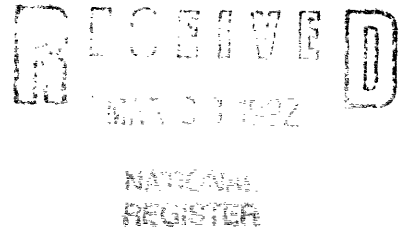


United States Department of the Interior
National Park Service

National Register of Historic Places
Multiple Property Documentation Form



This form is for use in documenting multiple property groups relating to one or several historic contexts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. For additional space use continuation sheets (Form 10-900-a). Type all entries.

A. Name of Multiple Property Listing

Farms in Berks County, PA

B. Associated Historic Contexts

Agriculture in Berks County: 1700-1945

C. Geographical Data

Berks County, Pennsylvania

☐ See continuation sheet

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards for Planning and Evaluation.

Brent D. Glass, PA Historical & Museum Commission

Signature of certifying official

Date

State or Federal agency and bureau

3/12/92

I, hereby, certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Signature of the Keeper of the National Register

Date

Patrick Andrews

5/7/92

E. Statement of Historic Contexts

Discuss each historic context listed in Section B.

Agriculture in Berks County: 1700-1945

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AGRICULTURE IN BERKS COUNTY: 1700 to 1945

Berks County, in Southeast Pennsylvania, has always been one of the leading agricultural counties in the state. From the time of settlement until the present, farming has been its primary land use, occupying 70 to 90 percent of the land in rural townships. Not only has the county retained its strong agricultural economy, it has preserved many of the traditional landscape features that give its countryside a unique historic character. The historic agricultural resources of the county have been the subject of the Berks County Conservancy's study for this multiple property National Register nomination covering the years 1700 to 1945.

The history of agriculture in Berks County can be traced through various periods, influenced by social, economic and technological changes that affected growth and progress. At its core, however, is the land itself and the individual farmer whose decisions about land use, crops, livestock, equipment, fencing, buildings, water supply, fertilizers, methods of planting, cultivation, harvesting, marketing and family lifestyle add up to Berks County farming over the years, an enduring heritage for nearly three centuries.

For the purpose of this study, certain periods have been chosen to define the context for today's surviving historic agricultural resources in Berks County. The period of settlement, 1700 to 1740, was one of pioneer farming, of clearing land and establishing farms. From 1740 to 1790, landowners strived to develop self-sufficient family farms and build substantial buildings that would serve the future generations of descendants. Wheat became the leading cash crop here and in other southeast Pennsylvania counties, making this region "the bread basket of the colonies." During 1790 to 1840, great progress was made in rejuvenating fields through use of fertilizer, lime and crop rotation. This was a time of prosperity when farming ruled the economy, new markets were developed, and well ordered farmsteads were established. It has been characterized as the golden age of Pennsylvania agriculture. There followed a long period of industrialization and urbanization from 1840 to 1920. Farming lost its domination of the economy, but it, too, was revolutionized by advances in technology. Animal power and machine power replaced hand power, transportation systems opened urban markets, and livestock and dairy industries improved. A reform movement developed seeking to bring scientific and educational advantages to the farmer. State land grant colleges, granges and other organizations led this effort.

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Finally, from 1920 to 1945, the era of modernization brought further revolutionary change to farm life, through the advent of the automobile, the farm tractor, rural electrification, indoor plumbing, the telephone, and other conveniences. Specialization and management became more important in farming, while dairying became the most important farm industry.

EARLY DEVELOPMENT OF AGRICULTURAL ECONOMY IN SOUTHEAST PENNSYLVANIA

During the colonial period Pennsylvania experienced rapid growth in population and increased status in national prominence. Next to the last colony to be founded, it was by 1750 third largest in population, after Virginia and Massachusetts. The climate of freedom encouraged by its founder, William Penn, attracted Europeans seeking relief from persecutions as well as persons of means who saw opportunities for individual initiative. Penn's city of Philadelphia became the largest city in the colonies, with nearly 18,000 inhabitants in 1750. This served as the center of government and trade. At the same time there was rapid expansion of the interior frontier bringing settlement to the counties radiating from Philadelphia, and to the farther reaches of the Delaware, Schuylkill, Lehigh and Susquehanna River regions.

A principal reason that Pennsylvania flourished during this period was its development of a strong agricultural economy. With Philadelphia serving as a market and export center and with the southeastern counties excelling in the cultivation of land and the production of food, a sound basis for prosperity was established. All real wealth sprang from the enterprise of the farmer and the merchant. The liberal land policies of the Penns, the skill and industry of the farmer-settlers, the richness of the soil, and the gradual development of transportation routes combined to make Pennsylvania the "breadbasket of America" (Stevens, 74). For more than a century, from 1725 to 1840, Pennsylvania led the nation in the production of food.

Farming patterns in Pennsylvania differed markedly from those in other colonies or in the European countries of origin. The village type of agriculture was practiced in the earliest English settlements in America, New England and Virginia. New England farmers lived in villages and went out to work on their respective farms, while holding certain land in "common" for grazing. In the early Virginia colony there was no private ownership of land, rather the settlers pooled the

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crops that they produced for use by the community. The colony did not prosper until private ownership was substituted for communal ownership. In Pennsylvania, on the other hand, small self-sufficient farms widely scattered in the open country prevailed from the beginning (Fletcher, 17). Although William Penn proposed establishment of the English system, the village plan did not meet the needs of the independent-minded Pennsylvania farmers. Most English, German and Scotch-Irish settlers desired to live on separate farms in the open country, as had the Dutch and Swedes before them. Instead of following Penn's directive for the establishment of separate townships of 5,000 acres with ten families having homes grouped in a central village, most landholders purchased tracts of 100 to 300 acres.

The southeastern region of the state was, and is, its principal farming area. Settlement radiated from the port city of Philadelphia into the rolling hills of the Piedmont and the broad expanse of the Great Valley. One of the major routes of migration was the Schuylkill River corridor which passed through Chester and Montgomery Counties into Berks. Between 1700 and 1760, the tillable portions of the county were occupied and the population reached approximately 15,000 persons.

BERKS COUNTY 1700 - 1740 PIONEER FARMING

When the first settlers arrived in Berks County they found a land dominated by virgin forests. The region had been home to the Lenni-Lenape tribe who were semi-nomadic and practiced limited agriculture. Their chief crop was maize or Indian corn, and other garden plants were beans and squash. Most of their diet was composed of wild plants, animals and fish. In spring they caught shad in the Schuylkill River; in summer they picked berries; in fall they ate wild fruits, nuts and garden vegetables; in winter they consumed dried foods and smoked meats. During much of the year they hunted game animals. Often they set fires to the woods to drive the deer and other game to the waiting hunters. Esther DeTurck Bertolet, an Oley Valley pioneer, told her grandson (author Dr. Peter Bertolet) about the Indian fires which over the course of many years cleared open gamelands in much of the valley. Before the French and Indian War, Indians co-existed with the early settlers in some areas of the county. They shared useful agricultural practices, such as the cultivation and storage of corn, methods of growing beans, squash and tobacco, and the clearing of land by girdling trees. Only archeological evidence of their presence

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remains. Tools and other artifacts have been found at locations of known encampments and hunting grounds.

Life on a frontier farm was hard. The earliest dwellings were temporary structures that provided shelter until fields could be cleared, crops grown, and a farmstead established. Roads were rutted paths and the use of wagons was not common until after 1730. Tools were made from wood, including the plow (which was sometimes equipped with an iron knife to cut the sod). Crude wooden harrows were pulled by oxen to break the soil further. There were few horses. Grains were sown by hand, and cultivated with a hoe. Grain was cut with a hand sickle. Once cut, the grain was bundled and shocked by hand. The harvested wheat was threshed either by tramping it out or by using the wooden flail, which beat it out. Ears of corn were shelled by hand.

Few buildings survive to illustrate the range of building types and construction methods of the settlement period. It is believed that houses were often simple structures made of log or rough planks fastened to posts driven into the ground. Records indicate that in 1718 George Boone Sr., Daniel's grandfather, built a "log cabin without floor" in Exeter Township. The description of a half-timber dwelling of 1724 is recorded in Peter Bertolet's manuscript of 1860. Some of the more substantial early houses, carefully crafted of log or stone, survive. Barns were known to exist at the same time, although dated examples are hard to find. The first crude barns were log shelters six to eight feet high, usually not chinked. The roof was thatched with straw or boughs held in place by saplings or stones. These primitive ground barns were replaced as soon as possible with sturdier structures, similar to the small log barn on a stone foundation at the John Leinbach farm or the small frame barn on the David Kaufman farm. One of the most common forms was the double log crib barn which had stables or animal shelters in the end sections and a threshing floor in the center. An example of this type is the Price barn in Ruscombmanor Township. Made of round logs, notched at the corners, this early barn has been in poor condition for decades, yet still survives. A number of gristmills were included on Berks farms before 1730 including the Kerlin, Boone, Kerst, and Reed mills. These mills have been demolished entirely or replaced by later mills at the same site.

One of the chief handicaps in the construction of farm buildings was the scarcity and high cost of nails, hence wooden pegs were used extensively. Wrought iron nails made of soft iron were hammered out

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laboriously on small anvils. These had rectangular shanks. Nails were so valuable that some times they were used in lieu of currency. Abandoned buildings might be burned down to recover the nails in them. It was not until 1796 that a nail cutting and heading machine was invented and "slitting mills" were constructed for cutting nails.

Although few dated buildings remain from the 1700-1740 period, other aspects of the rural landscape persist in boundaries, fence rows, settlement patterns, sites of roads, churches, and inns and family burial plots. When land ownership maps of Oley Township were superimposed on modern maps, it was seen that many original boundaries correspond to modern roads, fencerows, and property lines. Although farm sizes and field patterns have undergone many changes through the years, evidence of the old boundaries persists.

1740 - 1790 DEVELOPMENT OF THE SELF SUFFICIENT FAMILY FARM

Between 1740 and 1790 agriculture flourished in Berks County. This surge of wealth and well-being developed partially because of industrial progress with the opening of many forges and furnaces, making Berks the leading iron producer in the commonwealth, but primarily because of the increased production of wheat for the export trade. The "wheat boom" started in the 1730s, accelerated in the 1740s, and reached a peak in the late 1760s and 1770s. In 1770 wheat accounted for 69% of the value of Pennsylvania's exports, with at least a third of the wheat crop sent abroad. Before and after the Revolution great quantities of wheat were collected at Reading each winter and sent down the Schuylkill when the waters rose during the spring. Flour from Berks and other Pennsylvania counties was shipped to the West Indies, England, Portugal and Spain, and to the New England colonies. Hence this period saw a great expansion in the profitability of farming, the construction of substantial and even elegant houses, the raising of splendid barns, the additions of many out-buildings for specialized purposes, and the proliferation of industrial buildings such as gristmills, sawmills, fulling mills, and iron furnaces.

Another regional characteristic of Berks County was established during this period. Whereas earlier immigration had consisted of a variety of ethnic groups, Swedes, English, Welsh, Scotch-Irish, French, Swiss and German, after the 1730s, the tide turned to Germany and the

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"Pennsylvania Dutch" character of the area was rooted. This had great implications as to the type of farming that developed here.

The basic pattern of the German farm in Pennsylvania was that of the single farmstead with the family forming the unit. In 1789 Benjamin Rush wrote, "The German farm was easily distinguished from those of others, by good fences, the extent of orchard, the fertility of the soil, productiveness of the fields, the luxuriance of the meadow". The excellence of the "Pennsylvania Dutch" farms was no accident; they were the result of good judgment, hard work, and superior methods of farming. Not only did the "Pennsylvania Dutch" play a major role in the early agricultural prosperity of Pennsylvania, but they established a tradition of family farming that has endured to this day.

These farms were as self-sustaining as possible. By growing diverse crops and by selecting them wisely a farmer could keep himself busy throughout the year. A large variety of fruit and vegetables was dried for winter use. Meats were smoked over hickory or salted in brine for the winter. Honey and maple sugar were produced. Clothes were made from flax and wool grown on the farm. Shoes, candles and soap were home-made.

At that time wheat was sown by hand, usually in September, and cut with sickles in early July. The sheaves were stored in the barn to be threshed in winter. The predominant method in the Oley Valley appears to have been to have heavy draft horses tread over the grain. Another common method was by the use of flails. Winnowing or cleaning the grain followed threshing. Once cleaned, the wheat was ready for sale to a local merchant miller or to one down the river. Another option for the farmer was to have his wheat ground into flour either for sale or home use.

Rye was the other winter grain, sown in November and harvested with the wheat, in early July. Rye was used for bread and for distilling into whiskey. It was the second leading grain crop. The summer grains included oats, Indian corn, buckwheat, barley and speltz. Oats were used to feed horses. Indian corn or maize was fed to livestock rather than humans although it had been the Indian's mainstay. Buckwheat was made into meal for pancakes or feed for hogs and chickens. Barley and speltz (a German grain) were fed to animals.

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Much hay was grown too, suited to the moderate climate and plentiful rainfall of the region. Every farmer tried to include some meadow land and a brook in his property, for almost every farmer had a small herd of cows. The irrigation of meadows began in 1750 and continued for 50 years, being described in deeds and wills as a "right". Only when clover and timothy were grown on upland fields was less importance attached to meadow land.

Common crops on smaller plots were hemp and flax used for cloth. Apple and peach orchards, cherries along fence rows, and pear, plum, and quince trees in the house yard supplied the family's needs. Berry bushes and wild berries were used for wine and preserves. Vegetables raised were potatoes, sweet potatoes, cabbage, beets, parsnips, onions, parsley, radishes, green beans, peas, peppers, lettuce and various herbs.

The breeding and raising of livestock was widely practiced. A productive colonial farm in the Oley Valley may have ten to twenty cattle, five or six horses, fifteen sheep and about ten swine. All the farms had some chickens and perhaps ducks, geese, guinea hens, and turkeys. The inventory of Benjamin Boone's herd, appraised in 1762, consisted of: six horses, six cows, five heifers, one steer, two bulls, four calves, 13 sheep and 13 swine. According to the appraisal the horses were of the greatest value. A pair of draft horses might be worth as much as six cows, whereas a fine riding mare was among a wealthy farmer's prized possessions.

Estate inventories and other documents show the typical agricultural tools and implements of the colonial period. These same tools were in common use on most farmsteads: Axes, grubbing hoes (for digging out roots), plow, harrow, sickles, rakes, cutting-box and knife, riddles, scythes, pitchforks, dungforks, dunghooks, flax break, garden hoes, shovels or spades. Threshing flails are found, but less commonly. Another specialized implement was the "winnowing mill", used to clean threshed grain. Iron replaced wood in plowshares and iron-toothed harrows were found on progressive farms.

The farm economy of the eighteenth century developed a network of related industries and services. Iron production and blacksmithing furnished tools and hardware, coopers made wooden barrels and kegs for storing flour and other commodities, wheelwrights built wagons for transportation of wheat and produce, weavers wove flax and wool into

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cloth, tanners made hides into leather, and many other types of craftsmen supplied household and farm needs.

1740 - 1790 FARM ARCHITECTURE

Berks County is rich in its heritage of late 18th century farm architecture, characterized by soundly constructed buildings of log and stone. The presence of local variations in building types, designs and embellishments represents distinct patterns of folk cultural ethnic character. Because the farmers and builders of this period were mostly second generation immigrants, they naturally followed familiar European building traditions. Their handiwork in houses, farm buildings, tools and furnishings is a testimony to the fine craftsmanship of this prosperous period.

In a general way, the two main architectural traditions of the latter 18th century in Berks County are the "Anglo" and the "German". The former includes English and Welsh, primarily, and the latter Swiss, French Huguenot, and Germans from the Palatinate region of the Rhine Valley. Many outstanding houses, a number of barns and numerous outbuildings represent the 1740-1790 period. No farm in the county matches the David Kaufman Farm in Oley Township for its state of preservation and its amazing integrity. Everything one would expect to find on a 1740s to 1800s Pennsylvania German farm is there. A 1740s stone cabin, a 1760s manor house (architecturally intact with very few modern conveniences), a full set of domestic outbuildings, a walled garden, a walled spring and springhouse, a water ram; two fine stone barns, two frame barns, pig pen, wagon sheds, chicken house (later period), limekiln, quarry, family cemetery, locust groves, farm lanes and fences, meadow and cropland, all on the original 125 acres, still in family ownership and still farmed.

1790 - 1840 DEVELOPMENT OF COMMERCIAL FARMING AND "PERMANENT AGRICULTURE"

By the late 18th century, most settlements in southeastern Pennsylvania were connected to each other by roads. Major inland towns such as Lancaster, York and Reading were accessible by Conestoga wagon. Farmers could haul their crops to the markets and could plan their production accordingly. In the 1820s further advances in transportation, such as the opening of the Schuylkill and the Union

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Canals, provided a means of hauling large quantities of flour, grain and other agricultural products to Philadelphia. These developments brought about a change from self-sufficient pioneer agriculture to the beginnings of commercial or market farming in this region.

The expansion to commercial farm production, the production of certain crops for sale rather than home use, could not reach its economic potential until a major agricultural problem was solved, namely, the maintenance of soil fertility. In most sections of Pennsylvania the continual planting of grain had decreased the natural fertility of the soil until its productiveness was exhausted. Many pioneer farmers would work their land until it became worn out, and then they would move to new land and start again. During the Colonial period, farms within forty miles of Philadelphia saw their wheat yield decline from an average of 20 to 30 bushels an acre to eight or ten bushels. In 1791 Richard Peters of Philadelphia reported to George Washington, "About eight bushels per acre is a full allowance for the better kind of farms in these parts. Some do not yield six." (Fletcher, p. 124) Farming became unprofitable and thousands of acres were idled. In this orgy of soil robbery there were few exceptions, mainly among Pennsylvania Germans. Being characteristically frugal and industrious, the Germans cleared no more land than they could use to advantage, and they saved manure and applied it to their fields. (Fletcher, p. 125) Accordingly it was not the farms of Bucks, Chester and Philadelphia Counties that made Pennsylvania "the granary of the Revolution". It was the highly productive limestone valleys of Lancaster, Berks, Lebanon, Lehigh and Northampton - the Pennsylvania German lands. (Fletcher, p. 126)

In 1785 the Philadelphia Society for Promoting Agriculture was founded to address the critical need of improving soil fertility. To accomplish this goal the Society offered premiums "for the best method of recovering worn out field to a more hearty state within the power of common farmers". These premiums stimulated discussion and experiment among gentleman farmers that eventually resulted in a program of soil improvement that revolutionized Pennsylvania agriculture. This initiative was further stimulated by high export prices for farm products between 1790 and 1810 resulting from wars raging in Europe. (Fletcher, p. 127)

The farm practice that transformed agriculture most of all was the adoption of soil-conserving rotations. This was made possible by the

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use of gypsum and lime. These, in turn, made it possible to grow red clover on upland fields, in rotation with grains, instead of only in irrigated meadows. Finally, the production of more clover and grass made it possible for farmers to keep more livestock and have more manure to apply to the land. Thus a method of achieving "permanent agriculture" was devised. (Fletcher, p. 127)

Wheat remained the main cash crop throughout this period. From 1790 to 1840 Pennsylvania was the nation's most important wheat-producing state, while after 1840, it became second to Ohio. The limestone region of Berks and surrounding counties continued to lead the state in this important commodity. Corn became a more prominent crop after 1790 when the spacing between rows was gradually reduced, due to the introduction of more efficient tillage by the use of the cultivator. A method of cutting corn close to the ground and shocking it was practiced after 1800. Rye continued to be a leading grain in Berks County because of its many uses. The Germans preferred rye bread and used rye straw for roof thatch. In addition, it was used for the production of whiskey, with Berks ranking high in the state in the number of distilleries. In 1838 there were 19,410 acres of rye in Berks County, as compared with 17,400 of wheat, 17,200 of corn and 15,700 of oats. (Fletcher, p. 151)

After 1800 the acreage in hay increased for use on the farm. With the development of better roads, the number of horses increased rapidly, hence the need for timothy hay. 1838 statistics show that 11,700 acres of clover, 10,200 acres of meadow hay, and 6,600 acres of timothy were produced in that year. Another crop that gained favor was potatoes. In 1838, 4,000 acres were grown in Berks County. (Adams, p. 77) The growing of leaf tobacco for cigars was started in Lancaster County in 1828, and made some inroads into adjacent townships in western Berks.

Between 1790 and 1840 the livestock husbandry of Pennsylvania was transformed. The increase in use of lime and the greatly expanded production of forage and grain led to a marked increase in the number and quality of livestock. Improvement of breeding occurred at about the same time with the importation of English breeds of cattle, sheep and swine by wealthy patrons of agriculture, although in Berks County common use of these superior animals did not take place until after 1840. However, the displacement of grain farming by livestock farming was especially significant in the development of a permanent agriculture.

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Because of all these improvements, the half-century from 1790 to 1840 has been called the golden age of Pennsylvania agriculture, a period when an agricultural economy reigned, before the Age of Industry brought its revolutionary changes to the patterns of work and life. This half-century was a time of agricultural awakening when worn out fields were rejuvenated and farm mortgages paid. The new husbandry and new markets brought to Pennsylvania farmers a period of prosperity that has not been surpassed. It was a time when Berks County farms flourished in the production of crops and livestock and in the construction of well ordered farmsteads. These farmsteads consisted of typical Pennsylvania German vernacular houses and barns surrounded by dependency buildings, gardens, orchards, meadows, lanes, cropland and woodlots. This is the traditional Berks County farm that even today reveals the historic fabric of our countryside and defines our county's lasting rural heritage.

FARMSTEADS OF 1790 - 1840

On the typical Pennsylvania German farmstead of the 1790 to 1840 period the barn and house were complemented by numerous outbuildings that served specific purposes. These outbuildings can be divided into two major groups. Those which were used primarily to perform the domestic chores were clustered around the farmhouse and its yard area. They included the tenant house, springhouse, summer kitchen, bakeoven, root cellar, smokehouse, woodshed, privy, washhouse, butcherhouse, and pumphouse. The other group was located near the barn or in the fields. These were the pigpen, sheepfold, chickenhouse, corncrib, hay barn, wagonshed, toolshed, and limekiln. Some farms had other specialized buildings such as blacksmith forges, ice houses, or distilleries.

Farmhouses of this period embraced new design elements, especially those of the popular Georgian and Federal styles. New sophisticated architectural features were often combined with traditional Pennsylvania German craftsmanship to produce local interpretations of style with Germanic overtones. The vernacular architecture that evolved was influenced by both traditions, being part Georgian and part Germanic. The most common rural house form, still seen throughout the county, is of this heritage.

The 1790 to 1840 period was the time that the Pennsylvania barn came into its own. A geography of the period states, "The pride of a Pennsylvania farmer is his barn, many of which are from sixty to

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one-hundred twenty feet in length and substantially built, either wholly of stone, or the lower story of stone and the superstructure of wood, handsomely painted or whitewashed. The interior arrangement of stables, threshing floor, granaries, places for depositing hay, etc., is admirably convenient and useful." (Charles B. Trego, Geography of Pennsylvania, 1843, p. 112, quoted by Amos Long, p. 318) It was during this period that increases in barn size and changes in barn form took place. These changes resulted from the need for increased storage and stabling. Barns were lengthened by the addition of extra threshing floors and mows on the upper level and the corresponding enlargement of the basement stable. Cattle and horses were often tied in standing stalls with wood partitions. Doors from the barnyard opened into each stable section and into the feed passages between them.

1840 to 1920 - INDUSTRIAL REVOLUTION: FARM MECHANIZATION
AND THE REFORM MOVEMENT

The period from 1840 to 1920 could be considered an industrialization period for agriculture as well as for the overall American economy. The decade of the 1840s marked the close of the long period when agriculture dominated the economy of the state. In 1840 farming was the occupation of 60% of the people, but during the next decade, Industry grew to employ a majority of the work force.

Tremendous changes were occurring in American life that would profoundly affect the lives of Berks farmers. Before the Civil War in 1860, 20% of the total population in this country was urban, but by 1910, 46% of the population lived in the cities. The agrarian America, peopled with yeoman farmers envisioned by Thomas Jefferson, was rapidly disappearing. Factories and cities arose, seemingly overnight, to replace farms and villages. In Berks County, the iron industry and other industries were developing rapidly, causing a shift of labor from farm to factory and a shift in population from farm to city.

The county transportation systems improved dramatically with the opening of the canals in the 1820's, the railroad in 1838 and the continued expansion and improvement of a network of roads. The Schuylkill River valley became a vital industrial corridor in bringing a new source of energy, anthracite coal, located upriver, to the new factories and mills that were springing up in the downriver counties. In 1842 the Philadelphia and Reading Railroad reached the coal regions and the industrial revolution was underway. Coal would become the key to the expansion of the new industries and factories in the Schuylkill Valley and far beyond.

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The transportation revolution had a positive effect on Berks agriculture as well as its industries. Farmers took advantage of the canals, railroads, and turnpikes to ship their grain and produce to urban areas. Philadelphia became a major market of the flour trade, and although the state lost its place as "the breadbasket of America" to the Middle West, the grain milling industry remained strong, and even expanded during the mid and late 1800s.

The most outstanding change in agricultural practices, circa 1840, was the replacement of hand power with horse and machine power. The years from 1840 to 1920 could be designated as the animal-power period, in which most of the work on the farm which had been performed with human labor was now done by horses, mules and oxen. Prior to 1840 there had been little change in agricultural methods. Speaking of this period M. Jardine said: "Could the farmer of Pharaoh's time be suddenly re-incarnated and sat in Grandfather's wheat field he could have gone to work with a familiar tool. Then, within a period of fifty years, we covered ground in methods of crop production where fifty centuries had left almost no mark of progress." (Fletcher, 45.)

The first real improvements in tools and implements were made in the decades before and after 1840. In 1836, the first threshing machine was made in Reading. By 1837 John Deere and Leonard Andrus began manufacturing steel plows. In 1838 the first plows were made in Reading, and later Hamburg became a plow manufacturing center. Horse-powers, mowers and reapers were being developed. The McCormick reaper was invented in 1834, and was introduced to Pennsylvania in 1840 by agricultural reformer Frederick Watts of Cumberland County. The 1840s also saw the improvement of the cultivator and grain drill. The 1838 farm census reports the following implements on Berks County farms: threshing machines 100; corn shellers 152; revolving horse rakes 53; cultivators 1030 (Adams, 45).

Dr. Peter G. Bertolet of Oley in his Fragments of the Past written in 1860 relates, "Many of the modern labor saving machines have been brought into use among our farmers: such as mowers, reapers, threshers, drills, planters, etc. Thomas P. Lee introduced the first drilling machine in 1846; David Yoder Sr., the first reaper in 1845." Morton Montgomery in his 1909 History of Berks, states that Joel Dreibelbis, after he purchased his fathers' farm in 1857, was one of the first farmers in Richmond Township, to adopt mechanization. According to the

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agricultural census of 1850 Berks County ranked fifth in the state in value of farming implements and machinery with a value of over \$700,000.

After the 1850's, the use of reapers and mechanical threshing reduced labor and made increased acreage feasible. Old barns were expanded and new ones built larger. Early threshers were small, animal-powered machines that could be set up on the threshing floor where the grain had previously been hand-threshed with a flail or animal-threshed.

The horse-power machines were developed about 1835 and were in use until the latter part of the century. Several "horsepower rooms" were found on barns that were surveyed. The horse-power room on the farm of Ernest Angstadt in Maxatawny Township was built as an extension to the barn on the bank end. A wooden shaft in the middle of the room had three wooden arms on which the horses were fastened. The three horses walking in a circle turned the shaft that ran the belts and gears. A belt from the power ran to the threshing machine on the barn floor. In this way threshing and feed grinding could go on in good weather or bad.

As threshing machines grew larger with higher daily threshing capacity they were prohibitively expensive for many farmers. Enterprising farmers would buy a machine and go from farm to farm threshing. During the latter half of the 19th century, many Berks farmers purchased threshing machines and separators from the Ellis-Keystone Agricultural Works of Pottstown. Early in this century Berks County lead all other counties in the state in percent and number of farmers owning their own threshing outfits. They, therefore, depended less on custom threshers (Adams, 54).

When strawwalkers and chaffers were added to the simple cylinder-type thresher many more sheaves were threshed per hour. Straw removal became a bottle-neck in the system. A conveyor, known as a "carrier" was soon added. This could project out the front of the barn where a strawstack would be built in the barnyard. Straw stacks were wasteful, so many barns in Berks added additional storage for straw. The Survey revealed many of these additions, usually set at a right angle to the front of the barn.

The mowing machines patented in 1844 did not come into general use in Berks until after the Civil War. At that time, much, if not most hay was harvested, pitched and loaded by hand well into the new century.

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Hay was harvested with the sickle and scythe and gathered by wooden hand rakes. At the barn it was loaded by hand with a pitchfork, one man standing in the wagon, handing it to another man with a pitchfork in the barn. Methods overlapped in Berks, mechanization being used alongside man and animal power. While some farmers in Berks were loading hay by hand others, near the end of the 19th century were using the hay hook, spear or grapple. Many of the barns surveyed still had the metal track and carriage on the interior roof of the barn; several wooden tracks were also seen. Lloyd Dreibelbis and several other farmers remember the horses or mules being led outside the barn threshing floor so the animals pulling a rope over pulleys could lift hay from the wagon and move it across the track to storage in the hay mow. The Clemmer Barn in Hereford Township still has the track with two large steel grapples in place in the barn. The Survey found that many old barns had some interior roof support timbers removed or cut to accomodate mechanical loading.

Gas engines eventually replaced the horse and steam power. These engines were of all types and sizes and were used to pump water, run the cream separators or the washing machine, as well as to operate barn equipment. The Ernest Angstadt farm still has the building which housed the engine.

According to Ivan Glick of the New Holland Machine Co., rye was flailed while wheat was threshed mechanically. Mechanical threshing shredded the rye straw while the flail left it long and undamaged. The long rye straw was needed for roof thatch and for twisting into ropes to tie corn shocks and bundles of husked corn fodder. (The Survey found a log barn which the owner said still had rye thatching on the roof after 1900.) In 1880, Deering put 3,000 twine binders on the market and some of these reached Berks County during the eighties. The invention of the binder brought low cost twine in balls, and as a result rye could also be threshed mechanically after this date.

AGRICULTURAL REFORM MOVEMENT

During the great advances in industrialization, farming lost status. The agricultural reform movement grew out of the need to improve the image and reclaim the status of the farmer. Improvement was the key word of the agricultural reform movement. The reformer sought the improvement of the overused and worn-out soils, the improvement of tools and implements to lessen the burdens of the farmer, improved

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livestock through selective breeding, and the improvement of the architecture of the farmstead so that the younger generation would be proud to stay on the farm. This desire for improvements led to the creation of county agricultural societies, the Agricultural College of Pennsylvania (Penn State), the U.S. Dept of Agriculture and the Grange. The Patrons of Husbandry or Grange was first organized in 1867 in Washington D.C. by Oliver Hudson Kelly to provide a vehicle for debate and discussion (Adams, 131).

The same economic pressures felt by all American farmers after the Civil War were also felt in Pennsylvania and Berks County. These pressures were greatly intensified by the panic of 1873, and a need was felt by Pennsylvania farmers to band together for their protection and to have a forum for discussion. In 1873 the Pennsylvania State Grange was organized in Reading on September 18, with 25 Granges represented. The following local Granges were organized in Berks that year: one in Amity; two in Oley; two in Exeter; one in Richmond; one in Maxatawny; one in Douglass; one at Stouchsburg; and one in Perry. Twenty-six more grange chapters were organized by 1920 (Adams, 132).

The agricultural reform movement was also reflected in publications such as the Farm Journal, started in Philadelphia in 1877. Articles in this publication gave details of the newest farm machinery as well as why different varieties of crops and plants were the subject of experimentation. Often designs for farmhouses, barns, outbuildings, and grounds were featured in these periodicals.

On most Berks farms, mechanized or not, everyone worked from dawn to dusk. Farmwomen not only had to do housework, care for the children, milk, feed the farm hands, cook, bake large quantities of pies, can or dry the vegetables they grew in their garden but they also worked in the fields as needed. The farmers all remembered having tasks from the time they were quite small. The older farmers spoke only "Pennsylvania Dutch" when they started school.

1920 to 1945: PERIOD OF MODERNIZATION

The everyday pattern of farm life in Pennsylvania changed little between 1820 and 1920. It changed in a revolutionary way in the next few decades, thanks to the automobile, the improvement of roads reaching from farm to town, communications advances in radio and telephone and rural electrification. By 1920 the automobile was no longer a

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curiosity, but a practical method of transportation, and the next several decades saw the paving of roads that provided new mobility to rural families. Contact with towns and in turn their contact by motor truck transportation with larger cities meant many changes: new sources of supply for foodstuffs, new access to stores in town for clothing and supplies, new communication between town and country. The modern era had begun (Stevens, 300).

Electricity was a major force in modernizing life on the farm. During the 1930s most Berks County communities were supplied with rural electrification. This meant the coming of the refrigerator and home freezer, replacing home canning and the cold cellar. It meant lighting of houses and barns, automatic pumping of water, and use of electric tools and labor saving devices in the house, barn and farm shop (Stevens, 301).

Home Conveniences on Farms in Berks County
January 1, 1945

Department of Agriculture Estimates for 4,863 farms:

Electricity	4,270
Telephones	1,703
Radios	4,385
Running Water	2,913
Bath Rooms	1,100
Heating Systems	990

From 1923 to 1928 the successful light tractor was developed and from 1929 to 1936 the all-purpose rubber-tread tractors with complimentary machinery came into wide use. In subsequent years tractors increased in size, versatility, and in the types of equipment that they could operate. "Combines" for the mechanical harvesting of grain came into Berks County following the general use of farm tractors in the early 1930s, the first one being operated on Tulpehocken Farms owned by Henry Janssen. Other harvesting implements of the 1930s were hay balers, corn pickers and potato pickers.

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1945 CENSUS: TRACTORS, TRUCKS, UTILITIES

	TRACTORS	TRUCKS	AUTOS	ELECTRICITY	ELECTRIC LINE
1930	1,691	2,240	4,916	1,857	-----
1940	2,412	1,971	5,914	3,966	4,207
1945	3,572	2,558	5,416	4,026	4,563

DAIRY FARMING: 1920-1945

Dairy farming was the leading Berks County agricultural enterprise during this period. Hand milking, which often was a source of contamination of milk, began to give way to machine milking in the larger herds about 1920. At about this same time milking machines and mechanical cooling improved commercial dairy business opportunities and the milk market greatly expanded.

In 1916 the Interstate Milk Producers Cooperative was organized in West Chester and established headquarters in Philadelphia. Berks County dairymen were among the organizers and hundreds of memberships were sold to dairymen in the county. This was a bargaining organization which gradually gained the confidence and cooperation of established milk dealers in the Philadelphia marketing area. In 1934 the Lehigh Valley Cooperative farmers was established with its headquarters in Allentown. Hundreds of Berks milk producers from the northern and eastern sections of the county joined. During the 1940s this became one of the largest and most successful milk producers' cooperatives in the state, both in marketing of dairy products and in herd improvement through artificial insemination breeding service.

Other dairy cooperatives were the Farmer's Union Dairy Cooperative and the Farmers Fairfield Dairy Company, both in Muhlenberg Township in the 1930s and 40s. Many private commercial dairies also became established, including St. Lawrence Dairy, Clover Farms, and Dietrich's Dairy. These businesses had their own processing plants for pasteurizing and bottling the milk. They had fleets of delivery trucks that picked up the raw milk from the farm in the early morning, and delivered bottled milk to their customers, door to door, on daily routes.

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During this period sanitary standards prescribed by State and municipal authorities made it necessary for most dairymen to erect a milk house where the milk was separated and cooled. The survey found many of these houses (almost always of cement block) on Berks farms. After 1930, the springhouse and milk cellar were displaced by the milk house and electric cooler. Hand milking of smaller herds like those on the Heffner farm in Maiden Creek Township, continued well into the 40's as did other farmers of smaller herds in Berks.

In Berks County as elsewhere the new standards, mechanization and milk inspection requirements changed barns radically. Often forebays were enclosed with many windows to provide more space and light. Stanchions replaced stalls, dirt floors were cemented. Many of these enclosed forebays were encountered in our survey including the Stauffer Reifsnnyder (Richmond), Benjamin Scheffler (Upper Bern) and Adam Schaeffer (Lower Heidelberg) barns. The additional expense to conform to the new codes drove some Berks farmers out of the dairy business, especially those with smaller herds.

MUSHROOM FARMING: 1920-1945

A form of agriculture that came to Berks County during the 1920-1945 period was the growing of mushrooms. The mushroom industry came into existence in Pennsylvania in Chester County. In 1928 an Italian immigrant named John Morganti brought the industry into the Berks region, building a plant on Mt. Laurel Road in Muhlenberg Township. Other early mushroom entrepreneurs were Cleto Cinelli, John Paci, Pietro Gaspari and Samuel DeSantis. The industry continued to grow locally helping to make Berks and Chester Counties the "Mushroom Capital of the World".

TRENDS IN AGRICULTURAL PRODUCTION: 1945

In 1948 Charles Adams, Berks County Agricultural Extension Agent since 1914, wrote a History of Farming in Berks County in which he summarized his findings:

Changes in agricultural practices on Berks County farms have been made gradually over a long period of time. The early agriculture featured corn, wheat, rye and hay. Corn was the basic feed crop and still is today. Wheat was the chief cash or money crop and the basic food crop. With the opening of the midwest and the

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coming of the trans-continental railroads, western wheat grown on cheap land and on extensive acreages forced an adjustment in Berks County's agriculture. Wheat no longer was depended upon as the only money crop, even though it still is important as a cash crop to this day. It's importance was intensified by the world food situation created by two world wars. The peak in wheat acreage on Berks County farms was reached in 1920, while corn acreage increased with peak production in 1945. Oats, rye and buckwheat all declined since 1880. Tobacco was never a large crop in Berks County with 820 acres in 1880 and 59 acres in 1940.

New and improved varieties contributed much to the profit of the grain farmer. Most of this advance was made in the last forty years. The Pennsylvania State College and nearby state Agricultural Colleges and Experiment Stations all contributed to this advance. The corn improvement program has been the most outstanding, with the development of hybrids in the last dozen years.

Advancements in the livestock programs also are outstanding. It was not until the early years of the present century that any marked advances became apparent in better selection and better breeding of livestock. On the dairy farms the Durham and Shorthorn type of dairy cow began to disappear in the late nineties and early 1900s. The Holstein breed took the lead in this transition, and still is in the lead in numbers on our farms. The competition among milk dealers for a higher cream line and a more highly colored product has brought the butter breeds into the whole milk market, namely Guernseys, Ayrshires, and Jerseys. The change-over from a butter and cheese industry on dairy farms, to one of market milk, has meant a considerable adjustment. This occurred for the most part since 1910.

Beef cattle have not been able to compete with dairy since 1910. The numbers of beef cattle has decreased materially, because the dairy cow was found to be a more profitable machine in converting feed crops into a marketable product demanded by the public.

The transition in the poultry industry on Berks county farms is even more pronounced. A higher quality product through more careful handling of eggs has opened up a ready nearby market for well selected fresh eggs. This was spurred on through the cooperative effort of poultrymen from Berks and nearby counties, in the development of an egg auction which attracted large buyers from the seaboard markets. The dung-yard fowl which comprised our general

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farm flocks up to 1900 to 1910, have disappeared and standard bred hens are the rule on most farms, whether it be a flock of 100 or a commercial poultry farm with thousands of laying hens.

An outstanding adjustment in the last twenty-five years is that of mechanization of our farms, and a consequent reduction in numbers of horses and mules. This released more than 50,000 acres of land that produced feed for horses, for which other uses had to be found. Farm mechanization and farm home conveniences have greatly changed the rural life picture since World War I.

CENSUS STATISTICS: LAND UTILIZATION AND CROPS 1844-1945

	Acres in Farms	% in Farms	Improved Acres	Farm Crops	Pastures Fallow
1844	320,000	57.8			
1860	439,934	79.5	354,672		
1870	-	-	375,832		
1890	443,313	80.2	385,449	334,094	51,355
1900	461,090	83.3	390,703	318,315	72,388
1910	458,450	82.8	381,596	287,265	94,331
1920	427,053	77.1	354,810	279,001	75,809
1930	391,508	70.7	321,242	225,507	95,735
1940	389,646	70.5	317,740	239,835	77,905
1945	374,891	67.8	303,271	248,819	54,452

The peak of total farm acreage was reached by 1900. Since then, each decade shows a definite loss in farm acreage, so that in 1940 it is only slightly more than it was in 1844. The percent of acreage in farms also shows a decrease from the peak of 83.3 in 1900, to 67.8 in 1945. Improved acres in farms follow a similar trend. Woodland and waste land acreages also had been on the decline since 1900. The 1945 Census records the land area for Berks County to be 552,960 acres. Of this 374,891 acres are in farms, or 67.8% of the total area. (Adams, 76.)

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LIVESTOCK NUMBERS: 1838-1945

	DAIRY CATTLE	POULTRY	HOGS	HORSES MULES	SHEEP	BEEF CATTLE
1838			21,930	9,100	12,460	13,640
1844			38,500	13,500	15,500	14,500
1850	25,500		39,000	14,700	13,700	15,000
1860	27,807		38,410	16,400	5,740	19,287
1870	32,000		40,000	18,000	4,300	16,000
1880	33,541	314,034	32,790	19,874	2,823	20,572
1890	39,561	449,429	43,838	21,102	2,729	12,928
1900	54,940	505,194	43,031	22,089	1,875	1,727
1910	41,988	605,821	36,279	21,469	792	2,702
1920	39,573	752,279	52,318	19,931	1,074	6,806
1930	35,200	730,322	29,624	12,737	3,358	4,314
1940	40,073	635,876	24,408	10,861	3,660	1,179
1945	29,478	818,682	30,821	7,744	2,763	--

Dairy cattle numbers generally increased during the 1880s and since then have remained fairly constant. The drop in the 1945 census indicates less cattle raised during World War II when normal replacements were not available. The general trend in poultry numbers is definitely upward since 1880 and that is what has put Berks County into 15th place among the more than 3,000 counties of the nation in number of hens and 21st in total egg production. Horses and mules reached their peak population at the turn of the century and during the last 45 years have lost ground, due to mechanization of agriculture. Hogs vary from year to year, but increased in the war years. Sheep were numerous on farm flocks and for wool production to the mid nineteenth century, and have been of minor importance since then. Beef cattle have declined during the twentieth century, as dairy cattle have been more profitable.

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ORCHARDS: 1890-1945

Orchard yields tabulated in bushels for the county from 1890 to 1945 are as follows: (Adams, 87.)

	Total Bu.	Apples	Peaches	Pears	Cherries	Plums
1890	178,906	173,875	1,132	3,674	188	37
1900	1,322,462	1,252,974	6,676	32,611	25,973	4,228
1910	483,266	425,903	13,266	23,515	16,442	4,140
1920	377,224	254,453	79,471	27,846	10,053	5,401
1930	412,800	239,790	154,093	10,833	3,887	4,197
1940	1,054,012	859,267	175,115	13,724	4,000	1,906
1945	984,451	713,996	255,711	10,483	3,284	1,777

During the latter half of the 19th century practically every farm had a home orchard for family needs, and a few apples to sell. This trend continued up to the first decade in the 20th century, when farm orchards began to lose ground because of an infestation of San Jose Scale in the 1890's. Only those orchards continued to thrive where the farmers invested in spray equipment and did a consistent job of spraying year after year. Only a small percentage of farmers did so, and as a consequence most small farm orchards disappeared while larger commercial orchards developed to serve the market needs. Large amounts of fruit were produced in a favorable season, with most absorbed by the local markets. Peaches and apples were the exception which were heavily exported from the county.

EPILOG: CURRENT STATUS OF AGRICULTURE IN BERKS COUNTY

Since 1945, the number of farms in Berks County has consistently declined. According to the U. S. Bureau of the Census, Census of Agriculture: 1987 Advance County Report, Berks County farms decreased in number from 4,863 in 1945 to 1,809 in 1987, while the acreage decreased from 374,891 to 243,260 (from 67.8% to 44.0%). These statistics reflect a dramatic land use change occurring in Berks, similar to that in other highly productive agricultural regions in Pennsylvania and, in fact, in much of the northeast United States. The period from 1945 to the present has seen an urbanization of rural areas with development of transportation networks, shopping centers, industrial parks, office complexes and housing tracts on "open land". This has brought about a

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crisis for cities, which have lost their vitality, and for farming communities, which are beset with development pressures. Nevertheless, agriculture remains the state's and the county's "number-one" industry, and certainly the county's predominant land use. A strong agricultural base remains in the county, and farmers are striving for more efficient production in order to maintain profitable operations.

Unfortunately there is no really effective mechanism for growth management and agricultural preservation at state, county or regional levels, and local township governments lack incentives for cooperative planning. Locally, Berks County is participating with the commonwealth in the PACE (Purchase of Agricultural Easement) program and seven townships have enacted Agricultural Zoning. These programs begin to address the problem, but a much greater cooperative effort is needed to counteract the continuing loss of prime farmland to suburban sprawl.

Studies such as the Conservancy's multiple property nomination projects for farms and gristmills in Berks County help us learn a bit more about our county's rich agricultural and architectural heritage. The remarkable legacy of Pennsylvania history found in rural Berks - in farms, mills, villages and existing landscape patterns can still reveal many insights into our past. The loss of farmland over the past 47 years has resulted in the loss of many unique and important historic resources. This rather brief one-year project points out very clearly that preserving farms and farmland is the "number-one" historic preservation problem facing Berks County today.

F. Associated Property Types

I. Name of Property Type The Farm

II. Description

III. Significance

IV. Registration Requirements

☒ See continuation sheet

☐ See continuation sheet for additional property types

G. Summary of Identification and Evaluation Methods

Discuss the methods used in developing the multiple property listing.

☒ See continuation sheet

H. Major Bibliographical References

☒ See continuation sheet

Primary location of additional documentation:

- ☒ State historic preservation office
☐ Other State agency
☐ Federal agency

- ☐ Local government
☐ University
☐ Other

Specify repository: _____

I. Form Prepared By

name/title	Phoebe L. Hopkins, Administrative Director	date	June 30, 1991
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PROPERTY TYPE

DESCRIPTION

The property type for the purpose of this nomination is "the farm." The farm consists of land and land forms, buildings and structures utilized by man for the production of agricultural goods, our basic natural raw materials for food and fiber. In Berks County, the farm is commonly a "family farm", operated by the members of a family working as a cooperative unit. The farm includes a combination of natural and cultural or man-made features such as cropland, woodland, wetland and waterways with different topographical and soils characteristics, as well as: fences, roads, lanes, bridges, limekilns, walls, springs, ponds, contour strips, ditches, terraces, and groups of buildings for domestic and agricultural use.

Each farm is unique in its physical and cultural features, its history and its current use. Although some farms are representative of a period of architecture or a type of use, most farms exhibit a combination of periods and types, and an evolution of farming customs and practices.

Although early settlement in Berks County was multi-ethnic in origin and a number of eighteenth century houses and farm buildings reflect their European cultural building traditions, for the most part the Berks County farm is a Pennsylvania German form. Most farms and farmsteads fit very neatly into the categories of farm patterns and farm buildings described by Amos Long in The Pennsylvania German Family Farm (1971). A more recent study of the Pennsylvania Barn by Robert Ensminger (1991) has thoroughly examined the origins and evolution of the banked/forebay barn type. These exhaustive studies, coupled with analysis of recent Berks County survey information, furnish the following descriptions of the many components of "the farm."

THE FARMSTEAD

The barn, house and the various outbuildings with the adjoining yards, gardens, and roadways comprise the center of a typical Pennsylvania German farmstead. These areas and buildings were usually separated from the surrounding orchard, meadows, crop fields and woodlot by sturdy and picturesque wood fences or stone walls.

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The two main buildings are the house and barn, while the outbuildings form two major groups. Those which were used for domestic chores were clustered around the house or in the surrounding yard area. They include the tenant house, springhouse, summer kitchen, bakeoven, root cellar, distillery, smoke house, woodshed, privy, washhouse, butcherhouse, pumphouse and icehouse. The other group more specifically associated with farming were located in the area of the barn or in the barnyard. These include the hay barn, wagonshed, carriagehouse, toolshed, smithy, pigpen, chickenhouse, sheepfold, corncrib, limekiln, milkhouse, and tobacco barn. Many of these buildings have no European prototype (Long, 7).

The arrangement of the farmstead was influenced by topography, access to roads and fields, and convenient access to a fresh water supply. Often sloping sites were favored to facilitate drainage of water away from the existing buildings. The direction of slope would determine the location for the bank house, bank barn and outbuildings. A bank or multi-level structure is one that has been constructed into a bank or hillside, so that one or more sides of the building are partly below the ground surface. These buildings which appear to be growing out of the hillside were well adapted to the site. The lower level had more even temperature, cooler in summer and warmer in winter.

The number, size and type of buildings vary with the acreage or type of farm operation. On some farms the outbuildings cluster around the barn and house in a somewhat symmetrical arrangement. On others they form a linear pattern along a road or lane. Often they fit into the landscape so well that they appear to be part of the countryside. Some of the larger compounds with their varied array of buildings look almost like a small village.

In more recent years, the increased use of more and larger machinery has resulted in the construction of modern implement sheds and storage buildings. Over the years outmoded buildings have been demolished to be replaced with more useful structures. However, the fact that some of the buildings on the early Pennsylvania German farmsteads have withstood nearly two centuries of time and will probably continue to exist for generations to come is a true indication that the early German artisans built well and were proud of their handiwork (Long, 18).

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THE FARMHOUSE

Farmhouses survive from all periods of history in Berks County and furnish outstanding examples of vernacular architecture. The earliest surviving buildings of the settlement period were used as dwellings on properties which originally were farms, although later use may have changed. The Mouns Jones House, a two story stone house, dated 1716, has been preserved in the Swedish settlement of Morlotten in Amity Township. This building features a corner fireplace at the east end and a large walk-in fireplace with bake-oven on the west end. The Abraham Bertolet House, c. 1735, in Oley is an especially intact example of a settler's cabin with one room with fireplace on each floor, a heavily trussed, kicked roof covered with clay tiles, and a brick floor with no basement. Good examples of log cabins are the Peter Bertolet cabin, moved from Oley to the Daniel Boone Homestead, and the Godfrey Fidler cabin in Marion Township. Both are center-chimney Continental-plan dwellings. The siting of homes near water sources was common, as was the building of houses directly over a spring. Banked houses with springs and cooking fireplaces in the basement or ground floor level include the Jacob Keim cabin in Pike Township and the John Leinbach cabin in Oley. Larger buildings of the 1730s are the Mordecai Lincoln House and the George Boone Sr. House of Exeter with two rooms on each floor and fireplaces at both levels. All of the above buildings are listed on the National Register, individually or in historic districts.

Farmhouses built 1740 to 1790 are significant for their ethnic connotations and for their strong architectural statements. These houses identify the Berks County areas of English-Welsh and German-Palatine settlement, which otherwise have been assimilated into the evolving Pennsylvania German landscape. English Quakers favored end-chimney houses of "hall and parlor" or "center hall" design. Germans, on the other hand, built houses with "central" chimneys and a three or four room plan with the kitchen and its walk-in fireplace on one side of the chimney and a "stube" or stove room on the opposite side. An opening in the back of the kitchen fireplace permitted hot coals to be put directly into the five plate stove.

Regions of Quaker settlement were the Oley-Exeter area, Robeson Township, and the Ontelaunee-Maiden Creek area. Homes of the Boone family in Exeter and the Parvin family in Ontelaunee date from this period. Welsh settlement sites are located principally in Caernarvon,

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Cumru and Brecknock Townships. One of the better preserved houses from the 1740-90 period is the Jacob Morgan House in Caernarvon. Built in two sections, it embraces Welsh and English design features with a Georgian main wing added to an earlier gambrel roofed stone bank house. This building has fireplaces in each main room and much original woodwork. Swiss Mennonites and Schwenkfelders settled in the Perkiomen Valley which in Berks comprises Hereford and Washington Townships. The John Gehman Farm features a c.1767 Swiss bank house with stone walls at basement and first floor levels and a log upper story with braced corner posts. German and Huguenot settlers located in the Oley Valley and Western Berks. There are many examples of Colonial German farmhouses in both of these regions, featuring stone and log construction. The stone settler's cabin on the Bare Farm in Lower Heidelberg Township features a "Kicked" cantilevered roof, hewn beams, casement windows, and an unusual ground floor room arrangement, with living room and spring room side-by-side, separated by a stone wall. An especially well-preserved log house c.1780 is located on the Oxenreider Farm in North Heidelberg Township. This center-chimney two and one-half story bankhouse has the traditional three room plan. It has a deep basement divided into three rooms with wide board partitions, used for cold storage in place of a root cellar. It retains its Germanic feeling in all rooms except the parlor, which was "remodeled" in the early 1800s to add Federal style woodwork. (Note: Boldface property nominations are included with this multiple property form).

The Berks farmhouse of the 1790-1840 period differed from its colonial counterpart in many ways. Stylistically, it abandoned the European echoes of medieval design for new American principals of form. Many Berks farmers built stone houses with symmetrical facades and floor plans. Some opted for sophisticated Georgian or Federal features, as in the 1798 Kissling Farm in Heidelberg Township. This house has a complete rendering of Federal features upstairs and down, with an especially ornate "ballroom" occupying the east side of the first floor. The Jacob Dick Farm in Cumru Township is one of the finest and best preserved examples of a period farmstead of c.1810. It incorporates finely detailed Federal design in a side hall plan main wing, added to an earlier dwelling. Other farmers, like John Schlegel (Schlegel Farm) built smaller, simpler homes, but added to them at an early date, so that two or even three separate structures were combined to form a spacious dwelling to suit the family's needs. Rare, but highly prized, was the occasional brick house, such as the Federal side hall plan house on the Rieser-Shoemaker Farm in Bern Township, featuring Flemish bonded

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walls and large multi-paned windows. In northern Berks many builders used the superior native "blue stone" from the Jacob Leiby Farm's quarry, a type of layered bluish sandstone that could be cut in huge slabs, ideal for foundations and distinctive walls. Leiby himself utilized his product in all buildings on his farm and in fence posts, waterways, retaining walls and his own private burial ground.

From 1840 to 1870 a more general vernacular type of farmhouse developed, plain featured and solid, identified more by floor plan and use of space, than by style features. This "vernacular farmhouse" soon became the most common Berks County housing type. It embodied traditionally proud craftsmanship that characterized the Germanic heritage of its carpenter/builders. For lack of a better term, these common farmhouses are locally referred to as "Pennsylvania German" style buildings. The c.1871 farmhouse on the Angstadt Farm in Maxatawny Township is such a building, four bays wide with a four-over-four floor plan.

During the 1870 to 1920 period the use of brick became fashionable for farmhouses. Brick was locally manufactured and it was commonly used for construction of homes in the city of Reading and in rural villages during this time of urbanization. Farmhouse architecture adapted this material and the popular Victorian style features in interior floor plans, stairways, moldings, wainscoting, and exterior cornice and porch design. The Angstadt Farm, in its 1905 farmhouse, shows a vernacular treatment that incorporates eclectic high style features, as does the 1906 vernacular Queen Anne farmhouse on the Bare Farm in Lower Heidelberg Township.

THE SPRINGHOUSE

Nearly all farmsteads were built near springs, and most had an arrangement to shelter the spring to provide a clean source of water. Some springhouses were small buildings or vaulted "arches", built into the side of a hill. Others were considerably larger structures of one or two stories, built directly over springs, where their upper stories could be used as living or working space. The lower spring room was a place for the storage of perishables, milk and butter. If the room contained a fireplace, it was used for butchering, laundering, cooking apple butter, or making soap.

THE SUMMER KITCHEN

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The summerhouse or summer kitchen was a building in which summertime cooking and preserving of foods were carried out during hot weather, thus keeping the heat out of the main dwelling. This building could serve as a washhouse or butcherhouse during the colder months. It belongs to a later era than the springhouse, although many springhouses and other original dwellings have found later use as a summer kitchen. Located for easy access to the kitchen of the farmhouse, it was sometimes attached to a rear wing, or semi-detached with a connecting porch. Frequently the summer kitchen was a separate structure which was built later than the main house. The average dimensions vary from eighteen to twenty-four feet long and fourteen to eighteen feet wide with ceilings eight to nine feet high. A number of mid-nineteenth century farmhouses had a summer kitchen in the basement level.

THE BAKEOVEN AND SMOKEHOUSE

Other necessary outbuildings dealing with the preparation of food were the bakeoven and smokehouse. The functions of baking bread and pies, roasting cornmeal and drying vegetables were performed in the bakeoven. It could be a separate building, or attached at the rear of a cooking fireplace. Smokehouses were important in the preservation of meat products. Most butchering and smoking of meats was done during the winter months. A smoldering fire was started before the meat was hung inside the smokehouse to prevent freezing. This fire was kept going continually until the smoking was completed, up to a week for a large cut of meat. The smokehouse could be a separate building of stone, brick or wood, or it could be a chamber connected to a fireplace or bakeoven.

THE CAVE OR GROUND CELLAR

Before the days of refrigeration nearly every farmstead had a cave or ground cellar for the storage and preservation of food. It provided a cool, reasonably dry place if properly ventilated in summer and moisture-free protection against cold and frost in winter. It was used for storage of fruits and vegetables and might also be used for smoked meats. A ground cellar could be built into a hillside or dug underground with a cellarway built to enter the vault. Others may be built into the barn ramp. Many of the farmhouses built during the latter part of the eighteenth century contained a vaulted room (called an arch cellar) in the basement. The ceiling was usually stone or brick and the floor was frequently brick or clay.

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THE ICEHOUSE

Cutting and storage of ice was an important seasonal event on the farm during the coldest winter months. After being cut from ponds and streams, the ice was stored in an icehouse for use during the rest of the year. Blocks of ice were packed in sawdust and shavings. Icehouses were constructed of stone or wood. Some had double insulated walls while others might be lined with cork.

THE OUTDOOR PRIVY

Privies were once found on every farm. They were built in many sizes and dimensions. Most were of frame construction, although brick and stone privies can be found. They were usually fairly close to the farmhouse.

THE WASHHOUSE AND BUTCHER HOUSE

A separate building was commonly used for the washing of clothes. It contained a fireplace or stove to heat the water and shelves or benches for the tubs and washing equipment. Some washhouses were also used as butcher houses. The butchering of pigs and beef required facilities for slaughtering, hanging, cleaning, cutting and processing the carcass. A room for cutting the meat often has stoves with large Kettles to provide hot water to cook out the lard or to cook scrapple. Many butcher houses were converted from existing buildings.

THE BARN by Robert Ensminger

In the early eighteenth century, permanent barn structures were built in Berks County by Germanic pioneers. These early types were modeled after similar structures from their European homelands. The earliest barns were small and simple and consisted of a single log crib plus various attached sheds. They could house some cattle, feed, grains and a few hand implements.

This standard ground barn plan soon replaced the small first generation pioneer barns. This barn had two log cribs separated by a central threshing floor combined under a gable roof. The ground level of each log crib provided stabling space while the space above the stables and beneath the roof provided storage for hay and straw. This multiple purpose ground level barn, or Grundscheier, was modeled after

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similar structures common in the German Palatinate whose masonry and half-timbering were the common materials of construction. The almost universal use of log construction was most appropriate on the Pennsylvania frontier where the precedent had already been effectively established by earlier Swedish settlers in the lower Delaware Valley who passed on the technology to Germanic pioneers who moved farther inland.

Germanic settlers from eastern Switzerland introduced the log, two-level, banked, forebay barn during the same period when the Grundscheier was introduced. The Pennsylvania version closely resembled its Swiss prototype from Pratigau in Canton Graubunden. The upper level had two log crib mows and central threshing floor accessed by a ramp or bank on the back side. A forebay extended from this level six to eight feet beyond the lower stable front wall providing protection for the stable doors below. Commonly called the "Sweitzer" barn, this structure was characterized by an unsupported, cantilevered forebay which also provided a diagnostic asymmetrical gable end configuration. Both the Grundscheier and Sweitzer barn were commonly built in all Germanic regions of southeastern Pennsylvania.

During the latter part of the eighteenth century, commercial farming gradually replaced subsistence agriculture in southeastern Pennsylvania. Regional commercial market towns, such as Lancaster and Reading, and the development of an interconnecting road network focused on Philadelphia stimulated the expansion of commercial agriculture and the evolution of larger barns. Sweitzer barns displaced the smaller Grundscheier and were built much larger and utilized stone construction. These classical Sweitzer barns came to dominate the early nineteenth century landscape. The existence in western Berks County of surviving half log-stone and half log-frame Sweitzer barns is proof of the evolutionary process which resulted in Sweitzer barns of stone, frame, and even brick construction.

During the golden age of Pennsylvania agriculture from 1790 to 1840, the rapid expansion of commercial agriculture stimulated barn evolution resulting in a variety of styles and sizes of forebay barns which had come to characterize and symbolize the rural Pennsylvania Germanic landscape of Berks and surrounding counties. The name "Pennsylvania barn" has come to be used exclusively to designate the forebay bank barns which developed here.

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The first major barn style change resulted in what became the most abundant class of Pennsylvania barn in southeastern Pennsylvania and Berks County. It occurred when the asymmetrical cantilevered forebay was eliminated. The forebay form, however, was retained by recessing the lower front stable wall four to six feet back under the upper level, thus recreating the forebay overhang which was now part of the main barn frame. This resulted in a symmetrical gable wall configuration and is named the standard Pennsylvania barn.

Various versions of this form were built throughout the nineteenth century. The earliest ones were stone construction with lower gable end walls completely closing the recessed forebay. Many of these utilized "L"-shaped pillars, or Peilers, to strengthen and support the frame forebay front wall producing an L-shaped alcove, or Peiler Eck, on either side of the front stable wall. Most standard barns built after 1850 were frame with timber frame bent construction. Many of these eliminated the extended foundation end wall support producing an "open forebay" cantilevered configuration. Later examples frequently included posts below the forebay sill for additional support.

Another evolutionary development which originated in adjacent Chester County and spread north and west was the addition of a large, extended forebay straw shed to various existing barns. The resulting deep 20 to 25 foot forebays necessarily required additional support provided by posts. In Chester County, conical stone columns of English origin were frequently used. Some stone column examples spread into southern Berks County; however, the great majority of up-country posted forebay barns used wooden support posts. The extended, posted forebay became stylized and many barns were originally built according to this plan in Berks County into the latter nineteenth century.

An alternative strategy for barn enlargement involved the inclusion of rear outsheds on either side of the barn bank. This plan, which emerged in Lancaster County in the early nineteenth century, soon diffused west and north and became fairly common in Berks County. The outshed appendage which included the basement stable, usually provided a granary function adjacent to the upper level mow and threshing bays.

In the nineteenth century, many barns, especially in northern Berks County, were amended by enclosing the entire rear bank wall creating a large "ramp shed" storage area. Other barns were enlarged by the addition of a large shed projecting from the forebay producing an

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"L"-shaped wing with an additional gable wall. Both additions permitted storage of large amounts of straw and hay.

Although the building and rebuilding of two-level Pennsylvania barns continued into the twentieth century, most new barns built after 1900 were specialized, dairy barns designed and promoted by agricultural colleges and journals. A fascinating example is provided by the barn at Grandview Farm near Wernersville, Berks County, now owned and operated by Adam Schaeffer. In 1901, an existing 1849 stone, standard Pennsylvania barn was greatly enlarged by extending the barn lengthwise for an additional 100 feet. This two-level banked addition replicated the earlier timber frame bents creating two additional mows and threshing floors. The under forebay space of the addition was enclosed, thus enlarging the stable area providing room for 60 cows in two longitudinal rows of wooden stalls each served by a water line and drinking bowl. The stable was ventilated by wooden ducts which removed stale air to a row of gable dormers along each of the eaves and to large cupolas along the roof ridge. Large hay drop holes enclosed in two sheds were built onto the barn's bank side. One of the sheds also enclosed the silo as an integral part of the barn's design. This was indeed high technology for that period, and it continues to function well today with no revision.

Barn evolution in the eighteenth, nineteenth, and twentieth centuries has produced a varied and interesting assemblage of types. In Berks County, the traditional Pennsylvania barn with its forebay and bank, has maintained its dominance of the landscape revealing the strength of Swiss and Germanic traditions.

THE HAY BARN

The need for additional storage space for hay and straw after the mows in the main barn were full resulted in construction of hay barns. Most were built of wood, similar to a wagon shed in size and construction. The upper level was used for hay storage, which could be loaded through end doors, or by interior wagon access. Hay barns were built as separate structures, or were attached to the main barn, extending at right angles into the barnyard, with direct access to the threshing floor at the upper level, and storage for livestock or wagons on the ground floor.

THE WAGONSHED-CORNCRIB

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The general expansion of corn and hay farming during the early nineteenth century made extra storage space necessary. Wagons were used for hauling hay and other crops to the barn for storage. Wagon sheds were frame buildings, one or two stories high, built to accommodate one or two hay wagons. The wagon shed was often combined with a corncrib as a multi-purpose structure found on almost every Pennsylvania German farm. Corn cribs were built into the sides, and a storage loft was built at the upper level. Most have gable roofs covered with wood shingles, re-roofed with tin.

THE PIGPEN AND ANIMAL SHED

Livestock husbandry required specialized buildings in addition to the stabling provided on the ground floor of the barn. Piggens were found on most farms. These ground floor buildings had interior pens with exterior runs. A feed passage at the rear of the building provided access to the feed troughs. They were commonly frame buildings, although some were stone. Sheep sheds were usually simple frame sheds that provided shelter for the flock in wet weather and during lambing. The building was often located in a pasture or meadow.

THE CHICKEN HOUSE

The chicken house was unknown on early farmsteads, where fowl had the run of the yard and roosted in trees. When the demand for eggs increased, the need for proper shelters arose. Early chicken houses were usually frame buildings on stone foundations with many windows facing south or east. Most were built at a site with good drainage. They had roosts built well above the ground, and nesting boxes built in rows or tiers. Most date from the late 1800s.

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THE MILKHOUSE

Until the era of the milkhouse, milk was cooled and kept in the springhouse or ground cellar. With the advent of the commercial creamery and stricter regulations, methods of handling milk changed markedly. Most early milkhouses were constructed of wood, with cement block, tile, brick and stone used among later types. This building, located near the barn, provided a clean facility, free from odors and dust in which to cool the milk and separate the cream when necessary.

THE LIMEKILN

One of the most important improvements in agriculture during the early 1800s was the use of lime to "sweeten" the soil. Certain crops, like red clover and other legumes, required annual top dressing of lime. Lime was produced on nearly every farm in the limestone valley regions of Berks County through the use of the limekiln. These structures looked like furnace stacks of stone built into a hillside. Limestone was burned with charcoal to produce agricultural lime. Lime was often quarried on small farm quarries near the limekiln.

THE SILO

Silos came into use on Berks County farms around 1900. Some early silos were square and constructed of stone. The more satisfactory silo was round and constructed of studding and plaster or of wood. Cement silos came into use in the 1930's. Tile silos appeared in the 1940's. In 1944 there were silos on 760 Berks farms.

THE GARDEN, YARD AND ORCHARD

Vegetable and flower gardens were found on nearly every farm, and still are common features. The garden was usually located to the rear or side of the farmhouse, on the warm side of the house. It traditionally had a design of beds and paths and was enclosed by a stone wall or picket fence. The house yard and barnyard were distinct areas, also enclosed. The house yard featured flowers, fruit trees and other plantings. The barnyard sometimes included water troughs. Orchards were planted for home use and were frequently located near the garden and yard.

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MEADOW, STREAM AND WOODLOT

On the eighteenth century farm, low lying land along a stream was usually set aside for use as a meadow. The best permanent meadows included both sides of a small stream. The size of the meadow helped determine the number of cattle that were kept on the farm. Meadows were sometimes irrigated and meadow hay was cut for winter use. There were few permanent pastures before 1750, rather woodlots and old fields were utilized. The stream which flowed through the meadow and the springs that fed it were a very important asset to the farmer. The streams and springs supplied the family, the livestock and the meadows with much needed water. As land was divided through the years, it was done in such a way that as many farms as possible had the use of either the main stream or one of its branches. Meadow irrigation ceased by 1900. However evidence of old dams and ditches can still be found.

One of the outstanding features of colonial Pennsylvania was its extensive forest of large and valuable trees. As farms developed a good portion of this forest was retained in woodlots. The wooded areas provided logs and wood for building; fuel for fireplaces and stoves; wildlife for hunting and its products of meat, fur, and leather; and a source of berries, fruit, nuts and medicinal herbs. Many farmers that lacked adequate woodlots on their farm purchased mountain land in the vicinity to supply their needs. A major source of fencing and timber was lost when the chestnut blight disease ravaged the wooded areas of the state between 1908 and 1925.

FENCES

Stone and rail fences were at one time a prominent feature of the landscape of Berks County and the mark of a good farmer. Many of the fences served several purposes: keeping farm animals in, wild animals out, dividing fields and establishing boundary lines. In rocky regions stone fences were built of rocks cleared from the fields. These were of two types, continuous piles of stones merely dumped in place, and dry stone walls with the stones laid in two parallel rows and smaller stones filled in between. Stone walls were common in barnyards, gardens, cemeteries, and bridges.

Another early fence form was the worm fence or snake fence, constructed of split rails built in a zig-zag course that did not require posts. The post and rail fence was often used as a replacement

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for the worm fence. Although it required more time and labor to erect, it was more substantial and took up less space for its construction. Posts of chestnut or locust were preferred as they were long lasting. Of more recent origin is the board fence, often used for horses and cattle pastures. Fences around the farmhouse were more ornamental in character, favorites being the wrought iron fence and the pale or picket fence.

CROPLAND

In the eighteenth century the combination of good soil, ready markets for wheat and rye, and careful clearing of fields helped make southeast Pennsylvania the breadbasket of the colonies. Pennsylvania farmers developed "fields", while New England farmers were cultivating "gardens". While New Englanders and southerners hoed among maize and tobacco, Pennsylvanians built larger and better plows and harrows and adapted their fields to horse-drawn equipment. Mass-produced farm machinery dramatically reshaped the size and topography of fields after 1840. This chain of events has continued through the decades and the centuries. New agricultural crops, new methods, new equipment, new technology - all reshape the dimensions of cropland and the look of the landscape. Soil conservation practices within the last fifty years have further altered tilling methods. Contour strips, diversion terraces, swales and grass waterways have replaced the old fencerows and individual fields for each crop.

FAMILY CEMETERIES

Many early farms contained a family burial plot in which members of the family were laid to rest. The plots varied in size, but usually were square and were enclosed with a stone wall. They were often located on a high spot on the farm or at a suitable site some distance from the farmstead buildings. Many have tombstones with inscriptions in the German language.

BERKS COUNTY FARM LANDSCAPE OF 1880

From 1880 to 1883 an itinerant Swiss folk artist, Ferdinand Brader, traveled through Berks County drawing farm properties. In his minutely detailed, large size drawings, typically 32" x 45", done in pencil on brown paper, this skilled artist recorded a definitive description of life in rural Pennsylvania in the 1880s. It is estimated he drew

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approximately 200 farmsteads in Berks County. Many of his works have disappeared or succumbed to improper care, but those that survive leave no question as to the elements present in the farm landscape of his period. Appended to this section are copies of three Brader farmscapes (xerox copies of photographs) and their descriptions from an exhibition catalog of the Historical Society of Berks County, Brader in Berks, 1989. These drawings illustrate graphically all of those features described earlier in the Property Type narrative.

- #1 The Ephraim K. and Willi L. Kauffman Farm in Oley Township, 1882. This farm was the second farmstead group built on the Kaufman Homestead, established in the 1730s. Its 250 acres were divided from the original tract c.1830. It is still in family ownership. Adding to the verification of accuracy of the drawing is the oral interview with the present owner who had been told about Brader's visit by her father and grandfather. A comparison between the farm in Brader's time and the farm today reveals that most of the changes are in the fences and plantings. Nearly all buildings are there today and are easily recognized.
- #2 The George and Anna Maria Reininger Farm in Alsace Township, 1882. (Now Lower Alsace). The Reiningers had a hill farm and winery near Stony Creek Mills. This view portrays extensive plantings in grape arbors and fruit trees and vegetable gardens and the use of walls, fences and other enclosures to separate farm functions. This property is now a floral farm and most of the 1880s buildings survive. Of special interest is the Germanic center chimney log house with the typical three room plan (kuche, stube and kammer). The first floor of the house is intact with original woodwork, trim and hardware. It was examined by visiting architectural historian Edward Chappell of Williamsburg, Virginia, who determined it was built, c.1820-40. This building type had been built in the county with the same floor plan and placement of chimney for at least 100 years showing the strong role tradition plays in vernacular architecture in Berks County. The Brader drawing shows the log house looking much as it does today. The wine cellars on the property, with large wooden barrels, are also intact.
- #3 Levi and Mary Ann Hartman Farm, Oley Township, 1882. Located at a busy crossroad, this picture shows many types of horse-drawn vehicles, as well as fences, field divisions and a compact farmstead arrangement. The standard Pennsylvania barn has a

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peiler eck and an attached rear outshed. The pigpen and hay barns are combined with wagon sheds. This farm has fields in hay and grain crops in the gently rolling limestone valley terrain. Today this farm can be seen at the intersection of Route 662 and the Oley Turnpike. Most of the buildings survive, although the elaborate wrought iron fence has been removed due to road widening.

BERKS COUNTY AGRICULTURAL SURVEY FINDINGS, 1991

The 1991 Berks County agricultural survey examined about 300 farms with the characteristic buildings of the Pennsylvania German farmstead. Most of the farms exhibited a definite nineteenth century character in their buildings and land patterns, although the kind of diversity once associated with the self-sufficient family farm such as that exhibited in the Brader drawings of the 1880s does not exist in the 1990s.

Berks County still retains much of its early farm architecture, including houses, barns and outbuildings. However, many of the old outbuildings are no longer in use, some are too small and others like the springhouse, summer kitchen or ground cellar no longer needed. Increasingly, farmers no longer will repair the old outbuildings as they fear when they do, their assessments will be raised. Although much has been lost to development and neglect, much remains. No two buildings are alike. The Survey found buildings of all sizes, shapes and construction and for all farm purposes: wash houses, ice houses, spring houses, underground storage arches, butcher houses, smoke houses, bake houses, bake ovens, settlers cabins, woodsheds, toolsheds, pump houses, brood houses, silos, chicken houses, pig stys, corn cribs, wagon sheds, summer kitchens, milk houses, engine houses and various and sundry combinations of these, all types and construction of houses, high style and vernacular. The overwhelming type of barn found in the survey was the timber framed standard forebay bank barn described by Ensminger. It was found in all sections of the county and was built for over 100 years, and it is still being built.

Most Berks County farmers were found to be frugal and thrifty. Time after time the Survey found recycled timber being used to repair old buildings or construct new. Old buildings were recycled for newer uses: summer kitchens or cabin fireplaces were often fitted with butcher stoves and Kettles, an ice house made a fine child's playhouse or archive building, addition upon addition was often found on barns or wagon sheds to accommodate modern equipment. Nothing was wasted. The

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Pennsylvania German farmer practiced recycling before it became fashionable. These characteristics are perhaps one of the reasons the Survey found so many farmstead outbuildings. Although the resources on the majority of farms vary in date, they have been altered by gradual organic growth as new needs arose and many farmsteads form aesthetically pleasing groups.

The Survey found a conservative building tradition throughout the county. On many farmsteads early vernacular outbuildings such as stone or log cabins, spring houses, ground cellars, smoke houses or bake ovens built in 1840 could hardly be distinguished from a similar type of building built a hundred years previously. Materials, design and workmanship were nearly identical. One only need look at the 18th century Berks buildings shown in Eleanor Raymond's book, Early Domestic Architecture of Pennsylvania compared with those in the Survey c.1840 to recognize the similarity.

The Survey found local differences in buildings within the county. Centre Township had timber-framed houses with painted folk designs on the interior walls found nowhere else. Many large center chimney log houses, now covered with shingles, clapboards, or aluminium siding were found in Bethel Township. Barnscapes (usually paintings of landscapes or farm animals on barns) were more popular in Perry Township than anywhere else. Hereford and Washington Townships had roof hoods over the gable end barn door. Washington also had stone and brick pig stys, some with beautifully arched openings, found nowhere else in the county. Spring and Lower Heidelberg Township farmers favored a roof line on the barn that was broken with a peaked dormer in the center. Also in Lower Heidelberg Township log cabins were found, now covered with siding, built from 1840 to 1875 obviously much later than those in other areas of the county. In the North Heidelberg area were found banked wagonsheds. Red tile roofs were popular in Oley. Victorian two and two and a half story chicken houses prevailed in Tilden Township. Perhaps other sections of the county had a few of these characteristics, but their prominence was far greater in the sections mentioned. One can only guess why the differences--local builders, tradition, terrain and soil or materials at hand or perhaps these areas may have had uses or needs that dictated these types or forms of buildings.

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SIGNIFICANCE

"The Farm" is a property type with significance in the areas of agriculture and architecture. Since the time of settlement, agriculture has been a leading industry and the principal land use in the county, imparting the rural historic character that gives the region its identity. The history of agriculture is illustrated by the farms that exist today and a detailed study can uncover physical elements from the various types and periods that comprise the broad scope of farming and help define its context. The evolution of farm technology and farm architecture go hand in hand, buildings being adapted to changes in methods, equipment and trends in farm practices. In addition, rural architecture reveals the nature of the people who lived here and worked the land and determined the course of history in rural Berks County. The traditional Pennsylvania German virtues of saving and re-using practical items (from buildings to tools to scraps of cloth) make Berks County farms especially revealing of the long and illustrious history of agriculture in this region.

Under Criterion A, the farm is the basic production unit for the historic context of "Agriculture in Berks County: 1700 to 1945." It is the place where farming has been practiced over the span of county history and which still retains its agricultural land use patterns. The farm consists of land and buildings that have been devoted to the cultivation, processing and storage of crops and livestock, and to meeting the domestic needs of the farm family. It can represent a certain period of agricultural history, such as the pioneer farm, the self-sufficient family farm, or the specialized crop or dairy farm, as depicted in its organization patterns, its barn and its outbuildings. More commonly it can illustrate an evolution of farm technology and farm practices over an extended period.

Under Criterion C, the farm is identified by its buildings and structures that exhibit distinctive characteristics of a style, period, construction method, or vernacular tradition. Each building can be classified as to its original purpose and how it was designed to fulfill its function. Buildings can be compared in type, construction techniques, materials, form, stylistic details and workmanship. They can be analyzed to determine relationships to one another, regional and period associations, and evolution of a building type or form over time. Such a study was conducted by Dr. Robert F. Ensminger over a fifteen year period, resulting in his major work, Pennsylvania Barns: An Examination of the Origin, Evolution, Form and Distribution of Forebay Bank Barns in North America, currently being published by Johns Hopkins Press.

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In assessing the significance of the property type, Criteria A and C are mutually dependent, for the buildings cannot be considered out of context with their use and the way in which they fit the total organizational pattern of the working farm. Landscape features encompass the whole, and combine natural and man-made elements, tempered by regional cultural traits and sensibilities. The farm is not merely a collection of buildings, no matter how important their architectural quality. The farm is rather an institution and a way of life that is based upon man's relationship to the land.

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REGISTRATION REQUIREMENTS

CRITERION A AREA OF SIGNIFICANCE: AGRICULTURE

To be eligible for registration a property must have been involved through most of its history in the process and technology of cultivating soil, producing crops, and raising livestock and plants. It must include both the land and the buildings where these agricultural processes have taken place. The land must retain characteristics that provide evidence of its use in the production of crops or livestock, although current use may have changed. The agricultural buildings must include characteristics associated with production and storage of crops, livestock and farm equipment. The domestic buildings must display characteristics associated with farm life and the common household chores during the period of significance of the property.

CRITERION C AREA OF SIGNIFICANCE: ARCHITECTURE

To be eligible for nomination the property must include buildings that represent distinctive characteristics of a type, period or method of construction. In particular, farmhouses may represent the characteristics of an architectural style or type of vernacular architecture popular in Berks County or in Pennsylvania during a given period. A barn may exhibit characteristics of the construction methods and building type that illustrate its place in the evolution of the Pennsylvania barn, as described in this nomination. An outbuilding may exhibit characteristics in which its form was fitted to the function for which it was originally built or to which it was converted during the period of significance.

INTEGRITY

Location: The significant buildings and landscape features of the property must retain their historic location.

Design: The layout of buildings and of the surrounding lands should exhibit an organizational pattern that is characteristic of the agricultural use of the property. The orientation of farmstead groupings, for instance, is an expression of design that can be analyzed and compared to other farm properties in the region.

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The human decisions in land use and construction of enclosures, connecting roads or lanes, size and shape of fields, location and composition of woodlots or orchards are all indicative of a design that fits a particular property, and that exhibits common or distinctive features when compared with other properties.

Setting: The physical environment within and surrounding a property provides its own unique setting. Within Berks County there are many types of settings, depending upon the topography, soils, waterways, transportation routes, adjacent land uses, proximity to urban or developed areas, etc. The setting is one of the most important aspects of integrity in evaluating a farm for its National Register eligibility. To be eligible for the National Register a farm must retain its farmland or open space setting.

Materials: A property must exhibit integrity of materials in the construction of the buildings and structures. Cases of alteration or additions should be evaluated as to the impact on the ability to identify the original materials used.

Workmanship: Integrity of workmanship should be evident on a farm property. It should illustrate the soundness and durability of construction methods and materials, and the aesthetic or folk qualities that typify the heritage of the region or the craftsmanship of the individual builder.

Feeling: Integrity of feeling give a property its sense of time and place. Each farm should evoke its own feeling - its connection with the past, and its place in the overall history of the area.

Association: A property should have integrity of association, the relationship between the place and its chain of owners and its community. Some properties may reflect their ethnic heritage of the settlement period, their regional character or their association with an industry or an institution. One county farm supplied a fashionable late 19th century health spa with fresh produce and dairy products. Another was built by a man who operated a quarry that specialized in building stones for farm buildings. Ownership by many generations of the same family has been a noteworthy pattern on many Berks County farms, and adds to a property's integrity of association.

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SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

The multiple property nomination of Agriculture in Berks County from 1700 to 1945, for the property type "the farm" was prepared by the Berks County Conservancy under a grant from the Pennsylvania Historical and Museum Commission, extending from October 1, 1990 to June 30, 1991. Personnel consisted of Phoebe Hopkins, project manager; Louise Emery and Mary Ellen Lash, research and writing consultants; Carole Epler, office manager; Robert Ensminger, Ivan Glick, Philip Pendleton, and Edward Chappell, technical consultants; and numerous survey and office volunteers.

After organizing the project team, the first task was the review of existing data from the Berks County historic resources survey to choose potential National Register properties and sites that could assist in the development of the context statement. About three hundred farms were chosen for reconnaissance survey. Training sessions were held for volunteers, who accompanied project staff in a township-by-township windshield survey to select those farms that met the criteria of overall integrity or uniqueness in representing some aspect of agriculture. Concurrently the field study team of Louise Emery and Mary Ellen Lash started intensive survey of the properties of known interest. They developed a form to record an inventory of buildings and landscape features, and they interviewed farm owners when possible (see attachment). On properties that were deemed eligible for further study, they photographed buildings and examined interiors. This phase of the project examined over 100 properties and lasted about four months.

To determine those properties that were considered potential National Register historic districts as "farms" rather than "farmsteads" all survey personnel and advisors reviewed the existing information in light of the background knowledge of the participants. The advisory group felt that at least 100 farms would qualify, although a great number of these are located in existing rural historic districts, and therefore already eligible for National Register protections. The farms in the Oley Township and Tulpehocken Creek historic districts were considered among the most intact and architecturally significant in the county. However, because of their National Register status their documentation was beyond the scope of this survey. After eliminating this group, forty-seven properties were chosen for determination of eligibility through the preparation and submission of Pennsylvania Historic Resource Survey Forms. These forms were prepared by project staff and submitted to the Bureau for Historic Preservation in May, 1991.

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The above forty-seven properties were selected based upon completeness, integrity, period, region, ethnic heritage, and continued farm use through the period of significance. Each farm had to have good examples of the main buildings, house and barn, as well as typical house dependencies and agricultural outbuildings. It had to exhibit patterns of organization, orientation and circulation networks. It had to show the relationship of natural features to its development for agricultural use, and it had to fit into the historic scope of farming in Berks County as a worthy segment of the overall historic fabric or context.

The development of the context statement for the multiple property nomination involved input from Louise Emery, Mary Ellen Lash, Bob Ensminger, Ivan Glick and Philip Pendleton. Emery compiled field survey and oral history findings and researched the period 1840 to 1945, Lash conducted deed research, Ensminger examined barns identified in the survey and wrote the property type description of the Pennsylvania Barn, Glick led educational sessions on farm technology and its relationship to architecture, and Pendleton supplied primary source information concerning agriculture in the colonial period Oley Valley. Various drafts were written with the final form compiled by Hopkins. Secondary sources that were especially helpful were the volumes (see Bibliography) by Fletcher, Stevens, Klees, Adams, and Bertolet. The property type description borrowed heavily from the work of Amos Long. In writing the final draft an effort was made to coordinate survey findings with the assembled historical background information.

In addition to the multiple property form which develops the context, describes the associated property type, and defines registration requirements, a group of ten historic district nominations for farms is being submitted at this time. These farms were selected from the group of forty-seven that had been previously documented on the Pennsylvania Survey forms. The ten farms were chosen on the basis of their ability to illustrate the context statement and property type descriptions included in the nomination. They represent different periods, regions, styles, ethnic backgrounds, patterns of organization and evidence of evolution of farm practices. All have excellent integrity and well-preserved examples of vernacular architecture. These are not necessarily "the best" historic farms, but were considered the best of their types for this nomination.

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A side-line to this nomination was the evaluation of certain farms that are so exceptional and intact, both architecturally and in agricultural landscape qualities, that they are deemed eligible for National Historic Landmark status. Our volunteer consultant for this sub-project was Edward A. Chappell, Director of Architectural Research at Colonial Williamsburg, whose special area of interest is Colonial German - Rhenish architecture. The prime subject for this designation is the David Kaufman Farm in Oley Township, which is the most complete early Pennsylvania German farm in the county, and unmatched nationally in Mr. Chappell's opinion.

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