IB archaeological survey of Superfund Site, located along Black River. Recorded previously undocumented prehistoric archaeological site and identified site boundaries, allowing project proponent to fence off sensitive area and proceed with project clean-up without costly Phase II investigations.

Archaeologist, June 2012

Central Hudson Gas & Electric Corp., SC & KB Transmission Line Project, Phase IA Cultural Resources Investigation, Dutchess County, NY

Archaeologist for Phase IA cultural resources investigation for proposed transmission line upgrade. Project reviewed by New York State Public Service Commission.

Archaeologist, September 2011

CPV Cimarron Renewable Energy Company, LLC, Cimarron Wind Energy Project, Gray County, KS

Archaeologist for Phase II archaeological survey. Surveyed area comprised 58 acres.

Archaeologist, July–August 2011

NextEra Energy Resources, Honey Creek Wind Energy Center, Crawford and Seneca Counties, OH

Field Director for Phase I archaeological survey and author of survey report. Surveyed area comprised 203 acres. Project under review by Ohio Power Siting Board.

Archaeologist, May–June 2011

Invenergy LLC, Hardin Wind Farm, Hardin County, OH

Principal Investigator for Phase I archaeological survey and author of survey report. Conducted SHPO consultations and coordinated survey activities with Invenergy. Survey area comprised 70 acres. Project under review by Ohio Power Siting Board.

Archaeologist, April 2011

CPV Cimarron Renewable Energy Company, LLC, Cimarron Wind Energy Project, Gray County, KS

Archaeologist for Phase II archaeological survey. Surveyed area comprised 654 acres.

Archaeologist, November–December 2010

NextEra Energy Resources, Ensign Wind Resource Area, Gray County, KS

Field Director for Phase II archaeological survey, and lead author of survey report. Surveyed area comprised 669 acres.

Archaeologist, September–October 2010

Ridgeline Energy, LLC, Rockland Wind Energy Project, Power County, ID

Team leader of Class III archaeological survey for proposed wind energy development. Surveyed area comprised 1,480 acres

Archaeologist, August 2010

NextEra Energy Resources, Ensign Wind Resource Area, Gray County, KS

Team member for archaeological survey for proposed wind energy development.

Archaeologist, June–July 2010

CPV Ashley Renewable Energy Company, LLC, Ashley Wind Farm, McIntosh County, ND

Team member for Class III archaeological survey for proposed wind energy development. Surveyed area comprised 780 acres.

Archaeologist/Field Director, April 2010

Invenergy LLC, Hardin Wind Farm, Hardin County, OH

Field Director of Addendum Phase I archeological survey for Hardin Wind Farm. Incorporated Addendum into Project Report.

Archeologist/Field Director, October 2009–January 2010

Invenergy LLC, Hardin Wind Farm, Hardin County, OH

Principal Investigator of Phase I archeological survey for Hardin Wind Farm. The survey identified 40 prehistoric archeological sites. Authored report; Ohio Historic Preservation Office concurred with Tt report recommendations.

Cultural Resource Specialist, September 2009

U.S. Army Corps of Engineers, Public Involvement Plan, Former Camp Swift, TX

Developed Public Involvement Plan (PIP) to keep the local community informed of progress in the Remedial Investigation/Feasibility Study at former Camp Swift in Bastrop County, Texas.

Cultural Resource Specialist, April–June 2009

Invenergy LLC, Hardin Wind Farm, Hardin County, OH

Cultural Resource Lead for literature review and site visit to assist with permitting of proposed Hardin Wind Farm. Developed archeological sensitivity model for proposed project area.

Archeologist, October–November 2008

Horizon Wind LLC, Alabama Wind Farm, Genesee County, NY

Field Director of Phase IB archeological investigation of work areas associated with proposed Alabama Ledge Wind Farm. Coordinated lab procedures and analysis for archeological artifacts. Contributed to preparation of draft report.

Oral Historian, April 2007–November 2008

U.S. Army Corps of Engineers, New York District, Fort Slocum Historic and Archeological District, Davids Island, New Rochelle, Westchester County, NY

Developed, coordinated, and conducted Oral History Program to document the experiences of individuals associated with Fort Slocum as members of the armed forces, spouses or children of garrisoned servicemen, or civilian employees. Draft report written and submitted April 2008. As of June 2008, had conducted interviews with 30 individuals associated with former Fort Slocum. Draft report revisions in progress.

Archeologist, June–September 2008

Horizon Wind LLC, Jericho Rise Wind Farm, Franklin County, NY

Archeological Field Director for Phase IB archeological investigation of work areas associated with proposed Jericho Rise Wind Farm. Coordinated lab procedures and analysis for archeological artifacts, and contributed to draft report preparation.

Cultural Resource Specialist, April–September 2008

U.S. Army Corps of Engineers, New York District, Fort Slocum Historic and Archeological District, Davids Island, New Rochelle, Westchester County, NY

Conducted inventory of remaining cultural features and historic vegetation on Davids Island-Fort Slocum. Contributing author of draft Historic Landscape report.

Archeologist/ Cultural Resource Specialist, January–May 2008.

U.S. Army Corps of Engineers, New York District, Fort Slocum Historic and Archeological District, Davids Island, New Rochelle, Westchester County, NY

Contributed to preparation of historical documentation of 100 buildings on Davids Island-Fort Slocum.

Archeologist, January 2007–Present

U.S. Army Corps of Engineers, New York District, Fort Slocum Historic and Archeological District, Davids Island, New Rochelle, Westchester County, NY

Reviewed laboratory operations and assisted report preparation for a Phase IB archeological survey in a 78-acre historic district on Davids Island in Long Island Sound. The district, which is eligible for the National Register of Historic Places, encompasses over 100 buildings, structures, and landscape features comprising the former Army post of Fort Slocum (active 1862-1966), along with a Register-eligible prehistoric Native American site. Investigations took place over two field seasons in autumn 2005 and in autumn 2006. Had direct responsibility for quality assurance review of artifact analysis, coding, database construction, and artifact curation and conservation. Coordinated regularly with in-house graphics personnel and project director. Contributing author of full field investigation report. Coordinated report production for the Historical Documentation of Buildings; also assisted in QA/QC of draft report.

Archeologist/Cultural Resource Specialist, September 2007–January 2008

U.S. Army Corps of Engineers, Chatfield Reservoir Storage Reallocation Feasibility Report/Environmental Impact Statement (FR/EIS), Denver, CO

Reviewed archeological investigations and recorded sites in vicinity of project area, and authored cultural resources sections for FR/EIS.

Archeologist/Cultural Resource Specialist, August–October 2007

Central Hudson Gas & Electric Corporation, Cultural Resources Investigation of the WM Transmission Line Rebuild Project, Orange County, NY

Archeological team member for a Phase IB archeological investigation of work areas associated with the proposed construction and replacement of transmission line. Coordinated lab procedures for archeological artifacts, and assisted in preparation of report.

Archeologist/Cultural Resource Specialist, June–July 2007

Central Hudson Gas & Electric Corporation, Cultural Resources Investigation of the CL Transmission Line Rebuild Project, Orange County, NY

Archeological team member for a Phase IB archeological investigation of work areas associated with the proposed construction and replacement of transmission line. Coordinated lab procedures for archeological artifacts, and assisted in preparation of report.

GPS Technician, May 2006

Horizon Wind, LLC, Wetland Delineation of the Marble River Wind Farm, Clinton County, NY

Responsible for GPS data collection for wetland delineation of wind turbine, interconnect, and transmission line locations for the proposed Marble River Wind Farm in Clinton County, New York.

Archeologist/Cultural Resource Specialist, March 2006

West Hill Windpower, LLC, Cultural Resource Investigations of the West Hill Wind Farm, Towns of Stockbridge, Smithfield and Lincoln, Madison County, NY

Archeological team member in Phase IA assessment of wind turbine and roads, interconnects and transmission lines.

Archeologist, February–April 2006

U.S. Army, Fort Dix: Brindle Lake Dam Replacement Project, Plumsted Township, Ocean County, NJ

Archeological team member for a Phase I-II archeological investigation of work areas and access roads associated with the proposed replacement of a low earth dam on Fort Dix Military Reservation.

Participated in surface survey, shovel testing, and unit excavations. Investigated one portion of Site 28-OC-152, a nineteenth-twentieth century house site once occupied by a sawmill operator. Assisted in preparation of final report.

Archeologist, December 2005–April 2007

U.S. Army, Picatinny Arsenal: TACOM_ARDEC-Applied Research Center, Dover, Morris County, NJ

Archeological team member for Phase IB survey of a 20-acre construction site on a major armaments laboratory and military installation. Performed subsurface survey of proposed location of high-tech office park and recreational facilities. Coordinated closely with team responsible for removal of unexploded ordinance (UXOs). Assisted in preparation of Phase IB draft report, and responses to client comments on Phase II draft report.

Archeology Lab Director, August 2005–November 2005

United States Army Corps of Engineers, Davids Island/Fort Slocum Project, New Rochelle, NY

Archeology Lab Director responsible for analysis of over 6,000 artifacts and creation of digital database. Assisted in the supervision of field-work, and in the preparation and write-up of technical report. Analysis contributed to completion of project on-time and on-budget.

Previous Experience

Louis Berger Group, Inc.

Field Supervisor, 1990-2005

December 2002 – May 2004, New Jersey Turnpike Authority, Potters Field Disinterment/ Reinterment, Secaucus, NJ

Supervised an 80-person crew in the disinterment of 4,571 graves at Snake Hill Cemetery. Co-authored project report.

March 2002, General Services Administration, Erie Federal Courthouse Site, Erie, PA

Supervised construction monitoring at nineteenth century urban block in downtown Erie. Co-authored project report.

February 2002, Narragansett Bay Commission, Central Wharf Site, Providence, RI

Supervised Phase II study of sediments and archeological deposits. Co-authored project report.

October 2001 – November 2001, National Park Service, Prince William Forest park Archeological Inventory, Prince William County, VA

Supervised reconnaissance and testing of prehistoric and historic sites within 17,000-acre national park.

August 2000 – November 2000, Vermont Agency of Transportation, U.S. Route 7 Mainline Reconstruction, Rutland County, VT

Supervised archeological survey and testing of proposed 17.1-kilometer section of highway. Co-authored project report.

October 1997-September 1998, Delaware Department of Transportation, Puncheon Run Site, Kent County, DE

Supervised testing and data recovery of multi-component prehistoric site. Co-authored project report.

Publications & Presentations

Jacoby, Robert M. 2009. Legal Challenges, Cultural Traditions and Preservation Strategies for Historic Rural Churches in Northwestern New Jersey. M.A. thesis, Goucher College.

Jacoby, Robert M. and Gerard Scharfenberger. 2004. Archaeology, Compliance and the Section 106 Process. *Environmental Law In New York* 15(9):179-183.

Jacoby, Robert M. 2000. Prey Selection and Prehistoric Settlement in the Susquehanna Valley: A Test of Protein Residue Analysis. *The Journal of Middle Atlantic Archaeology* 16:97-115.

Jacoby, Robert M. and Gerard Scharfenberger. 2005. *Religious Aspects of the Snake Hill Potter's Field, Secaucus, New Jersey*. Paper presented at the Society for Historical Archaeology Conference Annual Meeting, York, England.

Jacoby, Robert M. 2004. *Tales of a Grave Undertaking: The Intersection of Law, Tradition, and Archaeology at a Potter's Field*. Paper presented at the Society for American Archaeology Annual Meeting, Montreal, Quebec.

Jacoby, Robert M. 1998. *Inland Fisheries and Prehistoric Settlement Patterns in the Susquehanna River Valley: A Protein Residue Analysis*. Paper presented at the Middle Atlantic Archaeological Conference Annual Meeting, Harrisburg, PA.

Jacoby, Robert M. 1993. Diachronic Changes in Subsistence Patterns Along the Susquehanna River: A Functional Analysis of Features at Site 36PE45. Paper presented at the Society for American Archaeology Annual Meeting, St. Louis, MO.

SUPERVISING ARCHEOLOGIST

Dr. Sydne Marshall

Experience Summary

Dr. Marshall has over 34 years of experience in the investigation and management of cultural resources including archeological and architectural properties. She serves as Cultural Resources Discipline Lead, responsible for evaluating technical requirements of projects and assisting project managers in addressing cultural resources issues on their projects. Her technical responsibilities include performing NHPA Section 106 review studies, developing National Register of Historic Places nominations for significant historic properties, designing and implementing field investigations, performing peer reviews of staff and subcontracted deliverables, providing environmental input to engineers, and developing project impact assessments. Management activities include project management, responsibility for technical work completed by staff and subcontractors, and coordination of cultural resources studies with multidisciplinary environmental analyses. Dr. Marshall has more than 20 years of experience as a Community Relations Specialist. Responsibilities include a full range of community relations activities associated with numerous USEPA Superfund sites, USACE Installation Restoration Programs (IRPs), USFWS and commercial client projects.

Education

PhD, Anthropology, Columbia University, 1981
MPhil, Anthropology, Columbia University, 1975
MA, Anthropology, Columbia University, 1974
BA, Anthropology, The American University, 1972

Registrations/Certifications

Registered Professional Archaeologist, Earned 8/6/85

Training

24-Hour Federal Bureau of Investigation Location of Human Remains Training Course; 1991
40-Hour OSHA Hazardous Waste Health and Safety Training; 1986
8-Hour OSHA Hazardous Waste Health and Safety Refresher Course; 2013
8-Hour OSHA Hazardous Waste Health and Safety Supervisor Training; 2013
Environmental Review and Compliance for Natural Gas Facilities; Federal Energy Regulatory Commission; 2013

Corporation Project Experience

Cultural Resources Lead, 2017–Present

Glenn Springs Holdings, Inc., Remedial Design – Lower 8.3 Miles of Lower Passaic River, OU2 of Diamond Alkali Superfund Site, Essex, Hudson, Bergen and Passaic Counties, NJ

Lead for cultural resources program to assist EPA in demonstrating substantive compliance with ARARs including Section 106 of National Historic Preservation Act. Cultural resources tasks include consultation with NJ Historic Preservation Office, and performance of studies to address potential Project effects to terrestrial archaeology, aboveground cultural resources, and marine archaeology. Area of potential effects includes 8.3 river miles shore to shore of Passaic River, upland areas where facilities will be constructed to process dredged river sediment, and proximal areas where the Project may affect National Register of Historic Places –listed and eligible properties

Community Outreach Specialist, 2017–Present

UGI Utilities, Inc., Communication Management Support Services - UGIU COA MGP Program, PA

Community Outreach Co-Lead supporting a program of community outreach activities related to UGIU's consent order and agreement with Pennsylvania Department of Environmental Protection for

26 former manufactured gas plant (MGP) sites in Pennsylvania. Tasks include development of a variety of general and site-specific documents including fact sheets, frequently asked questions, glossary of terms, and letters to landowners to set up meetings and gain access to properties for UGI environmental site investigations. Tetra Tech also provides direction to six UGI subcontractors who approach landowners directly as UGI representatives for upcoming environmental site investigations.

Cultural Resources Lead, September 2014–Present

Equitrans, LP, Mountain Valley Pipeline Project (MVP), WV and VA

Cultural resources lead for this 300-mile, 42-inch-diameter natural gas pipeline. The project is a joint venture of Equitrans, LP with NextEra Energy Resources. Cultural resources support includes consultation with the State Historic Preservation Offices in WV and VA, development of scopes of work for archaeology studies and historic architecture studies and overseeing the implementation of these scopes, Native American outreach, and consultation with the US Forest Service–Jefferson and Washington National Forests and the National Park Service–Blue Ridge Parkway Unit. Work is performed in compliance with the state guidelines of WV and VA and guidelines of the Federal Energy Regulatory Commission (FERC). Tetra Tech staff will develop Resource Report 4, as required by FERC, based on the results of all studies performed. Also participated in 14 community outreach meetings throughout the Project area.

Community Outreach Lead, 2014–Present

Equitrans, LP–Mountain Valley Pipeline Project, WV and VA

Working with Equitrans, LP and NextEra Energy Resources staff to arrange for and participate in 14 Community Open House meetings throughout areas near the proposed Mountain Valley Pipeline Project. Preparation for the meetings involved collaboration with the joint venture partners in developing banners, and the arranging for community outreach meetings. Tetra Tech staff also attended the meetings, set up displays and information stations, collected comments from the public, and maintained the mailing list and comment input and MVP responses for the Project. Newspapers notices of the meetings were also drafted and placed in local newspapers.

Cultural Resources Lead, 2015–Present

U.S. Coast Guard, Port Delfin LNG Third-Party EIS, LA

Cultural resources lead for a third-party EIS prepared as part of an environmental review of the Port Delfin Deepwater Port license application. The Project consists of four moored floating liquefied natural gas vessels (FLNGVs), two existing offshore natural gas pipelines, and four new pipeline laterals connecting the existing pipelines to each of the FLNGVs. The Project is proposed within the West Cameron Area, Gulf of Mexico, offshore Louisiana.

Cultural Resources Lead, 2014–2017

PennEast Pipeline Company, LLC., Third-Party EIS, PennEast Pipeline, PA and NJ

Cultural resources lead for this Third-Party EIS written under direction of the Federal Energy Regulatory Commission in compliance with NEPA and Section 106 of the National Historic Preservation Act. Project comprises 120 miles of 36-inch diameter natural gas pipeline. Cultural resources issues addressed numerous rural historic districts, archaeological sites, aboveground resources eligible or listed in the National Register of Historic Places, and many concerns expressed by local stakeholders regarding cultural resources Project impacts.

Cultural Resources Lead, 2017

U.S. Army Corps of Engineers U.S. Army Corps of Engineers, Philadelphia District, Phase I Cultural Resources Investigation, Bloomsbury Dam Removal Cultural Resources Investigation, NJ

Lead cultural resources specialist and Project Manager for this review of potential effects to archeological and aboveground cultural resources that may result from the implementation of plans to remove the Bloomsbury Dam from the Musconetcong River, Bloomsbury, Hunterdon County and Greenwich Township, Warren County, New Jersey. Field tasks included archaeological and historic architectural surveys. A report was provided for review by both the U.S. Army Corps of Engineers and the New Jersey Historic Preservation Office.

Cultural Resources Lead, 2017

U.S. Army Corps of Engineers U.S. Army Corps of Engineers, Philadelphia District, Phase IA Cultural Resources Investigations, Beneficial Use of Dredged Material for the Delaware River, Delaware Bay Coast, DE

Lead cultural resources specialist and project manager for study of potential effects of dune and berm construction from dredged material to provide coastal storm damage reduction at eight beaches in the state of Delaware along the Delaware Bay Coast. The project involved cultural resources file reviews; research of archaeology, historic community development (including consideration of historic architecture), and research related to shoreline changes over time; assessment of the archaeological sensitivity of areas to be affected; and recommendations for further research. Report produced was provided for review and comment to the U.S. Army Corps of Engineers and the Delaware State Historic Preservation Office.

Cultural Resources Lead and Project Manager, 2014–2015

U.S. Army Corps of Engineers, Philadelphia District, Phase IA Cultural Resources Investigation, PA

Lead cultural resources specialist and Project Manager for this review of 11 proposed detention basins to be constructed throughout the Tookany Creek Watershed. Cultural investigations included both archaeology and historic architecture. Project involved background research, field observations, and analysis of data collected.

Cultural Resources Lead, October–December 2014

PARS Environmental, Inc., Cultural Resources Support to Thomas A. Edison NHP Chemical Survey, NJ

Served as lead cultural resources specialist. As subcontractor to a WBE/MBE/SBE/DBE Certified Company, Tetra Tech's role was to provide cultural resources guidelines to the PARS Environmental Team of chemists who would inventory chemicals associated with the Thomas A. Edison National Historic Park and advise the National Park Service of those items that should have disposal priority. The items inventoried were remaining in the NHP, now a publicly accessed museum, since the time with Thomas Edison and his staff were actively performing experiments in his lab at the site in West Orange, NJ. Tetra Tech developed protocols that would be followed during the handling of museum artifacts that contained chemicals to be inventoried and provided training prior to the commencement of the inventory work.

Cultural Resources Lead, 2014–2015

Columbia Gas Transmission Company, Tri-County Bare Steel Replacement Project Third-Party EA, PA

Cultural resources lead for this Third Party EA Project. Responsibilities include identification of data gaps, development of data requests, review of all filed cultural resources reports and correspondence, and development of cultural resources sections of the Federal Energy Regulatory Commission (FERC) EA.

Cultural Resources Lead, 2014–2015

Clean Line, Inc., Plains & Eastern Transmission Line Third-Party EIS, TN, AR, OK, TX

Assisted in writing and reviewing cultural resources sections for this third-party EIS developed for the Department of Energy. The Project involves a transmission line proposed to traverse sections of TN, AR, OK, and TX.

Cultural Resources Lead, 2014

Crawford Environmental Services, Route 40 Easton, New York Spill Remedial Action, NY

Cultural resources lead. Assisted in consultation with NY State Historic Preservation Office (SHPO). Prepared data package that demonstrated the extreme disturbance created in an area where an emergency response cleanup was performed in a wetland area prior to obtaining a permit from the U.S. Army Corps of Engineers.

Project Manager, March 2013–2014

Columbia Gas Transmission Company, East Side Expansion Project Third-Party EIS, NY, PA, NJ, MD

Project manager for third-party Environmental Assessment of project that includes approximately 17 miles of natural gas transmission pipeline in PA and NJ, modification of an interconnect facility in NY, upgrades to two compressor stations in PA, installation of additional piping and valves in at another compressor station in PA, and modification to a compressor station mainline valve setting at a compressor station in MD. Responsibilities included working directly with FERC staff to review applicant-prepared environmental resource reports, create environmental data requests, participated with FERC at field visits, formal scoping meetings, attended meetings with regulatory state and federal agencies, assessed environmental impacts of project and alternatives, and wrote the environmental assessment for the Project. Additional responsibilities included management of the Project budget (\$346,288) and an interdisciplinary team of specialists who contributed to the environmental analyses and write-up. Columbia Gas Transmission Company received its FERC Certificate for East Side Expansion Project in December 2014.

Project Manager, July 2012–December 2012

Confidential Client, Confidential Project, MA

Project involved viewscape analysis focused on potential impacts of a transmission line on culturally sensitive landscape features. Tasks included field visit and photography, computer viewscape modeling, and development of photosimulations, and a report.

Project Manager, March 2013–December 2013

Burns & McDonnell, Confidential Project, CN

Project involved viewscape analysis focused on potential impacts of a transmission line on culturally sensitive landscape features. Tasks included field visits and photography, computer viewscape modeling, development of photosimulations, and a report.

Cultural Resources Lead, August–September 2013

Confidential Wind Development Client, Confidential Project, Nationwide

Responsible for cultural resources personnel involved in performing fatal flaw analyses for about 50 prospective wind development sites located in 22 different states. Work was successfully performed under a very tight deadline and was incorporated into reports that included contributions from other Tetra Tech team science specialists.

Cultural Resources Lead, October–November 2013

Confidential Wind Development Client, Confidential Project, Nationwide

Responsible for cultural resources personnel involved in performing fatal flaw analyses for about 12 prospective wind development sites located in 10 different states. Work was successfully performed

under a very tight deadline and was incorporated into reports that included contributions from other Tetra Tech team science specialists.

Cultural Resources Lead, December 2012–Present

Liberty Natural Gas, LLC, Port Ambrose Deepwater Port Third-Party EIS, NY

Cultural resources lead for this third-party EIS prepared as part of an environmental review of the Port Ambrose Deepwater Port license application. Project involves an offshore natural gas deepwater port facility that would be located in the New York Bight and would consist of two submerged turret loading buoys located in federal waters 17 nautical miles southeast of Jones Beach, New York and 24 nautical miles east of Long Branch, New Jersey. Also assisting U.S. Coast Guard in compliance with Section 106 consultation process.

Cultural Resources Lead, November 2013–Present

Confidential Client, Site Assessment Plan (SAP), DE

Responsible for the cultural resources section of the Site Assessment Plan (SAP) written for Bureau of Ocean Energy Management (BOEM). The Project includes two met buoys in a federal lease area.

Cultural Resources Lead, September 2013–Present

Burns & McDonnell, National Grid, New York Energy Highway, NY

Provide oversight of archeology team and historic architecture team to develop and implement studies within the area of potential effects (APE) in support of an Article VII Application to the NYPSC for this energy replacement project. The project, a new single-current 345-kV transmission line, will extend for approximately 152 miles primarily within extant rights-of-way. Work will also support reviews under Section 106 of the National Historic Preservation Act.

Cultural Resources Lead, August 2012–Present

Excelerate Energy, Lavaca Bay LNG Project, TX

Assist client in addressing concerns related to Section 106 of the National Historic Preservation Act. Provide technical oversight and management of marine archeology subcontractor. Coordinate with the Texas Historical Commission (which serves as the State Historic Preservation Office [SHPO]). Address cultural resources issues associated with upland areas of the Project. Responsible for preparation of Resource Report 4, part of the application for a Project Certificate from the Federal Energy Regulatory Commission for the proposed 27-mile-long natural gas pipeline, berths and shoreside facilities that support two Floating Liquefaction, Storage, and Offloading vessels that will be permanently docked at the site. Responsible for terrestrial archeological field studies performed in support of the Project.

Cultural Resources Lead, December 2011–Present

Cheniere Corpus Christi Liquefaction Project, TX

Responsible for all cultural resources studies and reports that will assist client in addressing Section 106 of the National Historic Preservation Act. Also responsible for preparation of Resource Report 4, part of the application to the Federal Energy Regulatory Commission to support a combined natural gas liquefaction/export and LNG import/regasification project in Corpus Christi, TX. Project includes 480,000 m³ of LNG storage and 23-mile-long natural gas pipeline.

Cultural Resources Lead, April 2012–Present

Central Hudson Gas and Electric Corporation, SC & KB Transmission Line Project, NY

Provide cultural resources technical oversight for Phase IA cultural resources investigation for proposed transmission line upgrade in Dutchess County, NY.

Cultural Resources Lead, November 2011–Present

Deepwater Wind, Block Island Wind Farm and Block Island Transmission System, RI

Tetra Tech supports the siting and permitting efforts of Deepwater Wind's 30-MW Wind Farm located in state waters off the coast of Rhode Island. Cultural resources responsibilities include technical oversight of upland archeological, marine archeological, and historic architecture studies performed to assess the potential effects of the proposed project on significant cultural resources. Also responsible for writing the cultural resources section of the Environmental Report.

Cultural Resources Lead, January 2011–Present

Iberdrola, Rochester Gas and Electric, Rochester Area Reliability Project, NY

Responsible for the cultural resources studies and analyses that are the basis of the Cultural Resources Exhibit for the New York State Public Service Commission Article VII application for the Rochester Area Reliability Project. This Project includes a new 345-kV/115-kV substation, 20.75 miles of two new 115-kV transmission lines, the partial rebuild of an existing 115-kV transmission line, and 1.9 miles of a new 345-kV transmission line.

Cultural Resources Lead, January 2012–2013

BP, Cape Vincent Wind Farm, NY

Assist BP in addressing cultural resources issues and performing studies needed for Cultural Resources Exhibits that will be included within an Article 10 Application to the New York Department of Public Service (DPS). Cultural resources studies include archeology, historic architecture, and outreach to the Onondaga Nation. Participate in meetings with the New York Office of Parks, Recreation, and Historic Preservation (that serves as the State Historic Preservation Office), DPS, and the Onondaga Nation.

Project Manager, 2012

Northeast Utilities, WMECO 2012 Structure Replacement Projects on Line 312, MA

Worked with in-house staff to perform a visual resource assessment of a pole replacement project. Client concerns focused on Native American tribal perceptions of project impacts on cultural resources located within and near the transmission line. Work involved development of photo simulations and computer modeling of viewshed differences between the extant transmission line and proposed modifications to the line to quantify visual changes and assess visual impacts of the project.

Cultural Resources Lead, 2011–2013

Wind Capital Group, Osage Wind Project, Osage County, OK

Responsible for cultural resources investigations performed to a level consistent with compliance with Section 106 of the National Historic Preservation Act. Work was performed by client voluntarily in case there would be a possible future federal nexus for the Project. Phase I and II investigations were performed by a local contractor for the wind project that will comprise 94 turbines and 65 miles of linear corridor, and other associated support facilities. Of the 65 archeological sites identified, 4 were recommended as warranting Phase II investigation. Also supported the client in discussions with the Oklahoma State Archaeologist, the Oklahoma State Historic Preservation office, and the Tribal Historic Preservation Officer of the Osage Nation.

Cultural Resources Lead, 2011

Georgia-Pacific LLC, Hughesville Mill Site Remediation, Hunterdon County, NJ

Assisted client in consulting with the New Jersey Historic Preservation Office about potential impacts to previously identified archaeological resources that could result from implementation of selected remedies. HPO agreed that in one area, the selected remedy would provide protection for a buried archaeological site considered potentially eligible to the National Register of Historic Places and that no

additional archaeological investigation would be required. Provided oversight to areas where new Phase IB work was performed. These areas proved not to contain significant cultural resources.

Cultural Resources Lead, 2010–2011

San Antonio Water System, Proposed Demolition of Historic Water Tanks, Former Kelly Air Force Base, Bexar County, TX

Worked with client to develop an appropriate approach for evaluating two historic water tanks located on the former Kelly Air Force Base. The San Antonio Water System, current owner of the properties, proposed to demolish the tanks to make way for new development and land use. Provided oversight to cultural resources staff who developed historic contexts for the tanks and through documentation addressed the concerns of the State Historic Preservation Office.

Cultural Resources Lead, 2011–Present

Excelerate Energy, Aguirre GasPort, Puerto Rico

Responsible for overseeing cultural resources studies performed to prepare an application to the Federal Energy Regulatory Commission for a Certificate to develop an offshore LNG import terminal near Jobos Bay, Puerto Rico.

Cultural Resources Lead, 2010–Present

Northern Pass, LLC (Normandeau Associates), Northern Pass HVDC Transmission Project, NH

Responsible for quality assurance review of cultural resources investigations performed by subconsultants. Cultural resources studies will be one component of the environmental assessment and permitting of the Northern Pass HVDC Transmission Project in New Hampshire. The project includes: +/-300-kV line, approximately 140 miles long, extending from the Québec/New Hampshire border to a new converter terminal in Franklin, NH and a new 40-mile, 345-kV line extending from the Franklin converter terminal to the Deerfield Substation in Deerfield, NH.

Cultural Resources Specialist, 2010–Present

Sempra Generation, Auwahi Wind Energy Project, Maui, HI

Writing the cultural resources sections of the Draft Hawaii Environmental Impact Statement (EIS) and the corresponding NEPA Environmental Assessment (EA) associated with permitting the proposed 22-MW wind energy project.

Cultural Resources Lead, 2010

GDF SUEZ–Mound Creek Wind Project, Cottonwood County, MN

Assisted GDF SUEZ's due diligence for this proposed project. Located near a significant cultural resource listed in the National Register of Historic Places as a Traditional Cultural Place that is currently under consideration to receive National Historic Landmark status. The proposed Project presents some unique challenges for permitting and local acceptance. Responsibilities included meeting with Minnesota Historical Society State Historic Preservation Office representatives, visiting the Project area to assess potential issues for siting the Project, and working with GDF SUEZ in developing a strategy for addressing critical cultural resource issues.

Cultural Resources Lead, 2009–Present

Hardin Wind Energy, LLC, Hardin Wind Farm, Hardin County, OH

Identify and address cultural resources issues associated with permitting proposed wind farm. Participated in consultation with Ohio Power Siting Board and Ohio State Historic Preservation Office. Develop and oversee performance of archeological and historic architecture cultural resources surveys and assure quality of deliverables. The project will comprise more than 200 turbines, approximately 63 miles of access road, 96 miles of buried electrical cable, a staging area, an interconnection substation, a transfer substation, and an O&M building.

Cultural Resources Lead, 2009–2011

CPV Renewable Energy Company, LLC, Ashley Wind Energy Project, McIntosh County, ND

Provide task oversight for historic architecture and Class I and Class III archeological surveys including literature search, field investigations, data analysis and report writing; development of an Unanticipated Finds Plan; and assistance in Tribal consultation. Work with client to meet Tennessee Valley Authority requirements for NEPA and compliance with Section 106 of the National Historic Preservation Act in association with its Power Purchase Agreement for 200 MW of energy. Provided written testimony presented by Project Manager before North Dakota Public Service Commission.

Cultural Resources Lead, 2010–2011

CPV Renewable Energy Company, LLC, Cimarron Wind Energy Project–Phase 1, Gray County, KS

Provide task oversight for historic architecture and archeological surveys including literature search, field investigations, data analysis and report writing; and development of an Unanticipated Finds Plan. Work with client to meet Tennessee Valley Authority requirements for NEPA and compliance with Section 106 of the National Historic Preservation Act in association with TVA's Power Purchase Agreement for this Project.

Cultural Resources Lead, 2010–Present

NextEra Energy, Ensign Wind Energy Center, Gray County, KS

Provide task oversight for historic architecture and archeological surveys performed in the area of project effects for this proposed 62 wind turbine project on private land. Assisted NextEra in avoiding impacts to archeological sites.

Cultural Resources Specialist, 2010

Equitrans, LP, Sunrise Project, PA and WV

Responsible for cultural resources sections of a Third Party EIS prepared for the Federal Energy Regulatory Commission pursuant to Section 7(C) of the Natural Gas Act. The proposed Project includes more than 44 miles of pipeline, one compressor station, and a number of aboveground locations that will contain a variety of associated interconnection, control, and a variety of other facilities.

Cultural Resources Lead, 2010

NextEra Energy, Baldwin Wind Energy Center, Burleigh County, ND

Provided task oversight for a Class II historic architecture reconnaissance survey of the defined Area of Potential Effects for the proposed project that would include 64 wind turbines with an output of 50 MW. An additional cultural resources task included performance of a Visual Assessment of the potential Project impacts on portions of the Lewis and Clark National Historic Trail, as requested by the National Park Service. The Project, which included an interconnection with a Western Area Power Administration transmission line, required the cultural resources studies in compliance with Section 106 of the National Historic Preservation Act.

Cultural Resources Specialist, 2010–Present

Gamesa Energy USA and Diversified Wind, 2Morrow Wind Project, Gilliam and Morrow Counties, OR

Lead cultural resources specialist assisting client in coordinating with interested Native American tribes and in performing all cultural resources studies required for the Project to receive a Conditional Use Permit (CUP) from the state of Oregon.

Cultural Resources Lead, 2009–Present

Patriot Renewables, LLC, Spruce Mountain Wind Farm Project, Oxford County, ME

Provide oversight of historic architecture studies performed in support of permitting for the Spruce Mountain Wind Farm Project in Woodstock, ME. Scopes were developed in consultation with the Maine Historic Preservation Commission and the Maine Department of Environmental Protection.

Cultural Resources Lead, 2009–Present

Patriot Renewables, LLC, Saddleback Ridge Wind Farm Project, Franklin County, ME

Provide oversight of historic architecture studies performed in support of permitting for the Saddleback Ridge Wind Farm Project in the Town of Carthage, ME. Scopes were developed in consultation with the Maine Historic Preservation Commission and the Maine Department of Environmental Protection.

Project Manager, 2007–2008

Willow Creek Winds, LLC, Willow Creek Winds Project, Gilliam and Morrow Counties, OR

Worked with client to design and implement archeological field investigations, wetlands delineation and a Phase I environmental site assessment. Additional tasks for the project included GIS services and construction oversight. Tasks and services were performed in anticipation of the development of approximately 55 wind turbines and associated interconnects and roadways within 7 miles of corridor, an on-site substation, and approximately 8 miles of corridor that would contain a 115-kV transmission line that would interconnect with the BPA grid. All tasks were performed within schedule and budget.

Cultural Resources Lead, 2008

Horizon Wind Energy, Arkwright Summit Wind Farm, Chautauqua County, NY

Provide oversight of historic architecture studies performed in support of permitting the Arkwright Summit Wind Farm Project. Work is performed in compliance with NY State Environmental Quality Review (SEQR) and New York SHPO Guidelines for Wind Farms. Studies involve historic architecture inventories within a one-mile ring and a five-mile ring around the Project.

Cultural Resources Lead, 2008–Present

Responding Parties, Lower Fox River and Green Bay Superfund Site Remediation Project, WI

Support this project by addressing cultural resources issues that arise as a result of proposed construction, dredging and capping. Issues include concern about potential project effects to cultural resources that may be eligible to the National Register of Historic Places both in upland locations and within the Lower Fox River. Provide support to EPA in consultation with the State Historic Preservation Office (SHPO). Developed a Programmatic Agreement to be signed by EPA, the Advisory Council on Historic Preservation (ACHP) and SHPO. Oversee the work of underwater archeologists to identify submerged resources within the area of potential effect, coordinate with Project team to try to avoid impacts to significant resources, and implement approved protocols to mitigate adverse effects to historic properties that will be affected by the Project.

Cultural Resources Lead, 2005–2007

New York Power Authority, Tri-Lakes Reliability Project, St. Lawrence County, NY

Provided oversight of cultural resources studies including archeology and historic architecture, performed for this approximately 26-mile 46-kV transmission line proposed within Adirondack Park. The Project included 15.6 miles of overbuild and about 10.4 miles of new rights-of-way. Investigation involved a historic architecture study to evaluate the potential effects of the Project on National Register of Historic Places (NRHP)-listed and –eligible structures within the Project’s area of potential effects (APE). Two NRHP-listed properties and one National Historic Landmark (Adirondack Park) are located within the project APE. NY State Historic Preservation Office (SHPO) agreed with Tetra Tech’s recommendation that the project would result in no adverse effect to any of the historic properties within the APE. A Phase 1 archeological investigation was also performed along several alternate routes. Approximately 20 historical sites were identified including foundations from historic structures, roads, maple sugar camps, and an historic paper mill. No prehistoric sites were noted. Further field investigations were recommended to determine if identified sites were eligible to the NRHP. Additional responsibilities included support for public meeting presentations, consultation with SHPO, and input to a State Environmental Quality Review Findings Statement.

Cultural Resources Lead, 2007

Central Hudson Gas & Electric Corporation, CL Transmission Line Rebuild, Greene County, NY

Cultural resources lead responsible for archeological and historic architectural studies performed in support of obtaining permits for the proposed rebuild of the CL Transmission Line from 69 kV to 115 kV. Responsibilities include consultation with New York State Historic Preservation Office, development of work scopes acceptable to SHPO, and oversight of the implementation of these scopes. Archeological surveys included background literature review, Phase 1B shovel testing, and Phase II investigation of one prehistoric period site. Historic Architecture survey was performed of the newly visible portions of the Project viewshed to determine if structures that qualify as significant may be affected by the Project.

Cultural Resources Lead, 2007

Central Hudson Gas & Electric Corporation, WM Transmission Line Rebuild, Orange County, NY

Cultural resources lead responsible for cultural resources studies performed in support of obtaining permits to rebuild and upgrade the WM Transmission Line. Studies included both archeological survey and historic architectural inventory of the Project area of potential effects. Provided support to CHG&E in their consultations with New York State Historic Preservation Office.

Cultural Resources Specialist, 2007–2008

South Florida Water Management District, Stormwater Treatment Area Expansion Project Third Party Environmental Impact Statement, Palm Beach and Hendry Counties, FL

Prepared cultural resources sections of a third party Environmental Impact Statement (EIS) that assessed impacts of a proposed expansion of stormwater treatment areas in the Everglades Agricultural Area. The project's area of potential effects contains a number of prehistoric-period archeological sites that include human remains and some sites that have been determined eligible to the National Register of Historic Places. The EIS was prepared for review by the U.S. Army Corps of Engineers to satisfy the National Environmental Policy Act (NEPA) and to aid in their decision to issue, modify, condition, or deny a Section 404 (of the Clean Water Act) permit for the proposed project.

Cultural Resources Specialist, 2004–2007

NOAA, Berman Oil Spill Restoration Planning Project, San Juan, Puerto Rico

Performed resource impact assessment as part of the Restoration Planning and Environmental Assessment for cultural resources affected as a result of an oil spill stemming from the grounding of the fuel-oil barge—Morris J. Berman on the northern coast of Puerto Rico near San Juan Harbor. The San Juan National Historic Site, a designated World Heritage Site, consists of the largest and oldest fortifications constructed by the Spanish in the New World. Oil on shorelines and in adjacent water caused discernible visual, air quality and possibly direct physical impacts to the significant cultural resources, previously available to be enjoyed by large numbers of seasonal tourists and residents of Puerto Rico. Compensatory restoration projects were identified to address the injured cultural resources.

Cultural Resources Specialist, 2005–2006

National Park Service, Restoration Plan/Environmental Assessment for the Igloo Moon Grounding Site, Biscayne National Park, FL

Performed an environmental assessment of potential effects to submerged cultural resources that may result from implementing a number of restoration alternatives in the area of the grounding of the Igloo Moon, a liquefied gas tanker grounded within Biscayne National Park.

Cultural Resources Lead, 2006–2007

St. Lawrence Windpower, LLC, St. Lawrence Wind Energy Project, Towns of Cape Vincent and Lyme, Jefferson County, NY

Responsible for cultural resources studies designed and implemented to identify cultural resources within the project's area of potential effects for both archeology and historic architecture. The Project, proposed to produce 128 MW, includes the wind turbine locations, energy collection lines, roadways, and transmission lines that connect to the state's energy grid. The cultural resources team produced a Phase 1A archeology report and a One-Mile Ring historic architecture report for the Project, compliant with NY SHPO Guidelines for Wind Farm Projects. Developed cultural resources sections for the Project's NY State Environmental Quality Review (SEQR) Environmental Impact Statement.

Cultural Resources Lead, 2005–2010

U.S. Army Corps of Engineers, New England District, Total Environmental Restoration Contract (TERC), Investigation, Remedial Action, and Restoration of Davids Island/Fort Slocum, New Rochelle, Westchester County, NY

Responsible for assisting the USACE in compliance with NEPA and Section 106 of the National Historic Preservation Act. Cultural resources tasks performed by a team of archeologists and architectural historians include: working with Interested Parties to understand and address their concerns about the prehistoric and historic period cultural resources located on Davids Island; developing and implementing a program of cultural resource identification and evaluation for eligibility to the National Register of Historic Places through archeological fieldwork and historic architecture analyses of standing structural remains; considering potential preservation in place of structures and/or salvaging of building elements for structures that are slated for demolition; documenting NRHP-eligible resources that comprise the Fort Slocum Historic and Archeological District prior to their demolition; preparing a historic context for Fort Slocum; video documenting extant structures on Davids Island related to Fort Slocum and the Nike Missile Program; working as part of a team of Interested Parties to create a digital virtual exhibit entitled 'The Army's Century on Davids Island, Fort Slocum, New Rochelle, New York' that may be viewed on the Internet at <http://davidsisland.westchesterarchives.com>; and implementing an oral history program geared to recording the experiences of civilians, military personnel, and children of military families who worked and lived on Davids Island.

Cultural Resources Lead, 2006–2008

Horizon Wind Energy, Jericho Rise Wind Farm, Franklin County, NY

Oversight of archeological and historic architecture studies performed in support of permitting for the Jericho Rise Wind Farm. Studies were designed to comply with NY State Environmental Quality Review (SEQR) and the New York SHPO Guidelines for Wind Farms. Studies involve archeological field investigations and historic architecture inventory and evaluations.

Cultural Resources Lead, 2007

American Wind Energy Association (AWEA), Siting Handbook for AWEA

Developed the content for the cultural resources section of a wind energy project siting handbook, prepared for use by developers of wind energy projects. The handbook covered facility development process including siting, identifying impacts, permitting, and monitoring.

Cultural Resources Lead, 2008–2012

Federal Energy Regulatory Commission, Calais LNG Project, Washington County, ME

Provided cultural resources third-party EIS services to the Federal Energy Regulatory Commission (FERC) for review of the Calais LNG Project and preparation of an EIS in accordance with the National Environmental Policy Act (NEPA) and the FERC's implementing regulations. Served as cultural

resources lead responsible for reviewing resource reports, issuing data requests, and drafting the cultural EIS section text.

Cultural Resources Lead, 2006–2008
Quoddy Bay LNG Project, Washington County, ME

Provided cultural resources support to third-party Federal Energy Regulatory Commission (FERC) EIS for the Quoddy Bay LNG Project. Responsibilities included reviewing cultural resource reports, drafting data requests; and writing cultural EIS section text.

Cultural Resources Lead, 2006
Access USRG Biomass Development, LLC, Ludlow Biomass Energy Project, Town of Ludlow, Windsor County, VT

Responsible for oversight of cultural resources studies performed in support of permitting for a proposed wood-fired electrical generating station. Tasks included both archeological and historic architectural studies performed to determine if the proposed project may affect cultural resources that may be eligible to the National Register of Historic Places.

Cultural Resources Lead, 2005–2007
U.S. Department of the Army, TACOM-ARDEC–Picatinny, Picatinny Applied Research Center, Picatinny Arsenal, Dover, Morris County, NJ

Responsible for development and implementation of studies to identify the presence of cultural resources within the area proposed for development of the Picatinny Applied Research Center. Phase 1 archeological investigations were performed in coordination with screening for unexploded ordnance. Phase 1 investigations resulted in the discovery of prehistoric and historic period archeological resources within the project's area of potential effect. Phase 2 investigations demonstrated that the resources identified did not sufficiently meet the criteria to qualify as potentially eligible to the National Register of Historic Places.

Cultural Resources Specialist, 2006–2008
U.S. Navy, Base Realignment and Closure Program Management Office West, Engineering Evaluation/Cost Analysis, Site 29, Hangar 1 Former Naval Air Station Moffett Field, Moffett Field, CA

Assisting the U.S. Navy in compliance with Section 106 of the National Historic Preservation Act by considering the effects of proposed alternative remediation measures for Hangar 1 at the former Naval Air Station Moffett Field (Moffett), CA. Provided input to the Engineering Evaluation/Cost Analysis (EE/CA) performed in accordance with US Environmental Protection Agency (USEPA) and Navy guidance documents for a Non-Time-Critical Removal Action. Hangar 1 was built in 1932 to house the airship U.S.S. Macon and is a key element of the U.S. Naval Air Station Sunnyvale Historic District. Developed an adverse impacts report that addressed the effects that Alternative 10 (i.e., removal of the contaminated skin of the buildings and leaving the steel frame) would have on Hangar 1.

Technical Reviewer, 2001
NASA Marshall Space Flight Center, AE Services for Environmental Engineering, Environmental Assessment (EA) for the Propulsion Research Laboratory, MSFC, AL

Reviewer in the preparation of an EA for the proposed Propulsion Research Laboratory (PRL) at MSFC NASA. The EA was developed to determine if an EIS was necessary or if a Finding of No Significant Impact was required. The EA analyzed the environmental resources at the site and any environmental consequences from the proposed action. Dr. Marshall reviewed the Cultural Resources portion of the Affected Environment and Environmental Consequences Chapter. The section included a summary of MSFC's archaeology and history; Cultural/Historic Resource Management and Section 106; effects of

the No Action Alternative; effects of the construction alternative; and the mitigation. Dr. Marshall was listed in Chapter 4.0 of the EA as a preparer of the document.

Technical Reviewer, 2002

NASA Marshall Space Flight Center, AE Services for Environmental Engineering, Environmental Resource Document, MSFC, AL

Technical reviewer for the preparation of the Environmental Resource Document (ERD), an internal NASA-required document. The purpose of the ERD is to serve as a current baseline description of all environmental aspects of the operations of the facility. Dr. Marshall was responsible for and reviewed the Cultural Resources chapter including areas such as: regulatory framework; archaeological overview of MSFC; local prehistory; a model of archaeological site locations; a historical summary from 1800 to the 1960s; and preservation issues and challenges. The ERD covered all environmental areas and serves as a reference document for MSFC.

Cultural Resources Lead, 2004–2005

Dominion Transmission, Third-Party Environmental Services, Cove Point LNG Expansion Project, MD, PA, NY, WV, and VA

Responsible for cultural resources input to third-party environmental impact statement assessing the potential effects of the proposed 160 miles of natural gas pipeline and associated aboveground facilities on archeological and historic architectural resources that may be eligible to the National Register of Historic Places. The EIS was developed under the direction of the Federal Energy Regulatory Commission (FERC) and involved FERC's NEPA pre-filing process and preparation of a NEPA EIS.

Cultural Resources Lead, 2004–2005

Cheniere Corpus Christi LNG, Third-Party EIS Services, Cheniere Corpus Christi LNG Project, Corpus Christi, TX

Developed cultural resources evaluations and write-ups for third-party EIS for a new LNG import terminal and 23 miles of natural gas pipeline in Texas. The EIS was developed under the direction of the Federal Energy Regulatory Commission staff.

Cultural Resources Lead, 2004–2005

Occidental Energy, Third-Party Environmental Services, Ingleside Energy Center LNG Project, Corpus Christi, TX

Prepared cultural resources input to third-party EIS for the proposed 1bcf LNG import terminal and 26 miles of sendout pipeline located near Corpus Christi, Texas. Work was performed under the direction of Federal Energy Regulatory Commission (FERC) staff during the FERC's pre-filing process and preparation of a NEPA EIS.

Cultural Resources Lead, 2005–2006

Gulf Coast LNG Partners, Third-Party Environmental Impact Statement, Calhoun LNG Project, Port Comfort, TX

Prepared cultural resources sections of a third-party Environmental Impact Statement developed for the proposed LNG import terminal and associated sendout pipeline to be located near Port Comfort, Texas. Work was performed under the direction of Federal Energy Regulatory Commission staff.

Cultural Resources Lead, 2006–Present

Downeast LNG, Inc. Downeast LNG Project Third-Party Environmental Impact Statement. Robbinston to Baileyville, ME

Prepared cultural resources section of a third-party Environmental Impact Statement for a proposed LNG terminal, pipeline facilities, and marine facilities including a pier and berthing/unloading facilities. Impact assessment included issues associated with potential impacts to precontact and historic period

archeological resources and architectural resources that may be potentially eligible to the National Register of Historic Places. Assessment also included consideration of potential impacts to areas where members of the Passamaquoddy Tribe participate in traditional cultural activities.

Cultural Resources Lead, 2006–Present

Quoddy Bay LNG, LLC. Quoddy Bay LNG Import and Regasification Terminal Project Third-Party Environmental Impact Statement, Pleasant Point Reservation, Washington County, ME

Responsible for preparation of the cultural resources sections of a third-party Environmental Impact Statement for a proposed LNG facility that included a terminal, pipeline, and marine pier and berthing/unloading facilities. The impact assessment addressed issues associated with potential impacts to precontact and historic period archeological resources and architectural resources that may be potentially eligible to the National Register of Historic Places. The assessment also considered potential project impacts to areas on the Pleasant Point Reservation where members of the Passamaquoddy Tribe participate in traditional cultural activities.

Cultural Resources Lead, 2008–2009

Weaver's Cove Energy LLC, Weaver's Cove LNG Offshore Berth Project, Third Party FERC Services, Fall River, MA

Responsible for addressing cultural resources considerations associated with the Weaver's Cove LNG Offshore Berth Project in the FERC's pre-filing process. Assisted FERC in the review of draft application materials and the preparation of the cultural resources sections of the FERC EIS.

Cultural Resources Lead, 2006

West Hill Windpower, LLC, Archeological and Architectural Historical Studies for West Hill Wind Farm, NY

Task Lead responsible for the development and implementation of cultural resources studies, including archeology and architectural history, in support of compliance with Section 106 of the National Historic Preservation Act and NY SEQRA permitting of the proposed West Hill Wind Farm in Madison County, New York. The project includes 25 wind turbines, 4.2 miles of access roads, 2.5 miles of underground interconnect electrical lines, and a 2.5 miles long aboveground transmission line. Work was performed implementing NY SHPO Guidelines for Cultural Resources Studies for Wind Projects.

Cultural Resources Lead, 2006–Present

Horizon Energy, Archeological and Architectural Historical Investigations for Alabama Ledge Wind Farm Project, NY

Task Lead responsible for the development and implementation of cultural resources studies, including archeology and architectural history, in support of compliance with Section 106 of the National Historic Preservation Act and NY SEQRA permitting of the proposed Batavia Wind Farm located in Genesee County, New York. The project includes approximately 63 wind turbines along with associated access roads, underground interconnect electrical lines, and aboveground transmission line. Cultural resources studies are designed to implement NY SHPO Guidelines for Cultural Resources Studies for Wind Projects. Supported client with SHPO consultations and Native American consultations. A Native American monitor from the Tonawanda Seneca Nation accompanied the archeological field team during fieldwork.

Cultural Resources Lead, 2005

Invenegy Wind, LLC, Phase IA Cultural Resources Study, High Sheldon Wind Farm Project, NY

Task Lead for the development and implementation of background literature review and walkover survey of proposed High Sheldon Wind Farm Project. Proposed project includes 107 wind turbines

interconnected by underground transmission lines and an aboveground transmission line of approximately three miles. Project has potential to affect both prehistoric and historic cultural resources.

Cultural Resources Lead, 2005

Invenergy Wind LLC, Phase IA Cultural Resources Study, Stamford Wind Project, NY

Task Lead for the development and implementation of background literature review and walkover survey of proposed High Sheldon Wind Farm Project. Proposed project includes 44 wind turbines, interconnected by about 9 miles of service roads and underground transmission lines. Project has potential to affect both prehistoric and historic cultural resources.

Cultural Resources Lead

Fort Dix, Phase I and Phase II Archeological and Architectural Historical Investigations, Brindle Lake Dam Replacement Project, Fort Dix, NJ

Task Lead for archeological investigations and an architectural historical assessment of the Brindle Lake Dam and associated construction laydown areas located in Ocean County, NJ for the Fort Dix Military Reservation. Work was performed in compliance with Section 106 of the National Historic Preservation Act. Evidence of both prehistoric and historic period archeological resources were recovered though no sites were recommended as eligible to the National Register of Historic Places. An evaluation of the dam indicated that the original nineteenth century-era vernacular dam had withstood several episodes of repair into the twentieth century. The dam's compromised integrity and setting contributed to the recommendation that the dam is not potentially eligible to the National Register of Historic Places.

Cultural Resources Lead

Fort Dix, NEPA Environmental Assessments, NJ

Performed archeological field inspections and prepared cultural resources input to several NEPA environmental assessments (EAs) for proposed projects at Fort Dix, including a centralized tactical vehicle wash facility, a rock crushing facility with the capability to produce asphalt, expansion of a parking lot, and construction of additional bays and new warehouse at the Equipment Concentration Site. These EAs were reviewed and approved by the NJ Pinelands Commission.

Cultural Resources Lead

Fort Dix, Architectural Investigation, NJ

Worked with a team of architectural historians to perform an architectural investigation of 600 World War II-era structures at Fort Dix. Work was performed in accordance with Sections 106 and 110 of the National Historic Preservation Act, Army Regulations 420-40, Advisory Council on Historic Preservation implementing regulations at 36CFR800, NEPA, and the NJ Pinelands Comprehensive Management Plan. A recommendation regarding National Register eligibility pursuant to 36CFR60.4 was made for each structure. The report was reviewed by NJ Historic Preservation Office (HPO), Fort Dix HPO, and NJ Pinelands Commission.

Cultural Resources Lead, 2004

New Jersey City University, New Jersey City University West Campus Expansion, NJ

At a contaminated Brownfields site in a former industrial area of Jersey City that will undergo remediation and redevelopment, performed a Stage 1A cultural resources study. The study included evaluation of the archeological potential of the project site and evaluation of nine structures slated to be razed. Study indicated that the standing structures do not meet the eligibility criteria for nomination to the National Register of Historic Places. Evaluation of geological cores from the site suggested that original land surfaces are extant underlying 9–13 feet of fill deposits and that these have potential to contain cultural remains related to populations that exploited resources in the former wetlands along the Newark Bay.

Cultural Resources Lead, 2004

Confidential Client, Due Diligence Evaluation of Proposed Energy Project in NY and NJ

Performed a due diligence evaluation for a client considering investing in a proposed energy project that involves placement of a submerged energy pipeline in waters that extend from New Jersey to New York. Reviewed reports of underwater and upland cultural resources investigations and associated comments from respective state reviewers to evaluate the complexity of reported results, the requests for further studies by regulators, and their monetary implications for project investors.

Cultural Resources Principal Investigator, 2003–2004

United States Fish and Wildlife Service, Archeological, Historical and Geomorphological Study of Prime Hook National Wildlife Refuge, Sussex County, DE

Project Manager responsible for performance of a variety of studies focused on the Prime Hook National Wildlife Refuge located near Milton, DE. Studies included performance of vibracores and test trenches on the refuge property to collect samples for pollen analysis and to perform geomorphological inspections to identify potential buried land surfaces that may contain intact prehistoric period archeological sites. Also performed a limited oral history program to interview local minority group representatives including Native Americans, Black populations, and other former occupants of refuge property to record information about pre-refuge life-ways.

Cultural Resources Lead, 2004

Calpine, Bethpage Pipeline Project, NY

Prepared a cultural resources documentation package for review by the New York Office of Parks, Recreation and Historic Preservation (the New York State Historic Preservation Office) in support of FERC compliance with Section 106 of the National Historic Preservation Act, as amended. The package described the current conditions of the project area of potential effect and estimated its potential cultural resources sensitivity.

Cultural Resources Lead, 1999–2004

U.S. Army Corps of Engineers, New Bedford Harbor Superfund Site, MA

Responsible for cultural resources activities in support of EPA's cleanup activities at the New Bedford Harbor Superfund site. Provided assistance in compliance with Section 106 of the National Historic Preservation Act including SHPO consultation, Native American consultation, development of scopes of work and their implementation involving studies focused on upland and intertidal archeology, marine archeology, architectural history and identification of potential historic districts. Duties involved coordination with project engineers, property owners, internal resources field teams and agency officials, and oversight of all cultural resource studies reports.

Cultural Resources Lead, 2001

Western Frontier Pipeline Company, L.L.C., Western Frontier Pipeline Project Third-Party Environmental Impact Statement, CO, KS, OK

Prepared cultural resources sections of a third-party Environmental Impact Statement (EIS) that evaluated construction and operation impacts of a 409-mile long natural gas pipeline, 2 new compressor stations, 9 meter stations, and appurtenant facilities in Colorado, Kansas, and Oklahoma. These facilities are under the jurisdiction of the Federal Energy Regulatory Commission (FERC). The EIS evaluated potential impacts on the environment (e.g., including cultural resources), and considered various system, major route, and above ground facility alternatives and route variations. The EIS provided recommendations to avoid and/or minimize environmental impacts and addressed comments raised by the public.

Cultural Resources Task Lead, 2002–2004

U.S. Navy, Portsmouth Naval Shipyard, Jamaica Island Landfill Remediation Project, Kittery, ME

Assist US Navy in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. Work with project engineers to develop appropriate field approaches for identifying cultural resources in areas where the proposed project may affect prehistoric and historic cultural resources that may have the potential to be eligible to the National Register of Historic Places. Project involved removal of hazardous materials from a landfill, introduction of clean capping material, and creation of new recreational area parking facilities.

Cultural Resources Task Lead, 2002

U.S. Navy, Naval Weapons Industrial Reserve Plant, Calverton, NY

Assisting US Navy in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. Working with project engineers to develop appropriate field approaches for identifying cultural resources in areas where the proposed project may affect prehistoric and historic cultural resources that may have the potential to be eligible to the National Register of Historic Places. Proposed project involving removal of hazardous materials from a landfill and restoration of former ponds and wetlands.

Cultural Resources Lead, 2002–2003

Confidential Client, Confidential LNG Project

Directed cultural resources study of three proposed pipeline marine and upland route alternatives. Data were used to evaluate the feasibility of the proposed project. Participated in selection of a preferred marine and upland pipeline route and location for a proposed off-shore LNG facility in US waters. Future studies will include upland and marine cultural resources surveys.

Cultural Resources Lead, 2001–2002

CMS Energy, Trunkline LNG Terminal Expansion Project, Calcasieu Parish, LA

Activities are designed to assist client in obtaining a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission (FERC) for the proposed project. Project includes cultural resources consultation with the Louisiana State Historic Preservation Officer, development of an Unanticipated Discovery Plan, Native American consultation, and development of FERC Resource Report No. 4.

Cultural Resources Lead, 2001–2002

Dynegy, Hackberry LNG Project, Cameron and Calcasieu Parishes, LA

Managed cultural resources work designed to support client in obtaining a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission. Activities include consultation with the Louisiana State Historic Preservation Officer, Native American consultation, oversight of archeological and architectural surveys of the proposed pipeline right-of-way, development of an Unanticipated Discovery Plan, and development of FERC Resource Report No. 4.

Cultural Resources Lead, 2001–2002

South Florida Water Management District, Loxahatchee Mitigation Bank, Palm Beach County, FL

Support project on all cultural resources issues. Conducted Phase I examination of South Parcel Mound and identified an isolated prehistoric-period artifact within a portion of Florida where few prehistoric archeological sites are known. Work was conducted in compliance with Tetra Tech FW, Inc.'s ERP and ACOE Section 404 permits for the Loxahatchee Mitigation Bank.

Cultural Resources Lead, 2002

Rochester Gas and Electric Company, Russell Station Repowering Feasibility Study, Monroe County, NY

Evaluated the cultural resources concerns that would need to be addressed by RG&E should they decide to seek permits to repower the Russell Station, located in Greece, NY. The Feasibility Study involved consideration of the application of various Clean Coal Technologies

Cultural Resources Quality Reviewer, 2002

Southern California Gas Company, L1030 Pipeline Replacement Project, Riverside County, CA

Performed a quality assurance review of a cultural resources evaluation report for a 6.2-mile natural gas transmission pipeline replacement project. Recommendations were made for organization of the report and clear presentation of information.

Cultural Resources Lead, 2002–2003

National Park Service, Jaite Paper Mill RP/EA and Restoration Project, Cuyahoga Valley National Park, Cuyahoga and Summit Counties, OH

Working with a multidisciplinary team to support National Park Service efforts to evaluate the Jaite Paper Mill for potential contamination and for potential historic values that may be appropriate for future public interpretation. Tasks involve developing a remediation plan and supporting NPS in compliance with Section 106 of the National Historic Preservation Act. Tetra Tech FW, Inc. will assist in developing a historic preservation plan that will allow cleanup activities to take place while preserving historic values of the resource.

Cultural Resources Lead, 2001–2002

Florida Power and Light, Linfield Energy Center Permitting, Montgomery County, PA

Provided cultural resources input to permitting strategy for this project. Cultural resources studies conducted in support of the project included an architectural inventory and evaluation of potential historic properties within the project viewshed, and an assessment of potential archeological sensitivity of the proposed project area. Assisted FP&L and the Army Corps of Engineers in consultation with the Pennsylvania Historical and Museum Commission (functions as the State Historic Preservation Office). Assisted in developing photosimulations of the project from specifically selected locations with critical views of the project. Participated in public meetings about the project.

Cultural Resources Lead, 2000–2003

Pennsylvania Department of Environmental Protection, GTAC-3, Valley Forge National Historic Park, Asbestos Release Site, Valley Forge, PA

Assessed the cultural resources sensitivity of the area included within the Asbestos Release Site located within the NPS' Valley Forge National Historical Park. Developed a protocol to be followed during the course of Remedial Investigation sediment sampling that would allow work to proceed with appropriate attention paid to high cultural resource sensitivity areas. Assisted PADEP in developing workplans acceptable to the NPS and assisted in consultation with the Pennsylvania Historical and Museum Commission (functions as the State Historic Preservation Office).

Cultural Resources Lead, 2000–2001

Niagara Mohawk Power Corporation, Johnstown (N. Market Street) Site, Johnstown, NY

Provided cultural resources assessment for the PSA/IRM study at the former Manufactured Gas Plant. Also provided input that resulted in development of a plan for minimizing potential project impacts to an adjacent historic property, the Johnstown Colonial Cemetery, listed on the National Register of Historic Places.

Cultural Resources Lead, 2001–2002

Calpine Corporation, Chippokes Energy Center, Surry County, VA

Lead cultural resources specialist working as part of a multidisciplinary team to obtain permits for construction and operation of a combined-cycle gas-fired electric generating plant. Provided oversight of Phase I cultural resources investigation of the proposed project area.

Cultural Resources Specialist, 2000

Florida Gas Transmission Company, FGT Phase V Expansion Project, Florida, Alabama, MS

Responsible for preparing cultural resources sections of a third-party Environmental Impact Statement (EIS) for construction of 231.1 miles of 16 pipeline segments (loops, laterals, and a rehab segment), additional compression at 11 stations (including construction of 2 new compressor stations), and various metering and regulator facilities in Florida, Alabama, and Mississippi.

Lead Cultural Resources Specialist, 1999–2000

Central New York Oil and Gas Company, LLC, Phase IA and IB Surveys for the Stagecoach Storage Project, Towns of Owego and Nichols, Tioga County, NY

Serves as Lead Cultural Resources Specialist on this project. Work is being conducted in support of a FERC certificate and supports CNYOGC and FERC in complying with Section 106 of the National Historic Preservation Act. Responsibilities include compiling Phase IA and Phase IB studies for the project working with a subcontractor, and developing the project Plan for Addressing Unanticipated Cultural Resources Including Human Remains that will be used during project construction. She has also supported project consultation with SHPO and interested Native American representatives.

Lead Cultural Resources Specialist, 1999–2000

PANDA Energy, Trans - Union Pipeline Project, LA and AR

Assist Trans-Union Pipeline L.P. in conducting all cultural resources studies in support of attaining a Federal Energy Regulatory Commission Certificate for construction and operation of an interstate gas pipeline in Louisiana and Arkansas. Responsibilities include developing plans to address unanticipated cultural resources, managing Native American consultation, providing overall guidance for cultural resources surveys within the project area of potential effect, and coordinating agency consultations in compliance with section 106 of the National Historic Preservation Act.

Cultural Resources Lead, 1996–1997

U.S. Army Engineering and Support Center, Huntsville Ordnance and Explosive Center of Expertise, Former Fort Hancock EE/CA

Developed and presented a Worker Education Program geared toward familiarizing UXO experts with the potential range of cultural materials that could be expected to occur on the historic facility. Also developed a plan and procedures to be followed in the event that UXO investigators identified potential cultural resources in addition to UXO during their investigations. Former Fort Hancock is listed in the National Register of Historic Places and contains a lighthouse that is also listed on the register. Developed a program to assist U.S. Army Corps of Engineers in its compliance with Section 106 of the National Historic Preservation Act.

Cultural Resources Lead, 1995–2000

Virginia Electric and Power Company, Roanoke Rapids and Lake Gaston Hydroelectric Relicensing Projects, Mecklenburg and Brunswick Counties, VA, and Warren, Northampton and Halifax Counties, NC

Responsible for cultural resources tasks associated with FERC relicensing of two hydroelectric projects on the Roanoke River. Tasks included consulting with SHPOs and FERC; developing appropriate scopes of work sufficient to support NHPA Section 106 documentation of project effects on cultural resources; implementing all associated cultural resources studies; providing assessment of project

impacts; preparing a report of all findings, conclusions, and recommendations; and developing a cultural resources management plan.

Cultural Resources Lead, 1984–2000

U.S. Environmental Protection Agency, Roebling Steel Company Remedial Investigation/Feasibility Study (RI/FS), Florence Township, NJ

Responsible for Stage 1 and Stage 2 cultural resources investigations. Project tasks include developing archival inventory of hundreds of documents, blueprints and miscellaneous company papers left by site corporate occupants; architectural inventory of over 90 Roebling plant structures; completion of form for Roebling Steel Company site nomination to National Register of Historic Places; and archeological testing at selected locations within the industrial site. Provides cultural resources input to project remedial engineers determining appropriate remediation for specific buildings on the property. Also works with engineers to keep open vast possibilities for adaptive property reuse.

Project Manager/Principal Investigator, 2000

United States Fish and Wildlife Service, Phase I Cultural Resources Survey for the Harding Borrow Area, Great Swamp National Wildlife Refuge, Morris County, NJ

Directed the Phase IA background literature work and development of project area archeological sensitivity analysis. She also participated in and directed the Phase IB archeological field investigation in an area proposed as a source of clean borrow material to be used in the nearby remediation of a contaminated landfill site. Conducted work in support of USFWS compliance with Section 106 of the National Historic Preservation Act. Prepared a report according to the guidelines of the New Jersey Historic Preservation Office. Identified, but did not recommend, one historic period archeological site as a possible addition to the National Register of Historic Places.

Cultural Resources Lead, 2000

U.S. Environmental Protection Agency, Olean Wellfield Superfund site, Olean, NY

Conducted Stage II cultural resources investigation in coordination with Remedial Action work assignment under the EPA RAC II Contract to complete the remediation of the site in accordance with the Remedial Design prepared under the EPA ARCS II Contract. Conducted the cultural resources investigation in Level C to determine if remnants of the Genesee Valley Canal, potentially eligible for listing in the National Register of Historic Places, were extant in the area that would undergo remediation. Work involved backhoe excavation to a depth of 14 feet in order to allow examination and recordation of a cross-section of the area slated for remediation. Planned work to reveal, if present, remnants of the former canal prior to proposed removal of soils from the Superfund site.

Cultural Resources Specialist, 2000

North Baja Pipeline, LLC, Pacific Gas and Electric Pipeline Project Riverside and Imperial Counties, Southern California, Riverside and Imperial Counties, Southern CA

Provided review of cultural resources report developed as part of a FERC project application.

Lead Cultural Resources Specialist, 1999–2001

South Carolina Pipeline Corporation, Carolinas Pipeline Project, SC and NC

Assisted South Carolina Pipeline Corporation in conducting all cultural resources studies in support of attaining a Federal Energy Regulatory Commission Certificate for construction and operation of a 280-mile interstate gas pipeline in South Carolina and North Carolina. Responsibilities included developing plans to address unanticipated cultural resources, Native American consultation, overall guidance for cultural resources surveys within project areas of potential effect, and coordinating agency consultation in compliance with Section 106 of the National Historic Preservation Act.

Cultural Resources Specialist, 1999–2000

Guardian Pipeline, L.L.C., Guardian Pipeline Project Third-party Environmental Impact Statement, IL and WI

Prepared cultural resources sections of a third-party Environmental Impact Statement (EIS) that evaluated construction and operation impacts of a 149-mile-long natural gas pipeline, 1 new compressor station, 7-meter stations, and appurtenant facilities in Illinois and Wisconsin (Guardian Pipeline Project) and about 38 miles of lateral pipeline in Wisconsin (WGC Lateral Line Project). The facilities associated with the Guardian Pipeline and WGC Lateral Line Projects were under the jurisdiction of the Federal Energy Regulatory Commission (FERC) and the Public Service Commission of Wisconsin (PSCW), respectively. Both facilities were analyzed in a single EIS. Responsibilities included preparing a cultural resources technical write-up evaluation of possible project impacts to cultural properties potentially eligible for the National Register of Historic Places.

Cultural Resources Specialist, 1999–2000

US Army Corps of Engineers New England Division, Upper Cape Water Supply Project, MA

Provided cultural resources oversight for preparation of the federal and state environmental documentation for development of regional municipal water supply within the Massachusetts Military Reservation, Cape Cod, Massachusetts. Assisted in Native American Consultation. Responsible for supporting activities involving compliance with Section 106 of the National Historic Preservation Act.

Cultural Resources Specialist, 1999–2000

Tennessee Gas Pipeline Company, Stagecoach Expansion Project, PA, NJ, NY

Responsible for reviewing the cultural resources survey reports prepared for the expansion project consisting of 24 miles of new lateral, 4 miles of looping, selected replacements along 74 miles of pipeline, and a compressor station in Pennsylvania, New York, and New Jersey.

Cultural Resources Specialist, 1999–2000

The Mason and Hangar Group, Inc./USACE Louisville District, Fort Dix, NJ

Assessed potential project impacts to cultural resources and prepared sections for an EIS for the construction of a centralized tactical vehicle wash facility at Fort Dix.

Cultural Resources Specialist, 1999

Niagara Mohawk Power Corporation, Glens Falls Site, Glens Falls, NY

Collected data for and prepared Phase I Cultural Resources Report to satisfy conditions of a Consent Decree Order for the former MGP site.

Cultural Resources Specialist, 1999

Niagara Mohawk Power Corporation, Schenectady (Seneca St.) Site, Schenectady, NY

Collected data for and prepared Phase I Cultural Resources Report to satisfy conditions of a Consent Decree Order for the former MGP site.

Cultural Resources Specialist, 1998–2000

Mobile District Corps of Engineers, Jackson Port EIS, Jackson, AL

Cultural resources lead for a politically sensitive fast-track NEPA EIS. Prepared cultural resources sections of EIS.

Cultural Resources Specialist, 1998–1999

TriState Pipeline, L.L.C., TriState Pipeline Project Third-party Environmental Impact Statement, IN, IL, and MI

Prepared cultural resources sections for a third-party EIS for Tri-State's proposed 228-mile-long pipeline and appurtenant facilities in Indiana, Illinois, and Michigan. Responsibilities included evaluating project impacts to cultural resources that were potentially eligible for the National Register of Historic Places.

Cultural Resources Specialist, 1998–1999

Independence Pipeline and Market Link Expansion Projects Third-party EIS, IL, IN, MI, OH, PA, and NJ

Prepared the cultural resources sections of a third-party EIS for multiple pipeline projects consisting of a proposed 624-mile-long pipeline in Illinois, Indiana, Michigan, Ohio, Pennsylvania, and New Jersey. Responsibilities included evaluating project impacts to cultural resources that were potentially eligible for the National Register of Historic Places.

Cultural Resources Specialist, 1998–1999

Millennium Pipeline Project Third-party EIS, NY

Prepared the cultural resources sections of a third-party EIS for Millennium's proposed 424-mile-long pipeline project proposed to extend from an interconnection with Trans Canada Pipelines Ltd. to the outskirts of New York City, NY. Evaluated project impacts to cultural resources that were potentially eligible for the National Register of Historic Places.

Cultural Resources Specialist, 1998

FERC, Amended North Alabama Pipeline Project, AL

Prepared the cultural resources sections of a Supplemental Environmental Impact Statement (EIS) for Southern Natural Gas Company's Amended North Alabama Pipeline Project. Project facilities included 26.9 miles of 16-inch-diameter pipeline, 0.2 mile of 12-inch-diameter pipeline, and two-meter stations in Morgan, Madison, and Limestone Counties, Alabama. Responsibilities included evaluating project impacts to cultural resources that were potentially eligible for the National Register of Historic Places and addressing comments raised by the public.

Cultural Resources Specialist, 1998

Niagara Mohawk Power Corporation, Johnstown (N. Market St.) Site, Johnstown, NY

Collected data for and prepared Phase I Cultural Resources Report to satisfy conditions of a Consent Decree Order for the former MGP site.

Cultural Resources Specialist, 1997–1998

FERC, Portland Natural Gas Transmission System EIS, VT, NH, ME

Prepared cultural resources sections for EIS for 242 miles of pipeline in Vermont, New Hampshire, and Maine.

Cultural Resources Specialist, 1997

FERC, Destin Pipeline Project, Gulf of Mexico and Pascagoula, MS

Responsible for preparing the cultural resources section of EIS that included 75.6 miles of offshore pipeline in the Gulf of Mexico (in Federal, Alabama and Mississippi state waters), 117.7 miles of onshore pipeline in Mississippi, 2 new compressor stations, 7 new meter stations, associated facilities (liquids slug catcher, offshore gathering platform), and the non-jurisdictional gas processing plant in Pascagoula, Mississippi.

Cultural Resources Specialist, 1996–1997

FERC, SeaBoard Expansion and Niagara Expansion Projects, NY, PA, NJ

Prepared the cultural resources sections of an EA for a project involving multiple applicants, facilities, and states. Proposed facilities included Transcontinental Gas Pipe Line Corporation's looping of 22.8 miles and replacement of 6.3 miles of pipeline, and upgrade/modification of existing aboveground facilities in Pennsylvania and New Jersey; National Fuel Gas Supply Corporation's modification of two existing compressor stations and 7 existing metering and regulating stations in New York and Pennsylvania; and Tennessee Gas Pipe Line Company's modification of an existing compressor station in New York. Responsible for evaluating project impacts to cultural resources that were potentially eligible for the National Register of Historic Places and for addressing comments raised by the public.

Cultural Resources Specialist, 1995–1997

FERC, Granite State LNG Project, Wells, ME

Prepared the cultural resources sections of an Environmental Impact Statement (EIS) for Granite State's proposed LNG Storage Facility in Wells, Maine.

Lead Cultural Resources Specialist, 1995–1996

Pennsylvania Electric Company, Seward Generating Station Project

Conducted Phase I cultural resources investigation of historic generating station to assess impacts of proposed expansion project. Focus of study involved both archeological and architectural resources. Produced a report for review by Pennsylvania State Historic Preservation Office.

Cultural Resources Specialist, 1995

FERC, Steuben Gas Storage Company, Thomas Corners Gas Storage Field Project, NY

Prepared the cultural resources sections of an EA for the proposed development of a gas storage field and construction of a new 3,284 hp compressor station and 6.45 miles of 12-inch diameter pipeline in Steuben County, New York.

Cultural Resources Specialist, 1995

Northwest Pipeline Company, Animas-LaPlata Pipeline Relocation, CO

Responsible for assisting Northwest Pipeline in complying with Federal Energy Regulatory Commission's (FERCs) cultural resources requirements for pipeline certification. Activities included summarizing all extant cultural resources information into Resources Report No. 4 document for FERC. Project involved the relocation of an extant pipeline to a new location in anticipation of the proposed Bureau of Reclamation's proposed Ridges Basin Dam and Reservoir Project that, if built, will cover approximately six miles of the extant pipeline.

Cultural Resources Specialist, 1995

Northwest Pipeline Company, Expansion II Project, WA, WY, OR, ID

Developed work scope and secured qualified subcontractors to serve as Project Forensic Anthropologists. Offered to provide services in the event that unanticipated human remains and/or cultural materials were discovered during the course of proposed Northwest Pipeline construction. Assisted Task Lead in developing multiple Cultural Resources Mitigation Plans and Procedures, which were tailored for proposed facilities in Washington, Wyoming, Oregon, and Idaho.

Cultural Resources Specialist, 1994–1999

Federal Energy Regulatory Commission, Cultural Resources Industry Outreach Training

Assisted FERC in providing outreach training to pipeline industry professionals. Tasks included preparing a workbook and an eight-hour presentation focused on educating pipeline industry professionals about cultural resources and FERC's guidelines for cultural resources investigations. Also

provided assistance to FERC by responding to written and oral questions from pipeline industry professionals.

Cultural Resources Lead, 1994

U.S. Army Corps of Engineers, Baltimore District, Environmental Analysis and Documentation of U.S. Army Research Laboratory Materials Directorate Interim Facilities, Newark, DE, and Dundalk and Hunt Valley, MD

Assessed potential impacts to three potential sites slated to accommodate the United States Army Research Laboratory interim move from Watertown, Massachusetts. The facilities would ultimately be moved into nearby constructed or renovated facilities at Aberdeen Proving Ground, Maryland. Prepared Section 106 cultural resources documentation.

Cultural Resources Specialist, 1994

FERC, Liberty Pipeline Project, KY, IN, PA, NJ, and NY

Responsible for the cultural resources sections of the draft Environmental Impact Statement (EIS) for the 269 mile-long Liberty Pipeline Project in Kentucky, Indiana, Ohio, Pennsylvania, New Jersey and New York.

Cultural Resources Specialist, 1993

National Aeronautics and Space Administration, Marshall Space Flight Center Environmental Compliance Evaluation, AL

Conducted an environmental compliance assessment of Marshall Space Flight Center's activities with regard to requirements of the National Historic Preservation Act (NHPA). Reviewed and compared all applicable regulations with information collected during a site visit and through telephone interviews. Stated observations about deficiencies in NHPA compliance and provided recommendations that would correct all deficiencies.

Cultural Resources Specialist, 1993

AlliedSignal, Inc., Sumitomo Machinery Corporation, Teterboro Facility Cleanup, Teterboro, NJ

Evaluated potential impacts of proposed removal of radiologically contaminated soils on cultural resources that were eligible for National Register inclusion. Examined the project area, located within the New Jersey Meadowlands, during a walkover survey. Consulted historical documentation of area development along with historical cartographic sources. Of particular interest was a historic drainage ditch that may have related to early attempts to drain the Meadowlands in preparation for agricultural use.

Environmental Lead, 1993

Triborough Bridge and Tunnel Authority, Throgs Neck Bridge Toll Plaza CEQR

Responsible for coordinating multidisciplinary environmental assessment of a proposed structural expansion of TBTA facilities.

Cultural Resources Specialist, 1992–1993

Tennessee Valley Authority, EIS on the Resource Management Plan for TVA's Land Between the Lakes, Western KY and TN

Provided comments and recommendations to TVA regarding their draft of the EIS for the Land Between the Lakes (LBL) Resource Management Plan. Worked with TVA staff to strengthen sections that addressed cultural resources management within the LBL facility.

Cultural Resources Lead, 1992

Chevron, South Plainfield Remediation Project, South Plainfield, NJ

Designed the strategy and provided oversight for a study which produced a Site Fill History based on archival, cartographic, and historic photographic resources.

Cultural Resources Specialist, 1992

Edison Township, Edison-Tylor Estates Compliance Review, Edison Township, NJ

Provided cultural resources compliance review services to township in New Jersey for an ongoing archeological data recovery excavation. Responsibilities included field inspections, field investigation reports, identification of potential problems, and recommendations.

Cultural Resources Lead, 1992

U.S. Army Corps of Engineers, Baltimore District, Army Research Laboratory Relocation, Adelphi, MD

Responsible for Environmental Assessment (EA) of the sites at Adelphi Laboratory Center where construction was proposed to accommodate incoming Army Research Laboratory facilities. Conducted archeological field investigations of early 20th century residential site to determine its potential National Register eligibility.

Cultural Resources Lead, 1991–1992

Crown Energy, L.P. and Vista Energy, L.P., Crown/Vista Energy Project, West Deptford (Gloucester County), NJ

Responsible for Phase I and II archeological investigations at site proposed for development of a coal-fired electricity generating station. Project resulted in the identification of extensive prehistoric cultural resources within the study area. Conducted project in compliance with the New Jersey Waterfront Development Act, Coastal Permit Program Regulations, and Rules on Coastal Zone Management.

Cultural Resources Lead, 1991–1992

U.S. Army Corps of Engineers, Baltimore District, Army Research Laboratory Environmental Impact Statement (EIS), Aberdeen, MD

Responsible for Environmental Impact Assessment of facilities slated to be moved to Aberdeen Proving Ground from Watertown, Massachusetts as part of the Base Realignment and Closure (BRAC) legislation. Assessed both the archeological potential of project areas and the possible impacts of the proposed project to potentially National Register-eligible World War II-era structures.

Cultural Resources Lead, 1991

Oxbow Power Corporation, Oxbow Wheatfield Greenhouse Site Project, North Tonawanda, NY

Responsible for Phase 1A and 1B cultural resources investigations of proposed greenhouse facilities in Wheatfield, New York that would use steam power generated from a nearby cogeneration facility. Discovered a solitary prehistoric projectile point within the proposed project area.

Cultural Resources Lead, 1990

Cogen Technologies, Linden Cogeneration Project, Linden, NJ and Staten Island, NY

Evaluated the archeological potential of the Staten Island portion of a proposed cogeneration project in Linden, New Jersey with an associated underwater transmission line to Staten Island, New York. Successfully presented case to New York State Historic Preservation Office that extant documentation of disturbance in project impact area precluded the need for field investigations of New York portion of project area.

Cultural Resources Specialist, 1990

Municipal Electric Authority of Georgia (MEAG), Site Selection Study, GA

Worked with a multidisciplinary team to identify sites within the State of Georgia suitable for accommodating a 200-400-megawatt (MW) peaking combustion turbine unit. Defined exclusion criteria for each discipline including cultural resources. Finally identified three suitable sites that satisfied all criteria.

Cultural Resources Specialist, 1990

Energy Initiatives, Inc., Bermuda Hundred Cogeneration Project, Chesterfield County, VA

Conducted a visual assessment of the impacts of a proposed cogeneration facility on ante-bellum plantation sites within the James River Valley in Virginia that were eligible for inclusion in the National Register.

Environmental Lead, 1989–1994

New Jersey Water Supply Authority, Lumberville Wing Dam Rehabilitation Environmental Assessment, Lumberville, PA and Bulls Island, NJ

Responsible for a multidisciplinary team that conducted an environmental assessment of the proposed rehabilitation of the Lumberville Wing Dam. The dam was associated with the Delaware and Raritan Canal, which were listed on the National Register. Project included both conducting an upland archeological field investigation and recording a National Register eligibility assessment of the 19th century Lumberville Wing Dam following its exposure through dewatering of the Delaware River. Coordinated the dam cultural resources study with engineering rehabilitation tasks. Conducted work to assist client in compliance with Section 106 of National Historic Preservation Act.

Cultural Resources Specialist, 1989–1990

Jersey Central Power and Light Company, Red Bank-Aberdeen 230 kV Transmission Line, Monmouth County, NJ

Responsible for evaluating effects of project construction on historic architectural and archeological sites, evaluating visual impacts to a National Register Historic District, preparing NHPA Section 106 compliance documentation, and preparing New Jersey Historic Sites Encroachment Application.

Cultural Resources Specialist, 1989–1990

Federal Energy Regulatory Commission; Cultural Resource Task Assignments, ID and ME

Provided cultural resources input to EISs for the relicensing of both the Twin Falls/Auger Falls/Star Falls Hydroelectric Projects (Idaho) and the Kennebec Hydroelectric Plant relicensing (Maine).

Principal Investigator, 1989

TAMS, Arnold Street Site Archeological Survey Project, Staten Island, NY

Responsible for conducting an archeological survey and testing at the site of proposed United States Navy Homeport housing site. One goal of the testing was to confirm the presence/absence of potential cultural resources identified on the basis of prior documentary research. Cartographic sources had indicated the project location as the former site of a house complex designed by famed architect Alexander Jackson Davis and it was anticipated that the house might also have had associated gardens possibly designed by landscape architect Andrew Jackson Downing.

Project Manager, 1989

Harborview Associates, Phase 1A Cultural Resources Study, Staten Island, NY

Developed and implemented scope of work including archeological background research, field visit and project impact assessment at target development site. Prepared a report for presentation to Landmarks Preservation Commission.

Cultural Resources Task Leader, 1989

Hackensack Meadowlands Development Corporation, Work Scope for Hackensack Meadowlands Special Area Management Plan EIS, NJ

Developed cultural resources work scope for HMDC EIS for the New Jersey Meadowlands.

Project Archeologist, 1989

North Carolina Low Level Radioactive Waste Siting Authority, Site Selection Environmental Criteria, NC

Responsible for collecting and evaluating cultural resources information for use in the selection of alternative potential project sites. Developed cultural resources criteria that were applied to multidisciplinary comparisons of multiple sites. Based on comparisons to each other and against the defined criteria (from various disciplines), sites were ordered according to a preferential scale from most desirable to least desirable.

Cultural Resources Specialist, 1988–1993

Federal Energy Regulatory Commission, Multiple Task Assignments, Nationwide

Supported FERC by preparing cultural resources applicant data requests and by writing sections for numerous EISs and EAs. Also assisted FERC in compliance reviews of numerous projects including ANR Pipeline Project (Wisconsin, Michigan, Illinois, Ohio), Ohio-Indiana Pipeline Project, COCO Storage Replacement Project, Riverside Storage, ARKLA EA, FLEX-X EA, EF Expansion EA, 95/96 SE Expansion EA, Roanoke Expansion Project, East Leg Expansion Project, Easton South Project, CNG-TL-470X5 Project, the Liberty Pipeline (New York, New Jersey, Ohio, Pennsylvania, Indiana, Kentucky) Line L Replacement EA, Thomas Corner Gas Storage EA, and Majorsville Herd Crawford Storage EA. Conducted field compliance checks, prepared project-related documentation for the Advisory Council on Historic Preservation, and developed PMOA and MOA documents.

Cultural Resources Specialist, 1988–1989

Taiwan Environmental Protection Agency, Environmental Impact Assessment Short Course for Taiwan EPA

Developed and presented lectures to representatives of Taiwan EPA about cultural resources management in the United States. Emphasized issues relating to both the legislative base and the techniques applied. Presenters representing other disciplines also participated as part of a team of lecturers.

Environmental Lead, 1987–1988

New Jersey Water Supply Authority, Stormwater and Sediment Control Study of Delaware and Raritan Feeder Canal, Hunterdon and Somerset Counties, NJ

Responsible for coordinating environmental input for a multidisciplinary feasibility study to control, reduce or eliminate stormwater and sediment from within the Delaware and Raritan Canal Feeder between Kingwood Township and Upper Ferry Road. Assessed impacts of various engineering alternatives on cultural resources including the Canal, Canal-associated resources and prehistoric cultural resources. Participated in presentations to the client, state agencies, the D&R Canal Commission, and the public.

Cultural Resources Lead, 1986–1988

New Jersey Department of the Treasury, Division of Building and Construction, Imlaystown Dam Rehabilitation, Imlaystown, NJ

Responsible for coordination of environmental input to a multidisciplinary project to provide a design for dam and spillway rehabilitation, and development of a recreation plan in the Imlaystown Historic District, Monmouth County, New Jersey. Directly responsible for assessing impacts of the proposed project on the historic district. Services included supervision of historical research and archeological field

investigations, laboratory analyses, interaction with project engineers, and preparation of documentation for use by the State Historic Preservation Office in support of a Historic Sites Encroachment Application.

Cultural Resources Specialist, 1987

Jersey Central Power and Light, Environmental Assessment of 230 kV Substation and Transmission Line Near Taylor Lane, Middletown Township, NJ

Performed assessment of the potential impacts of the proposed project on archeological and standing historic architectural resources.

Cultural Resources Specialist, 1987

Lawler, Matusky and Skelly, Engineers, Stage 1B Archeological Investigation of Northport Marine Center, Northport, NY

Conducted Stage 1B archeological field investigation within an area of proposed construction. Test trenches excavated using a backhoe revealed historic and prehistoric artifacts in a disturbed fill context. No in situ artifactual materials were recovered.

Cultural Resources Specialist, 1987

New Jersey Natural Gas, Proposed Office Building EIS, Rockaway Township, NJ

Conducted a Phase I archeological investigation of an area proposed for development. Work was conducted in compliance with Rockaway Township, New Jersey cultural resources regulations. Shovel tests revealed that the site is covered by at least two feet of fill. Concluded that the project area was not archeologically sensitive for prehistoric or historic archeological resources. Visual inspection of the surrounding area demonstrated a lack of National Register-eligible properties that would be affected by the proposed construction.

Assistant Cultural Resources Lead, 1986–1987

U.S. Army Corps of Engineers, South Atlantic District, Archeological Overview and Management Plan for Military Ocean Terminal, Sunny Point (MOTSU), NC

Responsible for day-to-day operation of project activities associated with development of a historic preservation plan.

Cultural Resources Lead, 1986–1987

U.S. Army Corps of Engineers, New York District, New Sanitary Landfill Siting Study and EIS, Fort Drum (Jefferson County), NY

Participated in multidisciplinary site selection study and developed cultural resources criteria that were used to distinguish among several alternative potential sites. Also responsible for planning and executing an archeological survey of the selected proposed sanitary landfill site.

Assistant Project Coordinator, 1986–1987

National Park Service, World War II in Alaska: A History and Resources Management Plan, AK

Responsible for coordinating subconsultant input for a cultural resources management plan for all World War II Department of Defense (DoD) debris in Alaska. Conducted project as part of the Corps of Engineers' Defense Environmental Restoration Project.

Cultural Resources Specialist, 1986

Marcal Paper Mills, Marcal Paper Cogeneration Project, Elmwood Park (Bergen County), NJ

Evaluated archeological sensitivity of proposed project site. Evaluation included literature review, cartographic study, and examination of site borings for evidence of buried land surfaces and presence of cultural resources.

Material Longevity Specialist, 1985
Confidential Client

Provided results of documentary investigations into the uses of concrete and its potential survival over time. Information was used to support selection of preferred alternative site capping design at a contaminated site and was used to support court testimony.

Cultural Resources Lead, 1985

New York State Department of Environmental Conservation, Cannonsville Reservoir Enlargement Study, New York, NY

Assessed environmental impacts of the proposed project on cultural and paleontological resources. Prepared sections of a SEQR EIS document.

Cultural Resources Specialist, 1985

Van Note Harvey and Associates, Canal Road Sewer Easement, West Windsor, NJ

Directed literature search, field investigation and report preparation for a Phase I study evaluating the potential impact of a proposed sewerline on archeological cultural resources and the adjacent Delaware and Raritan Canal.

Assistant Cultural Resources Lead, 1984–1988

New York Power Authority, Sound Cable Project, Westchester and Nassau Counties, NY

Worked with a multidisciplinary team to evaluate the potential impacts of the proposed project. Participated in route selection for the proposed underground transmission line, upland archeological investigation, inventory and evaluation of National Register-eligible structures in the project area, and conducted underwater survey for prehistoric sites utilizing vibracore testing technology and application of soil chemistry tests to identify prehistoric sites.

Assistant Project Manager, 1984–1985

Virginia Electric and Power Company, Site Selection Study for Coal-Fired Electric Generating Facility, Mecklenburg, Buckingham and Greensville Counties, VA, and Bertie County, NC

Responsibilities included assuring project quality; coordinating with client, subconsultants and state agencies; and preparing reports. Cultural resources identification and evaluation program included extensive archeological surveys and preparation of environmental assessments of the four potential major power plant sites.

Assistant Project Manager, 1984–1985

National Park Service, Historic Preservation Plan, Fort Drum (Jefferson County), NY

Responsible for supervising analysis of the results of an archeological survey of 107,000-acre Fort Drum. Also assisted in developing a cultural resources preservation plan for the fort.

Cultural Resources Specialist, 1984

Office of Nuclear Waste Isolation, Battelle Memorial Institute, Evaluation of Environmental Impacts on Canyonlands National Park Due to Proposed Nuclear Waste Repository, UT

Evaluated the effect of construction and operation of a proposed nuclear waste repository in Lavendar and Davis Canyons in Utah on cultural resources in Canyonlands National Park. Previously identified resources included numerous Native American rock art sites and habitation sites. Special consideration was given to the potential effects of salt and acid rain on masonry and rock, effects to sites due to increased accessibility, and effects on cultural resources of vibrations from blasting sites located two to three miles away.

Cultural Resources Specialist, 1984

Holyoke Energy Recovery Company (HERCO), Waste-to-Energy Project, Holyoke, MA

Evaluated potential impacts of adverse air quality to historic structures in the vicinity of a proposed energy recovery facility. Project area included numerous historic structures that were listed in or eligible for the National Register. Prepared cultural resources sections of Environmental Impact Report (EIR) for review by The Commonwealth of Massachusetts Department of Environmental Quality Engineering, Western Region.

Cultural Resources Specialist, 1984

United Illuminating, Environmental Compatibility Study for 115 kV Transmission Line, Bridgeport, CT

Evaluated the impacts of a proposed transmission line to historic and pre-historic cultural resources. Provided responses to interrogatories relative to cultural resources.

Cultural Resources Specialist, 1983–1984

Alaska Power Authority, Susitna Hydroelectric Project, Susitna River Valley, AL

Responsible for reviews of cultural resources scopes of work, field investigation results, project impact assessments and site mitigations. Assisted Cultural Resources Lead in day-to-day management issues.

Cultural Resources Specialist, 1983

U.S. Department of the Army, Environmental Assessment of Construction Projects, Fort Riley, KS

Worked as part of a multidisciplinary team to study potential environmental effects of proposed construction projects at Fort Riley. Cultural resources concerns included numerous properties located within Fort Riley that were listed in or eligible for the National Register.

Assistant Technical Manager, 1982–1988

National Park Service, DARCOM Archeological Overviews and Management Plans Project, VT, CT, MA, NY, NJ, PA, MD, and VA

Responsible for the preparation of historical and archeological overviews and management plans for 19 United States Army DARCOM installations located throughout the northeastern United States including Tobyhanna Army Depot, Scranton Army Ammunition Plant and Letterkenny Army Depot in Pennsylvania; Watervliet Arsenal, Seneca Army Depot, and Rotterdam Housing Areas Nos. 1 and 2 in New York; Natick Research and Development Laboratories, and Army Materiel and Mechanics Research Center in Massachusetts; Picatinny Arsenal, Fort Monmouth (Main Post), Camp Charles Wood and the Evans Area in New Jersey; Stratford Army Engineer Plant in Connecticut; Ethan Allen Firing Range in Vermont; Harry Diamond Laboratories - Adelphi and Blossom Point Test Site, and Aberdeen Proving Ground in Maryland; and Woodbridge Research Facility in Virginia. Project duties included coordinating the work of five subcontractors, writing management sections of the overview documents, and editing other sections contributed by co-authors.

Cultural Resources Lead, 1982–1983

Consolidated Edison, Coal Combustion Residue Disposal Facility Site Selection Study, NY and NJ

Responsible for evaluating the archeological sensitivity of a number of large land tracts in New York State and New Jersey considered for selection as a waste disposal facility. Worked with multidisciplinary team to establish preferential ordering of the subject sites according to criteria defined by the team.

Community Relations Lead, 2009

U.S. Army Engineering & Support Center, Camp Swift RI/FS Public Involvement Plan, Bastrop County, TX

Provided oversight for development of a Public Involvement Plan (PIP). The PIP outlined the steps to be followed to inform interested public about the Remedial Investigation and Feasibility Study that is ongoing at Camp Swift.

Community Relations Lead, 2004

New Jersey City University, New Jersey City University West Campus Expansion, NJ.

Assisted New Jersey City University in composing a fact sheet that would inform stakeholders about the University's plans to expand its campus to include portions of a Brownfields site in Jersey City. Proposed activities discussed in the newsletter included razing nine former industrial buildings, remediating contamination at the site, and redeveloping the site for University use supported by some commercial use.

Community Relations Specialist, 2000–2005

Pennsylvania Department of Environmental Protection, GTAC-3, Valley Forge National Historic Park Asbestos Release Site, Valley Forge, PA

Responsible for preparing a community relations plan, fact sheets and providing other support to client during performance of a remedial investigation field effort, preparation of a remedial investigation report, and feasibility study report for a 482-acre site within the Valley Forge National Historic Park where asbestos contamination at concentrations up to 70% were found.

Community Relations Specialist, 1997–Present

U.S. Army Engineering and Support Center, Huntsville, Former Fort Hancock Ordnance and Explosive EE/CA, Sandy Hook, NJ

Responsible for developing the community outreach plan for this UXO investigation program. Also provided various community relations support including assisting at community meetings with local officials and developing display materials for public meetings.

Community Relations Specialist, 1991–2000

U.S. Environmental Protection Agency, ARCS II Programs

Responsible for developing and implementing community relations plans and activities related to proposed remediation of numerous Superfund hazardous waste sites including Rockaway Boro RI/FS and Cornell-Dubilier RI/FS.

Community Relations Specialist, 1999–2000

Port Authority of NY and NJ

Responsible for conducting interviews with PA NY NJ to identify the breadth of issues and anticipated stakeholders associated with a potential project in the New York Harbor area.

Community Relations Specialist, 1999–2000

U.S. Fish and Wildlife Service; Great Swamp National Wildlife Refuge, Morris County, NJ

Responsible for conducting research regarding facility history, conducting community interviews, assisting in preparing community information meetings, preparing public notes and display materials, and making presentations to community members about ongoing investigations at the Harding Landfill Remediation Project located within the USFWS Great Swamp National Wildlife Refuge.

Program Facilitator, 1998

Tetra Tech FW, Inc., Environmental Legislation and Standards Management Training Program, NY

Responsible for overseeing the implementation of a course presented to oil industry professionals who came to the US from Nigeria for the program.

Community Relations Specialist, 1996–2000

U.S. Fish and Wildlife Service, Phase II Remedial Investigation, Operable Unit 3 of the Asbestos Dump Superfund Site, Great Swamp National Wildlife Refuge, Morris County, NJ

Responsible for implementing the project community relations program for this Superfund site located within the Great Swamp National Wildlife Refuge. Established and maintained two information

repositories, wrote and produced fact sheets for distribution to the public, organized public meetings and open house sessions for local stakeholders, monitored project telephone "hotline", prepared news releases and newspaper notices, updated project mailing list, and provided other community relations support as needed.

Community Relations Specialist, 1995

U.S. Army Corps of Engineers, Albuquerque District, TERC, Holloman Air Force Base, NM

Developed Community Relations Plan for the IRP for the Holloman Air Force Base.

Community Relations Specialist, 1994

U.S. Army Corps of Engineers; Albuquerque District, Total Environmental Restoration Contract (TERC), Kirtland Air Force Base, Albuquerque, NM

Developed Community Relations Plan for the Installation Restoration Program (IRP) for the Kirtland Air Force Base.

Community Relations Specialist, 1988–1991

U.S. Environmental Protection Agency, REM III Programs

Responsible for developing and implementing community relations plans and activities related to the proposed remediation of numerous Superfund hazardous waste sites.

Previous Experience

Cultural Resources Specialist, 1982–1983

U.S. Army Corps of Engineers - New York District, Westside Highway Project, NY

Reconstructed former shorelines of the Hudson River based on study of core samples collected from shoreline and submerged areas along the present-day shore. Based on reconstructions of submerged topography, developed predictions of areas that had characteristics typical of known prehistoric settlement in the northeast. Evaluated areas for their likelihood of inclusion in the list of National Register prehistoric sites.

Independent Consultant/Principal Investigator, 1981

U.S. Army Corps of Engineers - New York District, New York Harbor Collection and Removal of Drift Project, DACW 51-81-M-1150, Hoboken to North Bergen Reach, NJ

Conducted background literature review and field examination of cultural resources within the Hoboken to North Bergen Reach of the Hudson shoreline. Identified resources that were eligible for inclusion in the National Register including features associated with existing properties listed in the National Register, such as the Hoboken Train and Ferry Terminal

Principal Investigator, 1980–1982

U.S. Army Corps of Engineers - New York District, Ramapo River Flood Control Project, DACW 51-81-M-1336, Newton, NJ

Conducted background literature review and field investigation of proposed flood control project along the Ramapo River near Oakland, New Jersey.

Field Director, 1979

Rockland County Sewer Authority, Phase I Cultural Resources Investigations of Proposed Sewer Line Right of Ways, Rockland County, NY

Directed cultural resources reconnaissance surveys of proposed sewage collection systems in Rockland and Ramapo, New York.

Investigator and Archeological Technician, 1978

Bureau of Land Management (Las Cruces District), Las Cruces, NM

Planned and performed all in-house project-related field surveys. Participated in an intensive National Register-area nomination survey. Performed related laboratory and photographic work. Prepared cultural resources sections of Environmental Analysis Record for Oliver Lee Memorial State Park.

University Professor, 1975-1984

American University, William Paterson College, Rutgers University, New York University, and City University of New York's Baruch College, Various Locations

Served on the faculties of American University, William Paterson College, Rutgers University, New York University and the City University of New York's Baruch College. Taught Archeology, Anthropology, and other related courses.

Archeological Crew Member, Summer Months 1973

New York Department of Transportation, I-88 Archeological Reconnaissance Survey, Buffalo, NY

Participated in reconnaissance survey of portions of proposed I-88 right-of-way.

Field Researcher, 1971-1977

The Catholic University, Franklin and Marshall College, The American University, Various Locations

Field experience in prehistoric and historic archeology in Virginia (Thunderbird Archeological Project, Front Royal, Virginia, through The Catholic University of America), and Pennsylvania (Faucett Site Archeological Project, Bushkill, Pennsylvania, through Franklin and Marshall College) and Shawnee Minisink Site, Shawnee-on-Delaware, Pennsylvania (through The American University).

Publications & Presentations

Publications:

McNett, C.W. Jr., B.A. McMillan, and S.B. Marshall. 1977. The Shawnee-Minisink Site. In: W.S. Newman and B. Salwen (eds.), pp. 282-296. Amerinds and Their Paleoenvironments in Northeastern North America. Annals of the New York Academy of Sciences, vol. 288.

Marshall, S.B. 1980. Descriptive Artifact Categories and Implied Function: A Problem in Archaeological Semantics. Paper presented at Annual Meeting, Society for American Archaeology, Philadelphia, Pennsylvania.

Marshall, S.B. 1982. Aboriginal Settlement in New Jersey During the Paleo-Indian Cultural Period c.a. 10,000-6000 B.C. In: O. Chesler (ed.). New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities. Office of Cultural and Environmental Services, New Jersey Department of Environmental Protection.

Marshall, S.B. 1984. Survivals of Prehistoric and Early Historic Archaeological Resources in Urban Contexts. In: O. Chesler (ed.). Selected Papers in the Identification, Evaluation, and Protection of Cultural Resources. Office of Cultural and Environmental Services, New Jersey Department of Environmental Protection.

Marshall, S.B. 1985. Paleo-Indian Artifact Form and Function at Shawnee Minisink. In: C.W. McNett Jr. (ed.). Shawnee Minisink: A Stratified Paleo-Indian Archaic Site in the Upper Delaware Valley of Pennsylvania. Academic Press, California.

Marshall, S.B. 1993. Review of "Early Paleo-Indian Economies of Eastern North America, Research in Economic Anthropology, Supplement 5, Kenneth Tankersly and Barry L. Isaac, editors." *American Antiquity*. 58(1):172-173.

Marshall, S.B. 2005. From the Spirit of Exploration to the Business of Archaeology: Two Surveys of the Roanoke Rapids and Gaston Hydropower Project. In Stanley South, Archeology of the Roanoke, University of North Carolina Press.

Marshall, S.B. 2011. Cultural Resources Connect Developers with Local Communities. Guest Column, Nov/Dec issue, *enerG*, Magazine, Vancouver, BC, Canada.

Poster:

Reeve, S, S.B. Marshall, J.C. Sexton, M.A. Carper, and C.L. Borstel, 2009. Assessing the Past to Secure the Future: Cultural Resources and Wind Energy. Poster presented at Windpower 2009, Conference and Exhibition in Chicago, IL, American Wind Energy Association (AWEA).

Presentations:

Marshall, S.B. 2011. Cultural Resources: Connecting Developers with Local Communities. Presented to AWEA Windpower 2011, American Wind Energy Association, Anaheim, CA.

Willant, G. and S.B. Marshall. 2010. Preserving the Army's History at Fort Slocum, New Rochelle, New York. Presentation to the Boston Post SAME (Society of American Military Engineers), Boston, MA.

Goepfert, G.J., B. Davis, N. Lowey, J.R. Boule II, P. Dohrenwend, M. Cavanaugh, S.B. Marshall, and C.L. Borstel. 2009. Public Launch of Web Site The Army's Century on Davids Island, Fort Slocum, New Rochelle, NY. Presented at Ossie Davis Theater, New Rochelle Public Library, NY.

Klein, J.I. and S.B. Marshall, 2002. Ethical Responsibility of Industrial Archaeologists to Communities with Toxic Wastes. Paper presented to Annual Meeting of the Society for Industrial Archaeology, Brooklyn, New York

Marshall, S.B. 1999. From the Spirit of Exploration to the Business of Archeology: Two surveys of the Roanoke Rapids and Gaston Hydropower Project. Paper presented Middle Atlantic Archeological Conference, Annual Meeting in Harrisburg, PA.

Marshall, S.B. 1995. Transportation Projects, Cultural Resources, and Hazardous Waste. Paper presented to Transportation Research Board 74th Annual Meeting held in Washington, D.C.

Klein, J.I. and S.B. Marshall. 1989. Hazardous Site Archaeology: Problems, Issues and Concerns. Paper presented to the First Joint Archaeological Congress, Baltimore, Maryland.

Professional Accomplishments

Recipient of '2010 Award Towards Excellence' from Greater Hudson Heritage Network, For the innovative website The Army's Century on Davids Island: Fort Slocum, New Rochelle, NY. The award was in recognition of the collaborative effort to preserve, document and make accessible an important part of New Rochelle history. Website address - <http://davidsisland.westchesterarchives.com>.

Awarded Commander's Certificate of Appreciation in recognition of outstanding dedication and lasting contribution to Davids Island/Fort Slocum Restoration in December 2008 from US Army Corps of Engineers New York District.

Awarded Certificate of Appreciation for Assistance in implementing community outreach efforts in October 1999 from the United States Fish and Wildlife Service.

Professional Affiliations

Founding Member, Professional Archaeologists of New York City
Member, Society for American Archaeology