

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USD/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

LIGHTFOOT MILL

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United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

1. NAME OF PROPERTY

Historic Name: Lightfoot Mill

Other Name/Site Number: Collins Mill; The Mill at Anselma

2. LOCATION

Street & Number: 1703 Conestoga Road

Not for publication:\_\_\_

City/Town: Chester Springs

Vicinity:\_\_\_

State: Pennsylvania

County: Chester

Code: 029

3. CLASSIFICATION

Ownership of Property

Private: X
Public-Local: \_\_\_
Public-State: \_\_\_
Public-Federal: \_\_\_

Category of Property

Building(s): X
District: \_\_\_
Site: \_\_\_
Structure: \_\_\_
Object: \_\_\_

Number of Resources within Property

Contributing

1
\_\_\_
\_\_\_
\_\_\_
1

Noncontributing

4 buildings
\_\_\_ sites
4 structures
\_\_\_ objects
8 Total

Number of Contributing Resources Previously Listed in the National Register: 1

Name of Related Multiple Property Listing: N/a

Designated a NATIONAL HISTORIC LANDMARK on

APR 05 2005

by the Secretary of the Interior

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**4. STATE/FEDERAL AGENCY CERTIFICATION**

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this \_\_\_ nomination \_\_\_ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property \_\_\_ meets \_\_\_ does not meet the National Register Criteria.

\_\_\_\_\_  
Signature of Certifying Official

\_\_\_\_\_  
Date

\_\_\_\_\_  
State or Federal Agency and Bureau

In my opinion, the property \_\_\_ meets \_\_\_ does not meet the National Register criteria.

\_\_\_\_\_  
Signature of Commenting or Other Official

\_\_\_\_\_  
Date

\_\_\_\_\_  
State or Federal Agency and Bureau

**5. NATIONAL PARK SERVICE CERTIFICATION**

I hereby certify that this property is:

- \_\_\_ Entered in the National Register
- \_\_\_ Determined eligible for the National Register
- \_\_\_ Determined not eligible for the National Register
- \_\_\_ Removed from the National Register
- \_\_\_ Other (explain): \_\_\_\_\_

\_\_\_\_\_  
Signature of Keeper

\_\_\_\_\_  
Date of Action

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**6. FUNCTION OR USE**

Historic: Industry/processing/extraction Sub: manufacturing facility

Current: Recreation/culture Sub: museum

**7. DESCRIPTION**

ARCHITECTURAL CLASSIFICATION: Other: Mill

MATERIALS: stone construction

Foundation: stone

Walls: stone

Roof: wood: shingle

Other:

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**Describe Present and Historic Physical Appearance.****Overview**

Constructed circa 1749, the Lightfoot Mill is a two-and-one-half story stone, gabled roof structure located along Pickering Creek, in West Pikeland Township, Chester County, Pennsylvania. Built as a custom grain mill, the mill has a high degree of historic integrity in both the mill building and the extant milling machinery.

**Contributing Resources**

1 Building Mill

**Noncontributing Resources**

1 Building Simmers'/Collins' House (labeled Night Miller's House on map)

4 Structures springhouse  
wagon barn  
head race  
tail race

**Site**

The mill is accessed from Conestoga Pike, Pennsylvania (Route 401), along a gravel driveway. The nominated property is a fourteen-acre parcel that contains the mill, its head and tail races, and related millpond.

The mill driveway continues past the miller's house and approaches the mill from the northeast and ends at the mill's east corner. The driveway widens to form a small parking area. South of the mill is a two-and-one-half story stuccoed stone dwelling (Simmers'/Collins' house labeled as the "Night Miller's House" on the site plan) which was built during the 1870s. The dwelling is three bays wide with a center door and six-over-six windows. Plain six-light eyebrow windows in the knee walls provide light for the attic. A porch runs the length of the north facade. A small vertical board outhouse with a shed roof is located approximately fifty feet east of the dwelling. Located southeast of the approach driveway is a short section of driveway that begins at the northeastern corner of the parking area and meets the approaching driveway to form a loop.

Within the area inside the loop of the driveway sits a springhouse, which may date to the eighteenth century. The springhouse is constructed of stone with whitewashed walls and has a gabled, wood frame roof covered with wood shingles.

Directly to the north across the driveway from the springhouse is a wagon barn, built during the late nineteenth century. The barn is a two-and-one-half story vertical board sided structure that has a one story shed section running its depth on the east side. The barn has been adapted to serve as a visitor center for the mill.

The site map includes two structures that have been moved in recent years. To the east of the wagon barn was a one story chicken coop with a shed roof and vertical board siding.

The building labeled as the "post office" was once attached as a shed addition to the "night miller's" house. This shed has been reattached to the miller's house as part of the current restoration project.

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The mill's headrace and tailrace are counted as noncontributing structures, due to lack of a high degree of historic integrity from the period of significance.

The millpond from which the mill's headrace originates is situated southeast of the mill. The pond is fed at its southwest end through a head gate at a small tributary of the Pickering Creek. The headrace flows from the northeastern end of the pond and curves north approximately 350 feet and through a low culvert under the former Pickering Valley Railroad right-of-way. It then enters a small impoundment pond immediately above the mill that supplies water through the flume gate to the header tank inside the mill.

The tailrace exits the mill building running northwest a short distance in a rubble fieldstone lined channel that turns and heads east. The tailrace then flows straight in a northeasterly direction approximately ninety feet before slowly curving behind the wagon barn to a northerly direction. It continues to flow straight along that course through a pasture to where it joins with the Pickering Creek. The tailrace runs approximately 570 feet from the point that it turns north to where it joins the creek.

Also within the boundary is a section of the abandoned railroad bed for the Pickering Valley Railroad. This railway was constructed in the 1870s.

#### Mill Description: Exterior

Measuring 30' x 50', the Lightfoot mill is a two-and-one-half story, gabled roof structure.<sup>1</sup> The first floor of the Lightfoot Mill is at grade on all but the south side, which is dug into a slope to provide proper fall for the head water onto the overshot water wheel inside the building and to allow at-grade entry onto the second floor. Located to the east of the wheel pit and between the first and second floors, is an intermediate floor level that is supported on the Hurst frame. The intermediate floor level, known as the stone floor, spans the width of the mill and is nine feet wide. The mill's length runs east to west and parallel to the Pickering Creek. Approximately eighteen inches thick, the exterior walls are of random coursed fieldstone construction with large, stone corner quoining. The east gable end wall is also random-fieldstone, while the west gable is wood frame covered with board-and-batten siding. The wood shingle roof is penetrated by a brick chimney at the east end. The eaves are supported by exposed, shaped rafter tails.

The four facades have an irregular fenestration pattern. The door and window frames are plank-framed with mortise and tenon corner joinery and exposed wood pin connections. The windows are single-hung with wood sash and a six-over-six pane configuration unless otherwise noted. Dimensions given to windows and doors are to the masonry opening. The fenestration of the mill consists of three window types: 3' x 5' single-hung, 2½' x 2½' fixed sash, and 2½' x 4½' foot attic windows.

The east facade has a door and window at the first floor level. Located just north of center, the door is a vertical board door with six lights in the top half of the door. Located approximately three feet from the southeast corner is a four-pane, fixed sash window (providing light to the lower level) that has a stone window well to hold back the grade. Directly above the fixed window is a vertical board door at the second floor. Also located at the second floor level is a window that is approximately 4'3" from the northeast corner. Two, four-over-four, windows are symmetrically placed at the attic floor level.

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<sup>1</sup> In order to simplify the building description, the facade that truly faces northwest will be identified as the north facade and all other building elements will be identified accordingly.

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On the south facade, the fenestration on the first floor consists of one single-hung and one fixed four-pane window. The four-pane fixed window is approximately twenty-two feet from the southwest corner. The other window is located approximately six feet from the southeast corner and is enclosed by a stone window well. At the stone floor, there is a window that is approximately 16'8" from the southwest corner. This low window lights the millstones at the level of the stone floor directly atop the Hurst frame, a feature typical of pre-Evans power transmission systems. A door and one window are located at the second floor level. The door is positioned just east of center and the window is centered between the door and the southeast corner. In addition to the door and windows on the south facade, an 18-inch-diameter iron pipe flume penetrates the exterior wall approximately halfway between the southwest corner and the stone floor window.

The west facade has a centrally located board door at the first floor that provides access to the wheel pit area. The door has wrought iron strap hinges and a sliding bolt latch. Directly above the door is a window at the second floor level. Symmetrically placed in the wood frame gable are two windows.

The north facade has a door and two windows at the first floor, one window at the stone floor level and two windows at the second floor. At the first floor, a four-pane fixed window is located twenty-three feet from the northwest corner. A door is located to the east of the four-pane window. A second window is located 6'6" from the northeast corner. A wood frame access opening for the mill shafts (approximately the size of the fixed four-pane window) is located 17'3" from the northwest corner with its sill height being approximately six inches above grade. Located directly above this opening is the window at the stone floor level. Directly above the first floor door and the single-hung window are the two second floor windows. Located below grade near the northwest corner is a stone arch opening for the mill's tailrace. The random rubble fieldstone walls of the tailrace run north for approximately eighteen feet from the mill building then make a radius turn to the east.

A mid- to late-twentieth century cider press and saw mill formerly abutted the easterly half of the north facade. The unstable and severely dilapidated frame structure was documented in 1983 and removed.<sup>2</sup>

**Interior and Machinery: Interior Framing and Finishes**

The interior of the mill has both exposed and plastered stone walls, wood floor framing, and wood flooring. On the first floor, a rectangular area in the southeast corner is a dirt floor. The remaining floor area is covered by plank flooring.

The second floor framing consists of wood floor joists supported by stone bearing walls at one end and a central east-to-west summer beam. The summer beam is 15½ inches wide by 14 inches high and spans from the east stone wall to the Hurst frame. Pocketed into the east wall, it is supported by a 15" x 15" octagonal column that is located approximately eighteen feet from the east wall. Wood floor joists measuring 9½ inches deep by 7 inches wide and spaced twenty-four inches on center, are mortised into the summer beam and pocketed into the north and south exterior walls. The second floor has random width board floors.

The attic floor is supported by a 14½" x 11" summer beam that spans from the east to the west wall. Posts located above the first floor octagonal column and the west side of the Hurst frame, provide intermediate support for the summer beam. Mortised into the summer beam and pocketed into the north and south exterior walls are 2¾ inches wide by 7 inches deep wood, floor joists spaced fifteen inches on center. The attic has a random-width wood floor.

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<sup>2</sup> John R. Bowie, AIA, "Documentation of the Cider Press and Saw Mill at the Collins' Mill," November 6, 1983, Mill at Anselma Preservation and Educational Trust, Chester Springs, PA.

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The roof is supported by tapered wood rafters, measuring 3 inches wide by 5½ inches deep and spaced approximately 27 inches on center. The rafters taper to 3" x 4½" at the ridge and are joined by a bridle joint having an exposed wood pin. Collar ties measuring three inches by four inches are located on every other rafter joined by a half lap joint, also pinned. Rafters are notched at the wall plate and secured with an iron spike. Unusual wood brackets connecting the wall plates to the attic floor framing restrain the lateral forces exerted by the roof framing on the tops of the stone knee walls. These braces consist of a 2¾" x 5" horizontal member that is secured to the top plate by a dovetail joint, held fast with a one-and-a-half-inch diameter dowel. Extending horizontally from the plate, this horizontal member is joined to a vertical member that is pinned through the top and mortised into the floor joist at the bottom. A diagonal brace gives additional rigidity to the vertical member by being pinned through the center and angling back to the exterior stone wall. The diagonal brace is also mortised into the floor joist at the bottom. The overall width and height of these braces varies. These simple rigid braces prevent the plates from spreading and were used as an adjunct to the collar ties in resisting the lateral forces of the roof and mill machinery suspended from the roof framing. The wall plates, measuring 9½ inches wide by 7 inches high, are rabbeted into the top of the stone walls and are exposed at the building's exterior.

Connecting the first floor and the stone floor is a wood, open riser stair located just to the south of the octagonal column. To the south of the landing of the first stair, a wood, open riser stair also connects the stone floor to the second floor. A third, wood, open riser stair connects the second floor with the attic floor.

### **The Hurst Frame and Machinery**

The layout of the mill's wooden grain mill machinery is almost identical to Thomas Ellicott's illustration of an "old fashioned" mill printed in Oliver Evans' 1795 book *The Young Millwright and Miller's Guide*. The Lightfoot Mill layout is typical of eighteenth century custom mills and retains its original type of machinery with a later addition of Oliver Evans type mechanical improvements.<sup>3</sup>

The interior of the first floor is dominated by the heavily built post-and-beam, mortise-and-tenon, Hurst frame that supports the millstones, gears, and much of the shafting. The Hurst frame stands independently from the mill foundation and walls in order to isolate the vibration of the machinery. The majority of the power transmission machinery is concentrated within the confines of the frame. It is here that the wooden cogged master face wheel transfers power from the water wheel to the lantern pinion wallowers. The wallowers turn the counter-shafts, which transfer the power to the mill machinery. Face wheels on the counter-shafts supply power to the trundle gears on the millstone spindles. Beyond the Hurst frame along the west end of the building lies the wheel pit and the 16' x 3'-steel Fitz water wheel that replaced the wooden wheel circa 1906.

Also on the first floor, a large fireplace is situated at the approximate center of the east wall. Pre-automated custom mills such as the Lightfoot mill typically had fireplaces for heat on the first floor or basement level since this was the miller's primary workspace. Prior to the introduction of Oliver Evans elevators, the miller spent most of his time at the bottom floor. Manual labor was required to transfer barrel loads of grain and meal by hoist to the top floor to load grain into hoppers that fed to the millstones, and to lift meal to the bolters.

Due to the wear caused by continuous use, some mill parts were periodically replaced but the mill machinery was maintained to its original design. The tenting staff and bottle weight at the Lightfoot mill are a rare survival of an eighteenth century method of adjusting the critical distance between the millstones. The mill was

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<sup>3</sup> See Figure 15 for a description of how grains were moved through the mill and the grinding process.

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also upgraded in the early nineteenth century by adding elevators for the meal bins and conveyors that closely follow Oliver Evans' design for an automated mill. An early elevator carries meal automatically from the bin of the northern-most run of stones to the bolter in the attic.

In addition to the milling machinery, the first floor has overhead line shafts that were installed later (probably during the early twentieth century) to supply power to woodworking equipment placed at the east end of the building.

Centered on the Hurst frame is a half flight of stairs that leads to the stone floor where three pairs of millstones, hoops, horses, and hoppers are located. The two stones nearest the south wall are straight dressed (a pattern of sharpening the stones to improve efficiency in grinding grains) and were used for grinding animal feed and corn meal. The other two pair of stones are quarter-dressed French buhrs for grinding wheat. Two millstone cranes are located along the west edge of the floor adjacent to the wheel pit. The header tank is mounted at the end of the cast-iron flume that projects through the wall near the southwest corner of the mill. The steel header tank directs the head water onto the water wheel and contains the wheel control gate.

Two steps up from the stone floor lead to the second floor. The second floor has a turned-newel post indicative of the decorative elements found in much of the craftsmanship throughout the mill building. A feed bagger is located near the stairs and is approximately centered on the south wall of the mill building. An elevator running from the first floor to the bagger on the second floor with a short conveyor and bagging machine serves the feed stone. North of the bagger are the stairs leading to the attic, the barrel hoist, and the elevator that comes up from the bottom floor to the top floor. Another early Evans-type elevator that moves the grain to the scourer in the attic is adjacent to the north side of the stairs. After being cleaned by the scourer, the grain dropped down a chute to a bin on the floor above the water wheel from which it could be directed to either pair of French buhr stones on the stone floor.

Sometime after the elevators and conveyors had been installed, a small office was built in the northeast corner of the second floor. After the mill had been partially automated, the second floor became the primary work area. The office was later enlarged circa 1927 according to the oral interview conducted by James B. Akerman with Oliver Ernest Collins, miller, July 6 and July 10, 1972.

The office is approximately 9'6" x 13'6" and has a door near its northwest corner. The office interior walls have two 3' x 6', twelve light, fixed windows in the west wall and two more in the south wall. A large flour bin is backed against the south office wall with its end against the chimney in the east wall. An early flour press of the design originally patented by Oliver Evans' younger brother Evan Evans, is located west of the flour bin. The flour press compressed the flour in the barrel with a wooden disc forced firmly downward by a compound lever (toggle joint) operated by hand.

Just as the first floor apparently became a woodshop after the center of activity moved to the second floor, the second floor became a machinist's shop after the gristmill business waned in the early twentieth century. Line shafts, shop equipment, and sharpening machines were installed on the second floor. The twentieth-century equipment had been documented under the direction of Frank McKelvey, Jr., Curator of Mechanical Arts at the Hagely Museum and Library, in 1972. Copies of the documentation are on file at The Mill at Anselma Preservation and Educational Trust, Inc. office as well as at the Hagely Museum and Library. The shop equipment was removed during restoration efforts during the 1970s.

The attic is crowded with elevators, chutes, and equipment. The barrel hoist is located in the center of the building alongside the stairs. The hoist drum and its shaft are supported by a heavy framework mounted on the

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north side of the stairs and positioned over the hoist opening through the floor. The scourer (which cleaned dirt off the grain) is located on the floor beneath the ridge line west of the stair and is vented through the west gable by way of a long pipe. Chutes drop through the floor to feed grain into the hoppers above the wheat millstones. The long bolting machine runs from the northeast corner to within a few feet of the hoist.

The bolter sifted the flour through a revolving bolting cloth (silk-mesh) covered drum (reel). The flour tumbled down the bolting reel and was sorted through two grades of cloth. The flour then moved down rope flight conveyors below the bolting reel to drop down two separate chutes to the wheat flour bins on the floor below. The conveyor is a very rare early type consisting of rope coiled around a shaft to form an Archimedes' screw. The rope on one half of the shaft is wound in one direction and the rope on the other half is wound in the opposite direction to convey the two grades of flour to the appropriate chutes. The tailings drop from the east end of the bolter into another conveyor beneath the attic floor and are carried back to the stones to be reground. It is unusual for these bulky and somewhat fragile bolting machines to survive. The typical, now extremely rare, all wood pin gear power transmission system for these machines is intact. Also typical of custom mills are the grist parcel bins along the north wall. These small bins are indicative of the custom mill and were necessary to prevent each individual client's grain from becoming intermixed with other's grain.

**Restoration Work**

The mill was purchased by the French and Pickering Creeks Conservation Trust in 1983 and the Trust designated a committee to administer the preservation of the mill. During 1983 through 1987, stabilization and drainage work was done; new electrical distribution, intrusion, and fire alarms were installed; and the breached embankment of the tailrace was repaired. The decayed wooden mill floor on the first floor was removed and replicated. The flooring nearest the Hurst frame was replaced with recycled original floor boards. Deteriorated Hurst frame members were carefully replicated. New rafters and collars to match the originals were installed where originals were severely deteriorated, the oak lath was repaired, and new shingles replaced the worn out corrugated sheet steel roofing.

During 1985–86 a severe washout in the head race overflow spillway was repaired. One hundred and fifty tons of clay and 175 tons of rock were used to rebuild the washed out area and provide for emergency overflow at times of flooding. A new head gate structure was installed. The water was returned to the headrace and the millpond was once again filled.

In 1987, further site work was completed. Archeological investigations were done in preparation for the construction of the new driveway and parking area at the mill, which was finished in gravel.

The millrace received additional work at the spillway to prevent erosion. The unstable walls of the wheel pit were rebuilt and decayed members of the Hurst frame were removed. Inside the mill, the master wheel was also removed for rebuilding and was subsequently replaced. The wall below the main water intake pipe (flume) was repaired.

In 1989, massive oak beams were cut and shaped to replicate the decayed elements of the Hurst frame that needed replacement.

From 2001 to 2003, repair and restoration work resumed at the mill. The first floor summer beam was jacked and re-leveled and rotted joist ends on the first floor were scarfed to repair them. Much attention was given to repairing the mill machinery by carefully replicating worn or damaged parts. In 2002, the replicated Fitz water wheel (the original shaft, bearings, hubs, and arms were re-used) and the header tank were reinstalled.

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The deteriorated master wheel and one counter cog wheel could not be repaired, and were replicated. The originals have been preserved as artifacts. Others were rebuilt or repaired. A worn lantern-type stone nut and the wallower were repaired. The tentering system (that controls the relationship between the grinding stones) was reassembled. The two existing original face gears were re-cogged. The water wheel shaft bearing castings were refurbished. The elevators were cleaned and repaired as needed. The sack hoist received repairs and was made operable. The feed stones were redressed. Cedar planking was reinstalled on the wheel pit side of the Hurst frame to protect the Hurst frame and equipment from water damage caused by the turning water wheel. The third floor pin drive power transmission components have been put back into running order. The bolter reels were re-silked and the scourer repaired. Three sections of rotted wall plate have been replaced, the plates have been pulled back into position and the roof was jacked back into place. For additional stabilization, two reinforcement plates were added on collar ties that were interrupted by machinery. Two of the attic plate braces were rebuilt and two missing ones were replaced. The exterior walls of the mill were repointed where necessary with mortar that was carefully matched using on-site creek sand. Special care has been taken to preserve as much original material as possible while bringing the mill up to working order. All replaced elements of the mill have been carefully replicated in order to maintain the high degree of historic integrity that is so remarkable at the Lightfoot Mill at Anselma.



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**State Significance of Property, and Justify Criteria, Criteria Considerations, and Areas and Periods of Significance Noted Above.**

Today, water-powered grist mills are nostalgic symbols on the landscape: quaint, quiet, and picturesque artifacts located “down by the old mill stream.” However in the eighteenth century mills were active places of commerce, industry, and trade that provided linkages between colonial farmers and the Atlantic trade and economy. “Water mills were the most sophisticated source of mechanical power and one of the most advanced technologies of the eighteenth century world. The establishment and operation of mills attracted creative talent, both entrepreneurial...and technical.” In fact, the late eighteenth century transformation of colonial milling—from “custom” to “merchant” milling, as a result of increased trading relationships and markets in the international economy, “became the basis of industrialization in British America.”<sup>4</sup>

The Lightfoot Mill is nationally significant as an extremely rare archetypal example of a small, eighteenth century, custom grain mill with its surviving, completely intact power transmission system.<sup>5</sup> The basic technology of this industrial artifact is that of the mid-eighteenth century, later adapted to make use of several of the automating inventions of the famous eighteenth century American inventor, Oliver Evans.<sup>6</sup> Throughout the history of its operation, significant mill machinery was repaired and maintained in its original order and form and the milling system process still functions today as it did when first built.<sup>7</sup> The Lightfoot Mill is the nation’s prime known surviving example of pre-Evans custom grain mill technology.<sup>8</sup> The early Oliver Evans labor saving improvements were appended to the original works. Thus, by observing the addition of the Evans elevators and conveyors and noting their juxtaposition with the original pre-Evans equipment one can witness

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<sup>4</sup> John J. McCusker and Russell B. Menard, *The Economy of British North America, 1607-1789* (Chapel Hill: University of North Carolina Press, 1985), 323, 325. The rarity and significance of the Lightfoot Mill has been noted for several years. In 1972, John Tyler, Curator of Science, Industry, and Technology at the William Penn Memorial Museum recorded his impressions of the mill in a letter to Mrs. Samuel W. Morris, Secretary, French and Pickering Creeks Conservation Trust: “Usually when I am asked to look at a mill I am prepared to be a little disappointed because few people recognize early mill machinery...and while many [mills] are worthy of preservation, they are not as interesting, nor as rare as those that do indeed retain their original gearing. Therefore I was truly delighted to see that the Collins mill was everything you had said over the phone, and more.” Mr. Tyler detailed several significant features of the mill: “The machinery that we see in place today is of the exact original type, and is not usually found in such a complete form.”

<sup>5</sup> In 1984, Stephen J. Kindig, an expert on historic mills, supported proposed funding for the mill from the National Trust for Historic Preservation. “Simply stated, I have never found an example to equal the Collins Mill. Whereas there are several partial examples extant, the Collins Mill is the only one complete in all the necessary machinery—of the ‘wooden age’—to produce ‘white flour’ from wheat and animal feed from various other grains.”

<sup>6</sup> “The work of Oliver Evans, ‘one of the world’s most important inventors,’ epitomizes the innovative technology that appeared in this sector of the colonial economy. By 1787 Evans had fully automated the flour-milling process, the first instance in history of a completely automated production facility.” McCusker and Menard, *Economy of British North America*, 323-324.

<sup>7</sup> It is probable that no moving parts of the power transmission system remain from ca. 1749 since wear from usage necessitated routine replacement of wooden drive train parts in these mills. National Park Service guidelines include the consideration of historic places that require periodic maintenance for operation and safety. When changes are in the form of renewal and replacement, either to continue operation historically or to perform a restoration, the structure will remain eligible if renewed features are replaced with materials, which in their composition, design, color, texture, and workmanship retain the historic character of the property.

<sup>8</sup> To date, searches have not located any other existing eighteenth-century custom mills with surviving eighteenth-century type equipment and power transmission layouts in the United States. The State Historic Preservation Officers and historians from the State Historical Societies/Archives in the Original Thirteen Colonies, and West Virginia, were queried about existing eighteenth-century grist mills with surviving eighteenth-century power transmission systems but nothing comparable was identified. In addition, the Society for the Preservation of Old Mills (SPOOM) and regional molinologists have not been able to identify any eighteenth-century custom mills that retain their machinery. SPOOM maintains a list of extant and former mills in the eastern states. In 2003, millwright Derek Ogden, for example, noted: “I had known of Collin’s Mill since 1976 and have always considered it to be one of the very few early historic water mills which contains wonderful examples of the millwrights art,” adding, “I know of only three water mills in the country where there are good examples of early bolters and Collin’s Mill is one of them and probably the best.”

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an artifactual record that clearly demonstrates the extraordinary impact of Evans' inventions and the introduction of the epoch-changing concept of automation.<sup>9</sup>

Prior to the American Revolutionary War, most mills were small operations serving only the local agricultural community. These small "custom mills," ground grain for individuals on a percentage basis, the miller typically collecting a 10 to 20 percent toll as payment.<sup>10</sup> The difficulties and high cost of transporting wheat and corn encouraged the construction of numerous custom mills that served a community with a radius of about 10 miles, the distance that a farmer could conveniently travel round-trip in one day.<sup>11</sup> Almost every farmer grew some wheat and corn during the colonial period, and a wide scattering of small custom mills was needed to grind the grain. In 1786, Thomas Jefferson said, "There is no neighborhood in any part of the United States without a water gristmill for grinding the corn of the neighborhood."<sup>12</sup> The mills played an especially significant role in regions that did not follow the New England settlement pattern of nucleated clustered towns. Mid-Atlantic and Southern mills became important as economic and social centers where locals could meet to exchange news, to socialize, and to conduct business. The millers sold surplus flour collected from the miller's toll to local tradesmen that did not farm and also transported some flour to market. Millers became the local source for facts about the market economy which helped farmers make informed decisions about what crops to plant.<sup>13</sup>

To fully understand and appreciate the importance of the Lightfoot mill and its place in our nation's history, one must compare the different roles that the "custom" and the "merchant" mill played in the development of American industrial technology.<sup>14</sup> Within the fertile wheat growing country along the East Coast, at locations where there was a good source of water for power and for transportation, another type of mill, the "merchant mill," soon thrived. Merchant mill operators purchased large quantities of grain, stored it, and ground it to produce flour in volume for domestic and export sale. Philadelphia became the leader in American flour trading, well surpassing Boston and New York, during the period just prior to and after the Revolution.<sup>15</sup> In America, millers realized that they need not serve only a local community as they had done under the traditional European feudal economic system that discouraged large milling operations. American custom mills had continued this tradition by grinding for individual farmers and collecting a percentage from each individual to pay for the miller's services. Merchant mills benefitted American farmers who farmed on a much larger scale than in Europe; farmers could grow large quantities of grain and sell it directly to the merchant mills for cash.

---

<sup>9</sup> "We do know much less about the various milling industries in the colonies than we do about the iron industry. This is surprising since milling industries contributed much more in total value to the colonial economy and were technically more progressive, chiefly in the development and diffusion of laborsaving devices." McCusker and Menard, *Economy of British America*, 327.

<sup>10</sup> Charles Howell and Allan Keller, *The Mill at Philipsburg Manor Upper Mills and a Brief History of Milling* (New York: Sleepy Hollow Restorations, 1977), 100.

<sup>11</sup> John Storck and Walter Dorwin Teague, *Flour For Man's Bread: A History of Milling* (Minneapolis: University of Minnesota Press, 1952), 146, and Charles B. Kuhlmann, *The Development of the Flour-Milling Industry in the United States* (1929; repr., Clifton, NJ: August M. Kelley, 1973), 33.

<sup>12</sup> Thomas Jefferson to M. de Warville, 15 August 1786, in *Writings*, vol. 5, ed. Merrill D. Peterson (NY: Literary Classics of the U.S.: Distributed to the Trade in the U.S. and Canada by the Viking Press, 1984), 403.

<sup>13</sup> McCusker and Menard, *Economy of British America*, 321.

<sup>14</sup> For example, George Washington first acquired a gristmill when he inherited Mount Vernon from the widow of his half-brother, Lawrence, in 1754. This first enterprise was a "custom mill," where wheat and corn were ground not for sale, but mainly for neighboring farmers and for consumption on the Estate. In 1770, Washington decided to build a "merchant mill," which began operation the following year. Here, flour and cornmeal were ground not only for use at Mount Vernon but also for sale up and down the East Coast of America, and as far away as Portugal and the West Indies. The new mill had two pairs of stones. One pair was used to grind wheat into flour, and the other pair was used to grind corn into meal. It is a reconstruction of this mill that you can see today at Mount Vernon.

<sup>15</sup> Storck and Teague, *Flour For Man's Bread*, 152, and Kuhlmann, *Development of Flour-Milling Industry*, 24, 34.

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Mills became multi-storied structures and ran as many as six pairs of stones from a single water wheel.<sup>16</sup> The diminutive old-fashioned custom mills rapidly became obsolete and were usually upgraded and enlarged or were completely rebuilt to operate as merchant mills. A few rural custom mills, such as the Lightfoot mill, continued to serve the local community by operating as very small scale merchant mills.

During the early 1770s, about one-third of the wheat produced in Pennsylvania was exported, primarily as flour and bread. Nearly half of Pennsylvania's export income and an estimated half of the average farm sales came from this source.<sup>17</sup> Merchant milling rapidly grew along the Wissahickon, in Philadelphia, and the Brandywine, in Delaware. In 1760, over eighty mills were located in Philadelphia County alone, and most of them were grinding flour for export trade.<sup>18</sup> By the 1790s, the Brandywine powered sixty gristmills in Wilmington, Delaware.<sup>19</sup> At that time, Robert Proud wrote that the Wissahickon and the Brandywine were "noted for the best and most numerous grist-mills, either in this province, or any other part of British America,...and which, perhaps, are not inferior in quality, to any in the world."<sup>20</sup> The impact of merchant milling can be seen in the value of exports from the Middle Colonies in the period from 1768 to 1782. A total of more than 379,000 tons of grain products were exported to Great Britain, Ireland, southern Europe, the West Indies, and Africa, representing over 72 percent of all exported products.<sup>21</sup>

The scale of merchant milling operations grew even larger as American millers adopted Oliver Evans' revolutionary concept of the automatic flour mill. The automatic mill cut in half the labor necessary to operate a mill. "Formerly, one hand was required for every ten barrels of flour that the mill made daily; now one for every twenty barrels is sufficient. A mill that made forty barrels a day, required four men and a boy; two men are now sufficient."<sup>22</sup> The concept of automation cannot be overestimated; it revolutionized the milling industry and is the foundation upon which all modern, mass-production industries are built.<sup>23</sup>

Millers in the region around Baltimore, Maryland, were the quickest to adopt the advances provided by automation. Although, Evans had opened his experimental automatic flour mill on the Red Clay Creek in Delaware in 1785, millers in Maryland were among the first to use his radical new milling concepts on a large scale. As a result, Baltimore became a leading flour manufacturing center in the early nineteenth century, usurping the status of the Philadelphia and Delaware mills as the leading milling centers in the nation. The new Evans type mills were more costly to set-up, but they operated much more efficiently. They made production on a truly large scale possible and encouraged the localization of the flour milling industry around chief milling centers, but at the same time, the automated merchant mills accelerated the demise of scattered small milling operations.<sup>24</sup>

After an initial period of reluctance, Evans' automatic milling equipment was rapidly introduced everywhere in the United States, even into existing small mills.<sup>25</sup> Lightfoot's modest custom mill at Anselma received early Evans type elevators to automatically transport grain to the scourer and to carry meal from the basement meal bin to the bolter where conveyors moved meal horizontally.

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<sup>16</sup> Howell and Keller, *Mill at Philipsburg Manor*, 102.

<sup>17</sup> James T. Lemon, *The Best Poor Man's Country* (Baltimore: Johns Hopkins Press, 1972), 181.

<sup>18</sup> Sylvester K. Stevens, *Pennsylvania: Titan of Industry* (New York: Lewis Historical, 1948), 78.

<sup>19</sup> McCusker and Menard, *Economy of British America*, 323.

<sup>20</sup> Robert Proud *The History of Pennsylvania in North America*, vol. 2 (Philadelphia: Zachariah Poulson, Jr., 1797-98), 255.

<sup>21</sup> McCusker and Menard, *Economy of British America*, 199.

<sup>22</sup> Oliver Evans, *The Young Millwright and Miller's Guide* (Philadelphia: n. p., 1795), Article 101, 124.

<sup>23</sup> Eugene S. Ferguson, *Oliver Evans: Inventive Genius of the American Industrial Revolution* (Greenville, DE: The Hagley Museum, 1980), 10.

<sup>24</sup> Kuhlmann, *Development of Flour-Milling Industry*, 71, 101.

<sup>25</sup> Storck and Teague, *Flour For Man's Bread*, 164.

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The Lightfoot Mill has a remarkable historical and educational value in the way that it exemplifies both traditional labor-intensive eighteenth-century milling equipment and early Evans-type automation improvements. In the Lightfoot Mill, the eighteenth-century flour milling machinery was never superseded by newer technology, but instead, it was supplemented by early Evans-type automation improvements. The juxtaposition of the eighteenth-century custom mill machinery with the early Evans improvements allows a side-by-side comparison of pre-automation and post-automation flour milling during the transitional period. While Evans' improvements to milling technology promoted large merchant mill buildings capable of housing an ever-increasing volume of grain and multiplied number of machines, the Lightfoot Mill represents the typical small country custom mill design of the pre-Evans era which became obsolete and quite rare due to its inability to compete with the more modern merchant mill concept.<sup>26</sup>

### Local History

Samuel Lightfoot purchased land along the Pickering Creek in Pikeland (later West Pikeland) Township and was among the earliest settlers there in 1725.<sup>27</sup> He established the first grain mill in the area and at that time the operation of bolting (sifting) the flour was performed by hand.<sup>28</sup> By the time of Pikeland's first tax records in 1747, Samuel Lightfoot had become one of the highest tax payers in the township, paying 3 shillings. Then, in 1749-50, Lightfoot's tax jumped to £1, the highest in the township.<sup>29</sup> The sudden jump in taxes could be evidence that the existing custom grain mill (toll mill) dates from this time. In 1765, the tax records were itemized and Lightfoot's grist mill and saw mill were specifically enumerated.<sup>30</sup> Wheat had become the principal crop in southeastern Pennsylvania around 1730. This helped the economy expand and the region prospered; after 1750 custom mills of the type Lightfoot erected were being commonly built.<sup>31</sup> By 1759, the tax records indicated that there were four grist mills operating in Pikeland Township.<sup>32</sup>

As was often the case with colonial mill operators, Samuel Lightfoot was prominently involved in community political and religious affairs. In 1736, he was chosen as a commissioner of Chester County, Pennsylvania, and in 1751 he was appointed Justice of the Peace for the county. He also served as a surveyor and kept the field records for Charles Mason and Jeremiah Dixon from 1763 to 1767 during the survey to establish the Mason-Dixon line. Following Lightfoot's death in 1777, the mill was owned by his son, William, and then twenty years later by his grandson, Samuel, who sold the business in 1812.<sup>33</sup>

Throughout the nineteenth and early twentieth centuries, the mill continued operation under various owners. The stones were last run to grind corn and wheat in the 1930s and the waterpower was last used to power

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<sup>26</sup> Konrad Bedal, *Mühlen und Müller in Franken* (Bad Windsheim: Fränkisches Freilandmuseum, 1992), 75-77. It is interesting to note that American mill technology became world-leading in the early nineteenth century, earning the automated mills the continental nomenclature of "American Mill."

<sup>27</sup> C. W. Heathcote, Sr., *A History of Chester County Pennsylvania* (Harrisburg: National Historical Association, 1932), 197.

<sup>28</sup> J. Smith Futhy and Gilbert Cope, *A History of Chester County, Pennsylvania, with Genealogical and Biographical Sketches* (Philadelphia: J. B. Lippincott & Co., 1881), 202.

<sup>29</sup> County Tax Records LR 250.1 1715-1753 (microfilm), Provincial Tax Records LR 249.1 1715-1764 (microfilm), Chester County Archives (hereafter cited as CCA), Westchester, PA.

<sup>30</sup> Provincial Tax Records LR 249.2 1765 (microfilm), CCA.

<sup>31</sup> Stephen G. Del Sordo, "Eighteenth-Century Grist Mills: Some Pennsylvania Examples," *Perspectives in Vernacular Architecture* (Annapolis: Vernacular Architecture Forum, 1982), 75.

<sup>32</sup> James T. Lemon, *The Best Poor Man's Country* (Baltimore: Johns Hopkins Press, 1972), 202.

<sup>33</sup> Eleanor Winsor, "Lightfoot Mill," National Register of Historic Places Nomination Form (Chester Springs, PA) (Washington, DC: U.S. Department of the Interior, National Park Service, 1973) Section 8, p. 1.

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twentieth-century line shafts in the 1950s.<sup>34</sup> The Lightfoot Mill at Anselma was owned and operated by a continuous series of millers from Samuel Lightfoot until 1983, when the site was purchased by the French and Pickering Creeks Conservation Trust. The last miller was Oliver Ernest Collins who obtained the mill from Allen H. Simmers in 1919. Simmers purchased the mill from John Oberholtzer in 1886. John Oberholtzer took over the mill from Elias Oberholtzer in 1873. Elias Oberholtzer acquired the mill from Jones Shenaman in 1859 and Jones inherited the mill from his father Rees. Rees Shenaman bought the mill from Lewis Rees and James Benson in 1822. Rees and Benson obtained the mill from Samuel Lightfoot in 1812 who inherited the mill from his father William Lightfoot who, in turn, had inherited the mill from his father Samuel Lightfoot, the man, it appears who built the mill.<sup>35</sup>

<u>Millers</u>	<u>Operation</u>	<u>Comments</u>
Samuel Lightfoot	1747-1777	
William Lightfoot (son)	1777-1797	Owned 280-acre tract that included mill seat.
Samuel Lightfoot (grandson)	1797-1812	
Lewis Rees and James Benson	1812-1822	
Rees and Jones Shenemans (Shenneman or Shenaman)	1822-1859	Adds Evans automation features.
Elias Olberholtzer	1859-1873	Built Night Miller's house.
John Olberholtzer	1873-1886	By 1883 mill property was 38 acres in area.
Alan H. Simmers	1886-1919	Installs Fitz water wheel, ca. 1906.
Oliver Ernest Collins	1919-1982	Last feed ground in 1934.

**Summary**

The Lightfoot Mill at Anselma is a truly exceptional, intact survivor of a significant artifact of American industrial history and of expanding science and technology with a high degree of historical integrity. This archetypal example of the once-common mid-eighteenth century custom mill embodies the distinguishing characteristics of the pre-Evans mill type and is of exceptional value for the study of industrial history. Already in 1795, Thomas Ellicott's illustration in *The Young Millwright and Miller's Guide* of an "old-fashioned" mill depicts an arrangement of the power transmission machinery almost identical to that which still remains in the Lightfoot Mill at Anselma. Broad searches have not been able to identify any other existing eighteenth-century custom mills with surviving mid-eighteenth century type equipment and power transmission layouts in the United States. The Lightfoot Mill and its mill machinery as an artifact physically capture a pivotal moment in American industrial history as the old traditional technology was supplanted by the new watershed ideas of industrialization and automation. The Lightfoot Mill at Anselma is a rare survivor of a colonial-era custom mill with tentative upgrades of partial automation—it has captured the humble beginnings of a rapid and remarkable change in the technological history of American milling. This change was one of the first steps in the story of worldwide industrialization.

<sup>34</sup> Denson Groenendaal, "The Mill at Anselma" (Pottstown, PA: French and Pickering Creeks Conservation Trust, 1983), 6.

<sup>35</sup> The Mill at Anselma Preservation and Educational Trust, deed research and tax records.

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**9. MAJOR BIBLIOGRAPHICAL REFERENCES**

- Bathe, Greville, and Dorothy Bathe. *Oliver Evans: A Chronicle of Early American Engineering*. Philadelphia: The Historical Society of Pennsylvania, 1935.
- Bedal, Konrad. *Mühlen und Müller in Franken*. Bad Windsheim: Fränkisches Freilandmuseum, 1992.
- Cremers, Estelle. *30,000 Acres: Vincent and Pikeland Townships, 1686 to 1850*. Philadelphia: Eastern Litho, 1989.
- Del Sordo, Stephen G. "Eighteenth-Century Grist Mills: Some Pennsylvania Examples," *Perspectives in Vernacular Architecture*. Annapolis: Vernacular Architecture Forum, 1982.
- Evans, Oliver. *The Young Millwright and Miller's Guide*. Philadelphia: n.p., 1795.
- Fegley, H. Winslow. *Among Some of the Older Mills in Eastern Pennsylvania*. Norristown, PA: The Pennsylvania German Society, 1930.
- Ferguson, Eugene S. *Oliver Evans: Inventive Genius of the American Industrial Revolution*. Greenville, DE: The Hagley Museum, 1980.
- Futhey, J. Smith, and Gilbert Cope. *A History of Chester County Pennsylvania, with Genealogical and Biographical Sketches*. Philadelphia: J. B. Lippincott, 1881.
- Groenendaal Denson. "The Mill at Anselma." Pottstown, PA: French and Pickering Creeks Conservation Trust, Inc., 1983.
- Heathcote, C. W., Sr. *A History of Chester County Pennsylvania*. Harrisburg: National Historical Association, 1932.
- Howell, Charles, and Allan Keller. *The Mill at Philipsburg Manor Upper Mills and a Brief History of Milling*. New York: Sleepy Hollow Restorations, 1977.
- Jefferson, Thomas. Thomas Jefferson to M. de Warville, 15 August 1786. In *Writings*, edited by Merrill D. Peterson, vol. 5. New York: Literary Classics of the U.S., Viking Press, 1984.
- John Milner Associates, Inc. "Exploratory Archaeology in Advance of a Fire Protection Sprinkler System for the Mill at Anselma, Chester Springs, Chester County, Pennsylvania," 2003.
- Kuhlmann, Charles B. *The Development of the Flour-Milling Industry in the United States, with Special References to the Industry in Minneapolis*. 1929; repr., Clifton, NJ: Augustus M. Kelly, 1973.
- Larkin, David. *Mill: The History and Future of Naturally Powered Buildings*. New York: Universe, 2000.
- Lemon, James T. *The Best Poor Man's Country*. Baltimore: Johns Hopkins Press, 1972.

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Louis Berger & Associates, Inc. *A Phase I Archaeological Investigation of the Proposed New Facilities for the Mill at Anselma, Chester Springs, Chester County, Pennsylvania.* August 1986.

McCusker, John J., and Russell R. Menard. *The Economy of British America, 1607-1789.* Chapel Hill: University of North Carolina Press for the Institute of Early American History and Culture, 1985.

Proud, Robert. *The History of Pennsylvania in North America.* Philadelphia: Zachariah Poulson, Jr., 1797-98.

Quillman, Stuart H. *History of the Conestoga Turnpike through Chester County, Pennsylvania.* Pottstown, PA: Tursack, 1993.

Stevens, Sylvester K. *Pennsylvania: Titan of Industry.* New York: Lewis Historical, 1948.

Storck, John, and Walter Dorwin Teague. *Flour For Man's Bread: A History of Milling.* Minneapolis: University of Minnesota Press, 1952.

Winsor, Eleanor. "Lightfoot Mill," National Register of Historic Places Registration Form (Chester Springs, PA). Washington, DC: U.S. Department of the Interior, National Park Service, 1973.

Previous documentation on file (NPS):

- Preliminary Determination of Individual Listing (36 CFR 67) has been requested.
- Previously Listed in the National Register. NR#73001616, Listed April 13, 1973
- Previously Determined Eligible by the National Register.
- Designated a National Historic Landmark.
- Recorded by Historic American Buildings Survey: #
- Recorded by Historic American Engineering Record: #

Primary Location of Additional Data:

- State Historic Preservation Office
- Other State Agency
- Federal Agency
- Local Government
- University
- Other (Specify Repository): The Mill at Anselma Preservation and Educational Trust, Inc.

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**10. GEOGRAPHICAL DATA**

Acreage of Property: 13.57 acres

UTM References:	<b>Zone</b>	<b>Easting</b>	<b>Northing</b>
	18	445096	4437168

## Verbal Boundary Description:

Beginning at a point in the roadbed of Conestoga Pike, Pennsylvania State Highway Route 401 (S.R. 0401), said point being the northernmost corner of the subject tract and a southeasterly property corner of Lands N/L of J. Kenneth & Mary Ann Wittle. Thence from said point of beginning through the roadbed of Conestoga Pike the following three (3) courses and distances: (1) South 26 degrees 55 minutes East, 47.72 feet to a point; (2) South 18 degrees 32 minutes East, 456.94 feet to a point; (3) South 28 degrees 14 minutes East, 131.86 feet to a point at the corner of Lands N/L of Eugene Yeager; thence along same the following three (3) courses and distances: (1) South 65 degrees 41 minutes 40 seconds West, 266.54 feet to an iron pin; (2) South 3 degrees 43 minutes 8 seconds West, 67.13 feet to an iron pin; (3) South 22 degrees 50 minutes East, 204.27 feet to a point on lands N/L of Melvin & Barbara G. Seiple; thence along Lands N/L of Melvin & Barbara G. Seiple and Lands N/L of Mabel S. White, along a line curving to the left having a Radius of 8594.42 feet, the Arc Distance of 165.35 feet; thence continuing along said Lands N/L of Mabel S. White, the following four (4) courses and distances: (1) along a line curving to the left having a Radius of 8594.42 feet, the Arc Distance of 203.94 feet, a Chord Bearing of South 77 degrees 40 minutes 11 seconds West, 203.94 feet to an iron pin; (2) South 70 degrees 1 minute 46 seconds East, 157.94 feet to a point; (3) South 22 degrees 14 minutes 48 seconds East, 88.48 feet to a point; (4) South 4 degrees 29 minutes 11 seconds West, 364.08 feet to an iron pin; thence along Lands N/L of Mabel S. White and Elmer H. White, Jr., North 89 degrees 30 minutes 49 seconds West, 394.29 feet to an iron pin; thence along Lands N/L of Nicholas V. & Rita Piccone in part and Lands of J. Kenneth & Mary Ann Wittle, North 12 degrees 2 minutes 30 seconds East, 950.79 feet to an iron pin; thence along Lands N/L of J. Kenneth and Mary Ann Wittle, the three (3) following courses and distances: (1) North 6 degrees 27 minutes East, 430.69 feet to a point; (2) North 67 degrees 46 minutes East, 86.58 feet to a point. (3) North 54 degrees 7 minutes East, 307.17 feet to point in Conestoga Pike being said point of beginning.

## Boundary Justification:

The boundary encompasses the historic mill and associated resources. The Landmark boundary is larger than the ca. 5 acres listed in the National Register of Historic Places in 1973. The boundary encompasses the historic mill and includes historic buildings and structures directly associated with the operation of the mill. It also includes the mill tract of Oliver E. Collins, the last miller to own and operate the mill machinery before the Lightfoot Mill at Anselma was purchased by the French and Pickering Creeks Conservation Trust, Inc. The abandoned store, depot, and warehouse building erected nearby in the 1870s to coincide with the beginning of rail service in 1872 is not included. While considered locally significant, it is not included within the National Historic Landmark boundaries because it does not relate directly to the operation of the mill and did not exist within the mill's period of significance.

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**11. FORM PREPARED BY**

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David H. Frens / Principal, Frens and Frens, LLC, Restoration Architects

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Date: 12 September 2003

Edited by: John H. Sprinkle, Jr., Ph.D.  
National Park Service  
National Historic Landmarks Program  
1201 "Eye" St. NW, 8<sup>th</sup> Fl.  
Washington, DC 20005

Telephone: (202) 354-2211

DESIGNATED A NATIONAL HISTORIC LANDMARK  
April 5, 2005

# LIGHTFOOT MILL

# FIGURES

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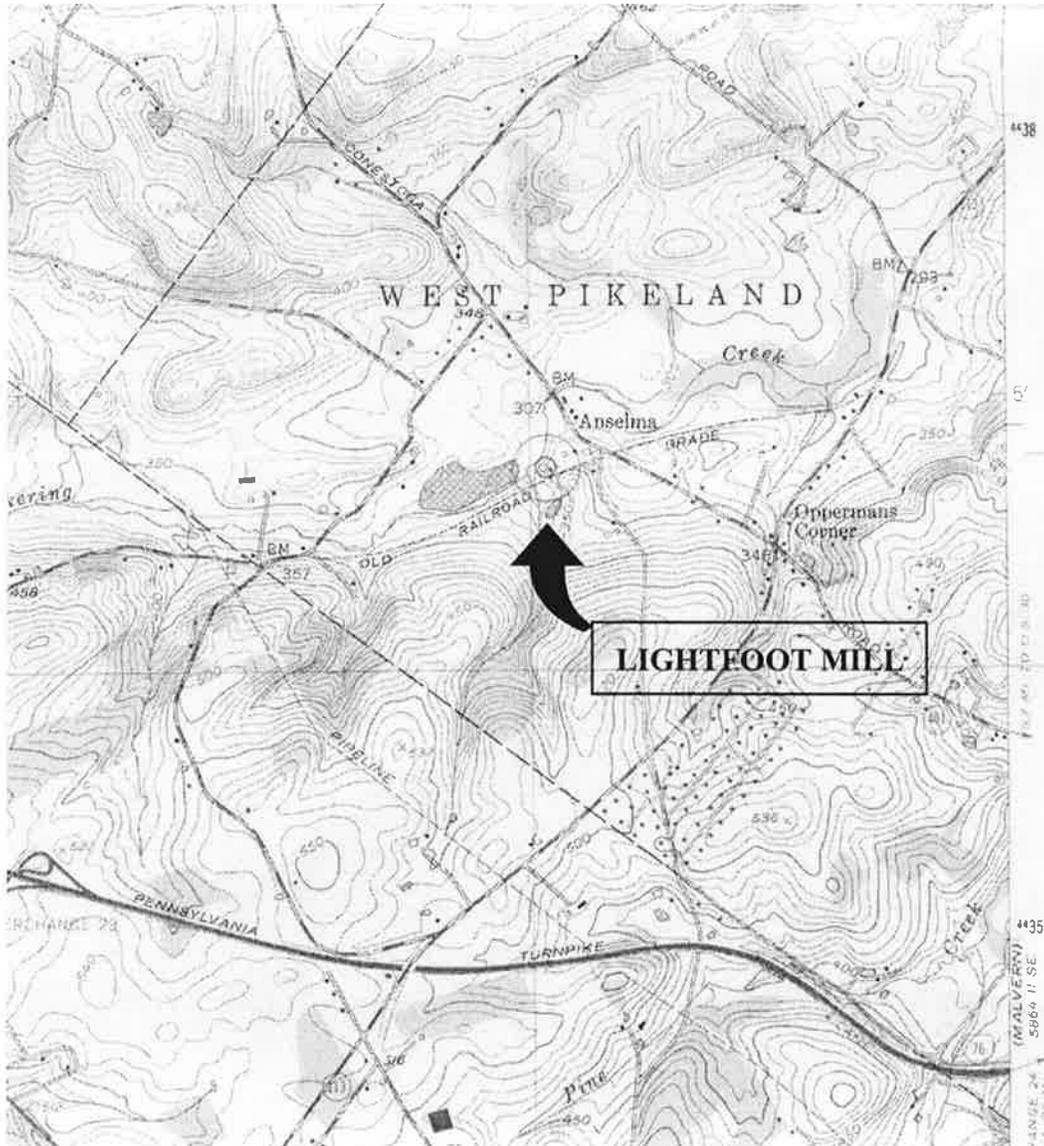
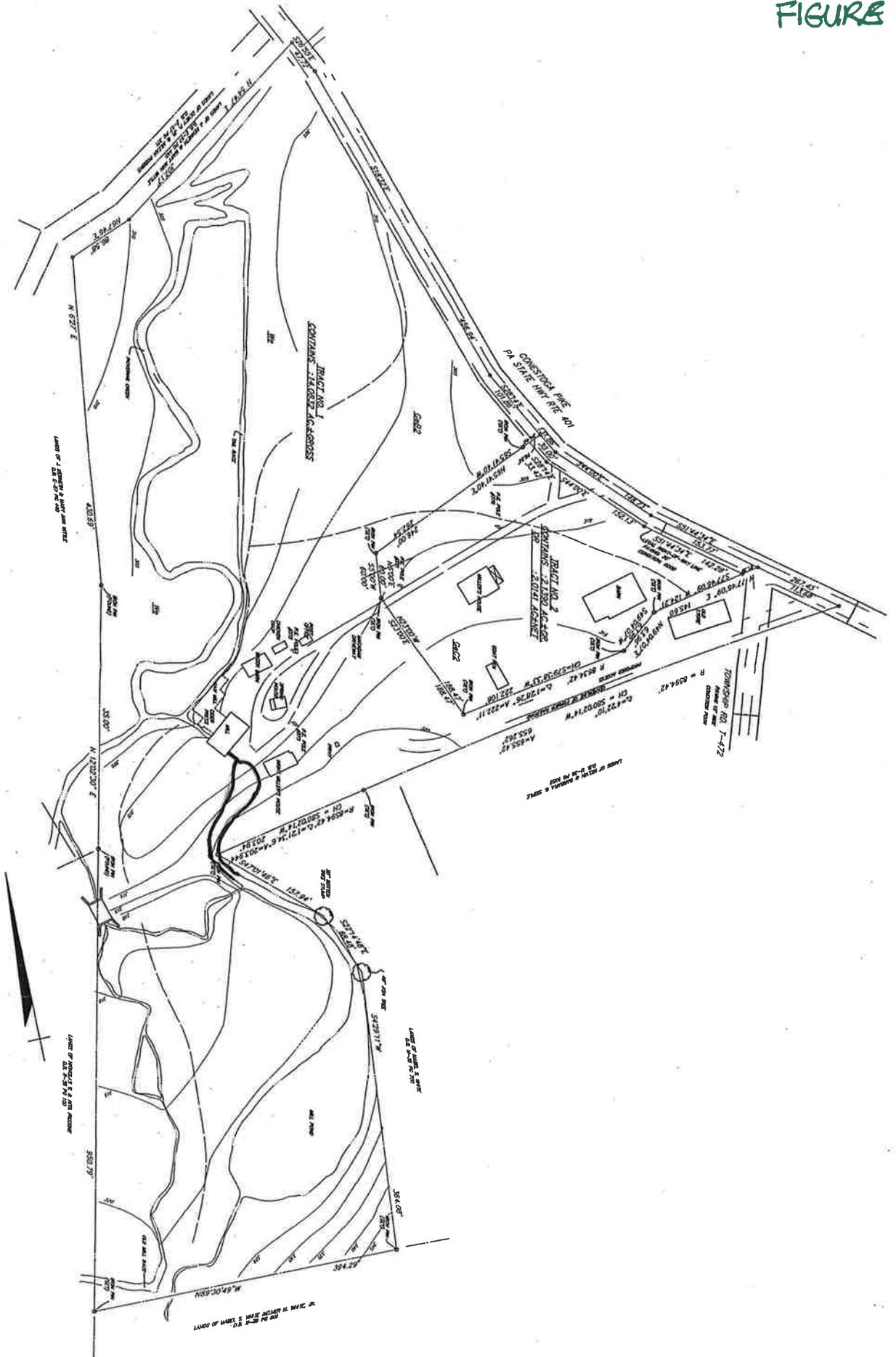


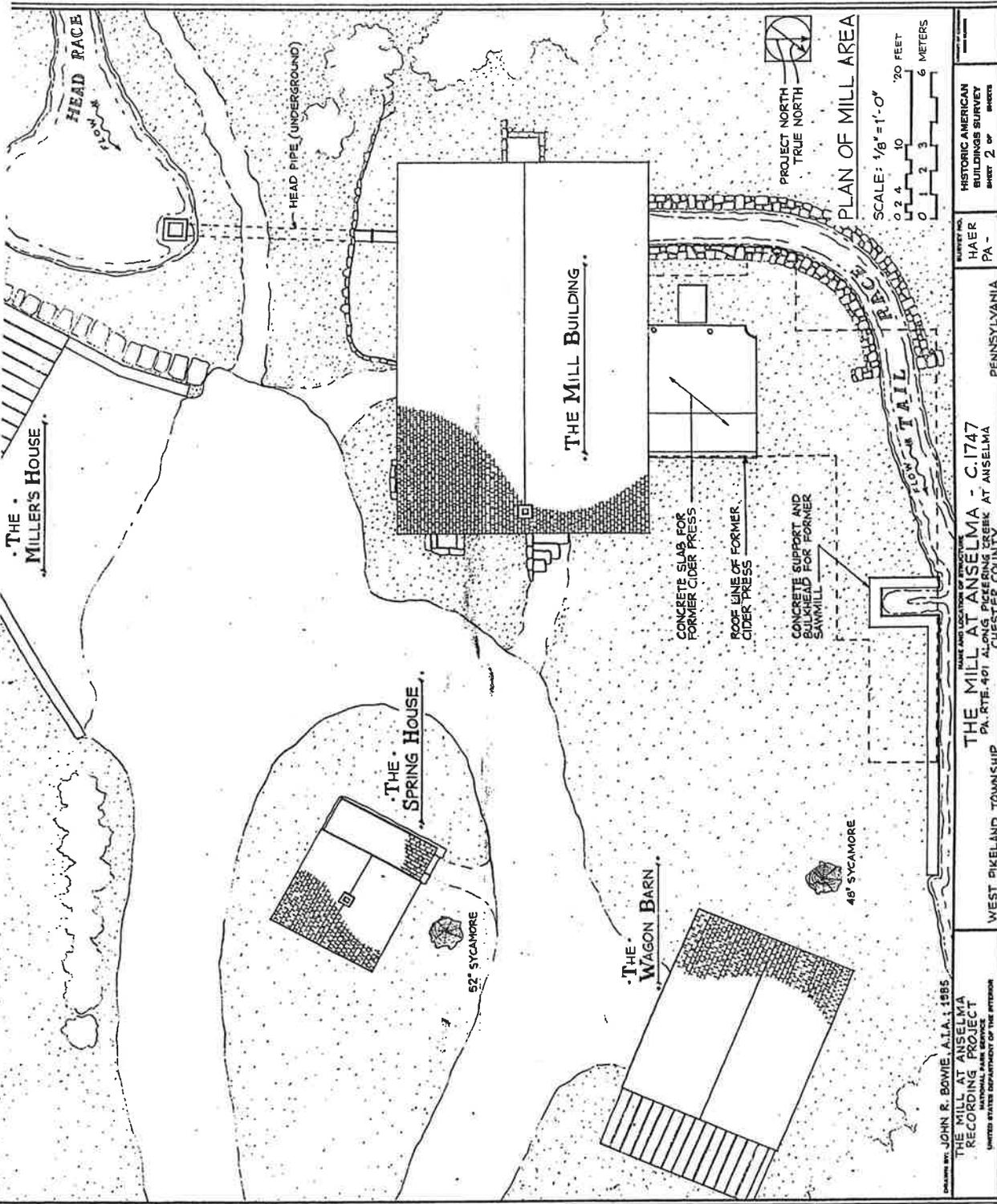
Figure 1. Lightfoot Mill, Chester Springs, PA. Location on USGS Topographic Map.



2

<p>REVISIONS:</p> <p>DATE: 5/20/01</p> <p>PROJ. NO.: 2000A.00</p> <p>SCALE: 1" = 60'</p>	<p><i>SITE PLAN</i></p>	<p>THE MILL AT ANSELMA          THE MILL AT ANSELMA PRESERVATION AND          EDUCATIONAL TRUST, INC.          WEST PIKELAND TOWNSHIP          CHESTER COUNTY, PA</p>	<p><b>F&amp;F</b></p> <p>FRENS AND FRENS, L.L.C.          RESTORATION ARCHITECTS          120 SOUTH CHURCH STREET          WEST CHESTER, PENNSYLVANIA 19382</p>
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FIGURE 3



DESIGNED BY: JOHN R. BOWIE, A.I.A., 1985  
 THE MILL AT ANSELMA  
 RECORDING PROJECT  
 NATIONAL PARK SERVICE  
 UNITED STATES DEPARTMENT OF THE INTERIOR

DATE OF SURVEY: 1977  
 THE MILL AT ANSELMA - C.1747  
 WEST PIKELAND TOWNSHIP  
 PA. RTE. 401  
 CHESTER COUNTY, PENNSYLVANIA

SURVEY NO. HAER PA -  
 HISTORIC AMERICAN BUILDINGS SURVEY SHEET 2 OF 2

IF REPRODUCED, PLEASE CREDIT: HISTORIC AMERICAN BUILDINGS SURVEY, NATIONAL PARK SERVICE, NAME OF DELINEATOR, DATE OF THE DRAWING

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Figure 4. Lightfoot Mill, Chester Springs, PA, 2003. South and East sides showing iron pipe that serves as the headrace.

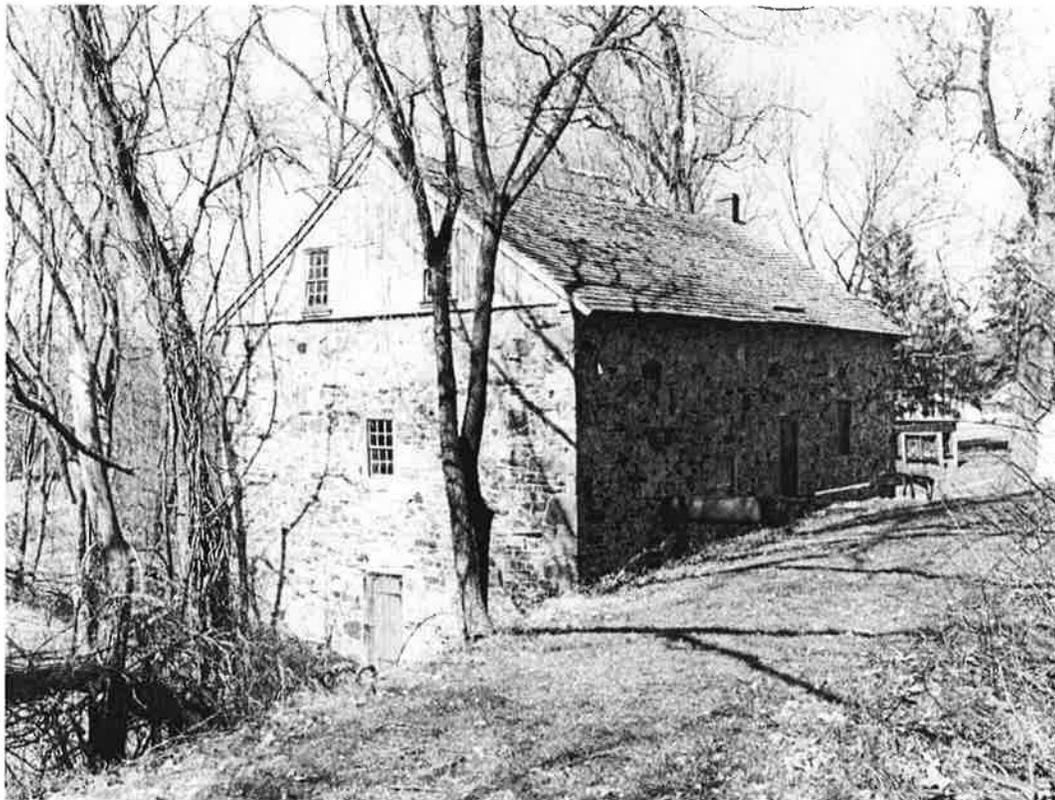


Figure 5. Lightfoot Mill, Chester Springs, PA, 2002. West and South sides.

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**FIGURES**

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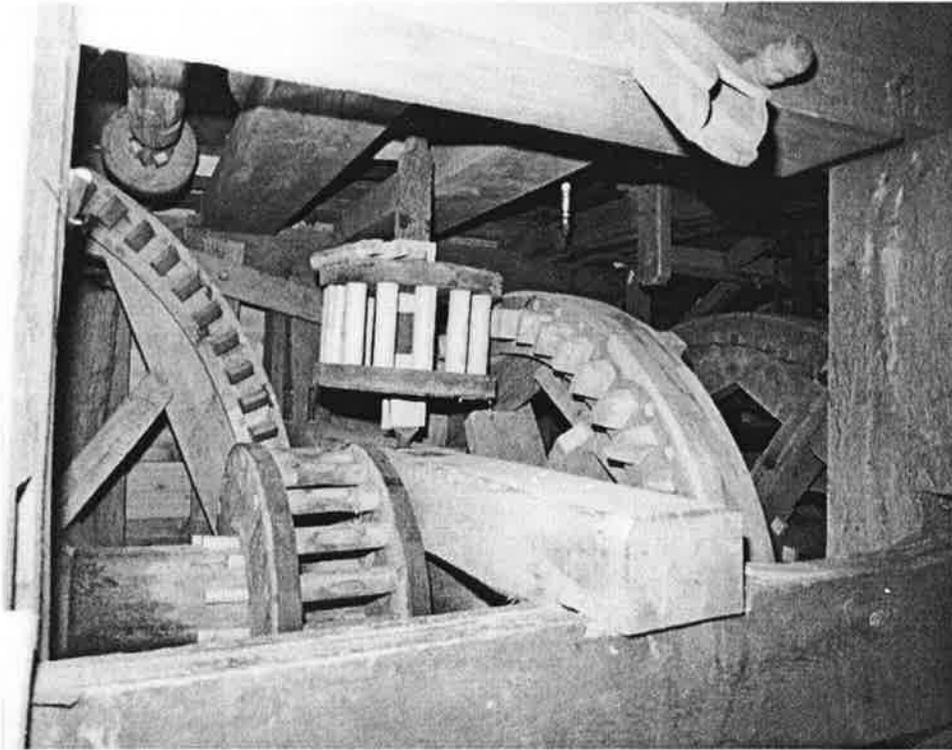


Figure 6. Lightfoot Mill, Chester Springs, PA. View of Drive Train. Gears (L to R), Bull Wheel, Wallower, Lantern, and Crown, 2003.

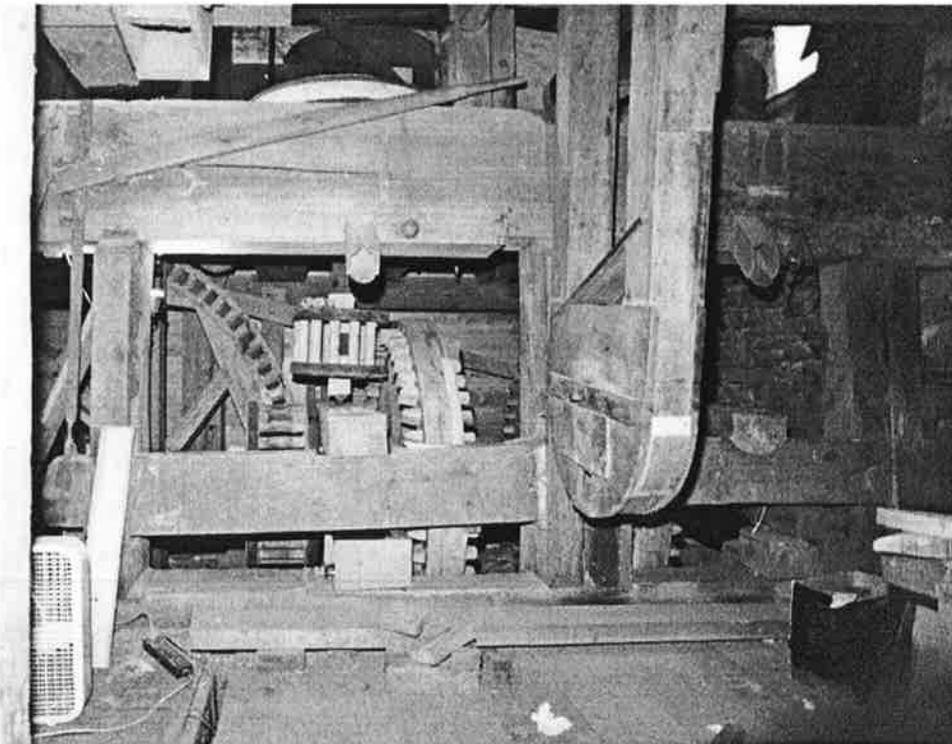


Figure 7. Lightfoot Mill, Chester Springs, PA. General View of the Drive Train, 2003.

**LIGHTFOOT MILL**

**FIGURES**

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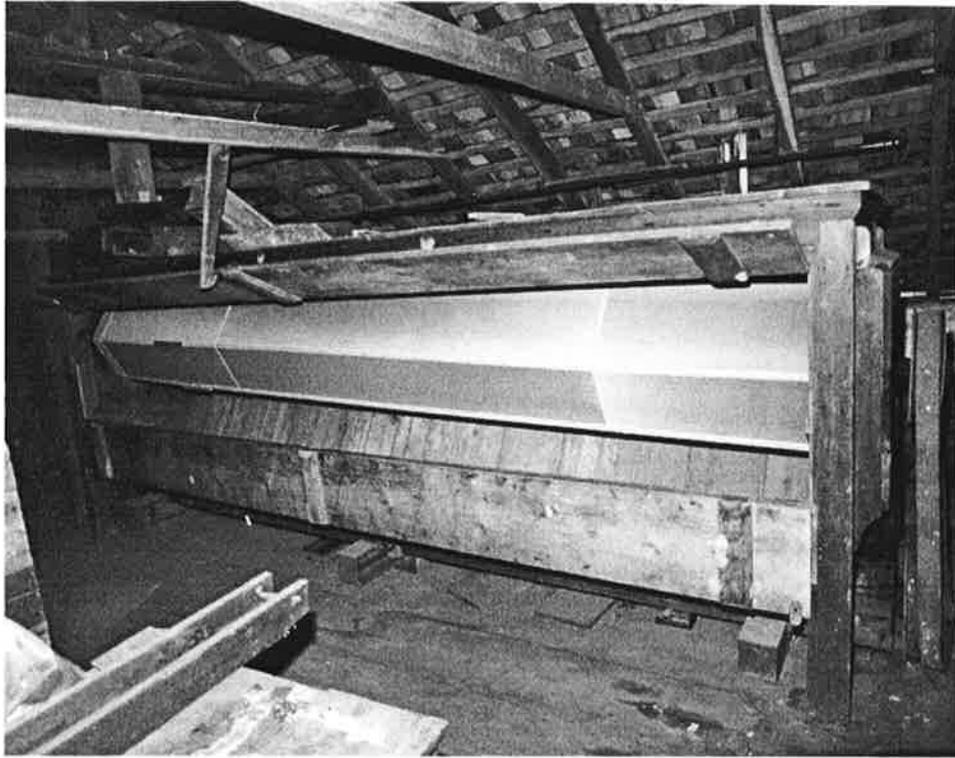


Figure 8. Lightfoot Mill, Chester Springs, PA, 2003. Bolter.

**LIGHTFOOT MILL**

**FIGURES**

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Figure 9. Lightfoot Mill, Chester Springs, PA, Restored Fitz Waterwheel, 2003.

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Figure 12. Lightfoot Mill, Chester Springs, PA. ca. 1973. North and East sides. Notice cider press (now demolished) appended to north wall. Miller's house is visible to the right.



Figure 13. Lightfoot Mill, Chester Springs, PA., ca. 1973. South and East sides. Cider Press and Saw Mill (now demolished) on right.

**LIGHTFOOT MILL**

**FIGURES**

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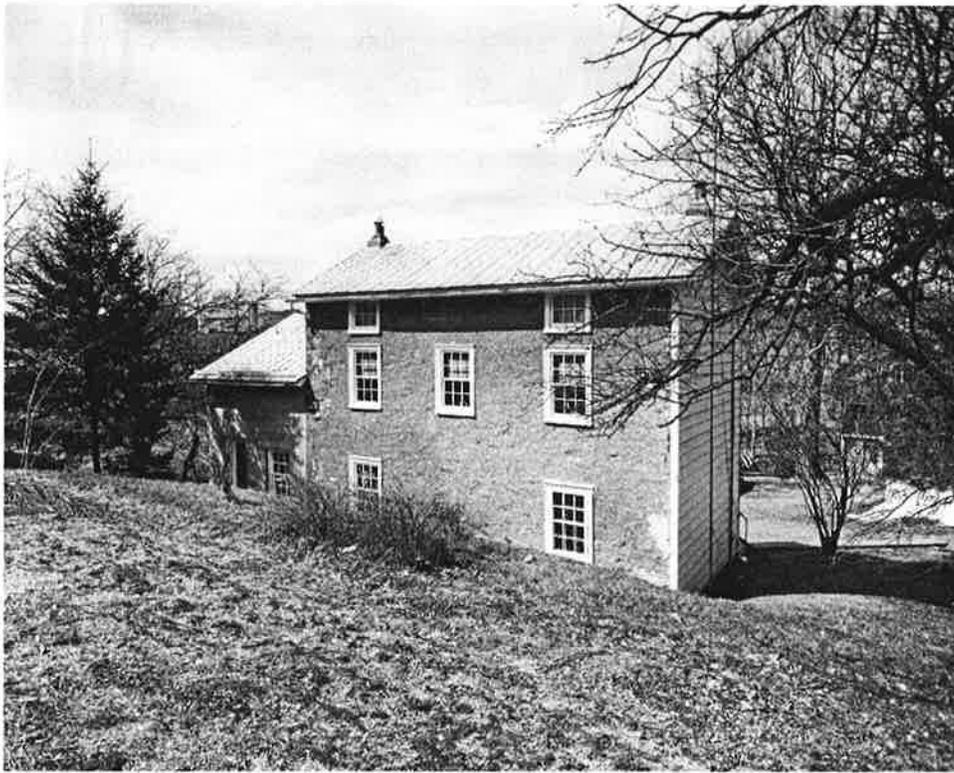


Figure 14. Lightfoot Mill, Chester Springs, PA, ca. 1973. Miller's House.

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**FIGURES**

National Register of Historic Places Registration Form

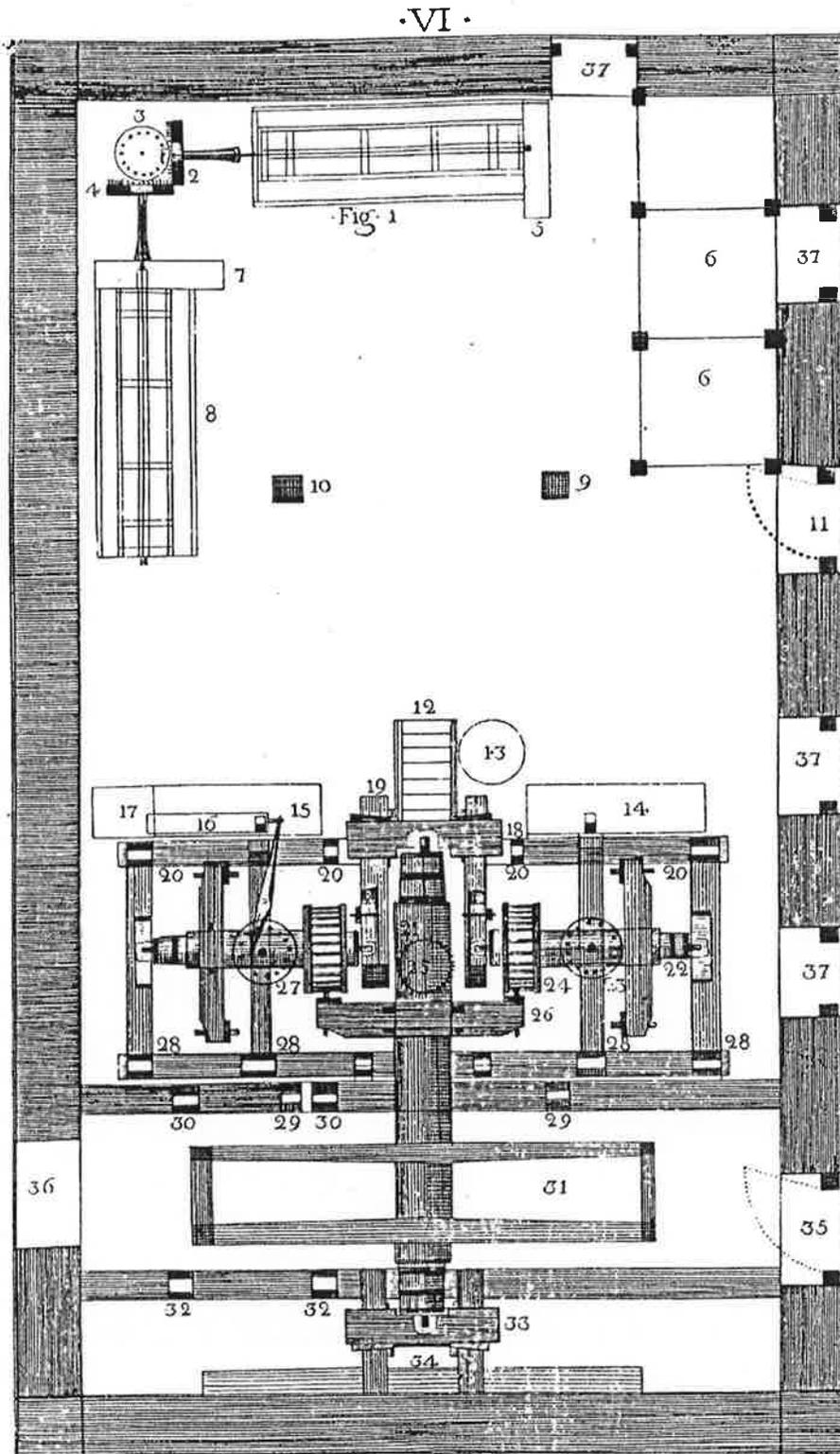
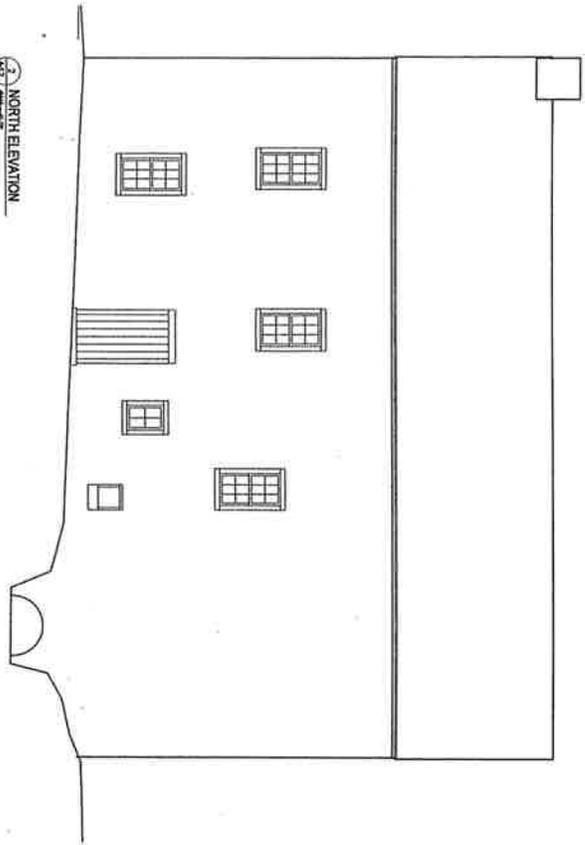
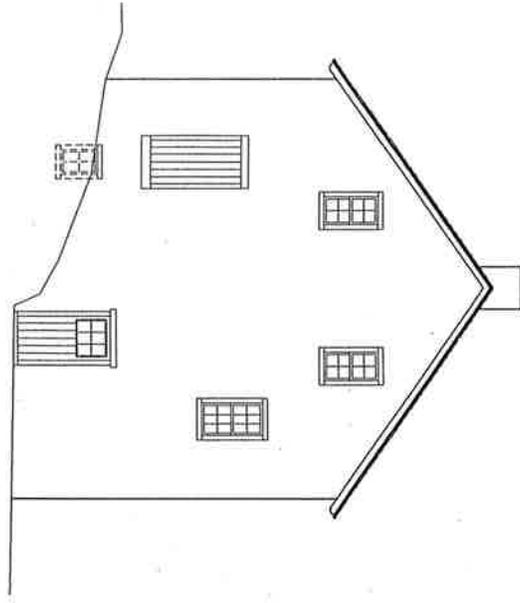


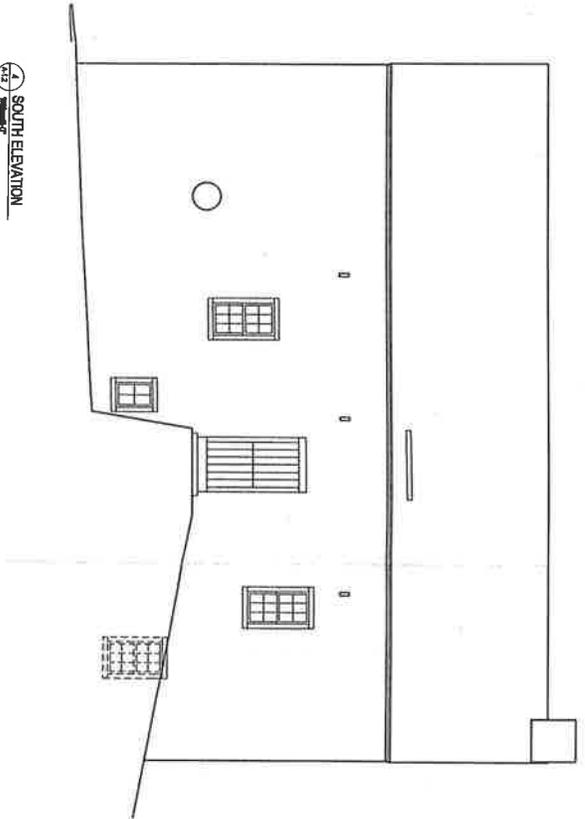
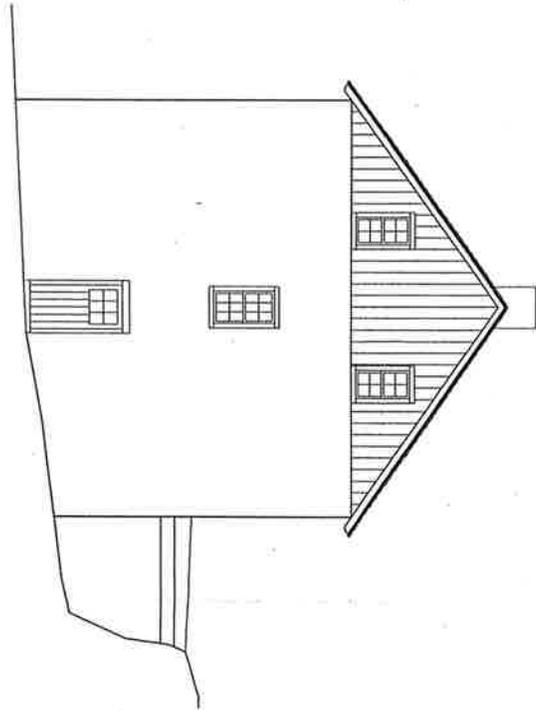
Figure 16. Thomas Ellicot's plan of an "old fashioned" grist-mill, in Oliver Evan, *The Young Mill-Wright and Miller's Guide*.



1 EAST ELEVATION



2 WEST ELEVATION



3 SOUTH ELEVATION

A-1.2

ELEVATIONS

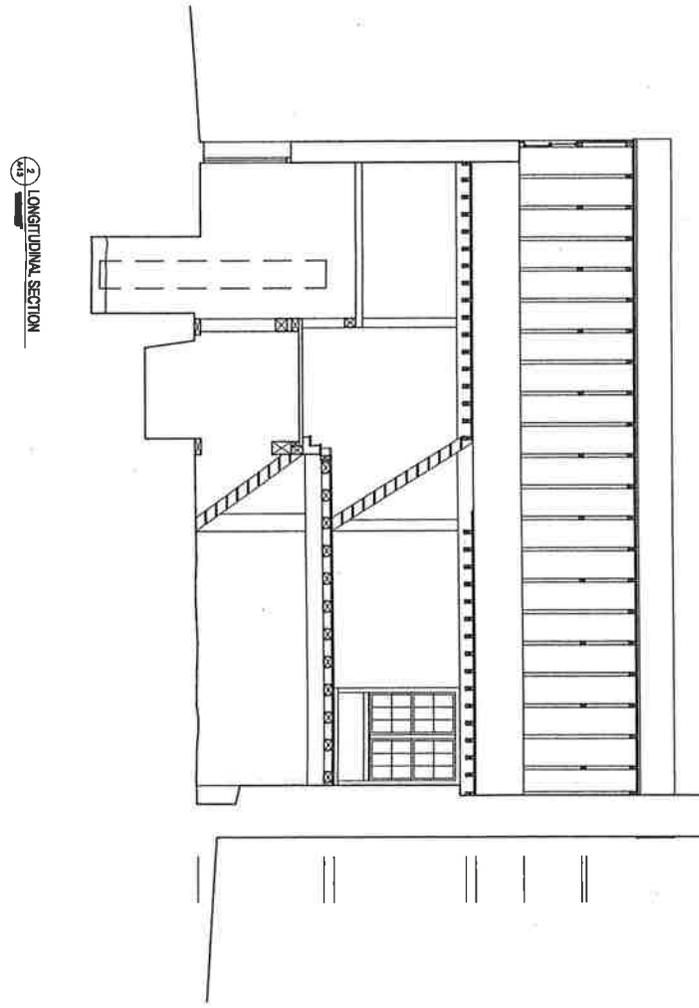
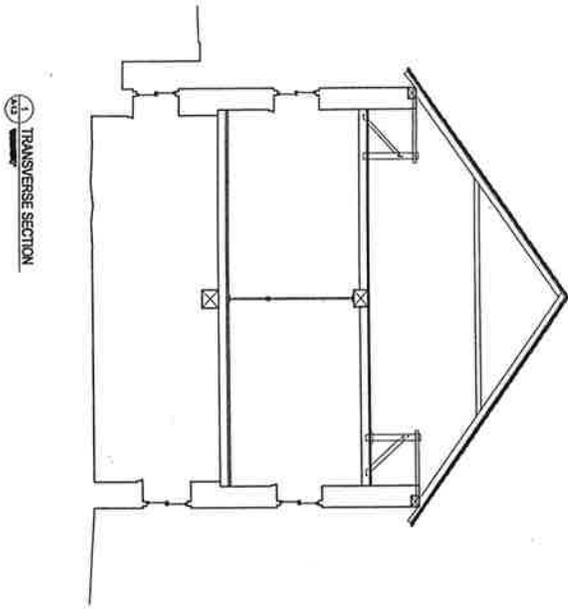
EXISTING CONDITIONS OF THE  
MILL AT ANSELMA  
THE MILL AT ANSELMA PRESERVATION AND  
EDUCATIONAL TRUST, INC.  
WEST PIKELAND TOWNSHIP  
CHESTER COUNTY, PA



FRENS AND FRENS, L.L.C.  
RESTORATION ARCHITECTS  
120 SOUTH CHURCH STREET  
WEST CHESTER, PENNSYLVANIA 19382

DATE: FEB 2002  
PROJ. NO. 01033.00  
SCALE: AS NOTED  
REVISIONS:

FIGURE 18



SECTIONS

EXISTING CONDITIONS OF THE  
MILL AT ANSELMA  
THE MILL AT ANSELMA PRESERVATION AND  
EDUCATIONAL TRUST, INC.  
WEST PIKELAND TOWNSHIP  
CHESTER COUNTY, PA

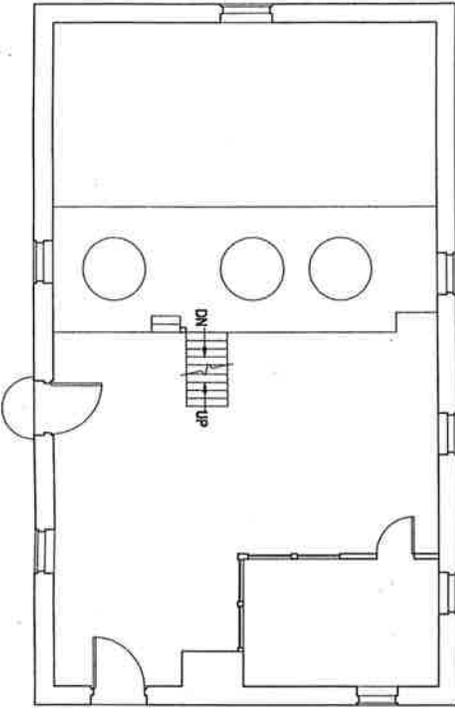


FRENS AND FRENS, L.L.C.  
RESTORATION ARCHITECTS  
120 SOUTH CHURCH STREET  
WEST CHESTER, PENNSYLVANIA 19382

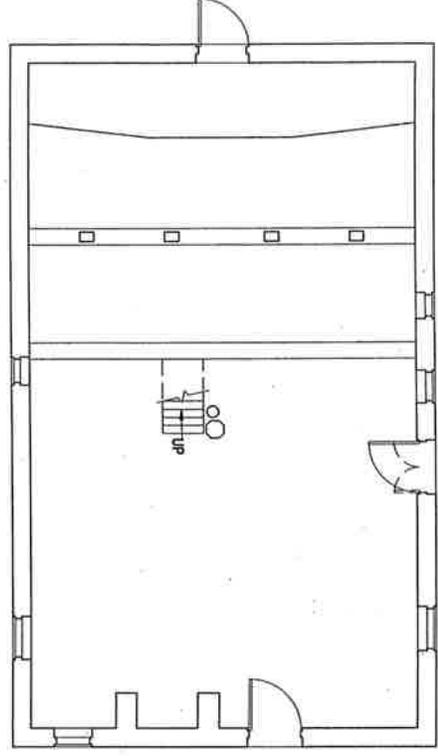
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REVISIONS

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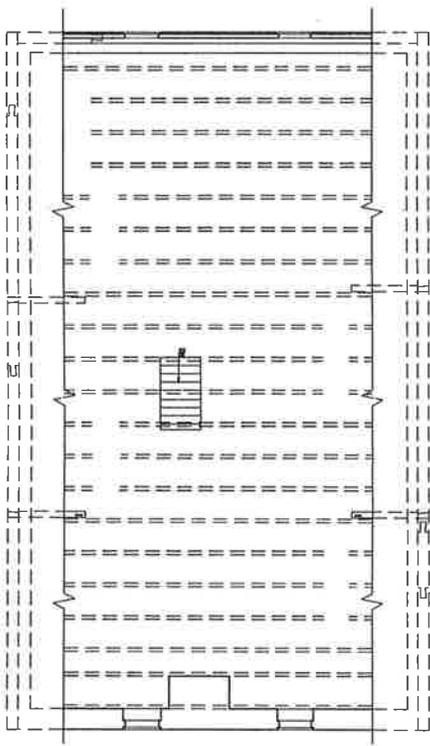
1 FIRST FLOOR



2 LOWER LEVEL



3 ATTIC LEVEL



A-1.1

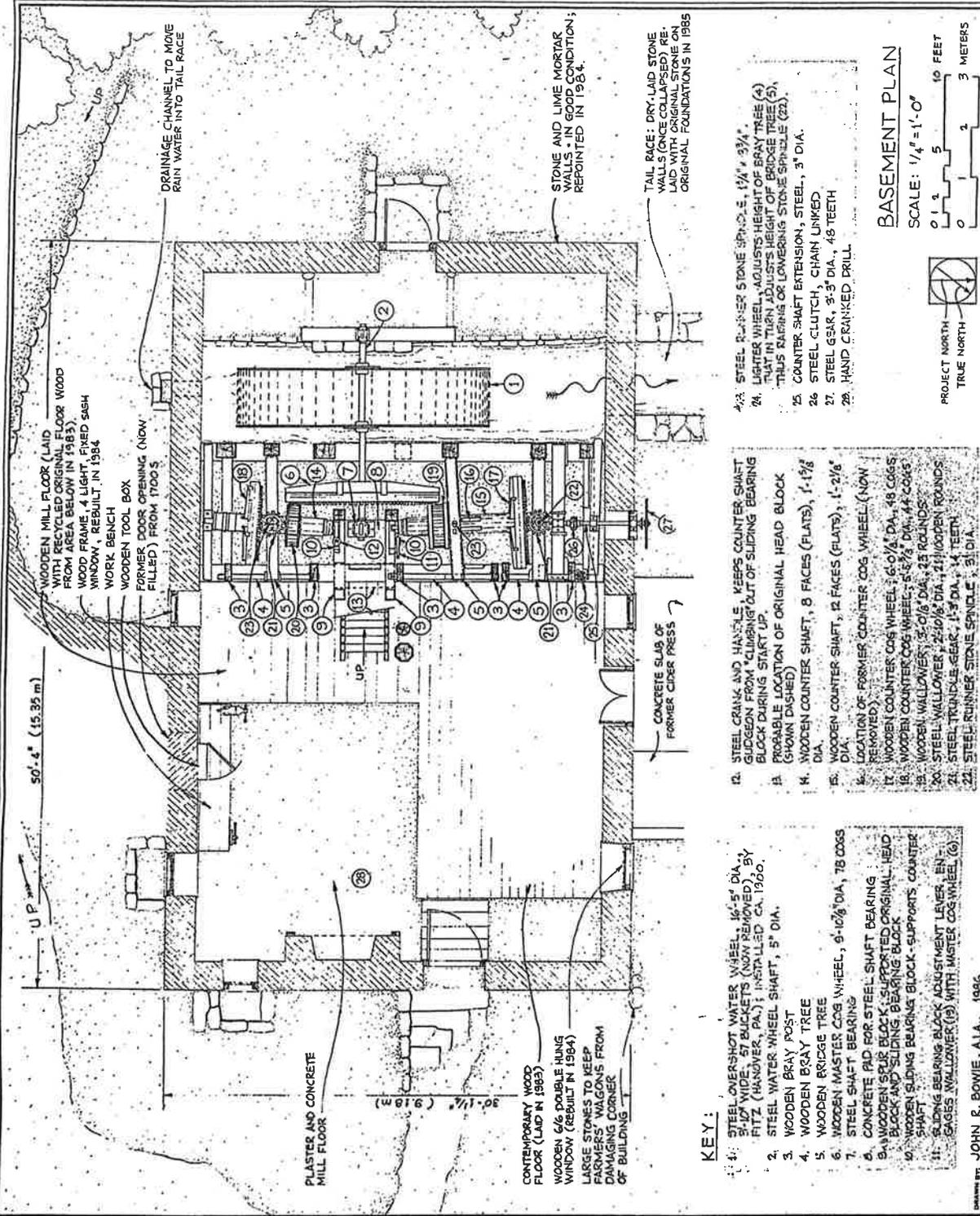
DATE: FEB 2002  
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 SCALE: AS NOTED  
 REVISIONS:

FLOOR PLANS

EXISTING CONDITIONS OF THE  
 MILL AT ANSELMA  
 THE MILL AT ANSELMA PRESERVATION AND  
 EDUCATIONAL TRUST, INC.  
 WEST PIKELAND TOWNSHIP  
 CHESTER COUNTY, PA



FRENS AND FRENS, L.L.C.  
 RESTORATION ARCHITECTS  
 120 SOUTH CHURCH STREET  
 WEST CHESTER, PENNSYLVANIA 19380



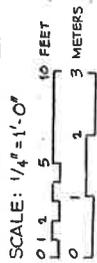
KEY:

- 1. STEEL OVERSHOT WATER WHEEL, 16'-5" DIA., 21-1/2' WIDE, 57 BUCKETS (NOW REMOVED), BY FITZ (HANGOVER, PA.) INSTALLED CA. 1900.
- 2. STEEL WATER WHEEL SHAFT, 5" DIA.
- 3. WOODEN BRAY POST
- 4. WOODEN BRIDGE TREE
- 5. WOODEN MASTER COG WHEEL, 8-10 1/2" DIA., 78 COGS
- 6. STEEL SHAFT BEARING
- 7. CONCRETE PAD FOR STEEL SHAFT BEARING
- 8. WOODEN SQUAR BLACK SUPPORTED ORIGINAL HEAD BLOCK AND SLIDING BEARING BLOCK - SUPPORTS COUNTER SHAFT
- 9. WOODEN SLIDING BEARING BLOCK - SUPPORTS COUNTER SHAFT
- 10. SLIDING BEARING BLOCK ADJUSTMENT LEVER, EN- GAGES WALLOWER (8) WITH MASTER COG WHEEL (5)

- 12. STEEL CRANK AND HANDLE, KEEPS COUNTER SHAFT GLIDGON FROM "CLIMBING" OUT OF SLIDING BEARING BLOCK DURING START UP.
- 13. PROBABLE LOCATION OF ORIGINAL HEAD BLOCK (SHOWN DASHED)
- 14. WOODEN COUNTER SHAFT, 8 FACES (FLATS), 1-1 1/8" DIA.
- 15. WOODEN COUNTER SHAFT, 12 FACES (FLATS), 1-2 1/8" DIA.
- 16. LOCATION OF FORMER COUNTER COG WHEEL (NOW REMOVED)
- 17. WOODEN COUNTER COG WHEEL, 6-0 1/2" DIA., 48 COGS
- 18. WOODEN COUNTER COG WHEEL, 5-5 1/2" DIA., 44 COGS
- 19. WOODEN WALLOWER, 3-0 1/8" DIA., 23 ROUNDS
- 20. STEEL WALLOWER, 2-10 1/8" DIA., 21 WOODEN ROUNDS
- 21. STEEL TRIANGLE GEAR, 1-5" DIA., 14 TEETH
- 22. STEEL RUNNER STONE SPINDLE, 3" DIA.

- 23. STEEL RUNNER STONE SPINDLE, 1 1/4" x 3 1/4"
- 24. LIGHTER WHEEL, ADJUSTS HEIGHT OF BRAY TREE (A) THAT IN TURN ADJUSTS HEIGHT OF BRIDGE TREE (5), THUS RAISING OR LOWERING STONE SPINDLE (22).
- 25. COUNTER SHAFT EXTENSION, STEEL, 3" DIA.
- 26. STEEL CLUTCH, CHAIN LINKED
- 27. STEEL GEAR, 3'-3" DIA., 48 TEETH
- 28. HAND CRANKED DRILL

BASEMENT PLAN



DRAWN BY: JOHN R. BOWIE, A.I.A., 1986

THE MILL AT ANSELMA RECORDING PROJECT NATIONAL PARK SERVICE UNITED STATES DEPARTMENT OF THE INTERIOR

WEST PIKELAND TOWNSHIP

THE MILL AT ANSELMA - C.1747 PA. RTE. 401 ANSELMA CHESTER COUNTY

PENNSYLVANIA PA -

HISTORIC AMERICAN BUILDINGS SURVEY SHEET 3 OF 3

**LEGEND & KEY:**

1. CENTER-SHAFT EXTENSION SUPPORT (STRAIGHT SAWN)
2. LOWER SILL BEAM (CIRCULAR SAWN)
3. STRAIT (CIRCULAR SAWN)
4. STRAIT (CIRCULAR SAWN)
5. BEAM FOR COUNTER-SHAFT SUPPORT (CIRCULAR SAWN)
6. CENTER-SHAFT SUPPORT BEAM (STRAIGHT SAWN)
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100. BRIDGE TRUSS (STRAIGHT SAWN)

**CRITICAL MEMBER THICKNESSES:**

1. - 1'0"	7. - 1'0 1/2"
2. - 1'0"	8. - 1'0 1/2"
3. - 1'0"	9. - 1'0 1/2"
4. - 1'0"	10. - 1'0 1/2"
5. - 1'0"	11. - 1'0 1/2"
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33. - 1'0"	39. - 1'0 1/2"
34. - 1'0"	40. - 1'0 1/2"
35. - 1'0"	41. - 1'0 1/2"
36. - 1'0"	42. - 1'0 1/2"
37. - 1'0"	43. - 1'0 1/2"
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39. - 1'0"	45. - 1'0 1/2"
40. - 1'0"	46. - 1'0 1/2"
41. - 1'0"	47. - 1'0 1/2"
42. - 1'0"	48. - 1'0 1/2"
43. - 1'0"	49. - 1'0 1/2"
44. - 1'0"	50. - 1'0 1/2"
45. - 1'0"	51. - 1'0 1/2"
46. - 1'0"	52. - 1'0 1/2"
47. - 1'0"	53. - 1'0 1/2"
48. - 1'0"	54. - 1'0 1/2"
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51. - 1'0"	57. - 1'0 1/2"
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66. - 1'0"	72. - 1'0 1/2"
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68. - 1'0"	74. - 1'0 1/2"
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70. - 1'0"	76. - 1'0 1/2"
71. - 1'0"	77. - 1'0 1/2"
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82. - 1'0"	88. - 1'0 1/2"
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93. - 1'0"	99. - 1'0 1/2"
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SCALE: 1" = 1'-0"  
 0 1 2 3 4  
 FEET (INCHES OTHERWISE NOTED)

DETAILS OF:  
**THE HURST FRAME**  
 GRAPHIC DOCUMENTATION  
 OF THE  
**COLLINS MILL**  
 AT ANSELMA -  
 P. A. R. T. E. 401 - THE CONESTOGA PIZ  
 W. PHELAMP TWP., CHESTER CO., PENNA.  
 JOHN R. BOWIE, A.L.A., ARCHT.  
 107 N. 3RD ST., PHILADELPHIA, PA.  
 NOVEMBER 12, 1964

