III. ENVIRONMENTAL, PREHISTORIC, AND HISTORIC CONTEXTS

ENVIRONMENTAL CONTEXT

The project area is located along Smith's Bridge Road, at a crossing of Brandywine Creek. The area is situated in the extreme north portion of New Castle County near the Pennsylvania state line, within the Piedmont Plateau Physiographic Province. The major drainage in this area is the Brandywine Creek, flowing in a southerly direction to Wilmington, where it meets the Christiana River before continuing to the Delaware River.

The soils in this part of New Castle County are generally of the Glenelg-Manor-Chester association, which consists of nearly level-to-steep, well-drained, medium-textured, upland soils (Matthews and Lavoie 1970). This association is located in the northern and northwestern parts of the county and accounts for about 15 percent of the soils found in New Castle County. The soils in the tested portions of the project area are primarily Codorus silt loam and Hatboro silt loam.

The Codorus Series consists of moderately well-drained soils that occur on flood plains in the Piedmont Plateau. This soil series is found on the west bank of the Brandywine Creek, north of Smith's Bridge Road, in Area B. The soils in this series are usually wet in spring; as water does not move quickly through these soils, they are subject to flooding, often causing delays in plowing and planting (Matthews and Lavoie 1970). South of Smith's Bridge Road, along the east bank of the creek in Area A, the soils are of the Hatboro Series. These soils are deep and among the wettest and most poorly drained in the county, causing frequent flooding. Both the Codorus and Hatboro soils contain considerable amounts of mica; when moisture content is favorable, they are fairly easy to work, though artificial drainage will likely be needed (Matthews and Lavoie 1970).

PREHISTORIC CONTEXT

The regional Delmarva chronology will be employed in the discussion of the prehistoric background for the project area, as most of the existing data for the state of Delaware (including settlement patterns) result from work conducted by Custer and his associates (Custer 1984, 1989, and 1996).

Table 1 Synthesis of Northern Delaware Prehistory

Environmental Period	Date Range	Traditional Eastern Chronology	Delmarva Chronology
Late Pleistocene	13,000 – 8000 B.C.	Paleo-Indian	*Paleo-Indian*
Early Holocene	8000 – 6500 B.C.	Early Archaic	

Table 1 (Cont'd)

Environmental Period	Date Range	Traditional Eastern Chronology	Delmarva Chronology
Middle Holocene	6500 – 3000 B.C.	Middle Archaic	*Archaic*
	3000 – 1000 B.C.	Late Archaic	*Woodland I*
Late Holocene	1000 B.C. – A.D. 1	Early Woodland	
	A.D. 1 – 1000	Middle Woodland	
	A.D. 1000 – 1600	Late Woodland	*Woodland II*

Paleo-Indian (13,000 – 6500 B.C.). The Paleo-Indian cultural period covers the Paleo-Indian and Early Archaic periods of the traditional eastern chronology. This period begins with the first evidence of humans in northern Delaware. During this period, the Wisconsin glacial ice sheet had fully receded; the first 5,000 years of the Paleo-Indian period are characterized by a cold and wet climate. Vegetation consisted of a mosaic of grasslands, deciduous forests and boreal forests. After 8000 B.C., a general drying trend is in evidence. Spruce and pine boreal forests with small amounts of deciduous trees dominated the mixed forest and grasslands.

New Castle County, like much of the Middle Atlantic region, was characterized by a relatively complex set of overlapping environmental zones, providing a variety of subsistence resources for prehistoric peoples entering the area. Throughout this period the occupants of northern Delaware practiced hunting-and-gathering lifeways focused around sources of stone for tools. Archaeological sites from this time period are usually identified by the presence of well-crafted stone projectile points, usually made of high-quality crypto-crystalline stone, including chert and jasper. The points are characterized by a single, long, channel flake, or flute, removed from both sides of the point. Various scrapers and flake tools commonly accompany these point styles.

Archaic (6500 – 3000 B.C.). In the traditional chronology there is a break in cultural patterns beginning about 8000 BC, corresponding with a general warming trend. Pine and northern hardwoods, particularly oak, replaced boreal forests and open grasslands. In the Delmarva regional chronology, the Paleo-Indian and Early Archaic periods are combined under the single rubric of Paleo-Indian. Archaic populations continued the basic lifeways of the previous period. Hunting and gathering continued as the basic subsistence pattern. Populations remained highly mobile in the Archaic period, though there is a noticeable change in the types of lithic materials utilized. As people expanded into new environments, the focus on high-quality lithic resources was lost. Tool kits of this period typically tended to be made from expedient, locally available material. Diagnostic stone tools of this period include points with bifurcated bases, side-notched points, and various stemmed points. The Delmarva Regional Archaic period incorporates the Middle Archaic chronological period of the Traditional Eastern Chronology.

Woodland I (3000 B.C. – A.D. 1000). About 3000 B.C., the rate of sea level rise slowed; as a result, riverine and estuarine environments stabilized enough to support significant and

seasonally predictable populations of shellfish and anadromous fish. An increase in the number of sites from this time period indicates a population increase. The development of sedentism (inferred from the number of complex sites found in this period) forms the basis of distinguishing the Archaic from the Woodland I periods in the Delmarva region. The Woodland I period incorporates the Late Archaic, Early, and Middle Woodland periods of the Traditional Eastern Chronology.

Container technology evolved through this time period, beginning with steatite bowls and evolving into a ceramic industry. At first, vessels were thick walled, undecorated, and mirrored the shape of stone bowls. Through time, ceramic vessels become rounded, more refined, and often decorated. Net sinkers, stone axes, and spear-thrower weights (along with a wide range of stone points and blades) were made during this period. Common point styles are stemmed, side-notched, and triangle points.

Native Americans adopted a more sedentary existence in the warmer and drier climate of the Middle Holocene. The oak and hemlock forests evolved into mixed vegetation of grassland, oak forest, and hickory forests. Settlement during this period commonly consisted of repeated reuse of campsites and semi-sedentary-to-sedentary small village sites along major drainages.

Woodland II (A.D. 1000 – 1600). Chronologically, this part of prehistory is known as the Late Woodland period. During the five hundred years of Native-American occupation preceding contact with Europeans, many Native Americans gathered in small villages or hamlets. Most villages lay adjacent to major streams and rivers. By approximately A.D. 900, horticulture began to achieve an important role in the subsistence pattern across the Middle Atlantic region, though little evidence of these practices has been found in Delaware.

Smaller settlements probably continued to rely on intensive food gathering as the main route of subsistence. Temporally diagnostic artifacts of this late period include small triangular arrow and/or dart points, as well as various styles of ceramic. Ceramic vessels of this period are often highly decorated and appear in a wide range of shapes.

The disappearance of non-local influences on mortuary practices and absence of tools made from non-local stone imply a breakdown in extensive trade networks during the early portion of the Woodland II period. The main Woodland II cultural complex is known as Minguannan, distinguished by a ceramic type of the same name.

HISTORIC CONTEXT

General History

Situated in the Piedmont Geographic Zone, as defined in the *Delaware Comprehensive Historic Plan* (Ames et al. 1989), the project area is located on the northeast bank of the Brandywine Creek (near Beaver Creek) in New Castle County, Delaware. Historically, the parcel was part of a larger tract that encompassed land in the Christiana and Brandywine Hundreds, as well as Birmingham Township, Delaware County, Pennsylvania.

Historic settlement within northern Delaware occurred during the seventeenth century when Swedish, Dutch, and Finnish settlers established homesteads along the Delaware River. The interior of northern Delaware remained sparsely settled until circa 1664, when the English wrested control of the region from the Dutch. As a result, settlers moved inland and established large agricultural settlements (Sharf 1888).

During the last quarter of the seventeenth century, William Penn granted numerous tracts of land in Delaware to English and Welsh settlers—many of whom were Quakers—thereby changing not only the ethnicity of northern Delaware, but also introducing a new religious influence. By the last decade of the seventeenth century, a hundreds system had been established for land division within the state. The Brandywine Hundred was organized in 1687, followed closely by the Christiana Hundred (Ferris 1846).

The region experienced steady economic growth during the eighteenth century. The subsistence farms of the previous century gave way to large farms that emphasized production farming (Pendleton 1999:6). Crops grown, harvested, and sent to market included wheat, corn, and fruit. In addition, livestock and dairy farming were also being expanded for commercial production. With the increase in settlement and the establishment of agricultural trade came the need for a more developed transportation system. During this period the former Indian paths were enlarged and overland transportation systems developed (Munroe 1979). By the end of the eighteenth century, the milling industry expanded from local mills to commercial paper mills, flour and gristmills, and woolen mills. The Brandywine Creek and its numerous tributaries, though ill suited for navigation due to heavy silting, proved ideal for the establishment of mills (Conrad 1908).

The start of the nineteenth century was the beginning of a new milling era in northern Delaware. In 1802, Eleuthere Irénée du Pont de Nemours, a French immigrant living in New Jersey, arrived in the Brandywine Valley. According to the family history, Du Pont had come to the area to hunt game and was appalled at the poor quality of gunpowder available. Having learned to manufacture black powder during his youth in France, E.I. du Pont established a saltpeter mill on the banks of the Brandywine Creek above Wilmington. By 1810, the mill had grown to become one of America's largest black-powder plants. With Du Pont's death in 1834, the gunpowder company was re-charted as a partnership, and the family bought out the original American and French stockholders who had backed Du Pont's original mill and plant. His son, General Henry du Pont, served as head of the company until his death in 1899 (Dorian 1962).

The larger mill complexes, such as Du Pont's Eleutherian Mills, Tatnall and Lea's Mill, Canby's Mill, and William Young's Rockland Paper Mill, were established on the Brandywine Creek, within or near Wilmington, Delaware. Smaller mills, such as John Farra's Mill Complex, William Twaddel's "Cannon Powder" Mills, Smith's Mill, Hatton Woolen Mills, and Perkins Sawmill, were established along the tributaries of the Brandywine Creek near the Pennsylvania state line (Case et al. 1994:134).

During the mid-to-late nineteenth century, improved transportation routes and the establishment of railroad lines throughout the state further enhanced Delaware's economy. The improvement to transportation routes had a direct impact on Delaware's agricultural sector. During the period 1810 – 1880, the majority of land use in Delaware was predominantly agricultural. Though farmstead size decreased, improved land increased in order to supply the demand created by the

state's steadily increasing population (Ames et al. 1989:47 – 49). With the state's improved transportation network, farmers were better able to transport their crops, livestock, and dairy products to markets throughout Delaware. Due to the intensive silt build up in the Brandywine Creek, the numerous mills were also able to utilize the transportation network to reach their markets.

By the beginning of the twentieth century, Wilmington had evolved into a primary population and industrial center. As a result, the small manufacturing centers in northern Delaware and the various mills on the Brandywine's tributaries saw a financial decline (Pendleton 1999:10). With the United State's entry into World War I, the Du Pont Company was awarded key military contracts for gunpowder and explosives; as a result, the family's previously established fortune escalated (Dorian 1962). The introduction of the automobile facilitated the development of suburbs around Wilmington and further advancement of the city's position as an industrial center. The outlying areas in northern Delaware, closer to the Pennsylvania state line, remained agricultural. During this period there was a shift from wheat and cereal production to livestock and dairy operations (Herman et al. 1989:15 – 16). By the first decade of the twentieth century, the majority of mills located on the Brandywine Creek tributaries had closed, as people no longer relied on mills for flour, woolens, and lumber.

Project Area History

The project area is located on the northeast bank of the Brandywine Creek, east of Smith's Bridge. A map of early land grants and patents for Birmingham Township, Pennsylvania indicates that during the early-to-mid eighteenth century the project area was part of a tract owned by the London Company (Figure 3). The first owner of record was William Smith, a weaver, who had large tracts of land within the Brandywine and Christiana Hundreds, as well as in Birmingham Township, Pennsylvania (New Castle County Recorder of Deeds Office). Deed research suggests that Smith may have inherited the land, as there are no deeds listed for the project area connected with William Smith (New Castle County Recorder of Deeds Office). Upon William Smith's death, his estates were divided among his nine children; his son, Jacob, eventually received the entire 100-acre tract, located within the project area.

Jacob Smith had possession of a 68-acre portion of the parcel at the time of purchasing his siblings' interest in the remaining 32-acre portion of the William Smith Estate. Jacob Smith purchased the 32-acre parcel, including houses and buildings, at a cost of $383.00; however, there is no mention of mill buildings on this parcel (Deed Book B3: 214). It is unknown whether Smith's gristmill had been erected by William Smith or later by his son Jacob. The stone, two-and-a-half story mill building was located north of Beaver Creek (known as Buck Run before 1816). A map of Delaware County indicates that as of 1844, the existing mill property had been enlarged to include an additional gristmill north of the original mill (Figure 4). In 1840, Jacob Smith sold the 100-acre parcel with houses, mills, and buildings to Isaac Smith (Deed Book L5: 198). Rea and Price's maps show Isaac Smith's gristmill and sawmill as well as six dwellings adjacent to the project area, inclusive of the mill house (Figure 5).

That same year, Isaac Smith petitioned for the construction of an improved bridge across the Brandywine. According to New Castle County road returns, Smith was responsible for building the bridge; the county reimbursed his costs. Construction of the covered bridge was delayed until the following year due to inclement weather (New Castle County Road Returns 1839 –

1840). Census records for 1850 indicate that Smith's gristmill produced 660 barrels of flour valued at $4,000.00 for that year (U.S. Bureau of the Census 1850). Isaac Smith operated the mill until his death in 1857. In March 1858, his sons, Louis and Edward (the executors of Smith's estate), offered the mill property at public sale. The property, now containing 144 acres and including the houses, mills, barns, stables, and other buildings, was purchased by Charles Twaddel and his brother James (Deed Book E7: 98). The Twaddels were related to William Twaddel, owner of the "Cannon Mills." Though historic maps show the mill complex as "C. Twaddel's Mill," the Smith's Mill Complex retained its name among the locals during the 24-year tenure of Charles and James Twaddel (Figures 6 and 7). The mill prospered under the Twaddels' ownership due in large part to the establishment of a route in 1868 through the Christiana Hundred by the Wilmington and Northern Railroad. The railroad constructed a station, known as Smith's Bridge Railroad Station, during the same year.

In 1882, the Twaddels sold the 144-acre mill complex to William P. Talley. Talley renamed the mill complex "William P. Talley Mill," as indicated on Baist's 1893 atlas (Figure 8, Plate 3). The locals adopted the name, while the bridge remained known as Smith's Bridge, the banks of the Brandywine near the mill as Smith's Ford, and eventually the road leading to the bridge as Smith's Bridge Road. Talley's Mill operated less as a commercial interest and more as a local corn and wheat-grinding mill during the last decade of the nineteenth century (Scharf 1888:907). William P. Talley died intestate and his property was equally divided between his four children. In 1904, three of the heirs sold their three-quarter interest to their brother John Heyburn Talley (Deed Book T19: 321). In 1920, John H. Talley's brother Elihu sold him a 2-acre parcel with the millrace (Deed Book Z28: 321). However, according to historian Henry C. Conrad, the mill had ceased operations prior to 1910, and by 1920 the mill building had begun to collapse (Conrad 1908:457). John Heyburn Talley and his wife Josephine sold three parcels containing the mill complex and mill house to Irénée du Pont, Jr. in 1928 (Deed Book F35: 494). The property was annexed to the 600-acre "Granogue" Estate, acquired between 1921 to 1923 (Pendleton 1999:12). During the creation of the "Granogue" Estate, Irénée du Pont, Jr. renamed the railroad station "Granogue Railroad Station." In 1955, Du Pont and his wife Irene sold a 6-acre parcel with the mill house to Ellice McDonald, the current owner (Deed Book L56: 177).

Plate 3 Talley's Grist and Sawmill 1896, View Looking Southwest. Smith's Bridge stands to the right (Courtesy of Hagley Museum and Library).