
ARCHITECTURAL RESOURCES SURVEY SILVER LAKE ROAD IMPROVEMENTS

New Castle County, Delaware

Prepared By:



**The Cultural Resource Group
Louis Berger & Associates, Inc.
East Orange, New Jersey**

Prepared For:



**The Delaware Department of Transportation
Dover, Delaware**

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ABSTRACT

The Delaware Department of Transportation (DelDOT) proposes to undertake a replacement or rehabilitation of Bridge 407A, located in St. Georges Hundred, New Castle County. The bridge carries Silver Lake Road (County Road 442) over the mill headrace that flows from Silver Lake and that formerly provided waterpower for the Willow Grove Mill. At the request of DelDOT, Louis Berger & Associates, Inc. (Berger), performed architectural investigations as part of the preliminary planning for the proposed replacement or rehabilitation. The purpose of the study was to identify architectural resources within the area of potential effect (APE) that are currently listed in or eligible for listing in the National Register of Historic Places.

The architectural survey identified nine architectural resources more than 50 years old located within the APE. Supplementary Delaware Cultural Resource Survey (CRS) documentation was prepared for the five previously inventoried resources, and initial CRS inventory documentation was prepared for the four architectural resources not previously identified. As none of the nine resources had been previously listed in or determined eligible for the National Register, the study also evaluated the resources with regard to their National Register eligibility. The study identified the Willow Grove Historic District (N-13782), a National Register-eligible district, in which seven of the surveyed resources are contributing elements. The Willow Grove Historic District is significant under National Register Criteria A and C. The study found that the remaining two resources are not eligible for listing in the National Register.

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I. INTRODUCTION

The Delaware Department of Transportation (DelDOT) proposes to undertake a replacement or rehabilitation of Bridge 407A. The bridge carries Silver Lake Road (County Road 442) over the mill headrace that flows from Silver Lake and that formerly provided waterpower for the Willow Grove Mill in St. Georges Hundred, New Castle County. The bridge is located approximately 4,600 feet south of the junction of Silver Lake Road with State Route 299 (the Middletown-Odessa Road) (Figure 1). The area is rural in character, with a mixture of agricultural land, woodland, and exurban residential lots.

DelDOT contracted the Cultural Resource Group of Louis Berger & Associates, Inc. (Berger), to perform architectural investigations as part of the preliminary planning for the proposed replacement. The purpose of the investigations was to identify architectural resources within the area of potential effect (APE) currently listed in or eligible for listing in the National Register of Historic Places, the Federal government's list of buildings, structures, sites, objects, and districts worthy of preservation. Federal legislation requires the identification, evaluation, and treatment of cultural resources impacted by publicly financed undertakings. These legislative mandates include Section 106 of the National Historic Preservation Act of 1966, as amended; Section 101 (b) (4) of the National Environmental Policy Act of 1969, as amended; the Advisory Council on Historic Preservation's Procedures for the Protection of Historic Properties (36 CFR 800); and Section 4(f) of the Department of Transportation Act of 1966, as amended.

Berger conducted architectural and historical research and fieldwork for this project during October-November 1999. Preliminary research focused on examining survey files at the Delaware State Historic Preservation Office (Delaware SHPO) in order to identify any previously surveyed and documented resources within the project's APE. Properties immediately adjacent to the proposed improvements constituted the APE for the investigation. Historical information was also gathered from the Delaware SHPO historic contexts for use in developing a historical narrative describing the evolution of the project area and outlining evaluation criteria for National Register eligibility. Site-specific historical research was conducted at the office of the New Castle County Recorder of Deeds in Wilmington and at the Delaware State Archives in Dover.

Five architectural resources located within the APE had been previously inventoried, none of which had been previously listed in or determined eligible for the National Register. Fieldwork identified four additional resources more than 50 years old that are located within the APE that had not been previously inventoried. Delaware SHPO Cultural Resource Survey (CRS) forms were completed for these four resources. Delaware SHPO CRS Update forms were completed for the five previously inventoried resources. The architectural investigation also identified and evaluated the Willow Grove Mill Historic District (N-13782). A Determination of Eligibility form was completed for the historic district.

Fieldwork, research, and report preparation activities for this project were undertaken following the Delaware SHPO's *Guidelines for Architectural and Archaeological Surveys in Delaware* (Delaware State Historic Preservation Office [SHPO] 1993). The investigations were performed under the supervision of Berger Principal Architectural Historian Martha Bowers. Architectural Historian Philip E. Pendleton performed the fieldwork and research activities and authored this report. (A copy of Mr. Pendleton's resume is presented in Appendix C.) The report was edited by Anne Moiseev. Graphics were prepared by Jacqueline Horsford.

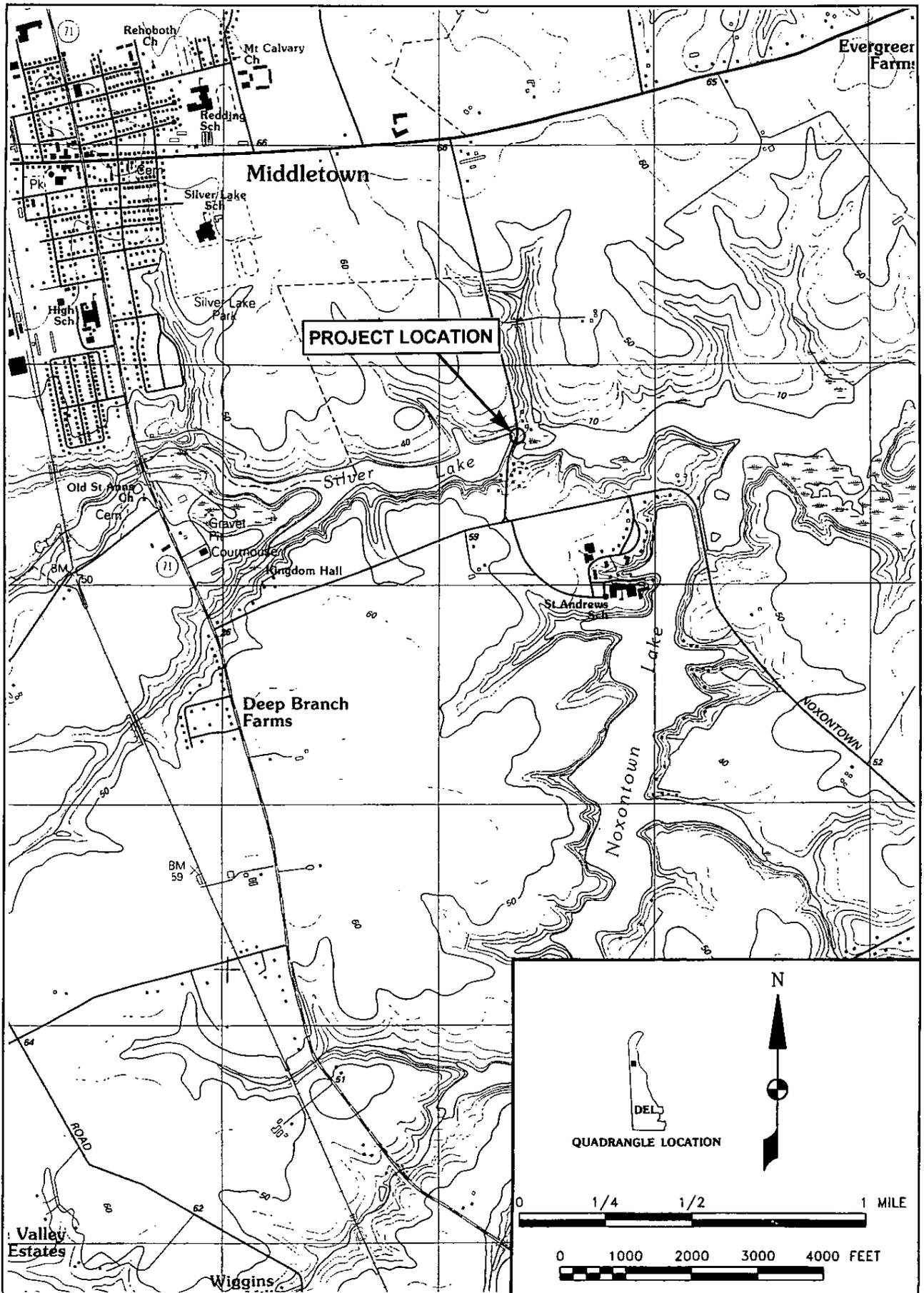


FIGURE 1: Project Location Map

SOURCE: USGS 7.5 Minute Quadrangle, Middletown, DE 1993

II. BACKGROUND RESEARCH

A. General Historic Context

In accord with Federal and State of Delaware guidelines concerning National Register eligibility for historical resources, this study uses historic contexts to link the project area's history with property types describing the evolution of its built environment. A context outlines levels of historical significance and architectural integrity that identified historical resources must possess in order to be determined eligible for listing in the National Register. Subsequent decisions regarding National Register eligibility compare levels of integrity and significance established by the context to the historical significance and architectural integrity of each identified historical resource. The use of historic contexts for the evaluation of National Register eligibility allows for the systematic evaluation of each resource's National Register eligibility based upon the historical evolution of the locale.

The following historic context has been divided into six chronological periods based on periods outlined in the *Delaware Comprehensive Historic Preservation Plan* (Ames et al. 1989). Fieldwork and research activities identified five themes applicable to the historical resources found in the project area vicinity. These themes are (a) Agriculture, (b) Manufacturing, (c) Settlement Patterns and Demographic Change, (d) Architecture, Engineering, and Decorative Arts, and (e) Transportation, which are discussed in each of the chronological periods.

1. Exploration and Frontier Settlement, 1630-1730 ±

The project area for the planned replacement or rehabilitation is situated where Silver Lake Road crosses the headrace that flows from Silver Lake and that formerly provided waterpower to the Willow Grove Mill in St. Georges Hundred, New Castle County (see Figure 1). The project area is located within the Upper Peninsula Geographic Zone as defined by the *Delaware Comprehensive Historic Preservation Plan* (Ames et al. 1989). The Upper Peninsula consists of the area lying to the south of the fall line, inland from the shoreline of the navigable rivers and creeks, and north of the Kent-Sussex County boundary. The topography of this zone varies from level through gently rolling to steeply sloping. The surface soils also vary, ranging from medium-textured to moderately coarse; subsoils are composed of sandy loam or sandy clay loam. Some areas are well-drained, others very poorly drained. Early European pioneers noted a rich variety of oak, hickory, poplar, walnut, and ash trees in the Upper Peninsula region prior to extensive land clearance activities. The region's major and minor creeks and streams generally drain eastward toward the Delaware River and Delaware Bay (Ames et al. 1989:34).

Colonial settlement of the north half of the present-day state of Delaware began in the early seventeenth century. The first Swedish, Finnish, and Dutch settlers largely concentrated their homesteads near the Delaware River in the north end of the future state, basing their settlement's economic life on the fur trade and subsistence agriculture. After England acquired control of the region in 1664, agricultural settlement gradually intensified and moved inland along the region's larger creeks and streams. Settlement of northern Delaware increased significantly after William Penn began granting tracts of land in Delaware to English and Welsh immigrants in the 1680s. At this time the first movement into the Upper Peninsula by Europeans in significant numbers took place. Subsequently the town of New Castle developed as the region's first urban area. Slavery became a limited presence in the region toward the end of the period. Early architectural construction by Europeans consisted primarily of log or frame buildings erected quickly and not intended for permanent use (Ames et al. 1989:45-46; Herman et al. 1989:4).

Around 1660 a small cluster of European settlement that represented an offshoot of the main concentration above New Castle was established on the Appoquinimink Neck, the land lying between Appoquinimink and Drawyers creeks in the vicinity of the present-day town of Odessa. The settlers were mostly of Dutch heritage; the size of the little colony probably did not exceed 20 or so dispersed homesteads, and it remained an isolated settlement during the late seventeenth and early eighteenth centuries. No urban center developed during this period. Most of the early properties were laid out in relatively long and narrow shapes that gave each property some creek frontage, with most of the parcels oriented to the north bank of Appoquinimink Creek. The project area is situated within the scope of the early Appoquinimink community, near its west end, on a parcel patented by Abraham Coffin in 1671 (Heite 1972).

Property types reflecting context themes during this period include non-nucleated agricultural settlements, pioneer trapping and hunting camps, roads, paths, early trails, landings, fords, ethnic impermanent architecture, and early durable buildings. Examples of these property types on the landscape should be considered extremely significant, as they provide information on the earliest settlement of the region. While integrity levels are expected to be low, resources should retain some integrity of materials and location in order to convey their significance.

2. Intensified and Durable Occupation, 1730-1770 ±

Settlement and agricultural development of the region quickened during the eighteenth century. As population density increased, overland transportation networks were created that joined outlying agricultural areas with larger village centers and engendered further intensive settlement along their routes. New port towns, such as Odessa and Smyrna, developed in the Upper Peninsula to serve the Atlantic coastal trade. Crossroads villages were beginning to emerge by the end of this period; the place "now known by the name of Middletown" was mentioned in a road petition presented to the county court in 1771. The region's agriculture emphasized diversified production on individual farms consisting of wheat and other cereal cultivation, livestock raising, dairying, orchard tending, and vegetable gardening. Toward the end of the period, farmers began experimenting with ways to rebuild their fields' fertility. Architectural forms during this period primarily consisted of more permanent brick, stone, and log versions of Georgian and ethnic vernacular structures (Ames et al. 1989:46; Herman et al. 1989:23-26; Scharf 1888:994).

Property types indicative of context themes include roads, taverns, inns, villages, mills, durable and permanent buildings, stair-passage dwellings, barns, granaries, and hay barracks. Survival rates and integrity levels for these property types are very low, similar to those from the Exploration and Frontier Settlement period, making surviving examples very significant. Resources documenting these trends should retain sufficient integrity of location, materials, and workmanship to convey information related to their significance.

3. Early Industrialization, 1770-1830 ±

During this period, non-nucleated settlement continued as the mode in the Upper Peninsula, with some noticeable clustering around existing communities. The population continued to grow gradually into the early years of the nineteenth century, but after 1810 it began to decline in some areas. Slavery also began to wane in the region. Tenancy became more widespread in connection with the emergence of a dominant new class of wealthy farmers who invested in additional farmsteads and urban and village properties. Many of these prosperous agriculturists also participated in a burgeoning progressive agricultural movement (Ames et al. 1989:47-48; Herman et al. 1989:26-30).

Property types documenting context themes include roads, bridges, inns, taverns, villages, mills, hall-parlor and stair-passage dwellings, dwellings incorporating service wings, domestic outbuildings, farmsteads, and specific-function farm buildings. Although survival rates for dwellings, taverns, and major agricultural

buildings are relatively good, these resources in the Upper Peninsula are under considerable pressure from modern development, especially in the north portion of the region where the project area is located. Property types indicative of these themes should be considered very significant but must also retain higher integrity than resources documenting earlier periods. Resources must possess integrity of location, materials, workmanship, and feeling.

4. Industrialization and Early Urbanization, 1830-1880 ±

The introduction of improved transportation networks, such as turnpikes and railroads, greatly assisted both farming and manufacturing activities and linked the area with the larger regional economy. Rail access provided farmers with more efficient methods of transporting surplus produce to distant markets, thereby boosting productivity and the cultivation of lucrative cash crops. The major market commodities for farmers during the period were beef and butter, with peach orchards a profitable presence for a relatively brief boom during the years circa 1855-1870. Southern New Castle County's farmers also raised substantial quantities of wheat for market (though less than formerly) and of corn, oats, and hay for livestock feed. The movement for agricultural improvement gained further strength because of the trend toward ever-increasing intensification of cultivation and the accompanying soil erosion; this trend itself was a consequence of the ongoing division of farmsteads by inheriting generations in local families. Population growth regained its vitality during this period, especially in the north portion of the region, accompanied by continued increase in the rate of tenancy in the countryside as well as in towns and villages. During this period the region's domestic, industrial, and agricultural architecture displayed tendencies toward increasing variation as the Victorian eclectic styles proliferated, the local industrial establishments further diversified, and farmers built multifunctional buildings, such as barns with basement stables and granaries flanked by attached corncribs (Ames et al. 1989:50; Herman et al. 1989:30-34).

Property types documenting context themes include mills, towns, churches, schools, a variety of nineteenth-century architectural styles, single- and multiple-family dwellings, and multifunctional farm buildings. Although survival rates for resources of these types are relatively good, especially in comparison with resources from earlier periods, these resources are under pressure from modern development. Integrity levels are relatively high for these resources, requiring integrity of materials, workmanship, design, location, setting, and feeling.

5. Urbanization and Early Suburbanization, 1880-1940 ±

Despite decline in the profitability of wheat and peach cultivation, life on the rural landscape of southern New Castle County largely followed the traditional agrarian mode during the closing years of the nineteenth century and the opening years of the twentieth. After 1915, however, the spread of automobile ownership led to the construction of the Du Pont Highway (U.S. Route 13) and a general improvement in secondary roadways. Initial suburban neighborhoods as well as expanded commercial centers and residential neighborhoods of older towns developed in the Upper Peninsula region. New nonagricultural sources of employment, at the U.S. Air Force base at Dover and at the oil refineries around Delaware City, for example, became increasingly important to the region's inhabitants. In most areas of the Upper Peninsula, however, the economy continued to center on agricultural activity well into the middle twentieth century. The emphasis in the region's agriculture during the latter half of the period was on truck farming for nearby urban markets and for canning concerns. The architectural forms in evidence on the Upper Peninsula landscape during this period included a variety of late-nineteenth and early-twentieth-century architectural styles. A common house type in the new suburban developments was the bungalow (Ames et al. 1989:51; Herman et al. 1989:34-37).

Property types representing context themes include bungalow-type houses and other dwellings representing the architectural styles of the period, early subdivision developments, factory complexes and mills, bridges,

bank barns, and truck and dairy farmsteads. Surviving resources representative of early suburbanization are fairly numerous. Resources related to agriculture and manufacturing, however, are threatened by recent land-use patterns and therefore require the same levels of cultural resource evaluation as those for property types dating to the 1830-1880 ± period.

6. *The Upper Peninsula After circa 1940*

Since the end of World War II in 1945, the Upper Peninsula region has experienced continued suburban growth. Much of the region's former agricultural land is now the locus for tract housing, although extensive areas of open land dotted with exurban residential properties remain. Associated development of strip- and mega-mall complexes, designed to accommodate the commercial needs of area residents unwilling to travel to congested urban or town centers, has also swallowed up considerable areas of former farmland. Business parks and research laboratories have also relocated to formerly rural areas, engendering additional suburban development and thus further propelling transformation of the Upper Peninsula's landscape.

B. Site-Specific Historic Context: Willow Grove Mill

The mill seat (i.e., a property adapted for the operation of a waterpowered mill) to the immediate northeast of Silver Lake, referred to today as Willow Grove Mill or Drummond's Mill and inventoried in Delaware SHPO files under the CRS number N-5215, is one of the oldest in central Delaware, probably dating to circa 1720. The original section of the extant gristmill building may date to that period; certainly it appears to have been erected by the early nineteenth century. According to historian Louise Heite, who conducted intensive research on the early history of the Appoquinimink settlement, the gristmill at this location was one of four established in the vicinity before circa 1740. Heite attributed construction of the mill to the wealthy miller Thomas Noxon, who was prominent in governmental and business circles in central Delaware during the two decades or so prior to his death in 1743. Noxon built and operated this mill before setting up his better known mill seat at nearby Noxontown, an assertion supported by a reference in 1773 New Castle County Orphans Court proceedings to the Silver Lake property as having been "Noxon's Old Mill." Heite also found that the Silver Lake mill seat was situated on a 400-acre tract that had been patented by early settler Abraham Coffin in 1671. When Thomas Noxon's son, Benjamin, sold the Silver Lake mill seat out of the Noxon family's ownership in 1767, however, the property was in the 18-acre configuration of metes and bounds in which it has remained up to the present day (Heite 1972:18-19, 33; New Castle County Orphans Court Records D1:429).

The mill at Silver Lake changed hands many times over its active business life, which came to a permanent close in 1929 (see Section II-C, Title Information, below). It appears that for much of its history the mill was a property held by a nonresident owner, sometimes as just one of a number of mills in the hands of an entrepreneur, whether managed for that businessman or rented to a miller-proprietor tenant. In 1773, in addition to identifying the property as "Noxon's Old Mill," the Orphans Court proceedings noted the mill's business mode as being that of a "merchant mill." Subsequent documentary references for the property through 1870 continue this identification as a merchant mill. In the usage of the eighteenth and nineteenth centuries, a *merchant gristmill*, as opposed to a service-oriented *custom gristmill*, was an entrepreneurial business whose proprietor, the merchant miller, bought farmer's stocks of wheat outright and then traded the flour he made on a large scale in the regional or international market. At a custom mill, the mill collected a toll (generally ranging from an eighth to a quarter) of the grain ground for the farmer, returning the remainder of the flour, meal, or animal feed to the farmer, who might use it or sell it on the market himself. The merchant mill tended to specialize to a large degree in flour production, hence the common alternative term of *flour mill* for this type of business. In actual practice, some millers divided their efforts between the merchant and custom approaches to the business (New Castle County Orphans Court Records D1:429).

The milling business tended to be a very competitive one; successive events or trends and technological developments tended to heighten this competition and to impel the adaptation of new techniques to existing mill buildings, as happened at the Willow Grove Mill. Alternatively, a miller might construct an entirely new building on an existing mill seat. Events or trends inducing negative effects in the market for Mid-Atlantic wheat and flour included the sharp decline in the European demand for American flour that occurred after 1815 following the end of the Napoleonic Wars, the general depressions afflicting American business conditions during the late 1830s and late 1850s, and the rapid emergence of the Upper Midwest-Northern Plains region as the great wheat-growing area in America during the years circa 1865-1875. The homesteading farmers of the latter area cultivated spring wheat that yielded a lighter bread more sought by consumers than that possible with the winter wheat grown in the Mid-Atlantic. The most problematic event for Mid-Atlantic millers, however, was probably the cataclysmic business failure and depression of 1929-1941.

Among the innovations in milling technology that affected competition among millers and encouraged innovation were Oliver Evans's automated milling system, which became widespread during the years circa 1790-1815; the increasing application of the turbine as the hydraulic prime mover for mills during the period circa 1850-1875, in large measure supplanting the vertical water wheel; and the rapid spread of the roller milling system in the 1880s and early 1890s, resulting in the steady decline of the millstone method of grinding flour. Improved methods of transportation combined with new technology to affect competition and innovation among millers. By 1850 steampower was enabling the operation of mills in locations with railway access but without waterpower. Later, electricity and gas- or diesel-fired engines were used for the same purpose. Around 1890 some millers began to concentrate on the grinding and shipping of animal feed from railside feedmills powered by steam, by electricity, or by internal combustion. The development of the automobile truck in the early twentieth century expanded the effective business neighborhood for "local" mills, heightening competition as farmers sought higher prices for the sale of their grain and lower prices for milling services.

In general, the number of operating mills in the Mid-Atlantic region declined from 1865 onward, as millers one by one found themselves unable to compete successfully. What had been a gradual reduction in the number of mills during the late nineteenth century became a fairly precipitous decline during the early twentieth century, with four out of five mills or even higher proportions closing in most localities between 1900 and 1940. Increasing centralization was the order of day, as a small minority of well-capitalized mills continued to grow larger and absorb more of the available trade.

The name of Willow Grove Mill was first documented for the mill at Silver Lake in 1882 under the ownership of Joshua B. Fenimore. The mill represents a renovation of an older mill building carried out for adaptation to new technology for power transmission. The mill building before modification was evidently a frame structure, probably two stories in height but possibly one story, built over a stone-masonry basement. The wheel pit where the vertical waterwheel was positioned was external to the building, situated against the building's north gable end. The original building measured approximately 47 feet long by 25 feet wide. The modifications made to the building extended it northward to create a frame structure 72 feet long, 25 feet wide, and two stories high. A brick-masonry addition to the basement was constructed that enclosed the 13x25-foot wheel pit. A turbine replaced the vertical water wheel, an alteration that was likely accompanied by the installation of improved gearing and drive belts (Aldine Publishing and Engraving Company 1882:270).

No definite documentary evidence of the date of the mill's renovation has been found. The available data suggest that the alteration and enlargement took place during the period 1850-1880. The U.S. Census of Manufactures for 1880 noted that the mill, then owned by Joshua B. Fenimore, was powered via a turbine three feet in diameter that did 180 revolutions per minute and provided 12 horsepower. The business of the mill was still largely conducted in the merchant mode, with one-fourth of its activity as custom work (as

opposed to the eastern St. Georges Hundred census district's other two gristmills, which were doing one-half and two-thirds of their business as custom work, respectively). The mill employed three runs or pairs of grinding stones and was producing 1,250 barrels of flour (a decrease from 1,400 barrels in 1870) and 810,000 pounds of cornmeal per annum. Unfortunately, little additional evidence regarding the mill's history is offered by earlier Census of Manufactures records, as the census survey appears not to have been conducted comprehensively for St. Georges Hundred in 1850 and 1860, and for 1870 the census taker's notations are largely indecipherable. According to owner Fred B. Carey, Jr., roller milling apparatus was never installed in the mill. It is therefore likely that the last decades of the mill, from 1885 when owner Joshua B. Fenimore failed financially until its final closing in 1929, were spent concentrating on the production of stoneground cornmeal and animal feed, as was done at many other surviving country gristmills in the region. Around 1940 the Pearce family converted the mill building to residential apartments, dismantling the hurst frame (the heavily built separate timber frame that supported the millstones) and removing the millstones and other machinery (Fred B. Carey, Jr., personal communication 1999; U.S. Bureau of the Census 1880).

The mill building, of course, was the central structure in an architectural complex on the Silver Lake mill seat that included the dam for the millpond (i.e., Silver Lake itself) and the headrace that channeled the motivating stream to the water wheel or turbine pit. The tailrace at Willow Grove Mill is an abbreviated watercourse just 30 feet or so in length and is formed by a articulated ditch enclosed with masonry only for its first few feet. The first explicit documentary reference to other buildings on the property appears in the 1805 will of owner-resident Jeremiah Beaston, who directed that Richard Pennington, evidently a renting miller who resided with Beaston, should continue to have use of the house, the mill, "and all appurtenances" until the property was auctioned on a specified date. In 1822, the Orphans Court proceedings for the estate of Jasper Corrie, which might be expected to give a comprehensive enumeration of buildings, cited the complex as consisting of a merchant gristmill, a house, a kitchen building, and stables. The map of New Castle County drafted in 1849 by Rea and Price indicates that a sawmill stood by the gristmill at that date, which was a common accompaniment for a gristmill in the Mid-Atlantic region (Figure 2). The absence of a sawmill from the 1822 record, as well as from the state atlas of 1868 and the county atlas of 1893, however, suggests that the sawmill of 1849 represented a comparatively short-lived asset (Figures 3 and 4). The 1861 tax assessment noted that the dwelling house of that date, which appears likely to be the house standing today, was of frame construction. The 1880 Census of Manufactures entry for the mill referred to an accompanying grain elevator with a capacity of 46,950 bushels, a useful appurtenance for a merchant mill (Baist 1893; Beers 1868; New Castle County Assessments v.d.; New Castle County Orphans Court Records v.d.; New Castle County Wills v.d.; Rea and Price 1849; U.S. Bureau of the Census 1880).

The 1886 sheriff's deed that resulted from Joshua B. Fenimore's financial failure listed a two-story frame gristmill, a three-story frame dwelling house, a frame stable-carriage house, and "other outbuildings" for the main homestead, and also a two-story frame tenement house and a one-and-a-half-story tenement house. It appears that these two rental dwellings are indicated in the 1893 county atlas, one situated next to the mill and the residence on the St. Georges Hundred map and labeled "Odessa Bank," the other located just west of the south end of the milldam on the Appoquinimink Hundred map and labeled "J. B. Fenimore" (see Figure 4). It was the New Castle National Bank of Odessa that purchased the mill property when the sheriff auctioned it away from Joshua B. Fenimore. It is possible that Fenimore, who had long been one of Middletown's leading citizens and businessmen before he acquired Willow Grove Mill as his residence and principal asset in 1875, continued to reside in a tenant house on the property after having lost it in 1886. He would have been 89 years of age in early 1893. A one-and-a-half-story house, evidently the tenant house that stood there in the late nineteenth century, is situated at the "J. B. Fenimore" map location of 1893 (Aldine Publishing and Engraving Company 1882:269-70; Baist 1893; New Castle County Deeds [Deeds] v.d.; Scharf 1888:1011).

The road presently designated Silver Lake Road or County Road 442 had been created by 1849, when it was indicated on the Rea and Price map. This road was referred to in 1886 as "the road leading from the

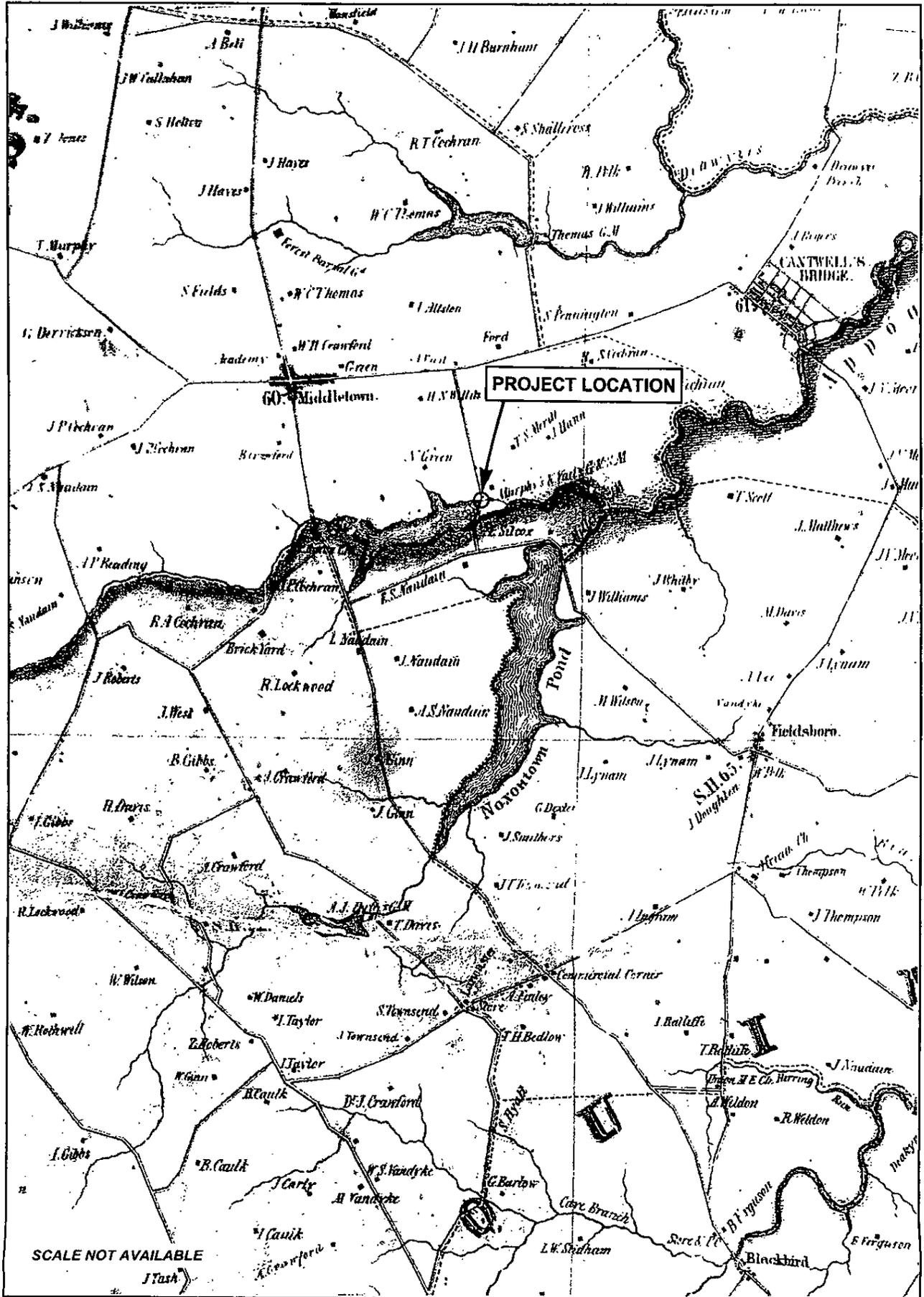


FIGURE 2: Project Area Vicinity in 1849

SOURCE: Rea and Price 1849

APPOQUINIMINK

New Castle Co. Del.

PROJECT LOCATION

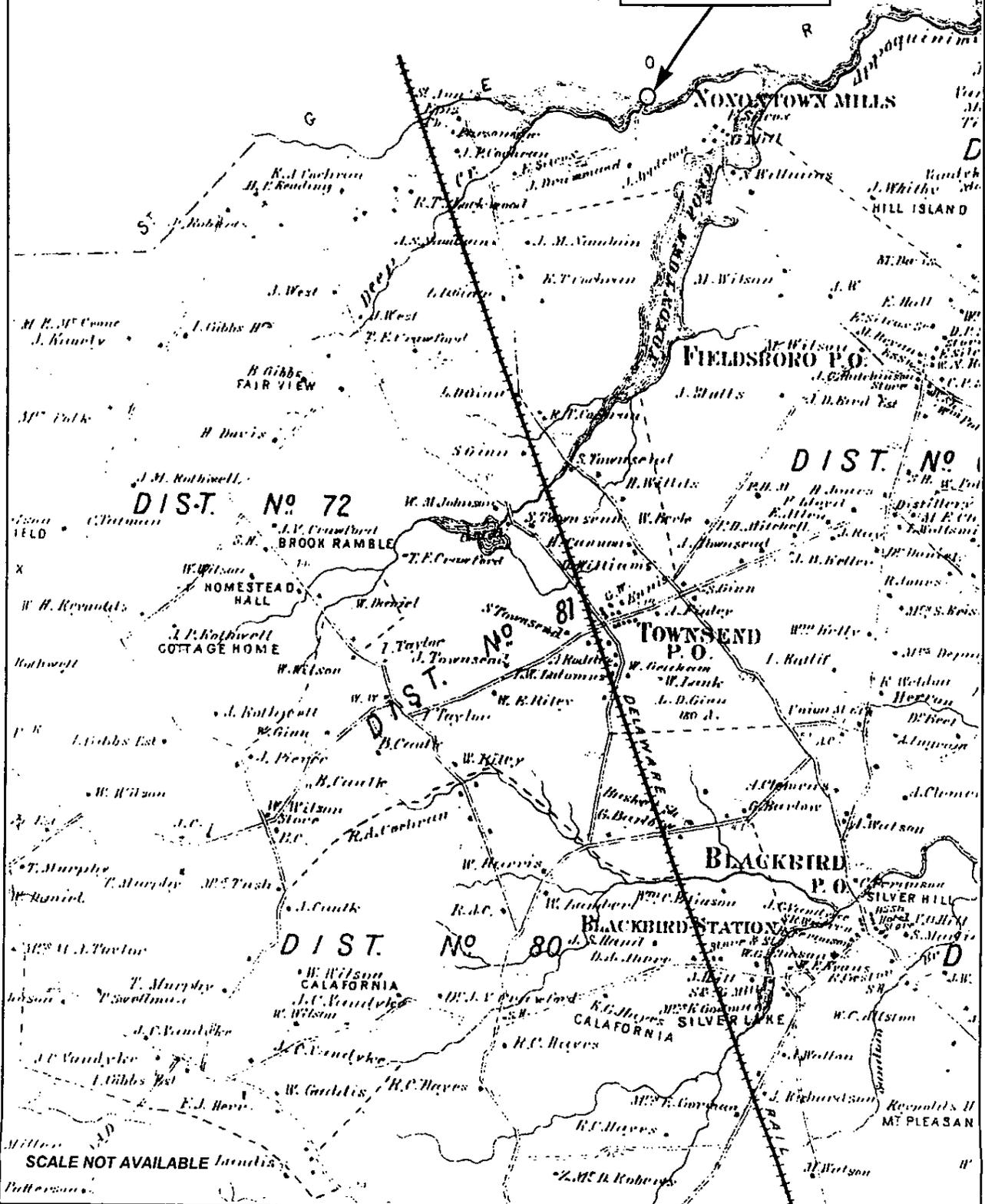


FIGURE 3b: Project Area Vicinity (South Side) in 1868

SOURCE: Beers 1868



FIGURE 4a: Project Area Vicinity (North Side) in 1893

SOURCE: Baist 1893

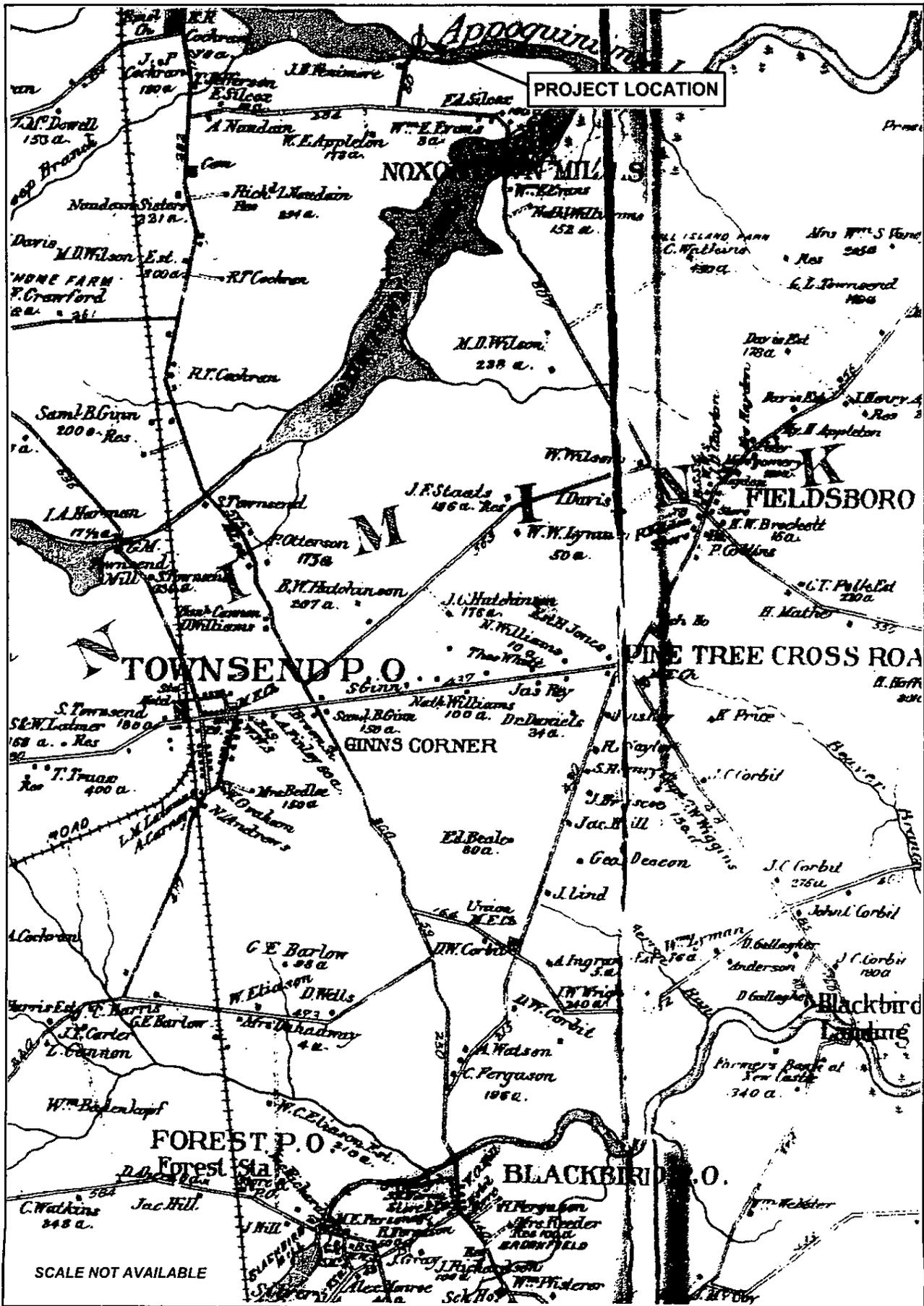


FIGURE 4b: Project Area Vicinity (South Side) in 1893

SOURCE: Baist 1893

Middletown and Odessa Road [the present-day Route 299] to the Noxontown Mill," the latter mill located just to the east of the north end of the Noxontown Pond, as can be seen on the maps of 1849, 1868, and 1893 (see Figures 2-4). The road, or at least its segment north of the Silver Lake dam, probably dates to the early years of the Willow Grove Mill in the first half of the eighteenth century. In 1771 Jonas Preston, who owned the mill at that time, petitioned the county court, praying that the court order the reopening of the road that went from his mill toward the place "now known by the name of Middletown," which former thoroughfare Benjamin Noxon had blocked with fences (Scharf 1888:994).

The present-day configuration of the milldam segment of Silver Lake Road, with three concrete bridges spanning the water outlets that interrupt the dam, was created in stages during the period 1931-1950. The gradual improvement was evidently undertaken largely in response to repeated damage from floods. The northernmost of the three bridges is State Highway Bridge 407A, the brief span that carries the road over the headrace. When it was constructed in 1932 by the New Castle County Levy Court, Bridge 407A represented a widening of a much older structure of unknown date. Bridge 407A was widened again in 1950. The two more substantial spans, located toward the southern end of the dam, cross the broader openings that feed Appoquinimink Creek. The New Castle County Levy Court originally constructed the southern one of this pair, State Highway Bridge 407, in 1931, but in 1934 the structure was severely damaged in a flood and the county had to rebuild it in 1935. Bridge 407 incorporated floodgates intended to enable the adjustment of the lake's water level. The reconstruction represented one of New Castle County's final bridge-building projects before the State Highway Department was assigned complete responsibility for bridges within the state. After a storm in 1938 proved the flood-control capacity of Bridge 407 to be inadequate (the dam was again washed out), State Highway Bridge 504 was designed with approximately double the flood-control capacity of the older bridge. The new span was completed in 1939, built on a location just south of Bridge 407. The floodgates of Bridge 407 were then rendered inoperative (A. G. Lichtenstein & Associates, Inc. 1996; Delaware Department of Transportation v.d.; New Castle County Levy Court Minutes v.d.; P.A.C. Spero & Company 1988).

C. Title Information: Willow Grove Mill (Carey Property)

November 20, 1767 Benjamin Noxon, Esq., of St. Georges Hundred, to Jonas Preston, gentleman, of Chester Borough, Chester County, Pennsylvania, for a message, a mill and two parcels, 12 acres and 6 acres, "condemned for the use of said mill," price £1,500 Delaware currency (Deeds 1Y:225).

April 20, 1773 Valuation and partition of the real estate of Jonas Preston, deceased, miller, late of St. Georges Hundred: Purport No. 5, "Noxon's Old Mill," being 12 acres on the north side of Appoquinimink Creek, and Purport No. 6, being 6 acres located across the Appoquinimink from No. 5, awarded to Preston's daughters Martha Sharpless and Hannah Fairlamb. On January 19, 1773, these two daughters, their husbands Thomas Sharpless and Nicholas Fairlamb, and their mother Mary Preston had brought before the Orphans Court a petition for valuation and partition of the real estate. There were three other siblings who were heirs to the estate. Preston's Delaware real estate included four other plantations, all located in St. Georges Hundred and including Preston's home plantation with store buildings and wharf, and "Ryall's old mill plantation" with its "water corn grist mill." In the January 19 petition, Purports Nos. 5 and 6 were identified as a message and "merchant mill" with 18 acres in two parcels located on both sides of the most westerly branch of the Appoquinimink (New Castle County Orphans Court Records D1:401, 418, 429).

May 1, 1773 Hannah Fairlamb, a daughter of Jonas Preston, deceased, and her husband Nicholas Fairlamb, carpenter, Middletown Township, Chester County, Pennsylvania, to Thomas Sharpless, wheelwright, late of Chester County, Pennsylvania, now of St. Georges Hundred, for a moiety or one-half interest in a messuage, a mill and two parcels, being Purports Nos. 5 and 6 in the real estate left by Preston, No. 5 the 12 acres on the north side of Appoquinimink Creek, No. 6 the 6 acres on the south side of the said creek, the two parcels together known as "Noxon's Old Mill," price £1,000 Pennsylvania currency. (Deeds 2B:296).

As of May 1, 1773, the situation regarding the ownership of the property was that Martha Sharpless owned a half-interest in her own right, as an inheritance from the estate of her father, Jonas Preston, and her husband, Thomas Sharpless, owned a half-interest. Thomas and Martha Sharpless evidently held these interests until their respective deaths around the close of the eighteenth century. They apparently resided in Pennsylvania, as the probate records for each of their estates were filed in either Chester County or Delaware County in that state. (Delaware County was formed from a portion of Chester County in 1789.) The will of Martha Sharpless, as known from the succeeding deed (Deeds 2X:88), was recorded in Delaware County. It directed the executor to sell Martha's half-interest. The half-interest of Thomas Sharpless went to his son, Preston Sharpless.

June 6, 1801 Estate of Martha Sharpless, deceased, William Sharpless of Delaware County, Pennsylvania, executor, to Preston Sharpless, of New Castle County, for a moiety or one-half interest in a messuage, a mill and two parcels totaling 18 acres and located on Appoquinimink Creek, price £300 U.S. currency (Deeds 2X:88).

April 16, 1803 Preston Sharpless, of St. Georges Hundred, to Jeremiah Beaston, of Appoquinimink Hundred, for a "merchant water corn or grist mill" and two parcels totaling 18 acres and located on Appoquinimink Creek, price £850 U.S. currency (Deeds 3G:166).

March 1, 1805 Will of Jeremiah Beaston, of St. Georges Hundred, made March 1, proved March 7, 1805: directed that the property should be auctioned on March 25, 1806. Until that date, Richard Pennington, "who now lives with me," was to occupy the house, the mill and all appurtenances free of charge (New Castle County Wills Q1:75).

March 25, 1806 Estate of Jeremiah Beaston, deceased, late of St. Georges Hundred, the Reverend William Price of Wilmington, executor, to Jasper Corrie, of St. Georges Hundred, for "merchant water corn or grist mill" and two parcels totaling 18 acres and located on Appoquinimink Creek, price \$2,200. The executor had auctioned Beaston's mill and dwelling house on March 25 in accord with the will's directions (Deeds 3D:198).

August 29, 1822 Valuation and partition of the real estate of Jasper Corrie, deceased: the two parcels totaling 18 acres, situated together astride Appoquinimink Creek, were awarded to Jasper's son George Corrie. The one of these parcels that was located in St. Georges Hundred contained the "merchant water corn or grist mill known formerly as Sharpless's Mill," a dwelling house, a kitchen building, and stables. George had brought a petition before the Orphans Court on August 20, 1821, asking valuation and partition of his father's real estate, which included several properties in New Castle County. George was also awarded a lot in Cantwell's Bridge (present-day Odessa) containing a dwelling house and a store building (New Castle County Orphans Court Records L1:82 and 162).

- Sept. 22, 1825 George Corrie, of Appoquinimink Hundred, to John Ginn, merchant, of St. Georges Hundred, for a "merchant water corn or grist mill" and two parcels totaling 18 acres and located on Appoquinimink Creek, price \$2,200 (Deeds 4F:370).
- March 5, 1833 John Ginn, of Appoquinimink Hundred, to Gassaway Watkins, of St. Georges Hundred, for the same property, price \$2,710 (Deeds 6I:341).
- Nov. 11, 1836 Gassaway Watkins, of St. Georges Hundred, to Thomas Murphy, of Cecil County, Maryland, for the same property, price \$1,800 (Deeds 4Y:83).

During the period 1844-1860, the mill was owned by two partners, the respective half-interests being designated "A" and "B" below. In 1860 ownership was again united, in the hands of John Drummond, when Drummond added the second half-interest to the one he had purchased in 1854.

Interest A

- March 29, 1844 Thomas Murphy, of St. Georges Hundred, to Alexander M. Vail, for a moiety or one-half interest, price \$2,500 (Deeds 5N:124).
- February 15, 1854 Alexander M. Vail, of St. Georges Hundred, to John Drummond, for a moiety or one-half interest, price \$2,500 (Deeds 7I:496).

Interest B (retained by Thomas Murphy in 1844)

- February 4, 1860 Thomas Murphy, of St. Georges Hundred, to John Drummond, for a moiety or one-half interest, price \$2,500 (Deeds 7I:499).
- November 10, 1875 John Drummond, of St. Georges Hundred, to Joshua B. Fenimore, of Middletown, for a "merchant water corn or grist mill" and two parcels totaling 18 acres and located on Appoquinimink Creek, price \$15,000 (Deeds 10O:330).
- February 8, 1886 Joshua B. Fenimore via Sheriff Thomas Ford to the New Castle National Bank of Odessa, for the mill "known as Willow Grove Mill or Drummond's Mill" and the associated two parcels totaling 18 acres and located on Appoquinimink Creek, price \$5,800. The property had been auctioned on November 20, 1885. The Sheriff's seizure and sale was in consequence of a debt of \$9,975.82 owed by Joshua B. Fenimore and Edward C. Fenimore to the Citizens National Bank of Middletown. The Superior Court of the State of Delaware issued a writ of *Alias Fieri Facias* on February 9, 1885, ordering the Sheriff to seize such property as necessary to cover the debt; the Sheriff found that there were not goods and chattels of adequate value, hence the sale of real estate was necessary. The Willow Grove Mill property was described as "lying on the road leading from the Middletown and Odessa Road to the Noxontown Mill" and containing a two-story frame gristmill, a three-story frame dwelling house, a frame stable-carriage house, and other outbuildings, and also a two-story frame tenement house and a one-and-a-half-story tenement house. The latter mentioned rental dwellings were perhaps located on the 6-acre parcel on the south side of the Appoquinimink (Deeds 13R:387).
- August 15, 1896 The New Castle National Bank of Odessa to George W. Argue, of Norristown, Pennsylvania, for the Willow Grove Mill property, consisting of two parcels totaling 18 acres and located on Appoquinimink Creek, price \$15,000 (Deeds 17D:413).

- February 11, 1897 George W. Argue, of Norristown, Pennsylvania, to Edwin F. Schively, attorney-at-law, of Philadelphia, Pennsylvania, for the same property, price \$20,000 (Deeds 17H:276).
- May 12, 1897 Edwin F. Schively, attorney-at-law of Philadelphia, Pennsylvania, to the Estate of Laurason Rigg, deceased, late of Baltimore, Maryland, for the same property, consideration \$1 (Deeds 17I:150).
- May 19, 1904 Mary T. Rigg, widow, and George W. Rigg, trustees under the will of Laurason Riggs, deceased, late of Baltimore, Maryland, to Laurason Rigg (the younger), for the same property (Deeds 19Y:171).
- June 1, 1904 Laurason Rigg, of Baltimore, Maryland, to Virginia Rees, of St. Georges Hundred, for the same property, price \$4,000 (Deeds 19Y:167).
- November 29, 1929 Virginia Rees and husband David R. Rees to the Peoples National Bank of Middletown, for the same property, consideration \$10 (Deeds 36U:188).
- April 14, 1933 The Peoples National Bank of Middletown to the Wisconsin Holding Corporation, for the same property, consideration \$10 (Deeds 38Q:292).
- June 1, 1934 The Wisconsin Holding Corporation to Frank P. Jones, single man, for the same property, price \$3,500 (Deeds 39D:191).
- April 24, 1935 Estate of Frank P. Jones, deceased, to William Thomas Pearce, Jr., and Margaret W. Pearce, for the same property, price \$3,750. Frank Jones had died (intestate) on December 15, 1934, leaving as heirs his wife, Eva, and his parents, Edward and Ida Jones (Deeds 39M:140).
- August 8, 1972 Fred B. Carey, Jr., to himself and wife Rosemary A. Carey, for the same property. Margaret W. Pearce, Mr. Carey's great-aunt, had died on November 18, 1968, her interest in the property being inherited by her husband. The latter, William Thomas Pearce, Jr., died on October 16, 1969, having bequeathed the property to Carey. This deed recorded 15 exceptions from the legal description, these exceptions representing deeds for small lots on the south side of Silver Lake and the Appoquinimink that had been issued by the Pearces during the period 1937-1965 (Deeds 86R:517).
- January 13, 1994 Fred B. Carey, Jr., to himself as trustee, for the same property, with the addition of a small parcel lying between the mill's headrace and the Appoquinimink, of which parcel Carey had been in adverse possession continuously since January 1, 1977. This parcel had apparently been omitted from the legal description of the mill property ever since the property had been parted from its parent property in 1767 or earlier. The metes and bounds description related for the other two parcels in this deed is the same as has been recorded since 1767. Rosemary B. Carey had died on April 2, 1980, Fred B. Carey, Jr., inheriting her interest (Deeds 1826:194).

III. RESEARCH DESIGN

A. Objectives

In order to assist DelDOT's project planning and analysis of alternatives, the objectives of the present study are to identify historic resources located within the APE for the proposed improvement and to evaluate the eligibility of those resources for listing in the National Register of Historic Places in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended. The level of survey combined Phase I (Background Research and Location/Identification) and Phase II (Evaluation) studies. Investigators undertook research sufficient for the development of a historic context following the guidelines of the *Delaware Comprehensive Historic Preservation Plan* (Ames et al. 1989) and its associated context documents. The APE consisted of properties immediately adjacent to the proposed undertaking along Silver Lake Road.

B. Methods

The methodology for the present study involved background research, to provide data for the development of a historic context, and fieldwork, to carry out the identification and documentation of historic resources in the APE. Following research and fieldwork activities, National Register eligibility evaluations were undertaken, utilizing the criteria developed by the historic context.

Background research activities entailed an examination of materials at various repositories. Researchers examined Delaware SHPO survey files and obtained copies of previously completed CRS and National Register forms for historic resources identified within the APE (Delaware SHPO v.d.). Historic contexts and other historical information describing the development of the project area were also inspected at the Delaware SHPO in Dover. Tax parcel and land ownership information was collected by Berger staff at the New Castle County Department of Land Use in New Castle. Berger staff conducted additional historical research at the office of the New Castle County Recorder of Deeds in Wilmington, the University of Delaware Morris Library in Newark, and the Delaware State Archives in Dover.

Fieldwork consisted of vehicular and pedestrian survey of the project area to identify historic resources meeting the National Register's 50-year age criterion. Based upon the resource's architectural style, building materials, and form, surveyors noted the location of 50-year-old resources on project area maps. Subsequent comparison with historical map views confirmed the age of these resources. Fieldworkers also attempted to identify resources younger than 50 years that may have attained significance within that period and therefore meet one of the criteria exceptions. Field documentation of newly identified historic resources involved collecting architectural information for the completion of CRS forms and for evaluating the resource's National Register eligibility, and photographing the resources as per the survey guidelines of the Delaware SHPO.

In compliance with the Advisory Council on Historic Preservation's regulations implementing Section 106 (36 CFR 800), and the guidelines of "Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines" (U.S. Department of the Interior 1983) and the Delaware SHPO's *Architectural and Archaeological Surveys in Delaware* (Delaware SHPO 1993), this investigation used historic contexts to evaluate the National Register eligibility of the identified historic resources. The levels of integrity and significance outlined by the contexts were applied to the resources documented during fieldwork and to their historical significance as ascertained during research to determine whether the resource met the National Register criteria.

C. Expected Results

Based upon the results of the historical research and the project area's location in rural St. Georges Hundred, and given the historical role of Silver Lake as a millpond, surveyors anticipated finding an agricultural landscape primarily composed of dwellings, domestic and agricultural outbuildings, and mill-related buildings and structures dating to the period 1830-1950.

IV. ARCHITECTURAL EVALUATION

A. Introduction

The APE for the proposed improvement was defined as consisting of the Silver Lake dam and the four properties that lie adjacent to the dam. A review of Delaware SHPO CRS inventory files found that five previously inventoried architectural resources stood within the APE, N-5214, N-5215, N-12644, N-12645, and N-12646. None of these five resources had been listed in or determined eligible for the National Register of Historic Places, although the revised Delaware Historic Bridge Survey has recommended that N-12644, State Highway Bridge 407, and N-12646, State Highway Bridge 504, are eligible for the National Register (A. G. Lichtenstein & Associates, Inc. 1996).

The field survey identified four additional architectural resources within the APE that meet the National Register's 50-year age criterion that have not been previously identified, N-13778, N-13779, N-13780, and N-13781. Delaware CRS inventory forms were compiled for these four previously unidentified resources, and CRS Update forms were completed for the five previously inventoried resources. The CRS forms compiled in the survey are presented in Appendix A, accompanied by those submitted during earlier surveys for the five previously inventoried resources.

The investigation also identified the Willow Grove Mill Historic District (N-13782), a National Register-eligible district in which seven of the nine architectural resources represent contributing elements. Figure 5 depicts the location of the district and the nine individual resources. Figure 6 depicts the boundary of the district with reference to tax parcels. The historic district is discussed below, followed by summary descriptions of the seven contributing elements. Table 1, at the end of the section, summarizes the architectural resources in the APE. A Determination of Eligibility form was completed for the district, which is presented in Appendix B. The remaining two resources, which have no association with the district, were evaluated with regard to their National Register eligibility as individual resources.

B. Willow Grove Mill Historic District (N-13782)

The Willow Grove Mill Historic District was identified and evaluated as a district for its representation of the history of a mill seat (i.e., a property adapted for the operation of a waterpowered mill) from the early eighteenth century through the early twentieth century, and of the subsequent mid-twentieth-century history of the dam that had enabled the provision of waterpower for the gristmill and that was retained in place by the community. The historic district is eligible for the National Register of Historic Places. It is significant under Criterion A, which applies to resources distinguished by their association with events and trends in American history, for its exemplification of the eighteenth- and nineteenth-century milling industry. The grain-milling and especially the flour-milling business played a key role in the development of the economic life, community life, and settlement pattern of central Delaware and the Mid-Atlantic region at large. The Willow Grove Mill Historic District is also significant under Criterion C, which pertains to resources that are important for their architectural and engineering qualities.

The district's contributing elements that have direct historical association with the operation of the mill are the Willow Grove Mill building itself (N-5215), the miller's house (N-5214), the milldam (N-13781) and the mill headrace (N-13780). These resources exemplify the essential components of a gristmill complex. The three other contributing elements are three State Highway bridges, Nos. 407 (N-12644), 407A (N-12645), and 504 (N-12646), all built in the 1930s. These spans were all designed and constructed incorporating flood-control water gates. The three bridges are notable for their association with the efforts of the county

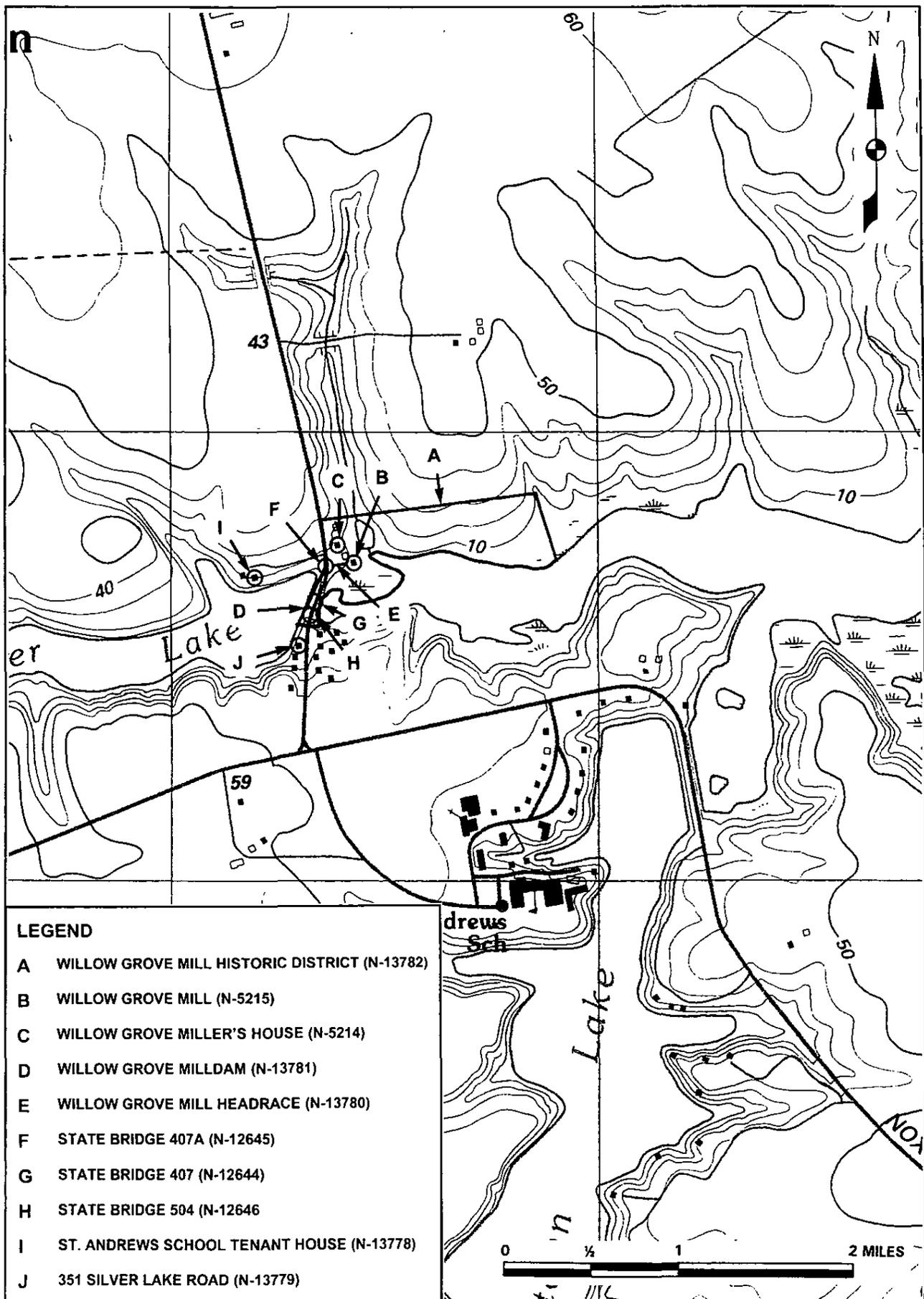


FIGURE 5: Architectural Resources Identified in the Area of Potential Effect

SOURCE: USGS 7.5 Minute Quadrangle, Middletown, DE 1993

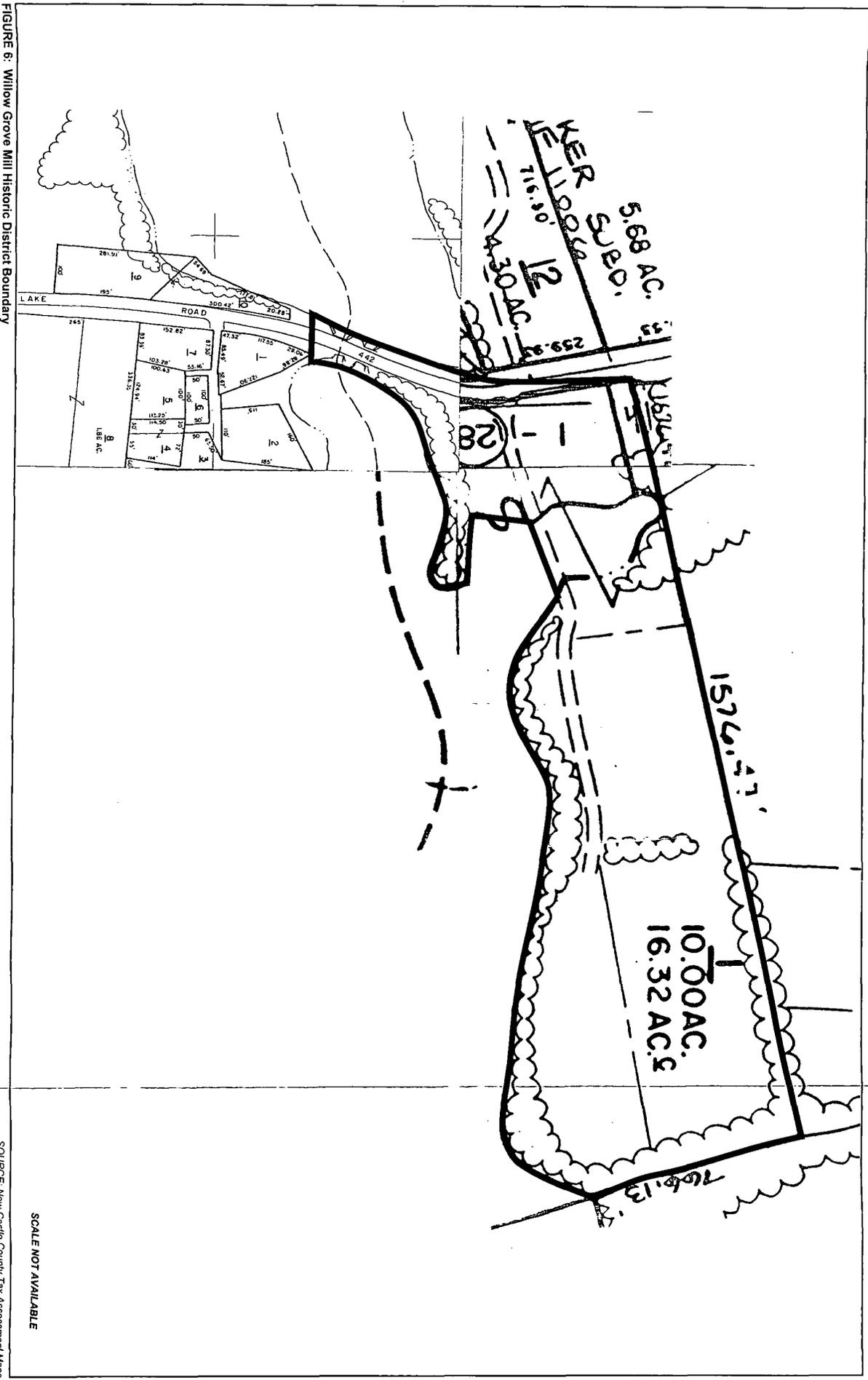


FIGURE 6: Willow Grove Mill Historic District Boundary

SCALE NOT AVAILABLE

SOURCE: New Castle County Tax Assessment Maps

and state governments to maintain the dam against the threat of flood damage, and hence for their design, which responds to the particular characteristics of the site.

The Willow Grove Mill complex was established by Thomas Noxon circa 1720 and is therefore one of the oldest surviving mill properties in central Delaware (see Section II-B, Site-Specific Historic Context: Willow Grove Mill, above). Although the gristmill building has been thoroughly altered on the interior, having been converted into a duplex rental dwelling, its exterior evidently retains its appearance as in the late nineteenth century when it was still operating busily as a merchant flour and cornmeal mill. The interior of the older or southern section of the basement of the mill building holds architectural evidence, such as nicely dressed structural timbers and a fireplace relief arch, indicating that the older section dates before circa 1830 and probably to the eighteenth century. In addition, the headrace is well-preserved, and the relationship among Appoquinimink Creek, the former milldam and millpond (Silver Lake), the headrace, and the mill is readily observable. The miller's house, constructed circa 1800-1860, and a stable of unknown but probable pre-1900 date are present to represent the historic complex of other buildings associated with the mill, and the immediate vicinity retains the rural character evocative of the historic environment of the mill complex. The three State Highway bridges are intact and therefore able to represent their historical significance. Overall, the Willow Grove Mill Historic District demonstrates the integrity necessary for National Register eligibility.

The Willow Grove Mill Historic District extends over an area of approximately 17 acres, containing within its boundary almost the entirety of the mill property owned by Fred B. Carey, Jr. (Tax Parcel No. 13-028.00-001), along with the milldam that incorporates the three highway bridges dating to the 1930s (Nos. 407, 407A, and 504) (see Figures 5 and 6). The dam, while originally within the mill property, is nearly if not entirely under the State Highway right-of-way as of 1999. That portion of the mill or Carey property that lies north of Appoquinimink Creek contains the contributing architectural resources as well as pastureland, woodland, and other open spaces that are historically associated with the architectural resources and serve as the historic setting for them. The small portion of the Carey property excepted from the historic district consists of a narrow strip of land along the south bank of the Appoquinimink. This narrow strip was retained as part of the property by the previous owners when they sold most of the south-side portion as houselots during the period 1937-1965; however, it does not contribute to the significance of the district because of its small size and evident lack of direct relationship to the historical function of the property.

1. Willow Grove Mill (N-5215) **Plates 1-7 and 10**

The overall gristmill building is a rectangular, gable-roofed, two-story structure with a basement foundation of masonry and upper stories constructed of timber frame. It is clad in novelty siding on the west (front), north, and south facades, and in corrugated sheet metal on the east (rear), and roofed with standing-seam metal. The older section of the building with its stone-masonry basement was apparently built before circa 1830 and may be the original mill building of circa 1720. This attribution of construction date is based on the presence of the remains of a relieving arch that evidently supported a corner fireplace for the mill office in the northwest corner of the older section, and of nicely dressed vertical posts in the basement (the only portion of the building interior open to survey), evidently in their original position supporting the summer beam. Both of these elements represent typical gristmill building features from the eighteenth or early nineteenth century, and the posts in particular, which are embellished with chamfers terminating in tapered stops, are finished in a manner that was no longer seen in mill building construction in the Mid-Atlantic after around 1830. At some date evidently between 1850 and 1830, the mill was extended in length (with brick-masonry basement construction as opposed to the original rubble stone), what had been an external wheel pit was enclosed, the vertical water wheel was replaced with a turbine, and the arrangement of basement openings was considerably altered. Around 1940 the mill building was converted into a rental dwelling, and the millstones and the other machinery were removed. As part of this transformation, the hurst frame was

dismantled and its heavy timbers reemployed in the basement to support the altered interior structure of the building.

2. Willow Grove Miller's House (N-5214)

Plates 8 and 9

The miller's house is a two-story, gable-roofed, frame structure on a foundation of brick for the older sections and concrete for all or most of the twentieth-century construction. It is clad in aluminum siding and roofed with asphalt shingle. The original section is an example of the two-story, center-passage, single-pile type, with its symmetrical five-bay facade oriented facing west to Silver Lake Road. The overall house incorporates four additional sections plus two enclosed porches, the major section being a two-story rear ell that forms an L-shape with the original or front section. According to owner Fred B. Carey, Jr., a 1947 fire severely damaged the rear area of the house, including a three-story section, so that a large portion of the house had to be taken down and rebuilt in an approximation of its historic form. (The house's three-story height was referred to in an 1886 deed description.) The house is accompanied by a two-story, gable-roofed stable of probable nineteenth-century date. The stable is built of frame, clad in asphalt siding and asbestos shingle, and roofed with corrugated metal. Other outbuildings on the property that are likely more than 50 years old are a one-story, front-gabled, single-bay frame garage and a one-story, shed-roofed, frame workshop, both of which appear to date to the period circa 1940-1960.

3. Willow Grove Milldam (N-13781)

Plates 10-12

The milldam, which retains the waters of Appoquinimink Creek to form Silver Lake, the former millpond, consists of a largely earthen berm interrupted by State Highway Bridges 407, 407A, and 504. The dam has been subject to periodic washouts caused by severe storms. Most recently, the dam was partially destroyed in storm flooding in September 1999. It was again rebuilt during the autumn of 1999 in its historic configuration.

4. Willow Grove Mill Headrace (N-13780)

Plates 13-14

The headrace, maintained as a dry ditch in recent decades, extends on a straight line from a sluice gate, fitted to Bridge 407A by the shore of Silver Lake, to the location of the head gate about 20 feet west of the wheel pit for the mill. The head gate, no longer in place, was fitted in a arched stone-masonry bulkhead, behind which is the sluice that delivered the flow of water to the brick-arched inlet in the stone-masonry west wall of the wheel pit. For most of its length the headrace ditch is about 10 to 12 feet wide and 4 feet deep, having probably been silted in considerably. At either end the race narrows to a width of approximately 8 feet.

5. State Highway Bridge 407A (N-12645)

Plate 15

Bridge 407A was built in 1932 by the New Castle Levy Court to span the headrace, and represented a widening and rebuilding of an earlier bridge. Bridge 407A was itself widened by a few feet on its west side in 1950. The relatively brief bridge, its superstructure consisting of 8-foot steel girders, rests on concrete abutments with concrete wing walls. The deck is 39 feet, 6 inches wide. The parapet is also of poured concrete, with decorative embellishment. The bridge is fitted with a water gate on the west side.

6. State Highway Bridge 407 (N-12644)
Plates 11, 12, and 16

Bridge 407 was constructed in 1931 by the New County Castle Levy Court and rebuilt in 1935 after severe damage from a 1934 flood. Part of a modification of the milldam that provided a spillway, the bridge was designed as a single span carrying Silver Lake Road over the spillway, incorporating a water gate on the west side intended to facilitate flood control. The bridge is 19 feet long and 20 feet, 6 inches wide, with a superstructure consisting of concrete-encased steel girders. The abutments, wing wall, and decorative parapet are of constructed of poured concrete.

7. State Highway Bridge 504 (N-12546)
Plates 11 and 16

The State Highway Department built Bridge 504 a few feet to the south of Bridge 407 in 1939, after a storm of the preceding year showed the inadequacy of the spillway-and-bridge configuration of Bridge 407, built by the county government. Bridge 504 is a double-span structure incorporating a water gate on the west side under each span. The overall bridge is 25 feet long and 24 feet, 6 inches wide. The superstructure of concrete slab is supported by concrete pier, abutments, and wing walls. The parapet is also of concrete.

C. Additional Architectural Resources

1. St. Andrews School Tenant House (N-13778)
Constructed circa 1940
Tax Parcel: 13-027.00-012
Plate 17
(CRS form in Appendix A)

Description: The older of the two dwellings standing on this parcel, owned by the nearby St. Andrews preparatory school, was constructed around 1940, according to the current tax assessment. The other house, standing just 50 feet or so northwest of N-13778, was built in 1985, probably soon after the school acquired the land. The aerial photo of this area (No. 06/07/28) on file in the CRS inventory at the Delaware SHPO, produced circa 1964, bears a reference to this parcel as "Silver Lake Park," evidently a private swimming club. It appears probable that this one-story, relatively small and boxlike, gable-roofed frame structure was built to be an office or service building for the club, and was afterward renovated by St. Andrews School for use as staff housing. The building is clad in stucco except for the gables, which are filled with weatherboard. The roof is covered with asphalt shingle. The windows are six-over-six sash of modern metal type.

Applicable Historic Context: Upper Peninsula Zone. Urbanization and Early Suburbanization 1880-1940 ±. Settlement Patterns.

Evaluation: This house appears to represent an undistinguished example of a service building renovated for use as a dwelling. Lacking qualities of architectural distinction or important historical associations, it does not meet the criteria of significance for National Register eligibility.

2. 351 Silver Lake Road (N-13779)**Constructed circa 1880****Tax Parcel: 14-006.24-010****Plates 18 and 19****(CRS form in Appendix A)**

Description: This much-enlarged, one-and-a-half-story house is located by the shore of Silver Lake, approximately 200 feet south of the south end of the dam and on the west side of Silver Lake Road. The oldest section or core is apparently a small, gable-roofed, rectangular frame structure, perhaps originally of hall-parlor plan, that is oriented facing northeast. The house appears to have been considerably enlarged and renovated, probably in the early years of the twentieth century, and to have received another addition and renovation later, probably around 1980-1990. As of October 1999, the building was undergoing yet another enlargement. The earlier additions were a leanto extending across the rear side of the original section and another leanto that was built against the southeast half of the front or northeast facade. On the southeast end of the house, five first-story windows and one garret window survive, with nine-light casements and with molded caps over their frames. The first-story casement windows are positioned on the southeast ends of both the front and rear leantos as well as on the southeast end of the original section, suggesting that this window sash was placed at the time the additions were made. The circa 1980s addition is a leanto extending across the southwest end of the older house and farther toward the northeast, so that a sheltered breezeway or stoop fills the space between this addition and the older front leanto. The addition of 1999 is a new rear leanto extending across the rear of the overall house.

The overall house is roofed with asphalt shingle. The pre-circa 1980 walls are clad in novelty siding, the circa 1980s walls in red cedar vertical board. As of October 1999, the exterior walls of the new addition had yet to be clad. The window sash on the front has been replaced with a triple piece of four-over-four sash of modern metal type. The house is accompanied by a one-and-a-half-story, gable-roofed garage that appears to date to circa 1950. In 1999 a large dormer was added on its front or northeast roof slope as an element in the renovation of the upper floor into a residential apartment.

Applicable Historic Context: Upper Peninsula Zone. Urbanization and Early Suburbanization 1880-1940 ±. Settlement Patterns.

Evaluation: Standing on land that belonged to the Willow Grove Mill property until the years around World War II, and sited where the 1893 county atlas indicated a house occupied by J. B. Fenimore, the original section of this dwelling appears to be the "one-and-a-half-story tenement house" listed among the mill property's assets in a sheriff's deed of 1886. Although it therefore bears a historical relationship to other resources that are contributing elements in the Willow Grove Mill Historic District, the house at 351 Silver Lake Road does not appear to represent a contributing element in the district or to be eligible for the National Register as an individual resource. The repeated enlargements and renovations made to the house have resulted in an architecturally disharmonious structure that does not distinctively embody the characteristics of a type, period, or method of construction. The past role of this house as a tenant dwelling on the mill property is not of such salience in the mill's history that it would qualify as an important historical association meeting the National Register Criteria of historic significance. Hence 351 Silver Lake Road does not meet the criteria for National Register eligibility.

Table 1

Architectural Resources Located Within the Area of Potential Effect

| Resource Number | Name | Context | Property Type | Integrity | Recommendation |
|-----------------|-------------------------------------|--|---------------|-----------|---------------------------------|
| N-5214 | Willow Grove Miller's House | Settlement Patterns; Architecture | Dwelling | Fair | Eligible (contributing element) |
| N-5215 | Willow Grove Mill | Settlement Patterns; Architecture; Manufacturing | Gristmill | Good | Eligible (contributing element) |
| N-12644 | State Bridge 407 | Transportation | Bridge | Good | Eligible (contributing element) |
| N-12645 | State Bridge 407A | Transportation | Bridge | Good | Eligible (contributing element) |
| N-12646 | State Bridge 504 | Transportation | Bridge | Good | Eligible (contributing element) |
| N-13778 | St. Andrews School Tenant House | Settlement Patterns; Architecture | Dwelling | Poor | Not Eligible |
| N-13779 | 351 Silver Lake Road | Settlement Patterns; Architecture | Dwelling | Poor | Not Eligible |
| N-13780 | Willow Grove Mill Headrace | Settlement Patterns; Architecture; Manufacturing | Structure | Good | Eligible (contributing element) |
| N-13781 | Willow Grove Milldam | Settlement Patterns; Architecture; Manufacturing | Structure | Fair | Eligible (contributing element) |
| N-13782 | Willow Grove Mill Historic District | Settlement Patterns; Architecture; Manufacturing; Transportation | District | Good | Eligible |



PLATE 1: Willow Grove Mill (N-5215), Looking Northeast



PLATE 2: Willow Grove Mill (N-5215), Looking East

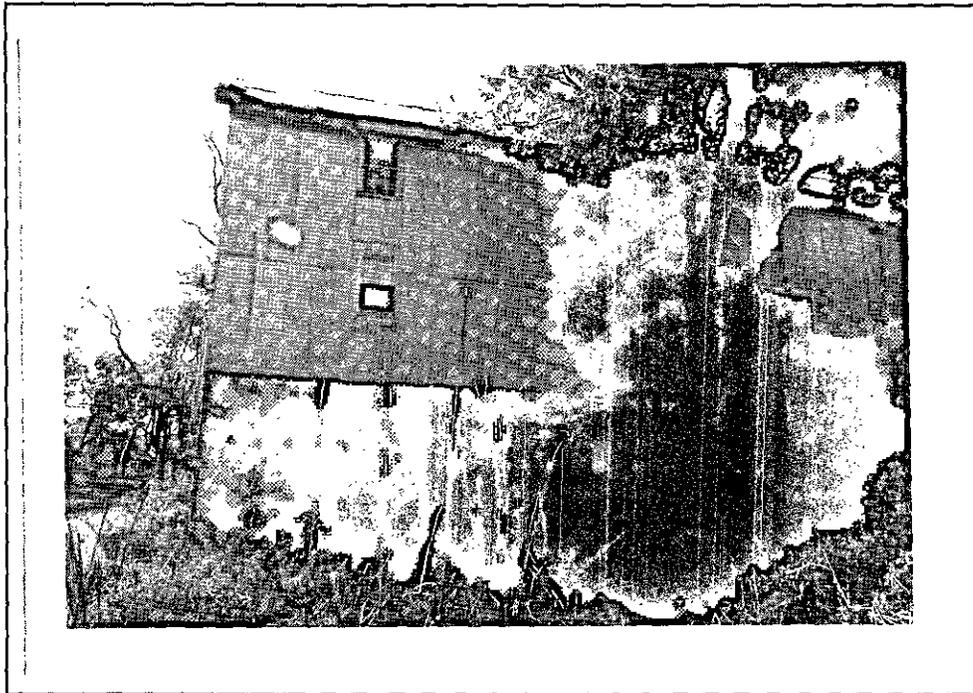


PLATE 3: Willow Grove Mill (N-5215), Rear View of Older Section, Looking West

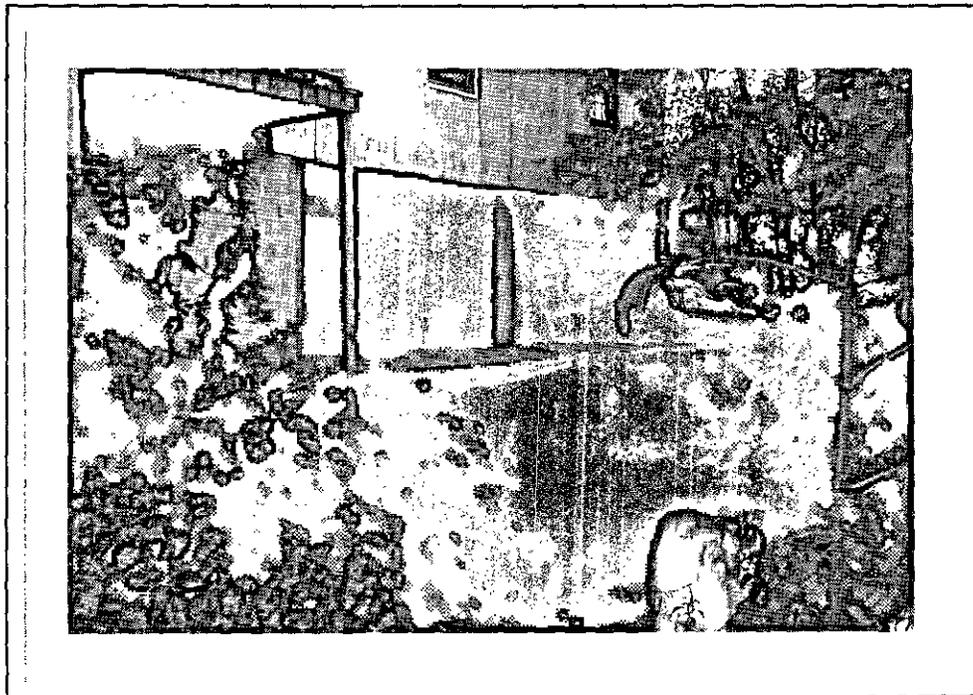


PLATE 4: Willow Grove Mill (N-5215), Rear View of Later Section, with Tailrace Outlet at Right Foreground, Looking Northwest

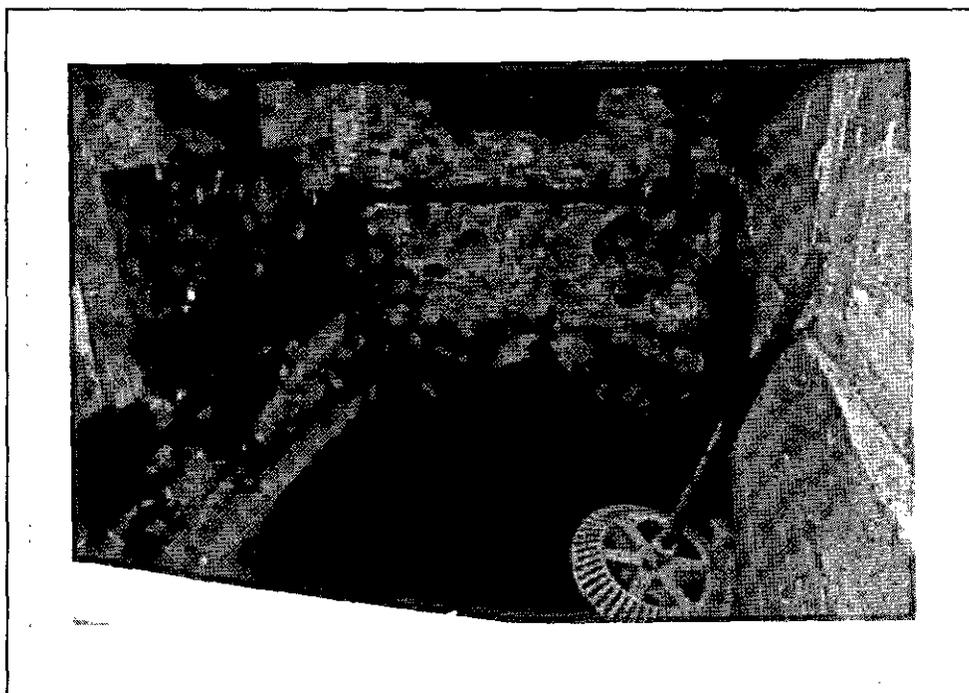


PLATE 5: Willow Grove Mill (N-5215), Detail of Wheel Pit, Showing Brick-Arched Inlet at Center

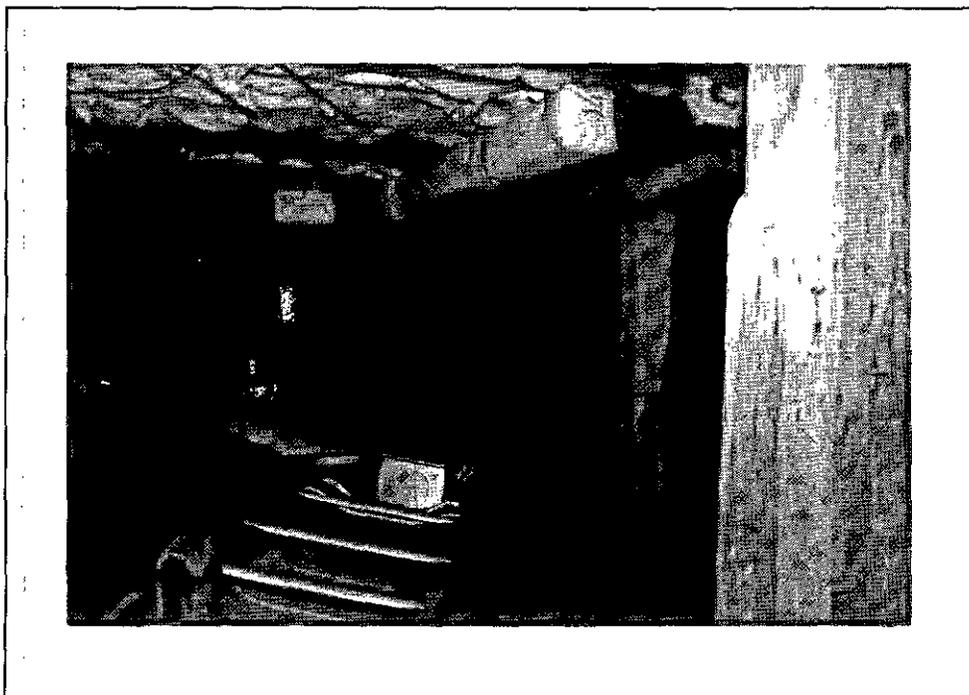
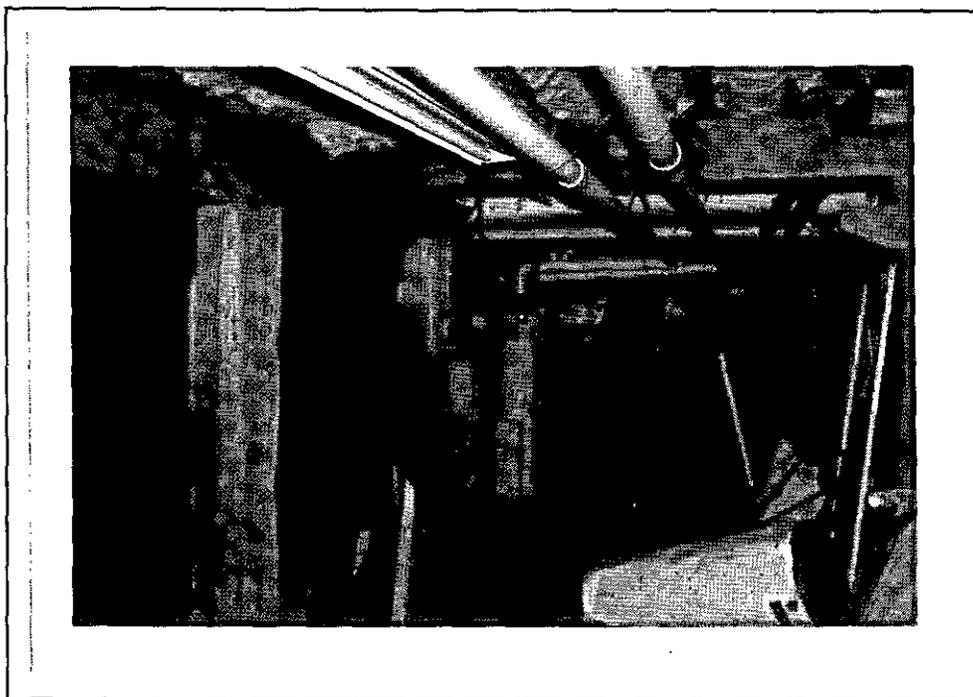


PLATE 6: Willow Grove Mill (N-5215), Interior Detail of Older Section Basement, Showing Central Row of Posts Supporting Summer Beam



**PLATE 7: Willow Grove Mill (N-5215), Interior Detail of Older Section
Basement, Showing Timbers from Hurst Frame in Reuse Positions**

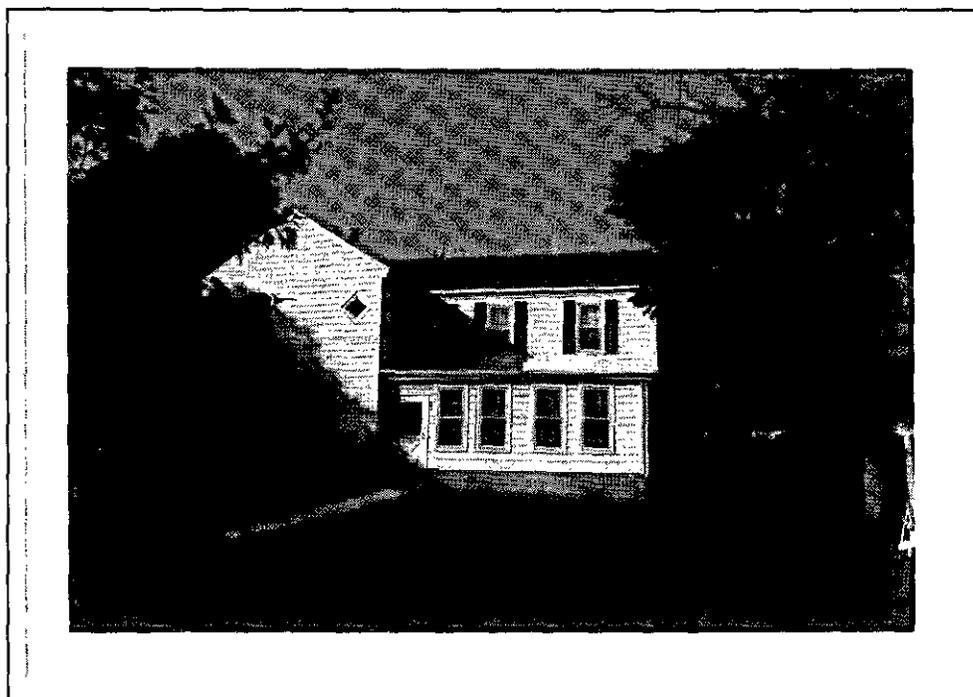


PLATE 8: Willow Grove Miller's House (N-5214), Looking Northwest

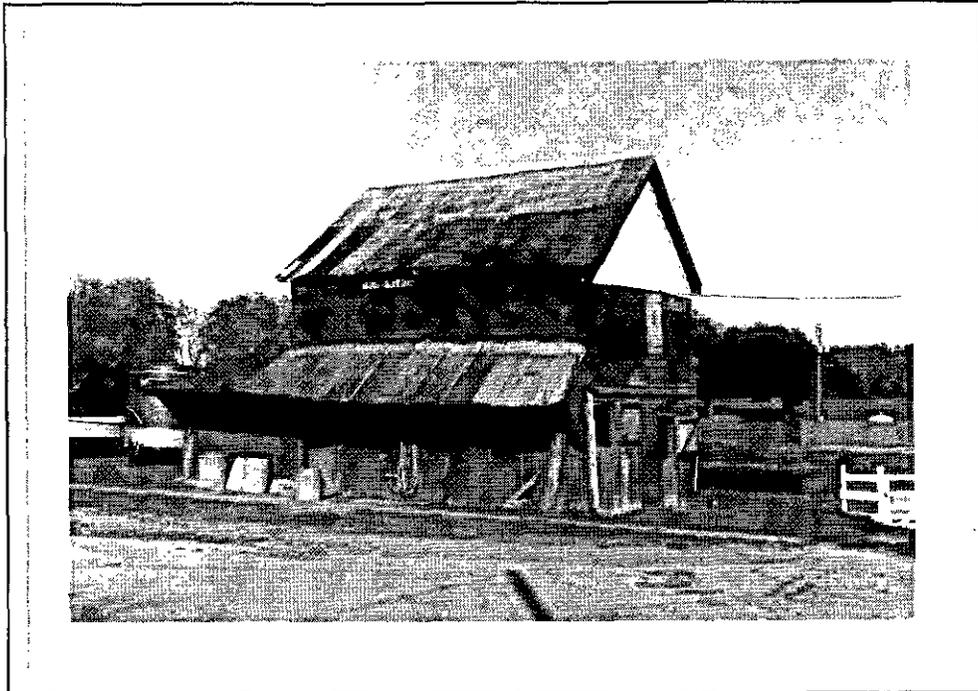


PLATE 9: Willow Grove Miller's House (N-5214), Stable, Looking Northeast

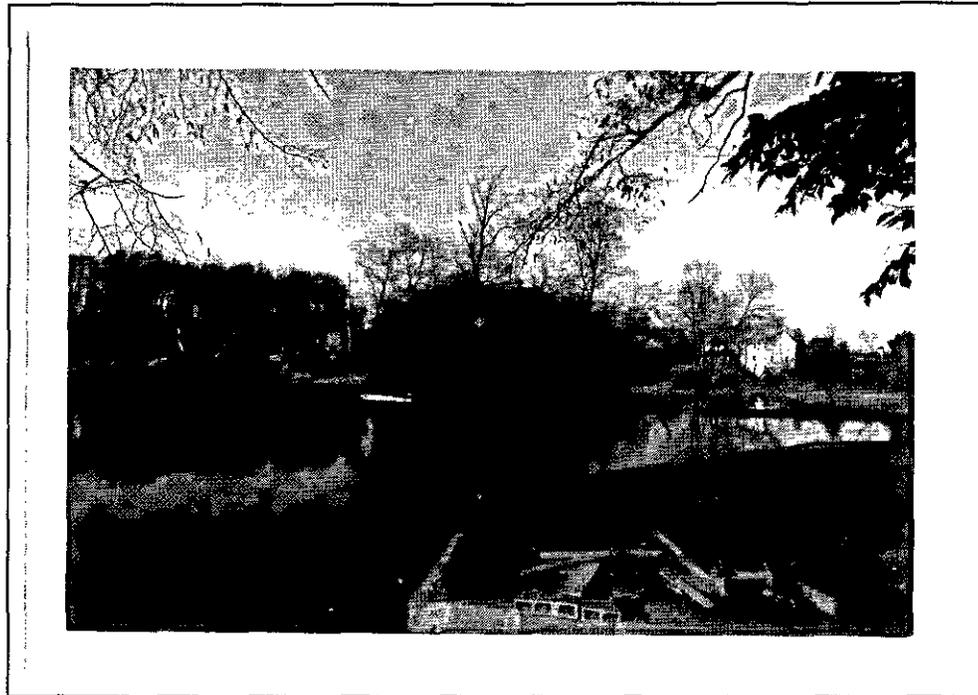


PLATE 10: Willow Grove Milldam (N-13781), Looking North Across Appoquinimink Creek, with Dam Location to Left, Willow Grove Mill at Right Center

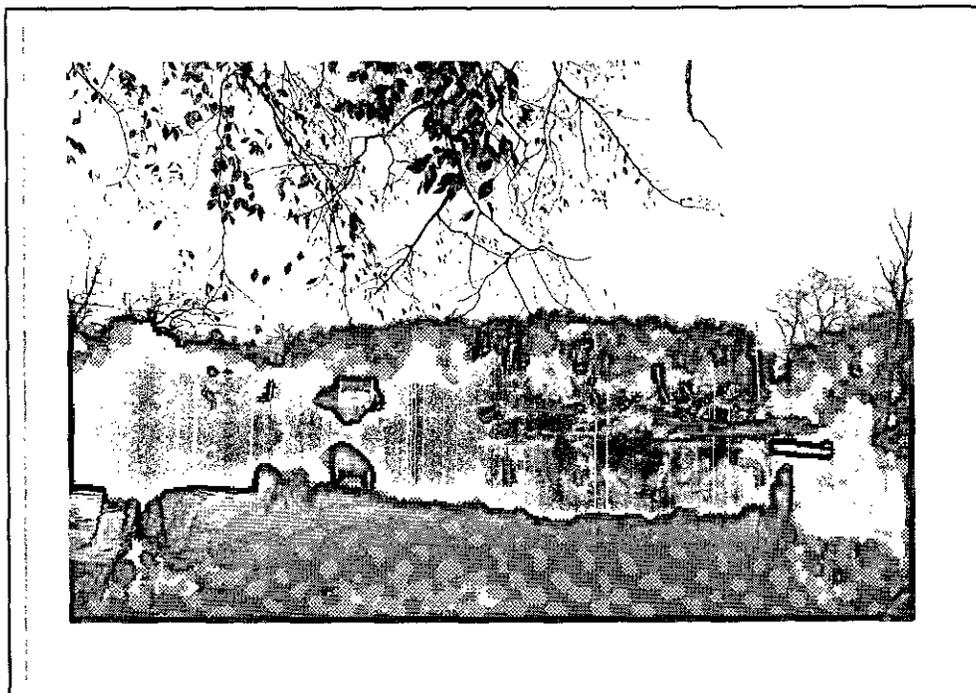


PLATE 11: Willow Grove Milldam (N-13781), Looking Northwest Across Appoquinimink Creek, with State Highway Bridge 504 to Left, State Highway Bridge 407 at Left Center

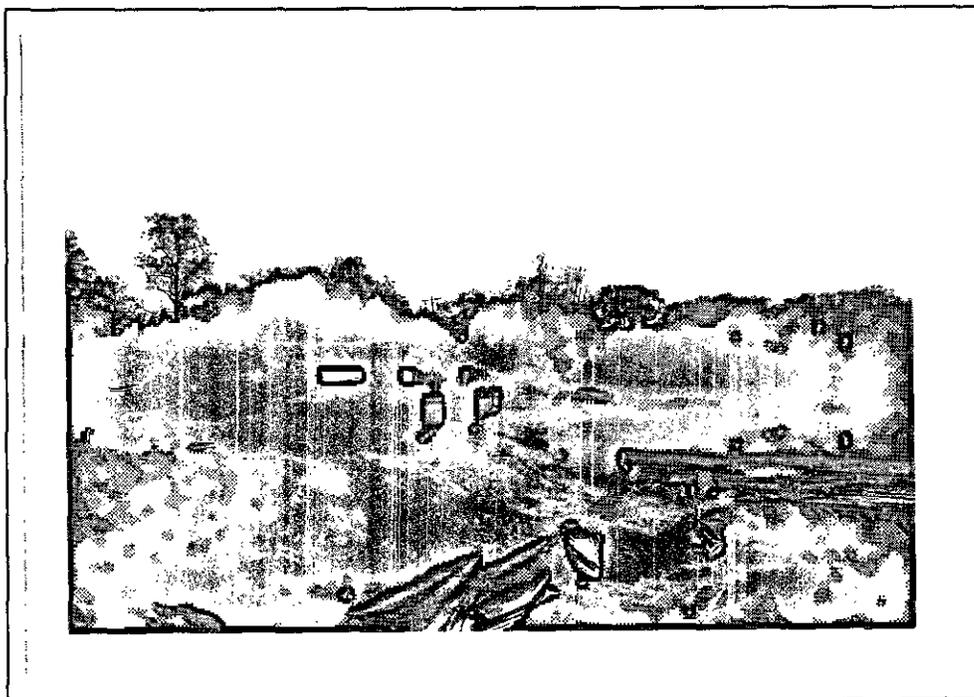
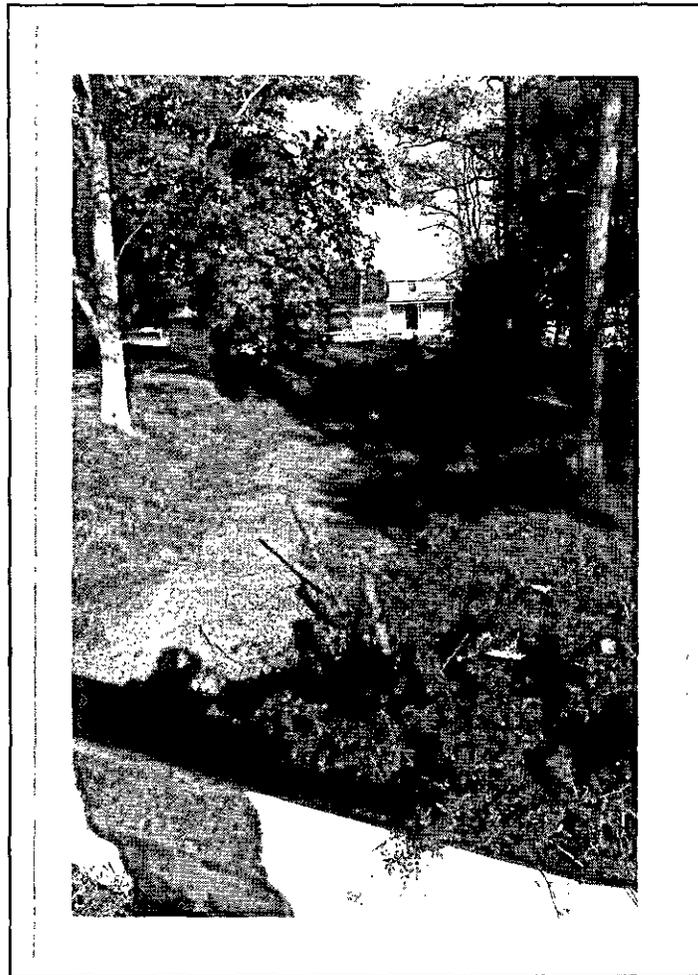


PLATE 12: Willow Grove Milldam (N-13781), Looking South, with Silver Lake (the Former Willow Grove Millpond) to Right, Bridge 407 at Center, Appoquinimink Creek to Left



**PLATE 13: Willow Grove Mill Headrace (N-13780),
Looking Northeast from State Highway
Bridge 407A, with Willow Grove Mill in
Background**



PLATE 14: Willow Grove Mill Headrace (N-13780), Looking Southeast, Showing Head Gate at Left Center, Mill to Rear

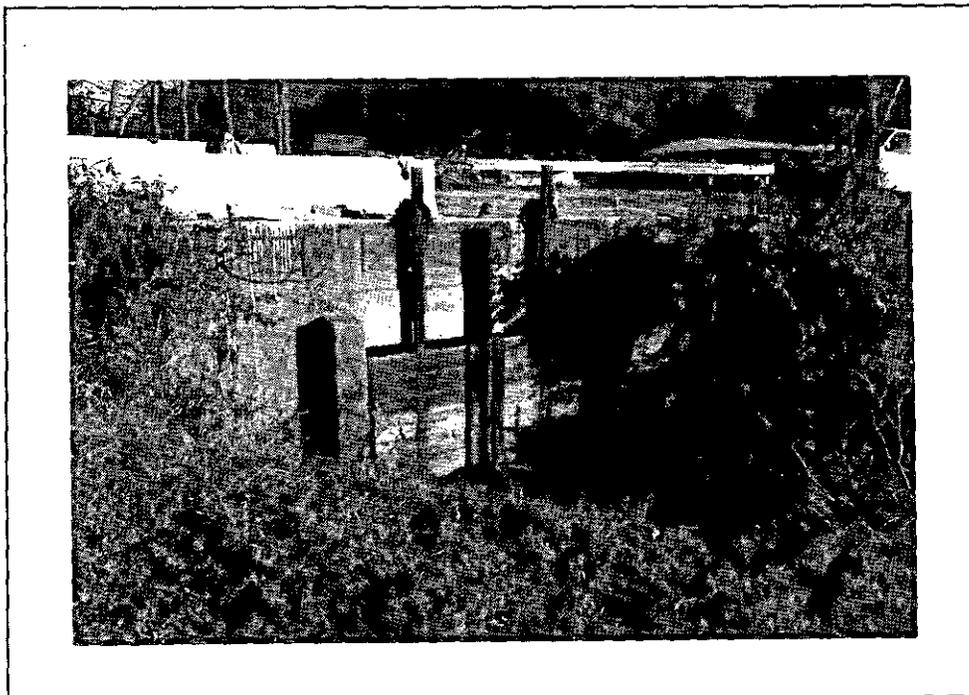


PLATE 15: State Highway Bridge 407A (N-12645), Looking Southeast

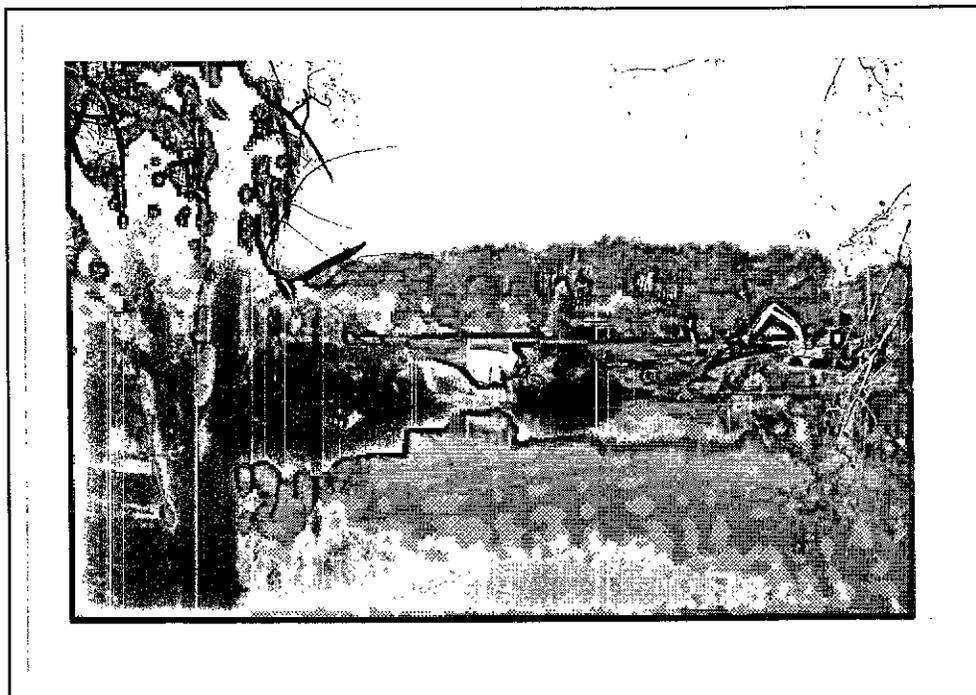


PLATE 16: Bridges 407 (N-12644) and 504 (N-12646), Looking West, with 407 at Center, 504 to Left

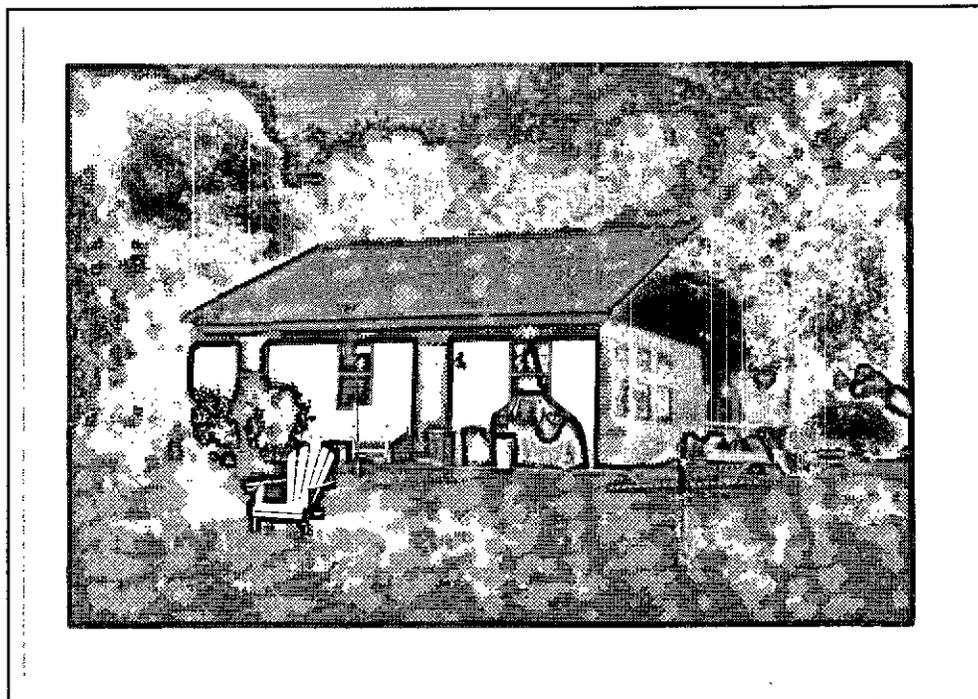


PLATE 17: St. Andrews School Tenant House (N-13778), Looking Northwest



PLATE 18: 351 Silver Lake Road (N-13779), Looking Southwest

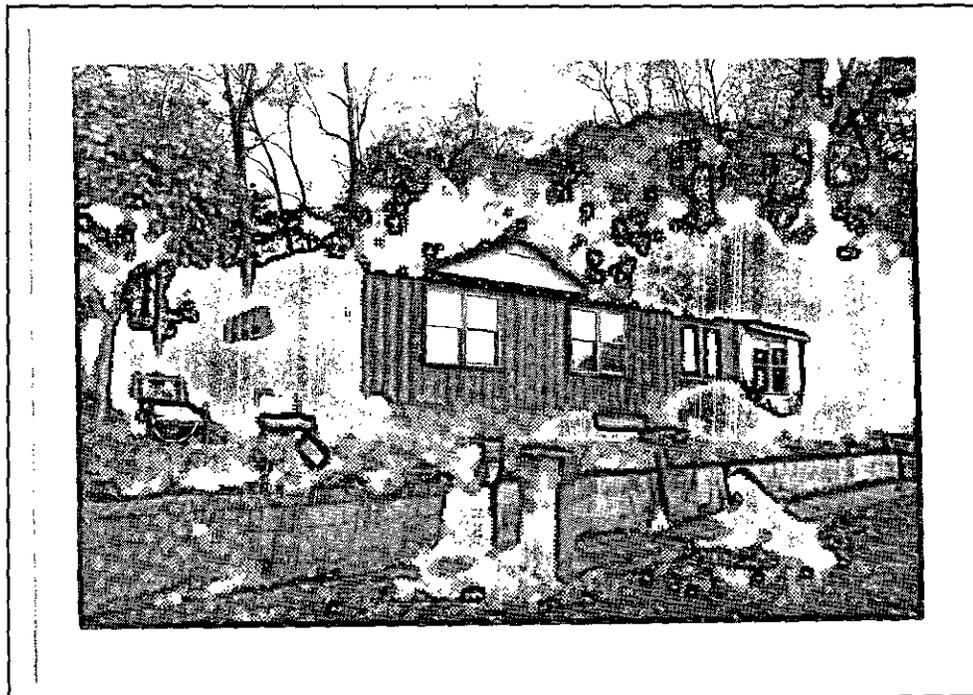


PLATE 19: 351 Silver Lake Road (N-13779), Looking Southeast

V. SUMMARY AND RECOMMENDATIONS

At the request of the Delaware Department of Transportation (DelDOT), Louis Berger & Associates, Inc. (Berger), performed architectural investigations as part of the preliminary planning for the proposed replacement or rehabilitation of Bridge 407A. The bridge is located in St. Georges Hundred, New Castle County, carrying Silver Lake Road (County Road 442) over the mill headrace that flows from Silver Lake and that formerly provided waterpower for the Willow Grove Mill. The purpose of the study was to identify architectural resources within the area of potential effect (APE) that are currently listed in or eligible for listing in the National Register of Historic Places.

The architectural survey identified nine architectural resources more than 50 years old located within the APE. Supplementary Delaware Cultural Resource Survey (CRS) documentation was prepared for five previously inventoried resources and initial CRS inventory documentation for four architectural resources not previously identified. As none of the nine resources had been previously listed in or determined eligible for the National Register, the study also evaluated the resources with regard to their National Register eligibility. The study identified the Willow Grove Historic District (N-13782), a National Register-eligible district in which seven of the surveyed resources are contributing elements. The Willow Grove Historic District is significant under National Register Criteria A and C. The study found that the remaining two resources are not eligible for the National Register.

VI. REFERENCES CITED

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- New Castle County Records
v.d. Assessments. On microfilm, Delaware State Archives, Dover, Delaware.

- v.d. Deeds. On file, New Castle County Office Building, Wilmington, Delaware.
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- v.d. Orphans Court Records. On microfilm, Delaware State Archives, Dover, Delaware.
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1988 *Delaware Historic Bridge Survey*. Prepared for the Delaware Department of Transportation; on file, Delaware State Historic Preservation Office, Dover, Delaware.
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APPENDIX A

CULTURAL RESOURCE SURVEY FORMS



DELAWARE STATE HISTORIC PRESERVATION OFFICE
BUREAU OF ARCHAEOLOGY AND HISTORIC PRESERVATION
15 THE GREEN, DOVER, DE 19901

CULTURAL RESOURCE SURVEY
PROPERTY IDENTIFICATION FORM

FORM CRS-3

CRS no. N-5214
SPO Map 06-07-28
Hundred St. Georges
Quad Middletown
Zone Upper Peninsula
Acreage _____

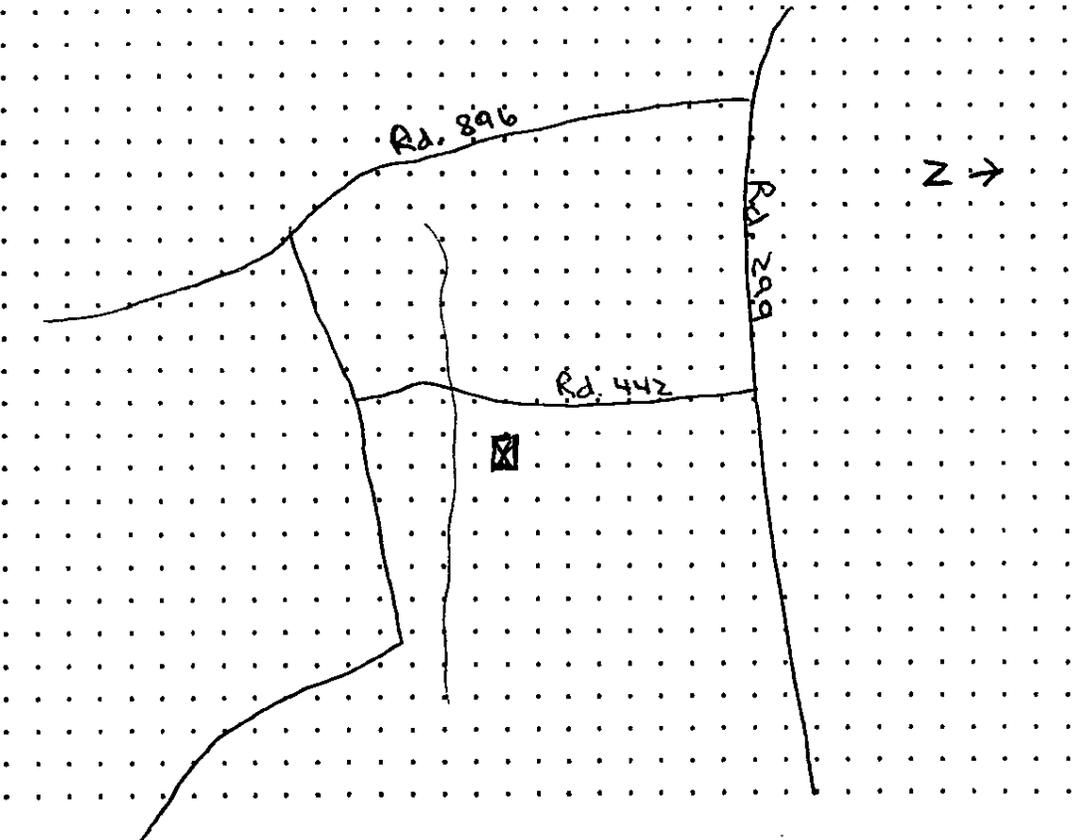
1. NAME OF PROPERTY: Drummond's Mill House
2. STREET LOCATION: E. Side Rd. 442 1/2 Mile From Intersection Rd. 38
3. OWNER'S NAME: _____ TEL. # _____
ADDRESS: _____
4. TYPE OF LOCUS: a) building b) structure _____ c) site _____
d) object _____ e) district _____ f) other _____
5. SURROUNDINGS OF LOCUS: (check more than one if necessary)
a) fallow field _____ b) cultivated field _____ c) woodland _____
d) scattered buildings e) densely built up _____ f) other _____
6. FUNCTION: original Mill House present Dwelling
7. LIST ADDITIONAL SHEETS USED

8. YOUR NAME: Chip Baker + Steven Moffson # _____
YOUR ADDRESS: 15 The Green Dover De. 19901 # _____
ORGANIZATION (if any) DSHPO DATE 2-19-92

USE BLACK INK ONLY

9. SKETCH MAP

Please indicate position of locus in relation to geographical landmarks such as streams and roads.



INDICATE NORTH ON SKETCH

10. CONTEXT

Consider the following:

- a) relationship to setting
- b) associated traditions or stories
- c) noteworthy features
- d) comparison with others in area
- e) threats

11. Comprehensive Planning:

- a. Time Period(s)
- b. Historic Theme(s)

12. Evaluation and Eligibility

List area(s) of significance and criteria

13. Certification

Survey: Name/Title _____ Date _____
 BAHF: Name/Title _____ Date _____



DELAWARE STATE HISTORIC PRESERVATION OFFICE
BUREAU OF ARCHAEOLOGY AND HISTORIC PRESERVATION
15 THE GREEN, DOVER, DE 19901

CULTURAL RESOURCE SURVEY
CONSTRUCTION DATA FORM

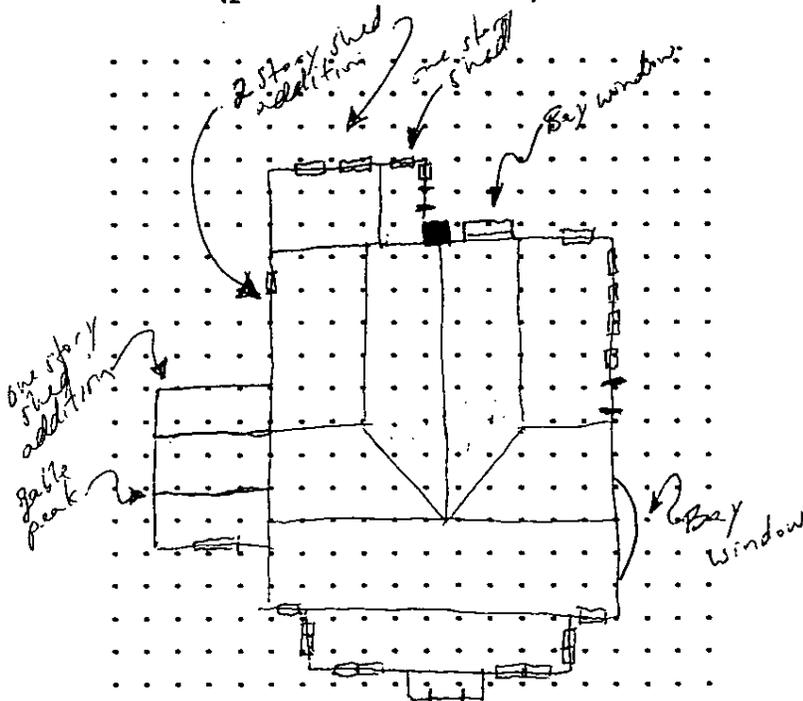
FORM CRS-1

CRS no. N-5214
SPO Map 06-07-28
Hundred St. Georges
Quad Middletown
Zone Upper Peninsula
Acreage _____

1. ADDRESS OF PROPERTY: E. Side Rd. 442 1/2 Mile From Intersection Rd. 38
2. DATE OF INITIAL CONSTRUCTION: 1860-1880
3. STYLE/FLOOR PLAN: Center hall, I-house
4. ARCHITECT/BUILDER: _____
5. INTEGRITY: a) original site b) moved _____
c) if moved, when and from where _____
d) list major alterations and dates (if known) _____
6. CONDITION: good deteriorated _____
remarks: _____
7. DESCRIBE THE RESOURCE AS COMPLETELY AS POSSIBLE:
 - a) Overall shape irregular, originally L-shaped.
stories 2
bays 5
wings 2 story row ell with smaller additions on the E and N sides
 - b) Structural system Frame
 - c) Foundation materials Not accessible
basement " "
 - d) Exterior walls (modern over original)
materials aluminum siding
color(s) white with black trim
 - e) Roof
shape; materials gable; asphalt shingles.
cornice box
dormers None
chimney location(s) 1 exterior brick chimney on gable end of row ell.

- f) Windows *regular*
 spacing
 type *some four over four with mostly 6 over 6 pane.*
 trim *plain surround*
 shutters *aluminum shutter (black)*
- g) Door
 spacing *regular W-W-D-W-W*
 type *Not accessible*
 trim
- h) Porches
 location(s) *Enclosed porch over main entrance, W side.*
 materials *wood & aluminum*
 supports *Frame*
 trim *plain*
- i) Interior details (if accessible)

SKETCH MAP (provide north arrow)



8. Surveyor: Steven Wolfson Date of Form 2-19-92



DELAWARE STATE HISTORIC PRESERVATION OFFICE
15 THE GREEN, DOVER, DE 19901

CULTURAL RESOURCE SURVEY
SURVEY UPDATE FORM

CRS # N-5214
SPO Map 06-07-28
Hundred St. Georges
Quad Middletown
Zone Upper Peninsula
Acreage 16.32a.

1. NAME OF PROPERTY: Willow Grove Miller's House

2. ADDRESS OF PROPERTY: 286 Silver Lake Road

3. CURRENT CONDITION: excellent _____ good X
fair _____ poor _____ demolished _____

4. ARCHITECTURAL INTEGRITY: Front section integrity good; rear section integrity somewhat diminished due to rebuilding after 1947 fire, but reconstruction approximated earlier appearance.

5. SETTING INTEGRITY: Rural setting intact.

6. HISTORIC CONTEXT INFORMATION: construction date Ca. 1820

chronological period(s) 1630-1730+/- _____ 1730-1770+/- _____

1770-1830+/- X 1830-1880+/- X 1880-1940+/- _____

historic theme(s) Settlement patterns; architecture

property type(s) Stair passage house with service wing

7. EVALUATION: eligible: Yes X No() Potential() Unknown()

area(s) of significance Contributing in Willow Grove Mill H.D.

NR criteria A, C

8. FORMS ADDED: _____

9. SURVEYOR: Philip E. Pendleton, Berger DATE OF FORM: 12/13/99

PRINCIPAL INVESTIGATOR: _____ DATE: _____

USE BLACK INK ONLY



DELAWARE STATE HISTORIC PRESERVATION OFFICE
BUREAU OF ARCHAEOLOGY AND HISTORIC PRESERVATION
15 THE GREEN, DOVER, DE 19901

CULTURAL RESOURCE SURVEY
PROPERTY IDENTIFICATION FORM

FORM CRS-3

CRS no. N-5215
SPO Map 06-07-28
Hundred St. Georges
Quad Middletown
Zone Upper Peninsula
Acreage _____

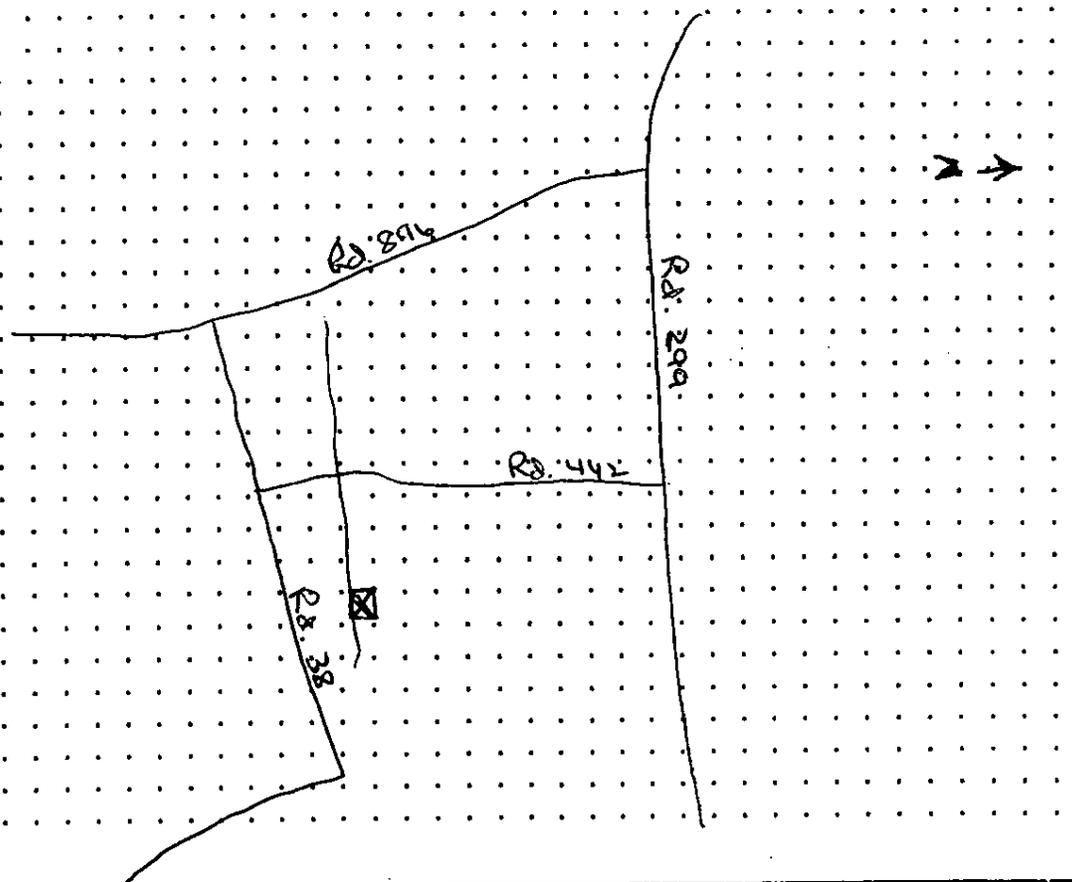
1. NAME OF PROPERTY: Drummond's Mill
2. STREET LOCATION: Rd. 442 1/2 Mile From Intersection Rd. 38
3. OWNER'S NAME: _____ TEL. # _____
ADDRESS: _____
4. TYPE OF LOCUS: a) building b) structure _____ c) site _____
d) object _____ e) district _____ f) other _____
5. SURROUNDINGS OF LOCUS: (check more than one if necessary)
a) fallow field _____ b) cultivated field _____ c) woodland _____
d) scattered buildings e) densely built up _____ f) other _____
6. FUNCTION: original Mill present Storage Shed
7. LIST ADDITIONAL SHEETS USED

8. YOUR NAME: Chip Baker + Steven Moffson # _____
YOUR ADDRESS: 15 The Green Dover, De. 19901 # _____
ORGANIZATION (if any) DSHPO DATE 2-19-92

USE BLACK INK ONLY

9. SKETCH MAP

Please indicate position of locus in relation to geographical landmarks such as streams and roads.



INDICATE NORTH ON SKETCH

10. CONTEXT

Consider the following:

- a) relationship to setting
- b) associated traditions or stories
- c) noteworthy features
- d) comparison with others in area
- e) threats

11. Comprehensive Planning:

- a. Time Period(s)
- b. Historic Theme(s)

12. Evaluation and Eligibility
List area(s) of significance and criteria

13. Certification

Survey: Name/Title
BAHP: Name/Title

Date _____
Date _____

DELAWARE STATE HISTORIC PRESERVATION OFFICE
BUREAU OF ARCHAEOLOGY AND HISTORIC PRESERVATION

15 THE GREEN, DOVER, DE 19901



CULTURAL RESOURCE SURVEY
INDUSTRIAL BUILDINGS

FORM CRS-5

CRS no. N-5215
SPO Map 06-07-28
Hundred St. Georges
Quad Middletown
Zone Upper Peninsula
Acreage _____

1. ADDRESS OF PROPERTY: E. Side Rd. 442 1/2 Mile From Intersection Rd. 38
2. FUNCTION: Mill
3. DATE OF CONSTRUCTION/ALTERATION: _____
4. STYLISTIC FEATURES: _____
5. ARCHITECT/BUILDER/ORIGINAL FIRM: _____
6. DESCRIPTION - Exterior - describe present and prior features.
 - A. Structural System: Frame
 - B. Wall Covering: weatherboard painted white
 - C. Foundation: Brick at N end with block and uncoursed rubble at free south end
 - D. Roof:
 - structural system raised seam sheet metal
 - covering Frame, gable
 - openings None
 - E. Entrance:
 - materials access Large wood door at N end with a smaller
 - worker's access pedestrian door nearer the center of the
 - office/management access main (W) facade
 - F. Windows:
 - industrial/area - spacing regular
 - type 6 over 6 sash
 - trim plain
 - office area - spacing Not accessible
 - type _____
 - trim _____

7. DESCRIPTION - Interior - list present and prior features

- A. Power Generation/Transmission *Not accessible*
- B. Heating/Cooling/Lighting
- C. Raw Materials Storage
- D. Materials Processing
- E. Waste Removal
- F. Finished Product Storage
- G. Employees Facilities
- H. Office Area
- I. Safety System

8. YARD AREA

- A. Auxiliary building/structures
Stable north of mill. Also note impact mill race.
- B. Plant Access

9. ASSOCIATED BUILDINGS/PLANTS

10. SURVEYOR

Steven Wolfson

DATE

2-19-92

USE BLACK INK ONLY



DELAWARE STATE HISTORIC PRESERVATION OFFICE
15 THE GREEN, DOVER, DE 19901

CULTURAL RESOURCE SURVEY
SURVEY UPDATE FORM

CRS # N-5215
SPO Map 06-07-28
Hundred St. Georges
Quad Middletown
Zone Upper Peninsula
Acreage 16.32a.

1. NAME OF PROPERTY: Willow Grove Mill
2. ADDRESS OF PROPERTY: 286 Silver Lake Road
3. CURRENT CONDITION: excellent _____ good X
fair _____ poor _____ demolished _____
4. ARCHITECTURAL INTEGRITY: Exterior of building is intact;
interior has been altered to serve as
2 apartments.
5. SETTING INTEGRITY: Rural setting is intact.

6. HISTORIC CONTEXT INFORMATION: Original date unknown
construction date Alteration Ca. 1860
- chronological period(s) 1630-1730+/- _____ 1730-1770+/- _____
1770-1830+/- _____ 1830-1880+/- X 1880-1940+/- _____
- historic theme(s) Manufacturing; settlement patterns;
architecture & engineering.
- property type(s) Gristmill

7. EVALUATION: eligible: Yes X No() Potential() Unknown()
area(s) of significance Contributing in Willow Grove Mill H.D.
NR criteria A, C

8. FORMS ADDED: _____
9. SURVEYOR: Philip E. Pendleton, Berger DATE OF FORM: 12/13/99
PRINCIPAL INVESTIGATOR: _____ DATE: _____

USE BLACK INK ONLY

HABS/HAER INVENTORY

N-12644

See "HABS/HAER Inventory Guidelines" before filling out this card.

| | |
|--|--|
| 1. NAME(S) OF STRUCTURE State Highway Bridge 407 | 3. DATE(S) OF CONSTRUCTION 1931/35 |
| 2. LOCATION Road 442 over Silver Lake Spillway Middletown, New Castle County, Delaware | 4. USE (ORIGINAL/CURRENT) Vehicular |
| | 5. RATING SG |

6. CONDITION
Good

State Highway Bridge 407 is a 19'-0" concrete encased steel girder span, carrying two lanes of traffic on a 20'6" wide deck. The superstructure rests on concrete abutments; the wing walls are U-shaped, with straight extensions on the east and flared extensions on the west; there is a steel/timber sheeting at the west opening, controlling the flow from Silver Lake. Nine concrete encased girders support the deck. The concrete parapet is ornamental, comprising end blocks with diamond figures which are spanned by a balustrade with triangular-headed openings. The end blocks support planters on the west elevation.

Delaware Department of Transportation records state that Bridge 407 was built in 1931 and altered in 1935; a stamp on the north abutment confirms the 1931 construction date, and a plaque on the bridge indicates that it was reconstructed in 1935.

State Bridge 407 is an example of a New Castle County structure which incorporates both a bridge and a water flow control structure. This type of combination structure was built in New Castle, Kent and Sussex counties; they serve as examples of creative engineering solutions to unusual site conditions. In addition to this, the bridge is an embellished example of a concrete encased girder bridge, a common type constructed during the early growth period and the period of rapid expansion of the state road network.

FORM 10-100
(4/86)

Historic American Buildings Survey / Historic American Engineering Record
National Park Service, U.S. Department of the Interior, P.O. Box 37127, Washington, DC 20013-7127



HABS/HAER INVENTORY

See "HABS/HAER Inventory Guidelines" before filling out this card.

| | |
|--|--|
| 1. NAME(S) OF STRUCTURE State Highway Bridge 407 | 3. DATE(S) OF CONSTRUCTION 1931/35 |
| 2. LOCATION Road 442 over Silver Lake Spillway Middletown, New Castle County, Delaware | 4. USE (ORIGINAL/CURRENT) Vehicular |
| | 5. RATING SG |

6. CONDITION

Good

State Highway Bridge 407 is a 19'-0" concrete encased steel girder span, carrying two lanes of traffic on a 20'-6" wide deck. The superstructure rests on concrete abutments; the wing walls are U-shaped, with straight extensions on the east and flared extensions on the west; there is a steel/limber sheeting at the west opening, controlling the flow from Silver Lake. Nine concrete encased girders support the deck. The concrete parapet is ornamental, comprising end blocks with diamond figures which are spanned by a balustrade with triangular-headed openings. The end blocks support planters on the west elevation.

Delaware Department of Transportation records state that Bridge 407 was built in 1931 and altered in 1935; a stamp on the north abutment confirms the 1931 construction date, and a plaque on the bridge indicates that it was reconstructed in 1935 by the Levy Court whose commissioners are listed. Additional repairs were carried out between April 15 and June 2, 1940, by E. F. Hammond of Delmar, Delaware under State Highway Department Contract 672A. The 1940 repairs involved the placement of fill and the excavation of the spillway channel.

State Bridge 407 is an example of a New Castle County structure which incorporates both a bridge and a water flow control structure. This type of combination structure was built in New Castle, Kent and Sussex counties; they serve as examples of creative engineering solutions to unusual site conditions. Although widely built throughout Delaware, only seven extant examples were surveyed. In addition to this, the bridge is an embellished example of a concrete encased girder bridge, a common type constructed during the early growth period and the period of rapid expansion of the state road network.

10. NAME(S) OF STRUCTURE
State Bridge Number 407

11. PHOTOS (w/ FILM ROLL & FRAME NO) AND SKETCH MAP OF LOCATION
30B:33-36A
31B:2-11



30B:35

Mack, Warren W. "A History of Motor Highways in Delaware", In Reed, Henry Clay, Delaware: A History of the First State, vol.2, pp.535-550 (NY: Lewis Historical Publishing Co., 1947).
Delaware State Program. Delaware State Highways: The Story of Roads in Delaware... [Newark, Delaware: Press of Kells, 1919].
Federal Writers' Project. Delaware: A Guide to the First State. (New York: Viking Press, 1938).
Delaware State Archives. New Castle County Levy Court Records, Specifications, Proposals, Contract and Bond files.
Delaware State Archives. New Castle County Road Commissioners Records, 1750-1940.
Delaware DOT records: Annual Reports; contract files.
Plans on file at Delaware DOT: Contract # 672, BNC-35

13. INVENTORIED BY:

P.A.C. Spero & Company with Kidde Consultants for Delaware DOT

AFFILIATION

DATE

April-November 1988

DELAWARE HISTORIC BRIDGES SURVEY

BRIDGE NUMBER: 407 OWNER: STATE CRS #: N-12644
COUNTY: NEW CASTLE HUNDRED: ST GEORGES/APPOQUINIMINK ZONE: UPPER PENINSULA
LOCATION: SE OF MIDDLETOWN SPO MAP: 06-07-28
ROAD NUMBER: 442 MILEPOST: 0.2 USGS QUAD: MIDDLETOWN

FACILITY CARRIED: ROAD 442 (SILVER LAKE ROAD)
NAME/FEATURE INTERSECTED: SILVER LAKE SPILLWAY

TYPE: MULTI GIRDER DESIGN: ENCASED

MATERIAL: STEEL

SPANS: 1 LENGTH: 22 (6.7 m) WIDTH: 22 (6.7 m)

DATE OF CONSTRUCTION: 1935 ALTERATION: SOURCE: HAER CARD

DESIGNER/BUILDER: NEW CASTLE COUNTY DOT DIST: 2

Setting: The bridge carries a two lane road over the spillway to Silver Lake southeast of Middletown. The lake was a mill pond, and the roadway is carried by the earth dam. The miller's house and mill still exist but have modern alterations. The lake has most recently been used by a private swimming club. Several late-20th-century residences have been built around the lake. The bridge is one of two bridges over the spillway. The other is State Bridge NC-504, a two-span concrete slab built in 1939. The mill complex including mill, miller's house, raceways, dam, spillways, and bridges may have historic district potential.

Current NR Status: Eligible

NR Recommendation: Eligible

Update Summary: There has been no change in the bridge's status since the previous survey. The one-span, 22'-long, encased multi girder bridge was built in 1935 as a replacement span to a previous bridge over the spillway. It is finished with concrete parapets with diamond-shape panels and pylons with flower boxes on the upstream side. A steel gate frame with wood sluice gates is built into the bridge's upstream side. The encased multi girder bridge is a representative example of a common 20th-century bridge type. It was selected for its historical and technological significance from the population of similar bridges because of its historic association with the spillway, custom-design parapets, and integrity of original design.

PHOTO: 13:17,20-24

REVIEWED BY: JPH

DATE: 10/96



DELAWARE STATE HISTORIC PRESERVATION OFFICE
15 THE GREEN, DOVER, DE 19901

CULTURAL RESOURCE SURVEY
SURVEY UPDATE FORM

CRS # N-12644
SPO Map 06/07/28
Hundred Appoquinimink
Quad M: ddletown
Zone Upper Peninsula
Acreage _____

1. NAME OF PROPERTY: State Highway Bridge No. 407

2. ADDRESS OF PROPERTY: Silver Lake Road @ Silver Lake

3. CURRENT CONDITION: excellent _____ good X
fair _____ poor _____ demolished _____

4. ARCHITECTURAL INTEGRITY: Demonstrates integrity to
historic condition.

5. SETTING INTEGRITY: Rural setting is intact.

6. HISTORIC CONTEXT INFORMATION: construction date 1931; rebuilt 1935

chronological period(s) 1630-1730+/- _____ 1730-1770+/- _____

1770-1830+/- _____ 1830-1880+/- _____ 1880-1940+/- X

historic theme(s) Transportation

property type(s) Concrete encased steel girder
bridge

7. EVALUATION: eligible: Yes X No() Potential() Unknown()

area(s) of significance Transportation

NR criteria C

8. FORMS ADDED: _____

9. SURVEYOR: Philip E. Pendleton, Berger DATE OF FORM: 12/13/99

PRINCIPAL INVESTIGATOR: _____ DATE: _____

USE BLACK INK ONLY

HABS/HAER INVENTORY

N-12645

See "HABS/HAER Inventory Guidelines" before filling out this card.

1. NAME(S) OF STRUCTURE

State Bridge Number 407A

2. LOCATION

Road 442 over Silver Lake Mill Race
Middletown, New Castle County, Delaware

3. DATE(S) OF CONSTRUCTION

4. USE (ORIGINAL/CURRENT)

Vehicular

5. RATING

SG

6. CONDITION

Good

State Highway Bridge 407A is a 8'-0" steel girder span, carrying two lanes of traffic on a 39'-6" wide deck. The superstructure rests on concrete abutments with U-shaped wing walls, and is constructed at a 15-20 degree skew. The east elevation features a concrete parapet comprising bevel-topped end blocks with a diamond design, spanned by a balustrade with triangular-headed openings. The west elevation incorporates a flow control device, and the parapet is a simple concrete wall with three incised horizontal panels.

Delaware Department of Transportation records for Bridge 407A do not document the date of construction. It was altered in 1950.

State Bridge 407 is an example of a New Castle County structure which incorporates both a bridge and a water flow control structure. In addition to this, it is an example of a concrete encased girder bridge, a common type constructed during the early growth period and the period of rapid expansion of the state road network. The structure has been altered and better preserved examples of this type exist.

16 FORM 10-800
(4/86)

Historic American Buildings Survey / Historic American Engineering Record
National Park Service, U.S. Department of the Interior, P.O. Box 37127, Washington, DC 20013-7127





CULTURAL RESOURCE SURVEY
SURVEY UPDATE FORM

CRS # N-12645
SPO Map 06/07/28
Hundred St. Georges
Quad Middle Town
Zone Upper Peninsula
Acreage

1. NAME OF PROPERTY: State Highway Bridge No. 407A

2. ADDRESS OF PROPERTY: Silver Lake Road @ Silver Lake

3. CURRENT CONDITION: excellent good X
fair poor demolished

4. ARCHITECTURAL INTEGRITY: Demonstrates integrity to
historic condition.

5. SETTING INTEGRITY: Rural setting is intact.

6. HISTORIC CONTEXT INFORMATION: construction date 1932; widened 1950

chronological period(s) 1630-1730+/- 1730-1770+/-
1770-1830+/- 1830-1880+/- 1880-1940+/- X

historic theme(s) Transportation

property type(s) Concrete encased steel girder bridge

7. EVALUATION: eligible: Yes X No () Potential () Unknown ()

area(s) of significance Transportation

NR criteria C

8. FORMS ADDED:

9. SURVEYOR: Philip E. Pendleton, Berger DATE OF FORM: 12/13/99

PRINCIPAL INVESTIGATOR: DATE:

USE BLACK INK ONLY

1. NAME(S) OF STRUCTURE

State Bridge Number 504

2. LOCATION

Road 442 over Silver Lake Spillway
Middletown, New Castle County, Delaware

3. DATE(S) OF CONSTRUCTION

1939

4. USE (ORIGINAL/CURRENT)

Vehicular

5. RATING

CS

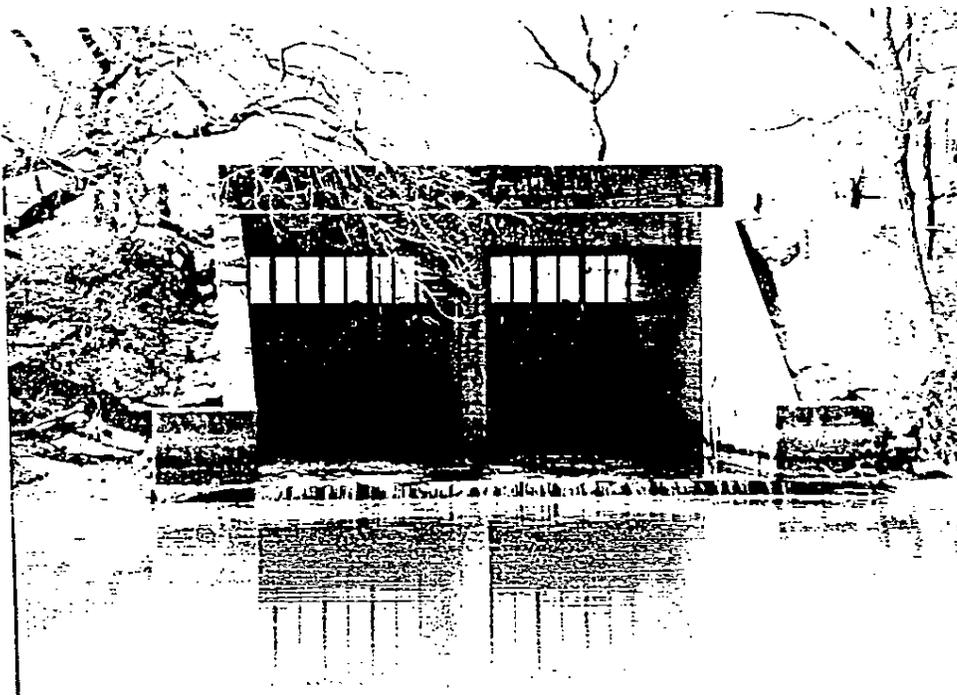
6. CONDITION

Good

State Highway Bridge 504 is a double span concrete slab bridge spanning 25'-0" feet, and incorporating a water control structure. It carries two lanes of traffic on a 24'-6" wide deck. The substructure consists of concrete abutments with concrete wing walls. The wing walls on the east elevation are straight, those on the west are flared. The parapet is concrete and constructed out of two separate pieces. It is decorated with four incised rectangles. The spillway for Silver Lake is located on the west elevation.

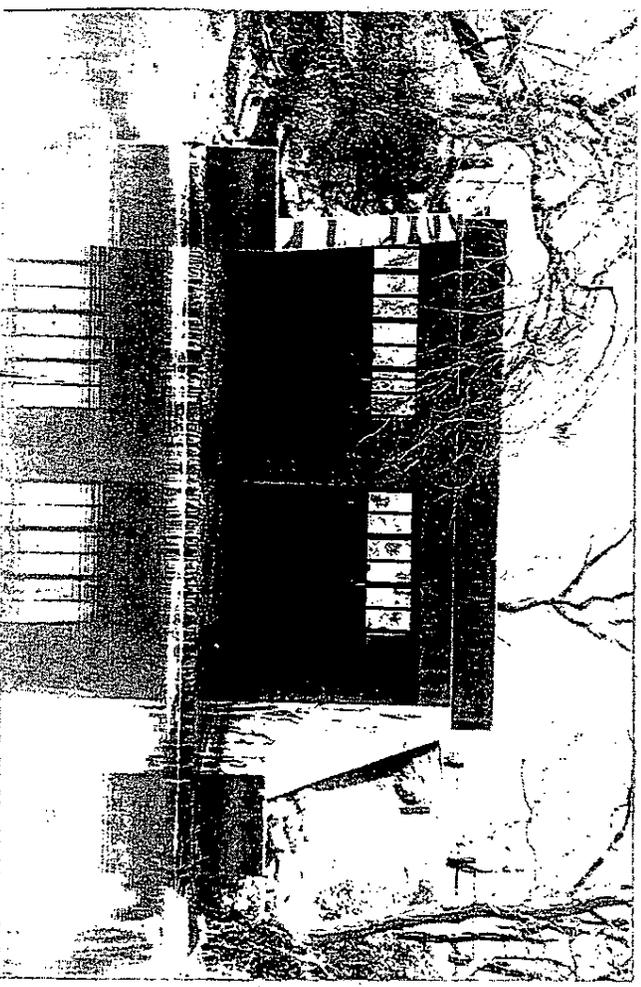
Delaware Department of Transportation records indicate that this structure was built in 1939 under State Highway Department contract 672; original drawings dated January 1939 document its configuration and construction details.

State Bridge 504 is a two span example of a concrete slab bridge built during the 1935-1942 period of rapid expansion. In addition to this, it is an example of a New Castle County highway structure which incorporates both a bridge and a water flow control structure. This type of combination structure was built in New Castle, Kent and Sussex counties; they serve as examples of creative engineering solutions to unusual site conditions. There are a few extant examples from the historic periods surveyed in each county.



10. NAME(S) OF STRUCTURE
State Bridge Number 504

11. PHOTOS (w/ FILM ROLL & FRAME NO) AND SKETCH MAP OF LOCATION
31B:13-22



31B:14A

Mack, Warren W. "A History of Motor Highways in Delaware", in Reed, Henry Clay, Delaware: A History of the First State, vol.2, pp.535-550 (NY: Lewis Historical Publishing Co., 1947).
Delaware State Program. Delaware State Highways: The Story of Roads in Delaware.... (Newark, Delaware: Press of Kells, 1919).
Federal Writers' Project. Delaware: A Guide to the First State. (New York: Viking Press, 1938).
Delaware State Archives. State of Delaware, New Castle County Levy Court, Specifications, Proposals, Contract and Bond. ms., State Archives, Dover, DE.
Delaware State Archives. New Castle County Road Commissioners Papers, various years 1750-1940, ms. State Archives, Dover, Delaware.
Delaware DOT records: Annual Reports; contract files.
Plans on file at Delaware DOT: Contract #672, 672A

19. INVENTORIED BY: Commansu with Kidde Consultants for Delaware DOT AFFILIATION

DATE
April-November 1988

23 SOURCE

HABS/HAER INVENTORY

See "HABS/HAER Inventory Guidelines" before filling out this card.

| | |
|---|-----------|
| 1. NAME(S) OF STRUCTURE | |
| State Bridge Number 504 | |
| 2. LOCATION | |
| Road 442 over Silver Lake Spillway Middletown, New Castle County, Delaware | |
| 3. DATE(S) OF CONSTRUCTION | 1939 |
| 4. USE (ORIGINAL/CURRENT) | Vehicular |
| 5. RATING | CS |

6. CONDITION

Good

State Highway Bridge 504 is a double span concrete slab bridge measuring 25'-6", and incorporating a water control structure. It carries two lanes of traffic on a 24'-0" wide deck. The substructure consists of concrete abutments with concrete wing walls. The wing walls on the east elevation are straight, those on the west are flared and end with straight extensions. The parapet is concrete and constructed out of two separate pieces. It is decorated with four incised rectangles and a corbeled cap on the outsides only. The spillway for Silver Lake is located on the west elevation.

Delaware Department of Transportation records indicate that this structure was built in 1939 under State Highway Department contract 672; original drawings dated January 1939 document its configuration and construction details. Notes on these drawings indicate that the bridge was designed while A.G. Livingston was Bridge Engineer for the Delaware State Highway Department, and the constructed by E.F. Hammond of Delmar, Delaware under Contract #672. The contract for \$12,927.70 was executed on May 23, 1939. Taylor-Davis, Inc. of Philadelphia provided the reinforcing steel, and Maryland Steel Products Company furnished the structural steel. Maryland Culvert and Pipe Company provided the gates and piping. The gate lifts were Hardesty handlift type, and were attached to wooden gates. Bridge 504 apparently assumed the water-control functions of the adjacent structure (#407), whose weir was removed and flood gates rendered inoperative at the time #504 was constructed. The construction contract included provisions for the removal of the weir. Heavy rain had caused washouts in August 1934 and July 1938 immediately south of Bridge 407; the new structure offered greater capacity for flood control. The bridge is designed for a 20 ton truck load.

State Bridge 504 is a two span example of a concrete slab bridge built during the 1935-1942 period of rapid highway expansion, exhibiting parapet detailing of the simplest type. In addition to this, it is an example of a New Castle County highway structure which incorporates both a bridge and a water flow control structure. This dual-purpose type of structure was found predominantly in Kent and Sussex counties; these bridges serve as examples of creative design solutions to unusual site conditions, reflecting a specialized engineering response to the water management necessities of lower Delaware. Delaware DOT photographic archives for New Castle County bridges in the 1920s illustrated a number of examples of the type at that time. There are a few extant examples from the historic periods surveyed in the state.

DELAWARE HISTORIC BRIDGES SURVEY

BRIDGE NUMBER: 504 OWNER: STATE CRS #: N-12646
COUNTY: NEW CASTLE HUNDRED: ST. GEORGES ZONE: UPPER PENINSULA
LOCATION: SOUTHEAST OF MIDDLETOWN SPO MAP: 06-07-28
ROAD NUMBER: 442 MILEPOST: 0.2 USGS QUAD: MIDDLETOWN

FACILITY CARRIED: ROAD 442 (SILVER LAKE ROAD)
NAME/FEATURE INTERSECTED: SILVER LAKE SPILLWAY

TYPE: SLAB DESIGN:

MATERIAL: REINFORCED CONCRETE

SPANS: 2 LENGTH: 26 (7.9 m) WIDTH: 20 (6.1 m)

DATE OF CONSTRUCTION: 1939 ALTERATION: SOURCE: HAER CARD

DESIGNER/BUILDER: DE HWY DEPT BRIDGE DIV/E. F. HAMMOND DOT DIST: 2

Setting: The bridge carries a two lane road over the spillway to Silver Lake southeast of Middletown. The lake was a mill pond, and the roadway is carried by the earth dam. The miller's house and mill still exist but have modern alterations. The lake has most recently been used by a private swimming club. Several late-20th-century residences have been built around the lake. The bridge is one of two bridges over the spillway. The other is State Bridge NC-407, a one-span encased steel multi girder bridge built in 1935. The mill complex including mill, miller's house, raceways, dam, spillways, and bridges may have historic district potential.

Current NR Status: Eligible

NR Recommendation: Eligible

Update Summary: There has been no change in the bridge's status since the previous survey. The 2-span, 26'-long, reinforced concrete slab bridge was built in 1939. It is finished with paneled concrete parapets and supported on a concrete pier and abutments with wingwalls. A steel gate frame with screw-operated gates is built into the upstream side of the bridge for regulating the water level of the lake. The slab bridge is a representative example of a common 20th-century bridge type. It was selected for its historical and technological significance from the population of similar bridges because of its historic association with the dam/spillway and integrity of original design.

PHOTO: 13:16,18-9,23,25-7

REVIEWED BY: JPH

DATE: 10/96



DELAWARE STATE HISTORIC PRESERVATION OFFICE
15 THE GREEN, DOVER, DE 19901

CULTURAL RESOURCE SURVEY
SURVEY UPDATE FORM

CRS # N-12646
SPO Map 06/07/28
Hundred Appoquinimink
Quad Middle town
Zone Upper Peninsula
Acreage _____

1. NAME OF PROPERTY: State Highway Bridge No. 504

2. ADDRESS OF PROPERTY: Silver Lake Road @ Silver Lake

3. CURRENT CONDITION: excellent _____ good X
fair _____ poor _____ demolished _____

4. ARCHITECTURAL INTEGRITY: Demonstrates integrity to
historic condition.

5. SETTING INTEGRITY: Rural setting is intact.

6. HISTORIC CONTEXT INFORMATION: construction date 1939

chronological period(s) 1630-1730+/- _____ 1730-1770+/- _____
1770-1830+/- _____ 1830-1880+/- _____ 1880-1940+/- X

historic theme(s) Transportation

property type(s) Concrete slab bridge

7. EVALUATION: eligible: Yes X No() Potential() Unknown()

area(s) of significance Transportation

NR criteria C

8. FORMS ADDED: _____

9. SURVEYOR: Philip E. Pendleton, Berger DATE OF FORM: 12/13/99

PRINCIPAL INVESTIGATOR: _____ DATE: _____

USE BLACK INK ONLY



DELAWARE STATE HISTORIC PRESERVATION OFFICE
15 THE GREEN, DOVER, DE 19901

CULTURAL RESOURCE SURVEY
PROPERTY IDENTIFICATION FORM

CRS # N-13778
SPO Map 06/07/28
Hundred St. Georges
Quad Middle town
Zone Upper Peninsula
Acreage 4.3 a.

1. NAME OF PROPERTY: St. Andrews School Tenant House
2. STREET LOCATION: Silver Lake Road (opposite # 286)
3. OWNER'S NAME: St. Andrews School of Delaware, Inc. TEL. #: 302-378-9511
ADDRESS: 350 Noxontown Road, Middletown, DE 19709
4. TYPE OF RESOURCE(S): building structure _____ site _____
object _____ district _____
5. SURROUNDINGS: (check more than one if necessary)
fallow field _____ cultivated field _____ woodland _____
scattered buildings densely built up _____ other _____
6. FUNCTION: original Park service building present Dwelling
7. LIST ADDITIONAL FORMS USED:
CRS-2 (Main Building)

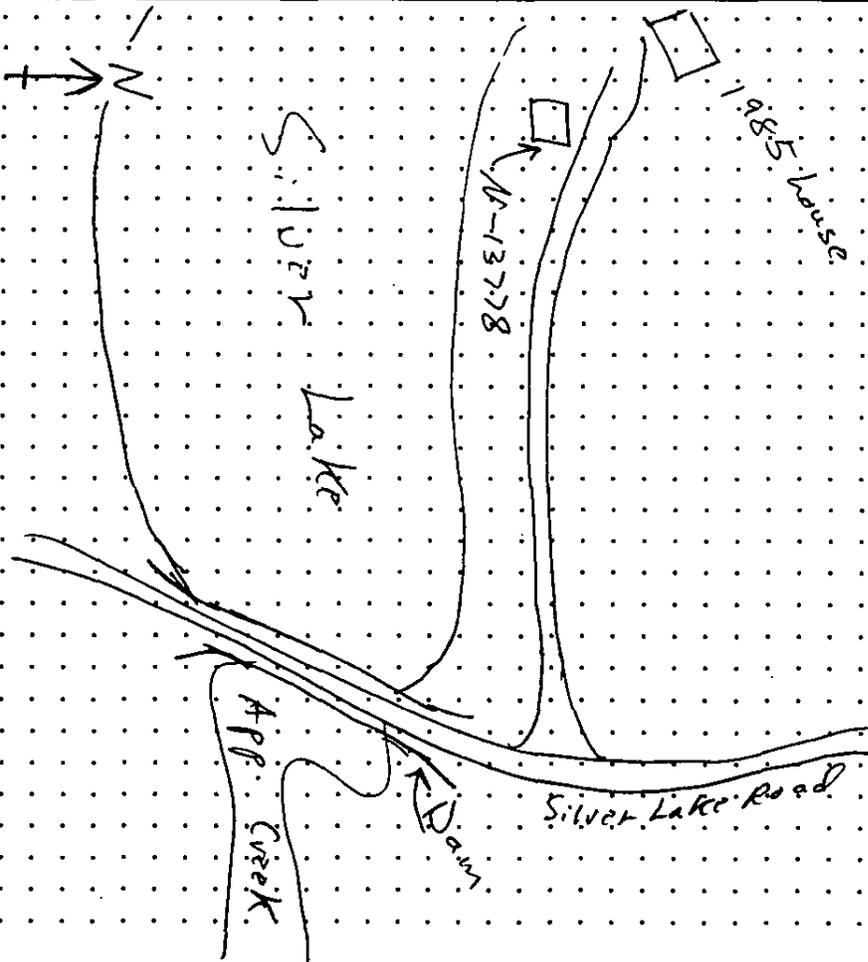
8. SURVEYOR: Philip E. Pendleton, Berger TEL. #: 973-678-1960
ORGANIZATION: Louis Berger + Associates, Inc. DATE: 12/13/99
ADDRESS: 100 Halsted Street, East Orange, NJ 07019

USE BLACK INK ONLY

9. LOCATION MAP:

CRS # N-13778

Please indicate position of resource in relation to geographical landmarks such as streams and roads.



INDICATE NORTH ON SKETCH

USE BLACK INK ONLY

10. OTHER INFORMATION Consider the following:

- a) Relationship to setting
- b) Associated traditions or stories
- c) Noteworthy features
- d) Comparison with others in area
- e) Threats
- f) Additional documentation

was apparently built to serve as office or service building for private recreational park, Silver Lake Park.

11. COMPREHENSIVE PLANNING:

- a) Time period(s) 1880-1940 ±
- b) Historic theme(s) Settlement Patterns

12. EVALUATION Eligible? Yes() No(x) Potential() Unknown()

- a) Area(s) of significance
- b) NR criteria

13. CERTIFICATION:

Surveyor: Paige S. Powell Date 12/13/99
 PI: _____ Date _____



CULTURAL RESOURCE SURVEY
MAIN BUILDING FORM

CRS # N-13778
SPO Map 06/07/28
Hundred St. Georges
Quad Middle town
Zone Upper Peninsula
Acreage 14.3 a.

1. ADDRESS OF PROPERTY: Silver Lake Road (opposite #286)
2. DATE OF INITIAL CONSTRUCTION: Ca. 1940
3. FLOOR PLAN/STYLE: Single-cell plan
4. ARCHITECT/BUILDER: _____

5. INTEGRITY: original site moved _____
if moved, when and from where _____
list major alterations and dates (if known) Renovated for use
as rental dwelling, ca. 1985

6. CURRENT CONDITION: excellent _____ good
fair _____ poor _____

7. DESCRIBE THE RESOURCE AS COMPLETELY AS POSSIBLE:
- a) Overall shape Rectangular
stories 1
bays 4
wings
 - b) Structural system Frame
 - c) Foundation materials Not visible
basement
 - d) Exterior walls (modern over original) materials Clad in stucco
color(s)
 - e) Roof shape; materials Gable; asphalt shingle
cornice
dormers
chimney location(s)

USE BLACK INK ONLY

7. DESCRIPTION (cont'd):

CRS # N-13778

- f) Windows
spacing
type
trim
shutters

6/6 of modern metal type

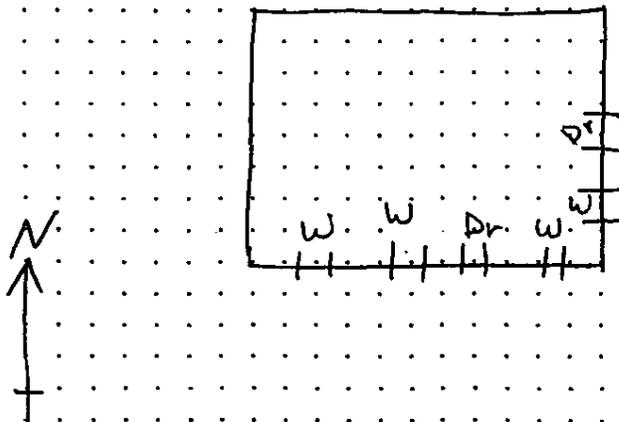
- g) Door
spacing
type
trim

Plain modern single-piece doors.

- h) Porches
location(s)
materials
supports
trim

- i) Interior details (if accessible)

8. SKETCH PLAN OF BUILDING:



INDICATE NORTH ON SKETCH

9. SURVEYOR: Philip E. Pendleton, DATE OF FORM: 12/13/99

Borger

USE BLACK INK ONLY



DELAWARE STATE HISTORIC PRESERVATION OFFICE
15 THE GREEN, DOVER, DE 19901

CULTURAL RESOURCE SURVEY
PROPERTY IDENTIFICATION FORM

CRS # N-13779
SPO Map 06/07/28
Hundred Appoquinimink
Quad Middletown
Zone Upper Peninsula
Acreage .37 a.

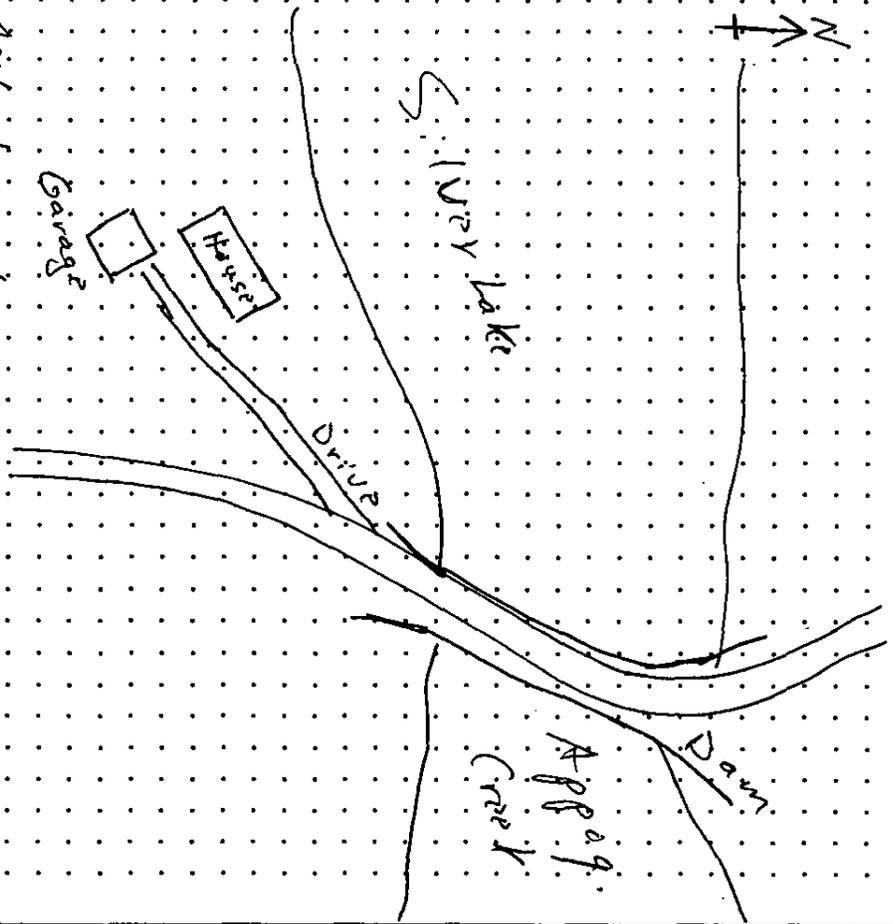
1. NAME OF PROPERTY: 351 Silver Lake Road
2. STREET LOCATION: 351 Silver Lake Road
3. OWNER'S NAME: Nikki Weidlein TEL. #: 302-378-8873
ADDRESS: 351 Silver Lake Road, Middletown, DE
19709
4. TYPE OF RESOURCE(S): building structure _____ site _____
object _____ district _____
5. SURROUNDINGS: (check more than one if necessary)
fallow field _____ cultivated field _____ woodland _____
scattered buildings densely built up _____ other _____
6. FUNCTION: original Dwelling present Dwelling
7. LIST ADDITIONAL FORMS USED:
CRS-2 (Main building)
CRS-3 (Related out building)
8. SURVEYOR: Philip E. Pendleton TEL. #: 973-678-1960
ORGANIZATION: Louis Berger + Associates, Inc. DATE: 12/13/99
ADDRESS: 100 Halsted Street, East Orange, NJ
07019

USE BLACK INK ONLY

9. LOCATION MAP:

CRS # N-13779

Please indicate position of resource in relation to geographical landmarks such as streams and roads.



Not to scale
INDICATE NORTH ON SKETCH

USE BLACK INK ONLY

10. OTHER INFORMATION Consider the following:

- a) Relationship to setting
- b) Associated traditions or stories
- c) Noteworthy features
- d) Comparison with others in area
- e) Threats
- f) Additional documentation

11. COMPREHENSIVE PLANNING:

- a) Time period(s) 1880-1940 ±
- b) Historic theme(s) Settlement Patterns,

12. EVALUATION Eligible? Yes () No (X) Potential () Unknown ()

- a) Area(s) of significance
- b) NR criteria

13. CERTIFICATION: Philip C. Pundleton Date 12/13/99

PI: _____ Date _____



CULTURAL RESOURCE SURVEY
MAIN BUILDING FORM

CRS # N-13779
SPO Map 06/07/28
Hundred Appoquinimink
Quad Middletown
Zone Upper Peninsula
Acreage 1.37a.

1. ADDRESS OF PROPERTY: 351 Silver Lake Road
2. DATE OF INITIAL CONSTRUCTION: Ca. 1880
3. FLOOR PLAN/STYLE: Original section is a ^{evidently} vernacular hall-parlor.
4. ARCHITECT/BUILDER: —

5. INTEGRITY: original site moved
- if moved, when and from where _____
- list major alterations and dates (if known) Enlarged 3 times:
Ca. 1920s, Ca. 1980s and 1999

6. CURRENT CONDITION: excellent _____ good
- fair _____ poor _____

7. DESCRIBE THE RESOURCE AS COMPLETELY AS POSSIBLE:

- a) Overall shape Rectangular
stories 1.5
bays 3
wings _____
- b) Structural system Frame
- c) Foundation materials Not visible
basement _____
- d) Exterior walls (modern over original) materials Partly novelty siding; partly red cedar
color(s) vertical board
- e) Roof shape; materials Gable, w/ shed-roofed lean-tos;
cornice asphalt shingle
dormers _____
chimney location(s) _____

USE BLACK INK ONLY

7. DESCRIPTION (cont'd):

CRS # N-13779

- f) Windows
spacing
type
trim
shutters

On SE side of house (i.e., gable end of original section and ends of front and rear lean-tos), there are 9-light casement windows dating apparently to ca. 1920s renovation, with molded caps over frames.

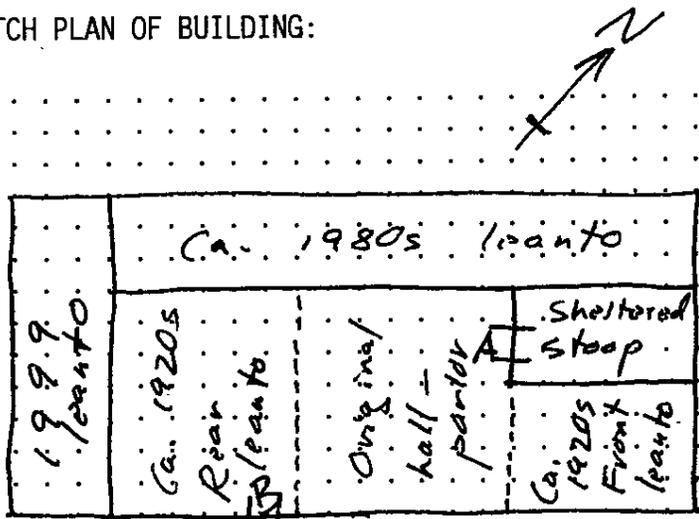
- g) Door
spacing
type
trim

- h) Porches
location(s)
materials
supports
trim

Front stoop, between 2 projecting sections, sheltered by roof that extends between the 2 sections.

- i) Interior details (if accessible)

8. SKETCH PLAN OF BUILDING:



A Front door

B Side door

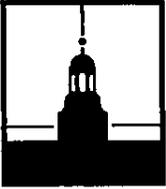
Not to scale

INDICATE NORTH ON SKETCH

9. SURVEYOR: Philip E. Rendleton

DATE OF FORM: 12/13/99

USE BLACK INK ONLY



CULTURAL RESOURCE SURVEY
RELATED OUTBUILDING FORM

CRS # N-13779
SPO Map 06/07/28
Hundred Appoquinimink
Quad Middletown
Zone Upper Peninsula
Acreage .37a.

1. ADDRESS OF PROPERTY: 351 Silver Lake Road

2. FUNCTION: Garage

3. DATE: Ca. 1950

4. STYLISTIC FEATURES: _____

5. ARCHITECT/BUILDER: _____

6. DESCRIPTION:

a) Structural system Frame

b) Wall coverings

c) Wall openings
windows
doors 2 bay doors, 1 regular door
other

d) Foundation Not visible

e) Roof
structural system Gable
coverings
openings Large gabled dormer installed on front (NE) slope

f) Interiors

floor plan

partition/walls

interior finish

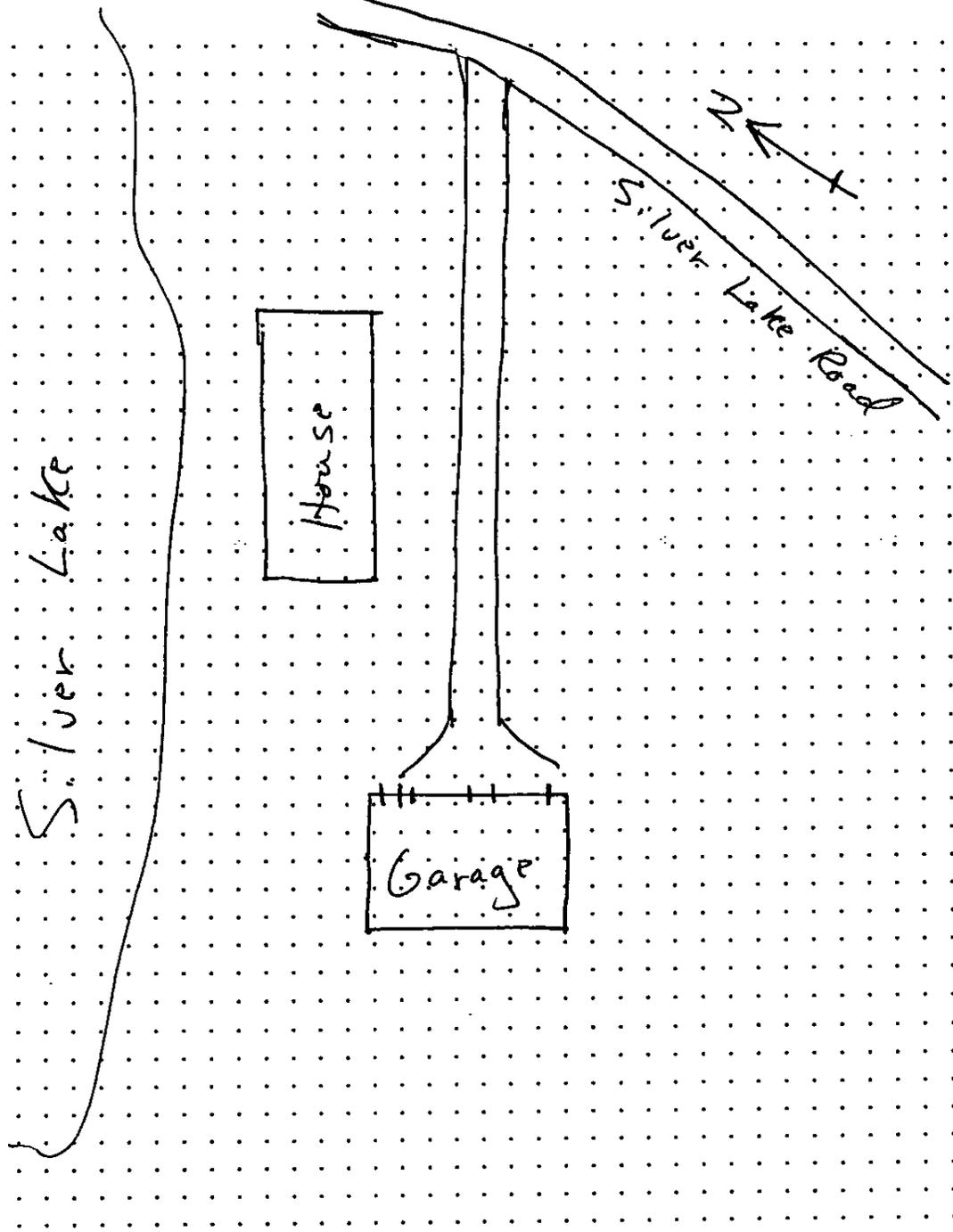
furnishings/machinery

USE BLACK INK ONLY

7. SKETCH PLAN:

CRS # N-13779

Show relationship to main building and provide sketch plan of outbuilding.



INDICATE NORTH ON SKETCH

8. SURVEYOR: _____ DATE OF FORM: _____

USE BLACK INK ONLY



DELAWARE STATE HISTORIC PRESERVATION OFFICE
15. THE GREEN, DOVER, DE 19901

CULTURAL RESOURCE SURVEY
PROPERTY IDENTIFICATION FORM

CRS # N-13780
SPO Map 06/07/28
Hundred St. Georges
Quad Middle town
Zone Upper Peninsula
Acreage 146.32a.

1. NAME OF PROPERTY: Willow Grove Mill Head Race

2. STREET LOCATION: 286 Silver Lake Road

3. OWNER'S NAME: Fred B. Carey, Jr. TEL. #: 302-674-1344
ADDRESS: P.O. Box 535, Dover, DE 19903

4. TYPE OF RESOURCE(S): building structure site
object district landscape

5. SURROUNDINGS: (check more than one if necessary)
fallow field cultivated field woodland
scattered buildings densely built up other

6. FUNCTION: original Mill race present Not in use

7. LIST ADDITIONAL FORMS USED:
CRS-6 (Structure)

8. SURVEYOR: Philip E. Pendleton TEL. #: 973-678-1960
ORGANIZATION: Louis Berger + Assoc., Inc. DATE: 12/13/99
ADDRESS: 100 Halsted Street, East Orange, NJ
07019

USE BLACK INK ONLY



CULTURAL RESOURCE SURVEY
STRUCTURE FORM

CRS # N-13780
SPO Map 06/07/28
Hundred St. Georges
Quad Middletown
Zone Upper Peninsula
Acreage 1/6.329

1. ADDRESS OF PROPERTY: 286 Silver Lake Road
2. TYPE OF STRUCTURE: Mill Head Race
3. DATE OF INITIAL CONSTRUCTION: 1st mill race probably ca. 1720
4. STYLISTIC INFLUENCE: _____
5. ARCHITECT/BUILDER: _____
6. INTEGRITY: original site moved _____
if moved, when and from where _____
major alterations and date _____

7. CURRENT CONDITION: excellent _____ good _____
fair poor _____

8. DESCRIBE THE STRUCTURE AS COMPLETELY AS POSSIBLE:

- a) Overall shape Dry ditch extending on a straight line
height from the sluice gate (fitted to Bridge 407A) on
length Silver Lake to the head gate location, about 20
width foot west of the mill building's internal wheel
pit. Head gate (not in place) was fitted in an
- b) Structural system arched stone-masonry built head which
is extant.
For most of its length the race
- c) Foundation is about 10-12 feet wide and 4 feet
type deep. It has been silted in somewhat.
material At either end, the ditch narrows to about
8 feet wide.
- d) Exterior claddings (modern over original)
walls, parapets
roofs

USE BLACK INK ONLY

8. DESCRIPTION (cont'd):

CRS # N-13780

- e) Openings (if applicable)
 - doors
 - windows
 - access

- f) Interior (if applicable)
 - volume
 - linings

- g) Systems (if applicable)
 - heating/ventilating/cooling
 - plumbing
 - electrical
 - lighting

9. ASSOCIATED RESOURCES: Willow Grove Mill (N-5215)
Willow Grove Mill Dam (N-13781)
State Highway Bridge #407A (N-12645)

10. PLAN SKETCH MAP:

See Property ID form
 C.R.S.-1

INDICATE NORTH ON SKETCH

11. SURVEYOR: Philip E. Pendleton DATE OF FORM: 12/13/99

USE BLACK INK ONLY



DELAWARE STATE HISTORIC PRESERVATION OFFICE
15 THE GREEN, DOVER, DE 19901

CULTURAL RESOURCE SURVEY
PROPERTY IDENTIFICATION FORM

CRS # N-13781
SPO Map 06/07/28
Hundred St. Georges
Quad Middletown
Zone Upper Peninsula
Acreage _____

1. NAME OF PROPERTY: Willow Grove Mill Dam

2. STREET LOCATION: Silver Lake Road @ Silver Lake

3. OWNER'S NAME: partly Del DOT, partly Fred B. Carey, Jr. (Willow Grove) TEL. #: _____
ADDRESS: _____

4. TYPE OF RESOURCE(S): building _____ structure X site _____
object _____ district _____ landscape _____

5. SURROUNDINGS: (check more than one if necessary)
fallow field _____ cultivated field _____ woodland _____
scattered buildings X densely built up _____ other _____

6. FUNCTION: original Dam present Dam

7. LIST ADDITIONAL FORMS USED:
CRS - 6 (Structure)

8. SURVEYOR: Philip E. Pendleton TEL. #: 973-678-1960

ORGANIZATION: Louis Berger & Associates, Inc. DATE: 12/13/99

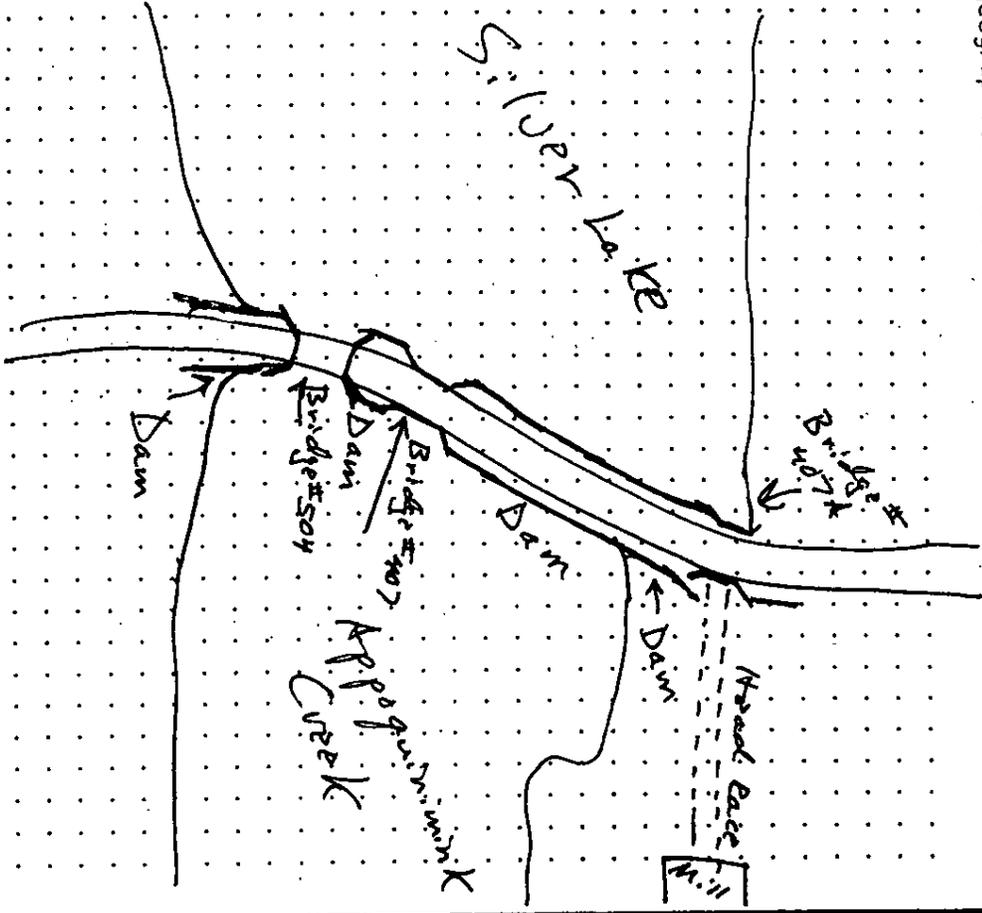
ADDRESS: 100 Halsted Street, East Orange, NJ 07019

USE BLACK INK ONLY

9. LOCATION MAP:

CRS # AU-13781

Please indicate position of resource in relation to geographical landmarks such as streams and roads.



INDICATE NORTH ON SKETCH

USE BLACK INK ONLY

10. OTHER INFORMATION Consider the following:

- a) Relationship to setting
- b) Associated traditions or stories
- c) Noteworthy features
- d) Comparison with others in area
- e) Threats
- f) Additional documentation

Dam has been washed out repeatedly in severe storms, but has always been rebuilt as a largely carbon structure in the same approximate configuration.

11. COMPREHENSIVE PLANNING:

- a) Time period(s): 1730-1770 ±; 1770-1830 ±; 1830-1880 ±; 1880-1940 ±.
- b) Historic theme(s): Settlement Patterns; Manufacturing; Architecture + Engineering.

12. EVALUATION Eligible?: Yes No Potential Unknown

- a) Area(s) of significance: Construction element in Willow Grove Mill H.D.
- b) NR criteria: A+C

13. CERTIFICATION:

Surveyor: Blair E. Ponder Date 12/13/99

PI: _____ Date _____



CULTURAL RESOURCE SURVEY
STRUCTURE FORM

CRS # N-13781
SPO Map 06/07/28
Hundred St. Georges
Quad Middletown
Zone Upper Peninsula
Acreage —

- 1. ADDRESS OF PROPERTY: Silver Lake Road @ Silver Lake
- 2. TYPE OF STRUCTURE: Earthen dam
- 3. DATE OF INITIAL CONSTRUCTION: Original dam built ca. 1720
- 4. STYLISTIC INFLUENCE: _____
- 5. ARCHITECT/BUILDER: _____
- 6. INTEGRITY: original site X moved _____
if moved, when and from where _____
major alterations and date Has been damaged by severe storms and rebuilt repeatedly, including in 1999.
- 7. CURRENT CONDITION: excellent _____ good X
fair _____ poor _____

Bridges were added, with flood control gates, in 1931 and 1939.

- 8. DESCRIBE THE STRUCTURE AS COMPLETELY AS POSSIBLE:
 - a) Overall shape
height
length
width
 - b) Structural system Earthen dam on berm
 - c) Foundation
type
material
 - d) Exterior claddings (modern over original)
walls, parapets
roofs

USE BLACK INK ONLY

8. DESCRIPTION (cont'd):

CRS # N-13781

- e) Openings (if applicable)
 - doors
 - windows
 - access

- f) Interior (if applicable)
 - volume
 - linings

- g) Systems (if applicable)
 - heating/ventilating/cooling
 - plumbing
 - electrical
 - lighting

9. ASSOCIATED RESOURCES: Willow Grove Mill (N-5215), Bridge #407
(N-12644), Bridge #407A (N-12645), Bridge #504 (N-12646),
Willow Grove Mill Head Race (N-13780)

10. PLAN SKETCH MAP:

See Property I.D. form
CRS-1

INDICATE NORTH ON SKETCH

11. SURVEYOR: Philip E. Pendleton DATE OF FORM: 12/13/99

USE BLACK INK ONLY

APPENDIX B

DETERMINATION OF ELIGIBILITY FORM

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NDS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Willow Grove Mill Historic District

other names/site number N-13782

2. Location

street & number _____ not for publication _____

city or town Middletown vicinity X

state Delaware code DE county New Castle code 003

zip code 19709

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this _____ nomination _____ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property _____ meets _____ does not meet the National Register Criteria. I recommend that this property be considered significant _____ nationally _____ statewide _____ locally.
(_____ See continuation sheet for additional comments.)

Signature of certifying official

Date

State or Federal agency and bureau

In my opinion, the property _____ meets _____ does not meet the National Register criteria.
(_____ See continuation sheet for additional comments.)

Signature of commenting or other official

Date

State or Federal agency and bureau

4. National Park Service Certification

I, hereby certify that this property is:

- entered in the National Register
- See continuation sheet
- determined eligible for the National Register
- See continuation sheet
- determined not eligible for the National Register
- removed from the National Register
- other (explain):

Signature of the Keeper

Date of Action

5. Classification

Ownership of Property
(Check as many boxes as apply)

- private
- public-local
- public-State
- public-Federal

Category of Property
(Check only one box)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property

| Contributing | Noncontributing | |
|--------------|-----------------|------------|
| <u>4</u> | <u>1</u> | buildings |
| <u> </u> | <u> </u> | sites |
| <u>5</u> | <u> </u> | structures |
| <u> </u> | <u> </u> | objects |
| <u>9</u> | <u>1</u> | Total |

Number of contributing resources previously listed in the National Register: 0

Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing)

6. Function or Use

Historic Functions (Enter categories from instructions)

| | |
|-----------------------|------------------------------------|
| Cat: <u>Industry</u> | Sub: <u>Manufacturing Facility</u> |
| <u>Domestic</u> | <u>Waterworks</u> |
| <u>Transportation</u> | <u>Single Dwelling</u> |
| | <u>Secondary Structure</u> |
| | <u>Road-Related</u> |
| | |
| | |

Current Functions (Enter categories from instructions)

| | |
|-----------------------|-----------------------------|
| Cat: <u>Domestic</u> | Sub: <u>Single dwelling</u> |
| <u>Industry</u> | <u>Secondary structure</u> |
| <u>Transportation</u> | <u>Waterworks</u> |
| | <u>Road-Related</u> |
| | |
| | |

7. Description

Architectural Classification (Enter categories from instructions):

Others

Materials (Enter categories from instructions)

foundation Stone
roof Asphalt
walls Wood
other _____

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria

USDI/NPS NRHP Registration Form
Smith's Mill-Granogue Historic District
New Castle County, Delaware

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

- A owned by a religious institution or used for religious purposes.
- B removed from its original location.
- C a birthplace or a grave.
- D a cemetery.
- E a reconstructed building, object, or structure.
- F a commemorative property.
- G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance (Enter categories from instructions):

Architecture
Engineering
Industry
Transportation

Period of Significance

Ca. 1720-1949

Significant Dates _____

USDI/NDS NRHD Registration Form
Smith's Mill-Granogue Historic District
New Castle County, Delaware

Significant Person (Complete if Criterion B is marked above)

Cultural Affiliation

Architect/Builder

Narrative Statement of Significance (Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NDS)

- preliminary determination of individual listing (36 CFR 67) has been requested.
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____

Primary Location of Additional Data

- State Historic Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other

Name of repository

10. Geographical Data

Acreage of Property:

Approx. 17 acres

UTM References (Place additional UTM references on a continuation sheet)

| | | | | | |
|------|---------|----------|------|---------|----------|
| Zone | Easting | Northing | Zone | Easting | Northing |
|------|---------|----------|------|---------|----------|

USD/NPS NRHP Registration Form
Smith's Mill-Granogue Historic District
New Castle County, Delaware

1 _____ 3 _____
2 _____ 4 _____

____ See continuation sheet.

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet.)

See Continuation Sheet

Boundary Justification (Explain why the boundaries were selected on a continuation sheet.)

See Continuation Sheet

11. Form Prepared By

name/title Philip E. Pendleton
organization Louis Berger & Associates, Inc. date December 13, 1999
street & number 100 Halsted Street telephone 973-678-1960
city or town East Orange state NJ zip code 07019

Additional Documentation

(Submit the following items with the completed form.)

Continuation Sheets

Maps: A USGS map (7.5 or 15 minute series) indicating the property's location.
A sketch map for historic districts and properties having large acreage or numerous resources.

Photographs: Representative black and white photographs of the property.

Additional items (Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

name _____
street & number _____ telephone _____
city or town _____ state _____ zip code _____

USD/ND8 NDHD Registration Form
Smith's Mill-Granogue Historic District
New Castle County, Delaware

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 20503.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section 7 Page 1

Smith's Mill-Granogue Historic District
New Castle County, Delaware

The Willow Grove Mill Historic District (Delaware CRS Inventory No. N-13782) extends over an area of approximately seventeen acres, containing within its boundary almost the entirety of Tax Parcel No. 13-028.00-001, along with the mill dam that incorporates the three highway bridges dating to the 1930s (Nos. 407, 407A and 504). The dam, while originally within the mill property, is nearly if not entirely under the State Highway right-of-way as of 1999. That portion of the mill or Carey property that lies north of Appoquinimink Creek contains the contributing architectural resources as well as pasture land, woodland, and other open spaces that are historically associated with the architectural resources and serve as the historic setting for them. The small portion of the Carey property excepted from the historic district consists of a narrow strip of land along the south bank of the Appoquinimink. This narrow strip was retained as part of the property by the previous owners when they sold most of the south-side portion as house lots during the period 1937-1965; however, it does not contribute to the significance of the district due to its small size and evident lack of direct relationship to the historic function of the property.

The overall *Willow Grove Mill* (N-5215) gristmill building is a rectangular, gable-roofed two-story structure with a basement foundation of masonry, and upper stories constructed of timber frame. It is clad in novelty siding, except for corrugated sheet metal on the rear or east, and roofed with standing-seam metal. The older section of the building with its stone-masonry basement was apparently built before circa 1830 and may be the original mill building of circa 1720. At some date evidently between 1850 and 1830, the mill was extended in length (with brick-masonry basement construction as opposed to the original rubble stone), what had been an external wheel pit was enclosed, a turbine replaced the vertical water wheel, and the arrangement of basement openings was considerably altered. Around 1940 the mill building was converted into a rental dwelling, with the millstones and the other machinery removed. As part of this transformation, the hurst frame was dismantled and its heavy timbers reemployed in the basement in supporting the altered interior structure of the building.

The *Willow Grove Miller's House* (N-5214) is a two-story, gable-roofed, frame structure on a foundation of brick for the older sections and concrete for all or most of the twentieth-century construction. It is clad in aluminum siding and roofed with asphalt shingle. The original section is an example of the two-story center-passage single-pile type, with a symmetrical five-bay facade. According to owner Fred B. Carey, Jr., a 1947 fire severely damaged the rear area of the house, including a three-story section, so that a large portion of the house had to be taken down and rebuilt in an approximation of its historic form. The house is accompanied by a two-story, gable-roofed stable of probable nineteenth-century date. The stable is built of frame, clad in asphalt siding and asbestos shingle, and roofed with corrugated metal. Other outbuildings that are likely of more than 50 years of age on the property are a one-story, front-gabled, single-bay frame garage and a one-story, shed-roofed frame workshop, both which appear to date to the period circa 1940-1960.

The *Willow Grove Mill Dam* (N-13781), which retains the waters of Appoquinimink Creek to form Silver Lake, consists of a largely earthen berm interrupted by three bridges. The dam has been subject to periodic washouts caused by severe storms. Most recently, the dam was partially destroyed in storm flooding in September 1999. It was again rebuilt during the autumn of 1999 in its historic configuration.

The *Willow Grove Mill Head Race* (N-13780), maintained as a dry ditch in recent decades, extends on a straight line from a sluice gate, fitted to Bridge 407A by the shore of Silver Lake, to the location of the head gate about twenty feet west of the wheel pit for the mill. The head gate, no longer in place, was fitted in a arched stone-masonry bulkhead, behind which is the sluice that delivered the flow of water to the brick-arched inlet in the stone-masonry west wall of the wheel pit.

State Highway Bridge 407A (N-12645) was built in 1932 to span the head race, and represented a widening of an earlier bridge. The relatively brief bridge, its superstructure consisting of steel girders, rests on concrete abutments with concrete wing walls. The parapet is also of poured concrete, with decorative embellishment. The bridge is fitted with a water gate on the west side. *State Highway Bridge 407* (N-12644) was constructed in 1931 by the New County Castle Levy Court, and then rebuilt in 1935 after severe damage from a 1934 flood. Part of a modification of the mill dam that provided a spillway, the bridge was designed as a single span carrying Silver Lake Road over the spillway, incorporating a water gate on the west side intended to facilitate flood control. The superstructure consists of concrete encased steel girders. The abutments, wing wall and decorative parapet are of constructed of poured concrete. The State Highway Department built *State Highway Bridge 504* (N-12546) a few feet to the south of Bridge 407 in 1939, after a storm of the preceding year showed the inadequacy of the spillway-and-bridge configuration of 407 built by the county government. Bridge 504 is a double-span structure incorporating a water gate on the west side under each span. The superstructure of concrete slab is supported by concrete pier, abutments and wing walls. The parapet is also of concrete.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section 8 Page 1

Smith's Mill-Granogue Historic District
New Castle County, Delaware

The Willow Grove Mill Historic District (Delaware CRS Inventory No. N-13782) was identified and evaluated as a district for its representation of the history of a mill seat (i.e., a property adapted for the operation of a waterpowered mill) from the early eighteenth century through the early twentieth century, and of the subsequent mid-twentieth-century history of the dam that had enabled the provision of waterpower for the gristmill and which was retained in place by the community. The historic district is eligible for the National Register of Historic Places. It is significant under Criterion A, which applies to resources distinguished by their association with events and trends in American history, for its exemplification of the eighteenth- and nineteenth-century milling industry. The grain-milling and especially the flour-milling business played a key role in the development of the economic life, community life and settlement pattern of central Delaware and the Mid-Atlantic region at large.

The Willow Grove Mill Historic District is also significant under Criterion C, which pertains to resources that are important for their architectural and engineering qualities. The district's contributing elements that have direct historical association with the operation of the mill are the Willow Grove Mill building itself (N-5215), the miller's house (N-5214), the mill dam (N-13781) and the mill's head race (N-13780). These resources exemplify the essential components of a gristmill complex. The three other contributing elements are State Highway bridges Nos. 407 (N-12644), 407A (N-12645) and 504 (N-12646), all built in the 1930s. These spans were all designed and constructed incorporating flood-control water gates. The three bridges are notable for their association with the efforts of the county and state governments to maintain the dam against the threat of flood damage, and hence for their design which responds to the particular characteristics of the site.

The Willow Grove Mill complex was established by Thomas Noxon circa 1720, and thus is one of the oldest surviving mill properties in central Delaware (see Section II-B, Site-Specific Historic Context: Willow Grove Mill, above). Although the gristmill building has been thoroughly altered on the interior, having been converted into a duplex rental dwelling, its exterior evidently retains its appearance as in the late nineteenth century when it was still operating busily as a merchant flour and cornmeal mill. The interior of the older or southern section of the basement of the mill building holds architectural evidence, such as nicely dressed structural timbers and a fireplace relief arch, indicating that the older section dates before circa 1830 and probably to the eighteenth century. In addition, the head race is well preserved, and the relationship of the Appoquinimink Creek, the former mill dam and mill pond (Silver Lake), the head race and the mill is readily observable. The miller's house, constructed circa 1800-1860, and a stable of unknown but probable pre-1900 date are present to represent the historic complex of other buildings associated with the mill, and the immediate vicinity retains the rural character evocative of the historic environment of the mill complex. The three State Highway bridges are intact and thus able to represent their historic significance. Overall, the Willow Grove Mill Historic District demonstrates the integrity necessary for National Register eligibility.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section 9 Page 1
Section 10 Page 1

Smith's Mill-Cranogue Historic District
New Castle County, Delaware

Major Bibliographical References

A. G. Lichtenstein & Associates, Inc.
1996 Delaware Historic Bridge Survey. Prepared for the Delaware Department of Transportation; on file, Delaware SHPO, Dover, Delaware.

Carey, Fred B., Jr.
1999 Telephone interview with Fred B. Carey Jr., Dover, Delaware, conducted by Philip E. Pendleton, December 8, 1999.

Heite, Louise B.
1972 Appoquinimink: A Delaware Frontier Village. Manuscript on file at the Delaware SHPO, Dover, Delaware.

New Castle County Records

v.d. Deeds. On file, New Castle County Office Building, Wilmington, Delaware.

v.d. Levy Court Minutes. On microfilm, Delaware State Archives, Dover, Delaware.

v.d. Wills. On microfilm, Delaware State Archives, Dover, Delaware.

U.S. Bureau of the Census

1880 Census of Manufactures. On microfilm, Delaware State Archives, Dover, Delaware.

Verbal Boundary Description: The boundary of the historic district includes the Fred B. Carey, Jr., tax parcel (13-028.00-001) almost in its entirety. The small portion of the Carey property excepted from the historic district consists of a narrow strip of land along the south bank of the Appoquinimink. This narrow strip was retained as part of the property by the previous owners when they sold most of the south-side portion as house lots during the period 1937-1965; however, it does not contribute to the significance of the district due to its small size and evident lack of direct relationship to the historic function of the property.

Boundary Justification: The boundary of the historic district, as proposed above, encompasses the historic architectural properties, including the historic buildings and structures that represent contributing elements as well as the agricultural lands, woodlands and other open spaces that are historically associated with the architectural resources and compose the historic setting for the latter.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section Photos Page 1 name of property
county, state

The following items apply to all xx photographs:

- 1.
- 2.
- 3.
- 4.
- 5.

The following items apply to individual photographs:

- Photo 1:
Photo 2:
Photo 3:
Photo 4:
Photo 5:
Photo 6:
Photo 7:
Photo 8:
Photo 9:
Photo 10:

APPENDIX C

PERSONNEL QUALIFICATIONS

PHILIP E. PENDLETON
Architectural Historian

EDUCATION

- Postgraduate work at University of Delaware, Center for Historic Architecture and Engineering, 1990-1991
- M.A., American History, University of North Carolina at Chapel Hill, 1981
- B.A., History, Washington and Lee University, 1976

TECHNICAL TRAINING

- Training Course in Section 106 (Introduction to Federal Projects and Historic Preservation Law), Advisory Council on Historic Preservation. 1994.
- Field School in Architectural History, Old Sturbridge Village Museum. Intensive seven-week program in methods of vernacular architecture study. 1989.

PROFESSIONAL EXPERIENCE

Mr. Pendleton conducts architectural survey and historical research for cultural resource investigations, National Register determinations of eligibility, HABS/HAER recordation projects, and historic context studies. Since joining Berger in 1992, Mr. Pendleton's major projects include:

- **Naval Air Station Patuxent River, Lexington Park, Maryland.** Historic context, architectural inventory, and determination of eligibility for complex of buildings and structures on naval air station, including context and survey with regard to pre-1942 history and surviving buildings. For the U.S. Navy, Naval Air Station Patuxent River.
- **Middle River Depot, Middle River, Maryland.** Determination of eligibility for former military aircraft assembly plant built during World War II. For the U.S. General Services Administration, Region 3.
- **Federal Building, Concord, New Hampshire.** Architectural survey in association with proposed addition to the Federal Building. For the U.S. General Services Administration.
- **Proposed Detention Center, Lee County, Virginia.** Architectural survey and Phase II archaeological investigations. For the U.S. Department of Justice, Federal Bureau of Prisons.
- **Federal Correctional Institution, Petersburg, Virginia.** Phase II cultural resource investigations. For the U.S. Department of Justice, Federal Bureau of Prisons.
- **Gloucester City U.S. Coast Guard Station, New Jersey.** Determination of eligibility for Coast Guard Station and former Immigration Service detention center. For the U.S. Coast Guard.
- **Elko Tract, Henrico County, Virginia.** Phase II archaeological investigations. For CH2M Hill.

- **State Bridge No. 69, New Castle County, Delaware.** HAER recordation. For the Delaware Department of Transportation.
- **State Bridge No. 123A, Kent County, Delaware.** HAER recordation. For the Delaware Department of Transportation.
- **State Bridge No. 177, New Castle County, Delaware.** HAER recordation. For the Delaware Department of Transportation.
- **State Bridge No. 211A, Kent County, Delaware.** HAER recordation. For the Delaware Department of Transportation.
- **State Bridge No. 424, New Castle County, Delaware.** HAER recordation. For the Delaware Department of Transportation.
- **State Bridge No. 445, Sussex County, Delaware.** HAER recordation. For the Delaware Department of Transportation.
- **State Bridge No. 456, New Castle County, Delaware.** HAER recordation. For the Delaware Department of Transportation.
- **Madison Street Improvements, Wilmington, Delaware.** Architectural recordation. For the Delaware Department of Transportation.
- **State Route 9, Kent County, Delaware.** Architectural survey. For the Delaware Department of Transportation.
- **U.S. Route 30, Marshall and Tama Counties, Iowa.** Cultural resource study. For the Iowa Department of Transportation.
- **State Route 25, Town of Haverhill, Grafton County, New Hampshire.** Architectural survey. For the New Hampshire Department of Transportation.
- **Belleville Bridge Replacement, State Route 7, Essex, Bergen and Hudson Counties, New Jersey.** Intensive historic architectural investigation. For the New Jersey Department of Transportation.
- **Long Valley Bypass, Morris County, New Jersey.** Architectural survey. For the Morris County Department of Public Works.
- **New Bethlehem Bridge Replacement, State Route 28, Clarion and Armstrong Counties, Pennsylvania.** Architectural evaluation. For the Pennsylvania Department of Transportation.
- **Maiden Creek Intersection Reconstruction, U.S. Route 222 & State Route 73, Berks County, Pennsylvania.** Architectural evaluation and criteria of effects analysis. For the Pennsylvania Department of Transportation.

- **Kratz Road Bridge Replacement, Montgomery County, Pennsylvania.** Architectural evaluation and criteria of effects analysis. For the Pennsylvania Department of Transportation.
- **U.S. Route 15, Tioga County, Pennsylvania.** Architectural survey. For the Pennsylvania Department of Transportation.
- **State Route 72, Laurens County, South Carolina.** Phase I cultural resource survey. For the South Carolina Department of Transportation.
- **U.S. Route 58, Lee County, Virginia.** HABS recordation of the Ewing Livestock Market, a shelter for livestock auctions built in the 1930s. For the Virginia Department of Transportation.
- **Route 871, Augusta County, Virginia.** Phase II architectural evaluation of Cochran's Mill, a circa-1800 gristmill. For the Virginia Department of Transportation.
- **Interstate Route 95, Atlee-Elmont Interchange, Hanover County, Virginia.** Phase II architectural evaluation of French Hay, an early-nineteenth-century plantation house. For the Virginia Department of Transportation.
- **Route 621, Rappahannock County, Virginia.** Phase II architectural evaluation of the Hughes-Varner Homestead, a nineteenth-century farmstead. For the Virginia Department of Transportation.
- **U.S. Route 50, Fairfax County, Virginia.** Phase II architectural evaluation of the Chantilly Overseer's House, an overseer's dwelling on an antebellum plantation in northern Virginia. For the Virginia Department of Transportation.
- **U.S. Route 19, Russell County, Virginia.** Phase II architectural evaluation of the Andy F. Hendricks House, a Greek Revival house dating to circa 1850. For the Virginia Department of Transportation.
- **Route 622, Warren County, Virginia.** Phase II cultural resource investigations resulting in determination of eligibility for Boyd's Mill Historic District. For the Virginia Department of Transportation.
- **Route 700, Washington County, Virginia.** Phase II cultural resource investigations, including architectural evaluation of the Henry Roberts House, a circa-1855 Greek Revival house. For the Virginia Department of Transportation.
- **Route 626, Nelson County, Virginia.** Phase II architectural evaluation of Norwood Plantation, a circa-1855 Greek Revival house with slave quarters and office building of similar date. For the Virginia Department of Transportation.
- **Route 603, Isle of Wight County, Virginia.** Phase II archaeological investigations. For the Virginia Department of Transportation.

- **State Route 10, Chesterfield County, Virginia.** Phase II archaeological investigations. For the Virginia Department of Transportation.
- **Interstate Route 895, Henrico County, Virginia.** Phase II archaeological investigations. For the Virginia Department of Transportation.
- **First Street Bridge, Richmond, Virginia.** IPS Intensive documentation. For the Virginia Department of Transportation.
- **U.S. Route 60 Bridge, Clifton Forge, Virginia.** IPS Intensive documentation. For the Virginia Department of Transportation.
- **Spotsylvania Courthouse Bypass of State Route 208, Spotsylvania County, Virginia.** Phase I cultural resource investigations. For the Virginia Department of Transportation.
- **Route 631, Tazewell County, Virginia.** Phase I and II cultural resource investigations. For the Virginia Department of Transportation.
- **Route 337, City of Portsmouth, Virginia.** Phase I cultural resource investigations. For the Virginia Department of Transportation.
- **Route 647, Washington County, Virginia.** Phase I cultural resource investigations. For the Virginia Department of Transportation.
- **Cowan Boulevard, Fredericksburg, Virginia.** Phase I cultural resource investigations. For the Virginia Department of Transportation.

PAST PROFESSIONAL EXPERIENCE

- **Architectural Historian, KCI Technologies, Inc.** Conducted a cultural resource survey for the Mon-Fayette Transportation Improvement Project, Monongahela County, West Virginia, and Fayette County, Pennsylvania. For the Pennsylvania Turnpike Commission. 1992.
- **Consulting Historian, Oley Valley Heritage Association.** Conducted comprehensive historical research and architectural-historical survey on colonial-period history of southeastern Pennsylvania settlement. 1986-1992.
- **Project Historian, Historic American Buildings Survey.** Prepared historical data for two HABS reports for the Monocacy National Battlefield Project. 1991.
- **Consulting Historian, Berks County Conservancy.** Researched and wrote a historic context essay and participated in an intensive field survey for the Gristmills of Berks County, Pennsylvania, National Register Thematic Nomination. 1988-1989.

PAPERS AND PUBLICATIONS

- *Oley Valley Heritage: The Colonial Years, 1700-1775*. Vol. 28 in the Publications of the Pennsylvania German Society. 1994. In 1996, recipient of the Award of Merit from the Pennsylvania Federation of Museums and Historical Organizations, and of the Certificate of Commendation from the American Association for State and Local History, the highest forms of recognition for individual projects conferred by these organizations.
- Historic American Buildings Survey Reports: Gambrill House (HABS No. MD-1051), Clifton Farm (HABS No. MD-1052). 1991. HABS subsequently incorporated the Clifton Farm document as an instructive example in its Guidelines for HABS Historical Reports.
- Eighteenth-Century Housemills of Berks County, Pennsylvania. Paper presented at Vernacular Architecture Forum annual meeting. 1990.