

BENJAMIN RICE MILL HISTORIC CONTEXT REPORT
SHA PROJECT NO. FR539B51
REPLACEMENT OF SHA BRIDGE NO. 1009100
MD 464 OVER CATOCTIN CREEK
FREDERICK COUNTY, MARYLAND



MARYLAND STATE HIGHWAY ADMINISTRATION
PROJECT PLANNING DIVISION
ENVIRONMENTAL EVALUATION SECTION
707 NORTH CALVERT STREET
BALTIMORE, MD 21202

MARCH 2012

**BENJAMIN RICE MILL HISTORIC CONTEXT REPORT
SHA PROJECT No. FR539B51
REPLACEMENT OF SHA BRIDGE No. 1009100
MD 464 OVER CATOCTIN CREEK**

JEFFERSON,
FREDERICK COUNTY, MARYLAND

PREPARED FOR



**MARYLAND STATE HIGHWAY ADMINISTRATION
PROJECT PLANNING DIVISION
ENVIRONMENTAL EVALUATION SECTION
707 NORTH CALVERT STREET
BALTIMORE, MD 21202**

PREPARED BY



**MARYLAND STATE HIGHWAY ADMINISTRATION
241 EAST FOURTH STREET, SUITE 100
FREDERICK, MARYLAND 20701**

AND

EHT TRACERIES INC
=====

**EHT TRACERIES, INC.
1121 FIFTH STREET, N.W.
WASHINGTON, D.C. 20001**

LAURA V. TRIESCHMANN, PRINCIPAL
KATE RITSON, ARCHITECTURAL HISTORIAN
JOHN LIEBERTZ, HISTORIAN

EXECUTIVE SUMMARY

This *Benjamin Rice Mill Historic Context Report* was prepared for the Maryland State Highway Administration (SHA) by EHT Traceries, Inc., a subcontractor to R. Christopher Goodwin & Associates, Inc. It was produced in accordance with SHA Project No. FR539B21: MD 464 over Catoctin Creek that enabled the replacement of Bridge No. 1009100, an historic pony truss bridge constructed in 1934. The bridge passed over and was attached to components of the historic Benjamin Rice Mill's mill race, and parts of the mill race structure were demolished along with the bridge. As a result of this work, SHA worked with the Maryland Historical Trust (MHT), to develop a Memorandum of Agreement (MOA) that required the preparation of an historic Context Report for the mill property.

The purpose of this report is to present an historic context for the Benjamin Rice Mill specifically and also for other grist and flour mills located in rural Frederick County, Maryland. In addition, the report provides information to assist in the assessment of eligibility of such mills for listing in the National Register of Historic Places and can be used to facilitate Section 106 consultation regarding these structures.

The research for this report was conducted in January 2012 through February 2012. The resulting report addresses the findings of the research. The *Benjamin Rice Mill Historic Context Report* contains: an historic overview of grist milling in the United States and the Mid-Atlantic region, a discussion of the evolution of mill technology and architecture, and an historic overview of agriculture and the milling industry in Frederick County. The report also further develops the history of the Benjamin Rice Mill, including documentation of the physical components of the mill, both historically and at present. Finally, the report provides guidance for assessing Frederick County's rural grist mills for National Register eligibility, including methodology for identifying and evaluating such sites for significance and integrity, and an analysis of the Benjamin Rice Mill's eligibility specifically.

The Benjamin Rice Mill is located near the town of Jefferson in Frederick County. Constructed sometime between 1798 and 1812 on the banks of the Catoctin Creek, the water-powered grist and flour mill operated through the 1950s. Beginning with Benjamin Rice, the first owner of the brick mill, the mill property passed through multiple owners in the nineteenth century, before it was sold to William Bell in 1895. The property has remained in the Bell family to the present date. Today, the mill property contains the mill building itself, and associated mill features within the landscape including the head race, mill pond, and wheel well. In addition, an historic single-family dwelling remains extant as well as several agricultural outbuildings. The property has been inventoried in the Maryland Inventory of Historic Places (MIHP F-2-046) and is considered eligible for listing in the National Register of Historic Places, with historic significance and sufficient integrity.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION	1
PROJECT INTRODUCTION	1
PROJECT BACKGROUND	1
PROJECT DESCRIPTION	1
PROJECT LOCATION	2
RESEARCH DESIGN AND METHODOLOGY	2
REPORT ORGANIZATION	2
CHAPTER 2: HISTORICAL OVERVIEW: DEVELOPMENT OF GRIST MILLING IN THE UNITED STATES AND THE MID-ATLANTIC REGION	4
INTRODUCTION	4
EVOLUTION OF MILL TECHNOLOGY	7
MILL ARCHITECTURE	11
MILL ELEMENTS -- DAMS, RACES, WATERWHEELS, AND GRINDSTONES	14
CHAPTER 3: HISTORICAL OVERVIEW: DEVELOPMENT OF AGRICULTURE AND INDUSTRY IN FREDERICK COUNTY, MARYLAND	17
FREDERICK COUNTY: GEOGRAPHY	17
FREDERICK COUNTY: HISTORICAL OVERVIEW	19
COMPARISON OF MILLING OPERATIONS IN JEFFERSON, FREDERICK COUNTY, MARYLAND	25
CHAPTER 4: OVERVIEW OF THE BENJAMIN RICE MILL	28
DESCRIPTION: BENJAMIN RICE MILL PROPERTY	28
MILL FEATURES IN THE APE	34
HISTORICAL OVERVIEW: BENJAMIN RICE MILL	42
CHAPTER 5: APPLICATION OF THE HISTORIC CONTEXT	50
IDENTIFICATION AND EVALUATION OF HISTORIC PROPERTIES	50
IDENTIFICATION OF PROPERTY TYPES IN RURAL FREDERICK COUNTY	54
EXISTING MILLS IN FREDERICK COUNTY	57
EVALUATION OF RURAL GRIST MILL PROPERTIES IN FREDERICK COUNTY	61
BIBLIOGRAPHY	66

LIST OF FIGURES

Figure 1: Frederick County's creeks and streams, such as the Catoctin Creek shown above, provided the necessary power to operate the area's grist mills. View of Catoctin Creek, Frederick, Maryland, 2008.	4
Figure 2: Views of Frederick and Middletown Valley, 1907	5
Figure 3: Section of Charles Varle's 1808 Map of Frederick and Washington Counties, State of Maryland.	6
Figure 4: Oliver Evan's proposed scheme for mill building showing new technologies and building design.	8
Figure 5: Section of an automated grist mill depicting many of Oliver Evan's designs.	10
Figure 6: Michael's Mill, Frederick County, Maryland. The mill shows typical eighteenth-century architecture with its gable roof, three bay width, and doors on each story. The weatherboards siding, however, was atypical for Frederick County.	11
Figure 7: Benjamin Rice Mill, 1991. Two-story brick mill with a coursed rubble stone foundation.	13
Figure 8: Lewis Mill, Frederick County, Maryland. Similar to the Rice Mill, the Lewis Mill is a two-story brick building with a coursed rubble stone foundation.	13
Figure 9: Typical mill site plan.	14
Figure 10: Basic vertical waterwheel types.	15
Figure 11: Pierce Mill, Washington, D.C., water turbine.	16
Figure 12: Upper and lower mill stone.	16
Figure 13: Issac Bond's 1858 Map of Frederick County, Maryland.	18
Figure 14: DJ Lake's 1873 Map of Frederick Maryland. The red arrows point to the Rice Mill, then known as Parker's Mill, and the Baltimore and Ohio Railroad.	21
Figure 15: Two remaining roller mills at Easton Roller Mill, Morganstown, West Virginia, 1974	23
Figure 16: 1850 Milling Operations, United States Census Manufacturers Schedule, Jefferson, Frederick County, Maryland.	25

Figure 17: 1880 Milling Operations, United States Census Manufacturers Schedule, Jefferson, Frederick County, Maryland.	27
Figure 18: Plat for current mill property owned by William Bell's descendents, 2012.	28
Figure 19: Benjamin Rice Mill, looking southeast towards west elevation, 2008.	29
Figure 20: Benjamin Rice Mill, looking west towards east elevation, 2008.	30
Figure 21: Benjamin Rice Mill, looking northwest towards south elevation, 2008.	31
Figure 22: Benjamin Rice Mill, looking southwest towards mill race, 2008.	33
Figure 23: A discarded millstone still remaining at the Benjamin Rice Mill, 2008.	33
Figure 24: Plan and Profile for the Bridge over Catoctin Creek, Contract F168-1-52.	34
Figure 25: SHA Right-of-Way Plat 677, 1933.	35
Figure 26: 1933 Photograph of construction of Bridge No. 1009100 by Hughes C.L.C. Photographers for State Roads Commission.	35
Figure 27: Ruins of pre-1933 Bridge Abutment, 2006.	36
Figure 29: In-stream remains of frame cribbing from no longer extant dam, 2006.	37
Figure 28: Mill-dam ruins, 2006.	37
Figure 30: Remaining underwater frame cribbing from the no longer extant dam, 2008.	37
Figure 31 and 32: 1933 Photograph of construction of Bridge No. 1009100 by Hughes C.L.C. Photographers for State Road Commissioners, showing race gate walls and mill dam and race gate on Pier D, view west, 2008.	38
Figure 33: Mill race remnant looking east from Bridge No. 1009100, 2008.	38
Figure 34: Log dwelling, 2008.	39
Figure 35: Outbuildings A, B, C, D, and E (clockwise), 2008.	40
Figure 36: Aerial photograph, 2008. The yellow line in the head race carrying water from Catoctin Creek to the mill (G) circled in red. The blue line is the tail race that conveys the exhausted water from the mill back to the creek. Two outbuildings (D and E) are in proximity to the mill (G) and the dwelling (F) is to the north. Northeast of the dwelling are outbuildings A, B, and C.	41

Figure 37: Benjamin Rice Mill, 1973.	42
Figure 38: Construction of the 1933 truss bridge with Benjamin Rice mill in background.	43
Figure 39: Araby Mill, 2010.	57
Figure 40: Buckey's Mill, 2009.	57
Figure 41: Buckey's Mill, 2009.	58
Figure 42: Ceresville Mill, 2007.	58
Figure 43: Kinna's Mill, 2007.	59
Figure 44: Lewis Mill, 2008.	59
Figure 45: Michael's Mill, 2007.	60
Figure 46: Sams Creek Mill, 2008.	60

CHAPTER 1: INTRODUCTION

PROJECT INTRODUCTION

The Benjamin Rice Mill, also commonly known as Bell's Mill, is located at 2609 Point of Rocks Road in Jefferson, Frederick County, Maryland. The water-powered grist and flour mill was constructed sometime between 1798 and 1812 and continued to operate through the 1950s. As such, it represents milling history in the Frederick County region, and is an important example of Maryland's rural mill architecture. Therefore, the Benjamin Rice Mill is eligible for listing in the National Register of Historic Places (NRHP) as an early-nineteenth-century mill complex that remained in use through the mid-twentieth century. The purpose of this Benjamin Rice Mill Historic Context Report is to present an historic context for rural grist and flour milling in Frederick County, Maryland, as represented by the Benjamin Rice Mill. The context provides information necessary to evaluate Maryland's rural mills to assess their eligibility for inclusion in the NRHP.

PROJECT BACKGROUND

The *Benjamin Rice Mill Historic Context Report* has been produced in accordance with Maryland State Highway Administration (SHA) Project No. FR539B21: MD 464 over Catoctin Creek that enabled the replacement of Bridge No. 1009100 (Maryland Inventory of Historic Properties No. F-2-36) in Frederick County, Maryland. The structure was a pony truss bridge constructed in 1934. Despite its demolition, the bridge had been determined eligible for listing in the NRHP. SHA defined the Area of Potential Effects (APE) for the proposed bridge replacement to include the standing historic properties and the associated setting that surrounds the highway and the bridge where ground disturbance and/or where visual intrusions occurred.

This assessment identified two historic properties on which the project would have an adverse affect. First, the project resulted in the loss of the pony truss bridge. Second, a portion of the Benjamin Rice Mill complex was impacted by the project. The bridge was attached to, and passed over, components of the Benjamin Rice Mill mill race that were demolished along with the bridge. In consultation with the Maryland Historical Trust (MHT), SHA developed a Memorandum of Agreement (MOA) that stipulated the preparation of an historic context report for the Benjamin Rice Mill. SHA contracted with R. Christopher Goodwin & Associates, Inc., and subcontractor EHT Tracerics, Inc., to complete this project.

The mill structure was initially documented by the Frederick County Planning Department in 1991, and was recorded on Maryland Inventory of Historic Properties (MIHP) form F-2-46. In 2008, as part of Project No. FR539B21, SHA completed an MIHP *Addendum* and Determination of Eligibility (DOE) that identified additional buildings and features associated with the Benjamin Rice Mill, including a dwelling, outbuildings, and associated mill features. The complex was determined eligible for listing in the NRHP under Criteria A, C, and D, and retained sufficient integrity to convey its historic character.

PROJECT DESCRIPTION

This *Benjamin Rice Mill Historic Context Report* provides an historic overview of grist milling nationwide, and more specifically in Frederick County, Maryland, and the Middletown Valley region. It also enhances the existing resource history for the Benjamin Rice Mill. The context identifies the areas of significance and themes, time periods, and geographic areas that pertain to the Benjamin Rice Mill, and discusses how these are relevant to

regional history. The report identifies the resource types and defines the components of a rural mill complex that are related to the context, including buildings, structures, and objects. It specifies physical characteristics that the property should possess, associative qualities that must be evident, and elements of integrity that must be present for inclusion in the NRHP. The occurrence and survival of such property types in the region is discussed. Finally, the report addresses how the Benjamin Rice Mill relates to the defined context, how it embodies the physical characteristics of the property type, and how it displays the necessary elements of integrity.

PROJECT LOCATION

The project area is focused on the Benjamin Rice Mill, located at 2609 Point of Rocks Road (MD 464) about two-and-one-half miles south of the town of Jefferson in Frederick County, Maryland. The mill and its associated features are associated with Frederick County Tax Map 92, Parcel Number 250. The property is located on the east bank of the Catoctin Creek, which flows south through the county and is a tributary of the Potomac River. The property includes the Benjamin Rice Mill itself, a single-family dwelling, five outbuildings, and mill features in the landscape including remaining portions of the mill race, a mill pond, mill dam, and wheel well. The report also generally discusses other mill sites within Frederick County and the Jefferson area. Frederick County is located in western Maryland, where it borders Pennsylvania to its north and Virginia to its southwest. In addition to its incorporated towns, it also includes many unincorporated communities, including Jefferson. Jefferson sits about 8 miles southwest of the county's seat, the City of Frederick. The community owes its growth through the nineteenth century largely to the traffic that passed through Frederick to the nearby railroad town of Brunswick.

RESEARCH DESIGN AND METHODOLOGY

EHT Tracerics, Inc., visited various archives to create an historic context for grist and flour mills in Frederick County, Maryland, and determine the historic significance of the Benjamin Rice Mill. Existing primary and secondary documentation held by the Maryland State Highway Administration was collected and analyzed. This included previous research efforts on Frederick County mills and the Benjamin Rice Mill. Further research was conducted at the Maryland State Archives, including examination of early-nineteenth-century Frederick County Tax Assessment Records and the 1850-1880 United States Manufacturers Schedules. Other repositories visited were the C. Burr Artz Public Library's Maryland Room and the Maryland Historical Trust Library; their collection of secondary sources augmented our existing understanding of agricultural, industrial, manufacturing, and social history of Frederick County. Internet resources include the Archives of Maryland Online, Ancestry.Com, Proquest Historical Newspapers, and general resources regarding mill history. The current owners of the Benjamin Rice Mill denied access to the site for the purposes of on-site research for this report. Therefore, documentation of existing conditions is based on previously documented site visits by the Maryland State Highway Administration.

REPORT ORGANIZATION

Chapter 1 describes the background, purpose, and organization of the report. Chapter 2 introduces the history of grist milling in the United States and the Mid-Atlantic region specifically. It also provides a summary of development of mill technology and architecture from the late eighteenth through the twentieth centuries. Chapter 3 presents an historical overview of grist milling in Frederick County specifically, including development of agriculture and industry in the region, and a discussion of mill architecture in the area. Chapter 4 further develops the history of Benjamin Rice Mill, including a physical description of the mill, and a narrative history. Chapter 5 presents a methodology for identifying and evaluating historic rural mill sites in the Frederick County region,

Benjamin Rice Mill Historic Context Report
SHA Project No. FR539B51, Replacement of SHA Bridge No. 1009100
MD 464 over Catocin Creek, Frederick County, Maryland
EHT Tracerics, Inc., 3
March 2012

including a discussion of significance criteria and integrity assessment, and applies this analysis to the Benjamin Rice Mill.

CHAPTER 2: HISTORICAL OVERVIEW: DEVELOPMENT OF GRIST MILLING IN THE UNITED STATES AND THE MID-ATLANTIC REGION

INTRODUCTION



Figure 1: Frederick County's creeks and streams, such as the Catoctin Creek shown above, provided the necessary power to operate the area's grist mills. View of Catoctin Creek, Frederick, Maryland, 2008 (Courtesy of the State Highway Administration).

Since this nation's earliest years, mills have held an important place in America's landscape. As centers for both industry and community, their visual presence simultaneously evokes a sense of both accomplishment and security. The construction of mill buildings flourished during the country's early years, as the newly founded nation entered a period of marked economic development following its formation in 1789. This economic growth has been attributed to a variety of factors, including a significant population increase, expanding international markets (particularly in the Caribbean and South America), excellent and abundant natural resources, and an entrepreneurial spirit.¹

Grist milling in particular thrived after the Revolutionary War. The grist milling industry was particularly well-suited to exploit the nation's existing resources, with its abundant water power

and vast areas of open land that were easily cultivated to grow cereal grains.² A grist mill is an industrial building defined by its function of processing grain into another form, such as flour, meal, or feed. Its name is derived from the term "grist," which means a batch of grain for grinding. Historically, "grist mill" has been applied to all types of grain processing mills.³ As such, the terms grist mill and flour mill have sometimes been used interchangeably, representing a place where wheat, corn, or other grain were ground into meal or flour.⁴ Depending on a number of factors, including topography, local agriculture, available transportation networks, and nearby marketing opportunities, grist and flour mills ranged from small mills running only one pair of millstones to large, multi-story factories operating multiple millstones.⁵

In the early national era, the United States financed its industrial growth via exports. After cotton, flour was the

1 Robert Lundegard, "Country and City Mills in Early American Flour Manufacture and Export," (2007): 3. <http://spoommidatlantic.org> (accessed February 2, 2012).

2 Lundegard, 3.

3 National Register of Historic Places, Grist Mills in Berks County MPS, Berks County, Pennsylvania, National Register # 64500529.

4 Gabrielle M. Lanier and Bernard L. Herman, *Everyday Architecture of the Mid-Atlantic: Looking at Buildings and Landscapes* (Baltimore, MD: Johns Hopkins University Press, 1997), 246.

5 Lanier, 246.

country's leading industrial export. The flour industry continued to flourish until the late nineteenth century, and for much of that period, it was concentrated in the Mid-Atlantic region, mainly in its large number of rural mills.⁶ The region's land was particularly suited to cereal grain agriculture, and plentiful water power sources were available to power mills for processing. An export industry had begun to grow as early as the mid-eighteenth century, when production of wheat and processed flour surpassed local needs. The region would remain the leading producer of wheat in the nation until 1860, when the industry began to concentrate in the mid-western states.⁷

These early national and regional trends in agriculture and industry were reflected in Frederick County, Maryland. Industrial and social life was centered around the county's grist mills. The development of agriculture, industry, and transportation were closely linked in Frederick County, as they were throughout the region and across the country. Frederick County's, and more specifically Middletown Valley's, industrial economy was built on its agricultural base, with the strength of the area's industries due to its farming capabilities. In fact, one historian stated that "the Valley mills depended entirely upon the local agriculturalist," with wheat, rye barley, oats, corn, and hay noted as its principal crops.⁸

Frederick County's rapid increase in grain cultivation in the late eighteenth century was predictably followed by the construction of a large number of small grist and flour mills.⁹ By 1791, it is estimated that over 80 grist mills had been constructed on the Monocacy River. In 1808, Charles Varle recorded 104 grist mills on his map

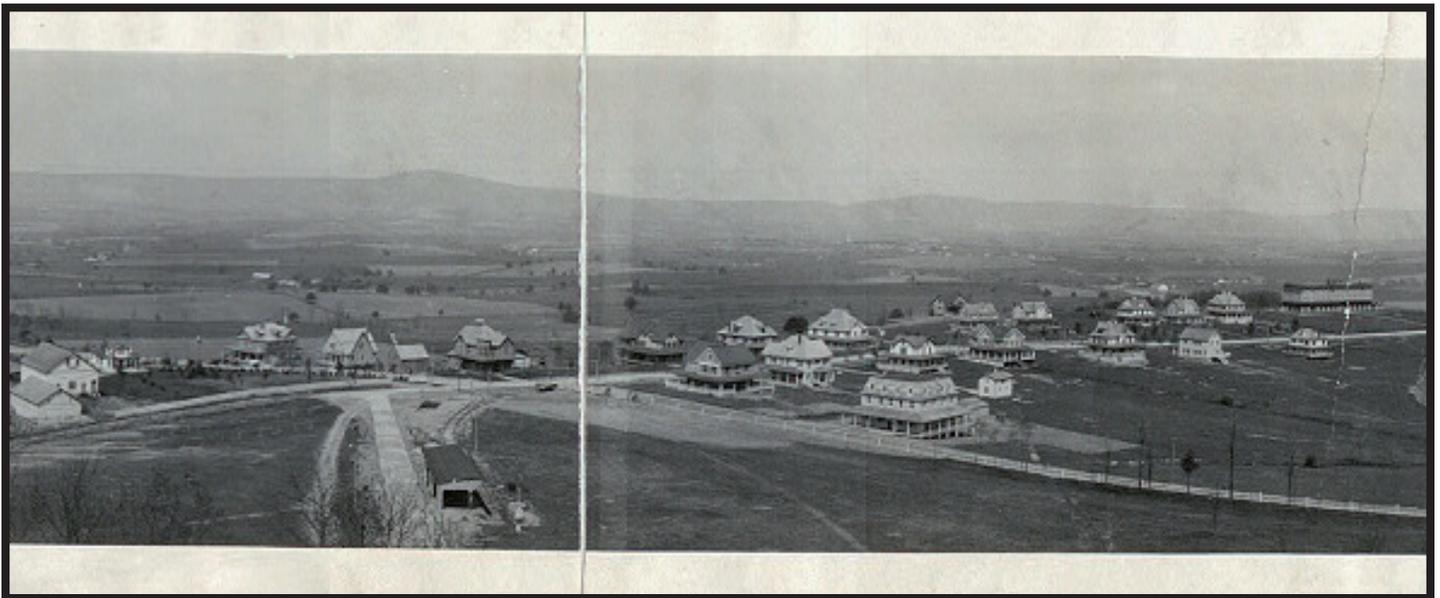


Figure 2: Views of Frederick and Middletown Valley, 1907 (Courtesy of the Library of Congress).

⁶ Lundegard, 15.

⁷ By 1860, Midwestern states between the Ohio and Mississippi Rivers, surpassed Mid-Atlantic wheat production with over 90,000,000 bushels of total U.S. production of 173,000,000 bushels. Lundegard, 14.

⁸ Harry M. Gross, *A Brief History of Middletown Valley, 1849-1890* (unpublished, 1932), 39-42. <http://freepages.genealogy.rootsweb.ancestry.com> (accessed February 2, 2012).

⁹ Harold Moser, "The Grist Mills of Frederick County MD," *The Valley Register*, December 7, 1984, <http://freepages.genealogy.rootsweb.ancestry.com/~marker/GristMill.htm> (accessed February 2, 2012).

of Frederick County (Figure 3). Published in 1880 by the Census Office, the *Statistics of Power and Machinery Employed in Manufactures* wrote that surrounding the Catoctin Creek “are small mills with falls of from 5 to 8 feet, and there are said to be no good sites not used.”¹⁰ Although historians consider it impossible to present an exact number, it has been estimated that about 400 operating mills have existed in Frederick County over the course of its history, with as many as 67 mill sites used at one time along the Catoctin Creek and its tributaries.¹¹



Figure 3: Section of Charles Varle’s 1808 Map of Frederick and Washington Counties, State of Maryland. The arrows point to three mills in the approximate location of the Benjamin Rice Mill along the Catoctin Creek. However, it is unknown which, if any of these marks are referencing the Rice Mill (Courtesy of the Maryland State Archives).

10 George F. Swain, “Report on the Water-Power of the Middle Atlantic Water-Shed,” in *Reports of the Water-Power of the United States* (Washington, D.C.: Government Printing Office, 1885), 46.

11 For information regarding the 400 mills in Frederick County, see Robert Chidester, “Industrial and Labor Heritage in Frederick County,” *Journal of the Historical Society of Frederick County, Maryland* (Spring 2005): 7. For information regarding the 67 mill sites along the Catoctin Creek, see Moser.

EVOLUTION OF MILL TECHNOLOGY

In the 1700s, early American mills were similarly designed to European mills utilizing many of the same principles. Similar to early housing, the buildings were small, temporary structures constructed of logs that often contained only a millstone to grind the grain and a sack hoist to lift it. The milling practiced within these buildings was based on simple, labor-heavy technology utilizing gravity. The wheat or corn was cleaned by the miller or the farmer, the grain was ground between two millstones, and the final product was sifted to separate the remaining coarser elements.¹²

An influx of settlers and a growing marketplace, however, led to the replacement of temporary mills with more elaborate buildings housing advanced machinery.¹³ Following the American Revolution, the United States entered a period of significant economic growth. Although the English continued to dominate most industries at that time, “when it came to flour milling the United States set the standard.”¹⁴ The nation was a leading flour exporter, and as such, led the way in milling improvements beginning in the 1780s.¹⁵

Fundamental to the expansion of the wheat trade was the rapid development of “merchant milling.” Traditionally, millers worked on a custom basis, in which the miller took part of the farmer’s grain, generally about 10% in return for his services. In merchant milling, the miller would outright purchase a large quantity of wheat from the farmer, prior to the milling process. Although merchant milling could be riskier to a miller’s livelihood, it also had the potential to be more lucrative in a good economic market.¹⁶ Essentially, custom mills ground wheat to grain for an exclusively local trade. In contrast, merchant mills concentrated on volume production and shipping. Most rural millers practiced a combination of custom and merchant milling, with custom work supplementing more extensive merchant activity.¹⁷ Many millers also cultivated their own agricultural lands to support milling operations.

Particularly well-suited to merchant milling was a technological advance pioneered by inventor Oliver Evans (1755-1819) in the last decade of the eighteenth century. Evans, who had experience apprenticing with a wheelwright as a teenager and later worked in a textile shop, devoted his life’s work to industrial improvements. After witnessing the slow and also dirty method for converting wheat to flour in a grist mill, Evans set out to automate the milling industry. He spent years perfecting the machinery necessary to automate the process, and in

12 Theodore R. Hazen, “The Preservation of Historic Mills, Preservation in Brief,” <http://www.angelfire.com/journal/millrestoration/historicmills.html> (accessed February 4, 2012).

13 Chad O. Braley, *Mills in the Upcountry: An historic Context, and a Summary of a Mill Site on the Peters Creek Heritage Preserve, Spartanburg County, South Carolina* (Athens, GA: Southeastern Archeological Services, Inc., 2005), 10.

14 Brooke Hunter, “Industrial Espionage along the Delaware . . . and beyond,” Department of History, Rider University, Paper Presented at the 28th Annual Meeting of the Society of Historians of the Early Republic. <http://www.spoommidatlantic.com> (accessed February 4, 2012).

15 Hunter.

16 National Register of Historic Places, Grist Mills in Berks County MPS.

17 Lanier, 246

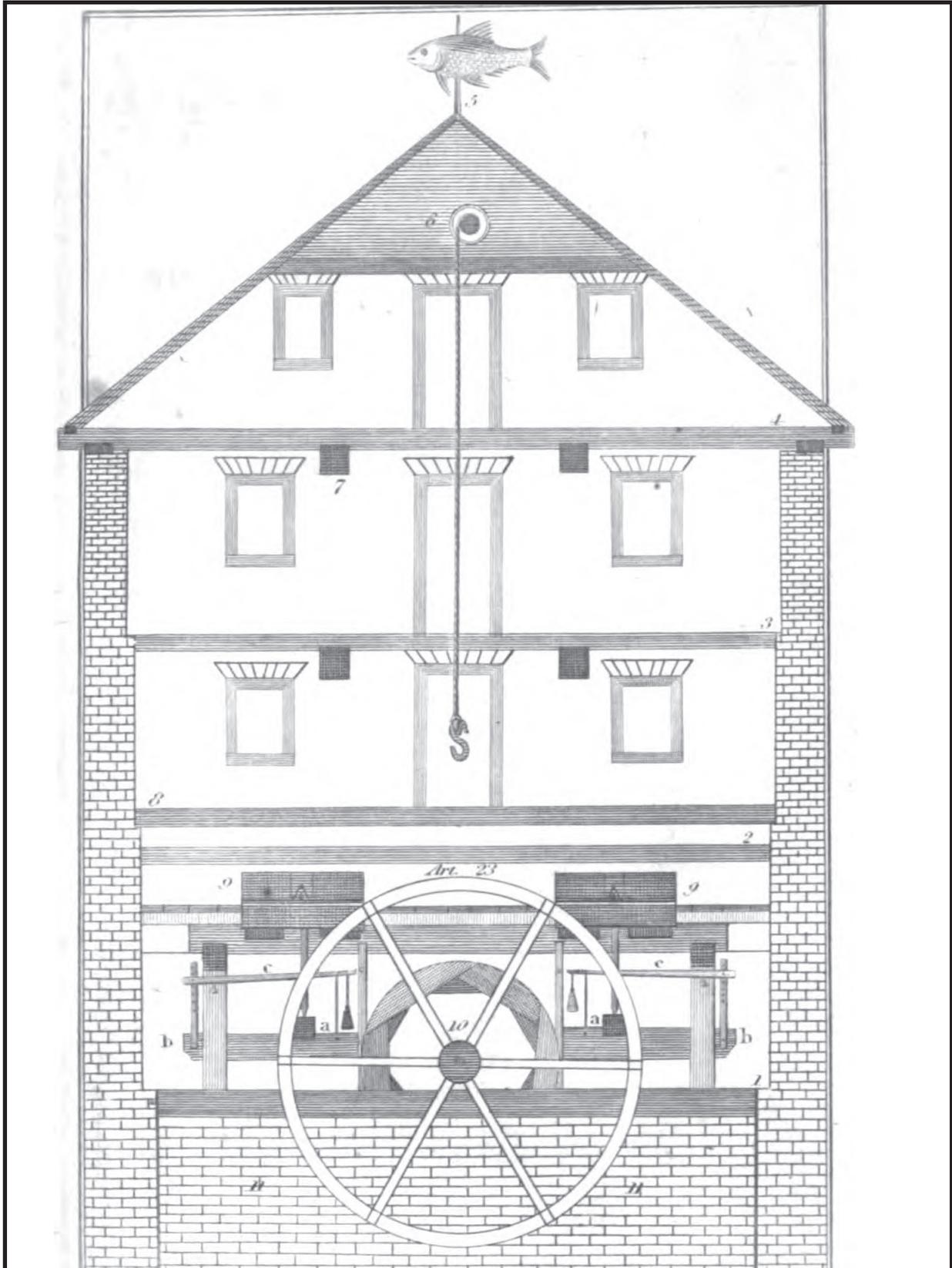


Figure 4: Oliver Evans' proposed scheme for mill building showing new technologies and building design (Source: *The Young Mill-Wright and Miller's Guide* by Oliver Evans).

1790 received the third patent issued by the newly formed U.S. Patents Office.¹⁸

The inventor initially had some difficulty in selling his new technology to millers bent on traditional methods. In 1795, though, Evans published his designs in a book titled *The Young Mill-Wright and Miller's Guide*. This publication was the first to make blueprints directly available to millwrights. Further, by presenting his improvements in print and detailed drawings, Evans was able to clearly illustrate the benefits of his new system. The guide was divided into four main sections and featured twenty-six illustrations. Where grist milling up to this time was a back-breaking affair for the miller and his apprentices (the method was literally known as “back and bag” milling because the workers had to carry sacks of grain and flour up and down the narrow ladders of the mill),¹⁹ the new automated method hardly required physical labor.

In the *Young Mill-Wright and Miller's Guide*, Evans described a continuous system of elevators that moved the grain vertically between floors, conveyers that pushed the grain vertically across floors, and hoppers that sifted and dried the final flour product (Figure 4). In an Evans' style mill, the entire process was connected, with water and gravity making it all possible. The most important elements of the process were the water wheel and gears that provided the power to the other machines, the millstones for grinding the product which used about 60% of that power, and the elevators, conveyers, and other secondary machinery that used the remaining power to move the product and to grind, sift, dry, and package it (Figure 5).²⁰

The result of the Evans' process was a final product that was not only of better quality, but produced less waste and cut labor costs in half. Evans' automation was well-suited to millers shifting from custom to merchant milling as efficiency increased and the number of necessary laborers decreased. The capital investments incurred by millers who installed Evans' system were quickly recouped by means of higher-quality flour, lower labor costs, increased space, and the ability to spend more time honing their trade.²¹

With such obvious advantages, the system soon proved itself superior to earlier methods, and began to spread in popularity among millers. Evans' ideas had firmly taken root by the end of the 1790s. In 1799, François Alexandre Frédéric, duc de La Rochefoucauld-Liancourt, best known as a French social reformer, published a journal detailing his travels in America from the years 1795 to 1797. He visited several major milling centers in his travels, including a number of mills in the Mid-Atlantic region. It is clear from his observations that by 1795, both Evans' technology and merchant mills were growing in popularity.²² Evans' system became so popular that in 1799, George Washington had it installed in his mill at Mount Vernon.²³ By the turn of the nineteenth century, the Evans' system had been widely adopted, and remained the most popular system of grist milling through the 1860s

18 Hunter, 7.

19 Hazen, “Flour Milling in America, a General Overview.” <http://www.angelfire.com/folk/molinologist/america.html> (accessed March 2012).

20 Hazen, “A Cross Section of a Typical Oliver Evans Mill.” <http://www.angelfire.com/journal/millrestoration/section.html> (accessed March 2012).

21 National Register of Historic Places, Grist Mills in Berks County MPS.

22 Lundegard, 4.

23 Lundegard, 3.

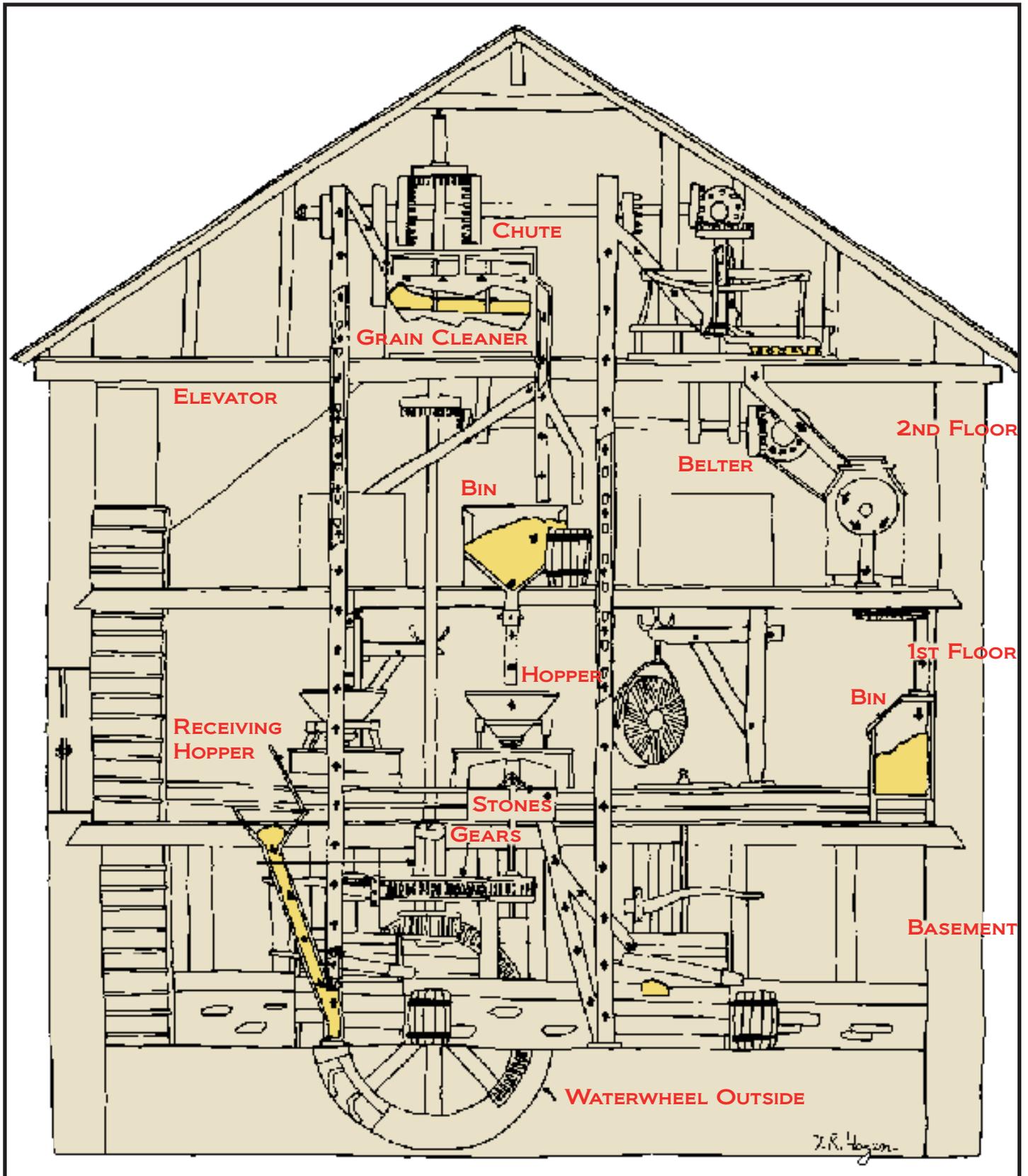


Figure 5: Section of an automated grist mill depicting many of Oliver Evans' designs (Courtesy of Thomas Hazen, National Park Service).

Although utilization of Evans' ideas and principles was widespread by the mid-nineteenth century, a inconsistency existed between the grinding process advanced by Evans and the sifting of the flour. The New Process milling system introduced in the 1860s addressed such problems by implementing a "middlings purifier" on the second floor of the mill that corrected the issue of coarse grains or middlings that remained after the initial grinding and sifting process. The process called for the coarse grain to subsequently be "graded in a moving sieve and subjected to an air blast for purifying. Then the clean middlings were reground, producing purer flour that enabled millers to grind the hard winter wheat efficiently."²⁴

The final stage of technological advancement led to the replacement of millstones with rollers that were first developed in Hungary in 1839, and introduced to mills in the United States beginning in the 1870s. The roller milling system incorporated the New Process system with rollers. Millers were able to precisely set the space between two cylinders (rollers) with spiral grooves and ridges that ground the corn or wheat without crushing the grain. The grain passed through a series of rollers that produced fine to coarse flour called the gradual reduction process. During the process, "the grain was cleaned, dampened, blended, broken, sifted several times, purified, reduced, and graded into various flours by machinery."²⁵ In comparison to traditional millstones, rollers allowed millers to more efficiently produce great proportions of higher quality white flour.²⁶ In the United States, these improvements were starting to be incorporated by the 1870s and 1880s and spread quickly, revolutionizing the milling industry. Many millers were able to alter the interiors of older mill buildings to accommodate the new technology.

MILL ARCHITECTURE

The overhaul of the milling system through both merchant milling and Evans' technology was reflected in mill architecture. The influence of Evans' *The Young Mill-Wright and Miller's Guide* remained strong throughout the nineteenth century; when New Process and roller milling technology were introduced by the end of that century, the technology was often just incorporated within the existing building and did not require a new structure. Although mill buildings generally conform to the styles and proportions common to their building period and location, in order to store the new machinery and larger quantities of grain necessary to transition from custom to merchant milling, millers required additional space. Following the publication of Evans' guidebook in 1795, most mills generally followed the designs illustrated by the author. He



Figure 6: Michael's Mill, Frederick County, Maryland. The mill shows typical eighteenth-century architecture with its gable roof, three bay width, and doors on each story. The weatherboard siding, however, was atypical for Frederick County. (Courtesy of the Frederick County Public Library).

²⁴ National Register of Historic Places, Grain Mills in Indiana MPS.

²⁵ National Register of Historic Places, Grain Mills in Indiana MPS.

²⁶ National Register of Historic Places, Grain Mills in Indiana MPS.

advocated that the building's massing, scale, and spatial arrangements reflect both the storage and processing of grain, enabling a one or two man operation.

In the nineteenth century, grist and flour mills were typically two-and-one-half stories in height in addition to a basement level and had a steep gable roof.²⁷ The façade of a typical mill building was three bays wide with central doors at each story for ease of moving equipment and tools.²⁸ Generally, the fenestration patterns of other elevations featured horizontally aligned windows to allow for the influx of light and air.²⁹ The waterwheel was typically located on the exterior of the building and was uncovered, but in harsher climates, the millwright often incorporated the wheel inside the mill.

The buildings were constructed of large timbers and/or masonry on a solid foundation to withstand the constant vibration resulting from grinding.³⁰ Mills were constructed with an array of building materials including quarried stone and brick, though in the United States, masonry mills were far less prevalent than timber mills.³¹ Regional preferences and the availability of particular materials accounted for the type of building. In Frederick County, stone was prevalent in mill construction. A number of buildings, however, were constructed of brick and its popularity grew with the onset of commercial brickyards in the second half of the nineteenth century.³² The Benjamin Rice and Lewis Mills are representative of a smaller percentage of brick mills in the county (Figures 7 and 8).³³

At the interior, mills were arranged for functionality. The basement level contained the mill's gears and shafts, the first floor contained the mill stones and hopper where grinding and shifting occurred, and the second floor housed the storage and cleaning of unprocessed grains. Often, prior to the use of grain elevators, mills had a series of trap doors to hoist sacks, machinery, and other materials between the floors.³⁴ The interior finishes included chamfered beams and joists, beaded wood floors, and plastered walls. A distinguishing feature in mills was the husk frame, "a heavy internal timber framework most often associated with water-powered old process mills."³⁵ The husk frame allowed for the gear trains to be attached to a distinct structural system, mitigating the milling's vibration effect on the building's foundation, walls, and other systems.³⁶ If the gears were attached to the building's foundation, the shaking would have resulted in the collapse of the structure.

27 A hoist hood is a pulley system to lift materials to the second story. Lanier, 245-247.

28 Braley, 10 and Lanier, 247.

29 Lanier, 247.

30 Braley, 10.

31 For more information see, Hazen, *The Preservation of Historic Mills, Preservation in Brief* and Martha Zimiles and Murray Zimiles, *Early American Mills* (NY: Clarkson N. Potter, 1973), 39.

32 National Register of Historic Places, Lewis Mill Complex, Jefferson, Frederick County, Maryland, National Register # 82002813.

33 For more information regarding the Lewis Mill, see: National Register of Historic Places, Lewis Mill Complex.

34 Braley, 10.

35 Braley, 10 and Lanier, 247.

36 Braley, 10 and Lanier, 247.



Figure 7: Benjamin Rice Mill, 1991. Two-story brick mill with a coursed rubble stone foundation (Source: Maryland Historical Trust Inventory Form, "Benjamin Rice Mill," <http://www.mdihp.net> (accessed February 27, 2012).



Figure 8: Lewis Mill, Frederick County, Maryland. Similar to the Rice Mill, the Lewis Mill is a two-story brick building with a coursed rubble stone foundation (Source: National Register of Historic Places, Lewis Mill Complex).

MILL ELEMENTS -- DAMS, RACES, WATERWHEELS, AND GRINDSTONES

Although mills were built in a variety of styles, materials, and scale, all mills had features necessary to carry out their functions, and those reliant on water power have several features that were generally present. The technology found within and surrounding mills is critical to classifying and evaluating historic mill sites. The landscape often continues to express these features even with the demolition of the mill building itself.

Grist mills were located along rivers, streams, and creeks, which acted as the power source (Figure 9). The mill utilized the energy created from the flow of water to turn a wheel that subsequently turned the internal gears and grinding stones. The construction of a mill included a dam located upstream that diverted water into a mill race to maintain the height of the fall and develop horsepower.³⁷ Dams were constructed of timber, masonry, and stone.³⁸ If the dam was of sufficient height, it created a reserve of water called the mill pond that allowed millers to accumulate sufficient water to operate the mills for an extended period of time. Rivers and streams of sufficient size did not require full-width dams, but smaller wings to divert water into the head race to power the machinery.³⁹

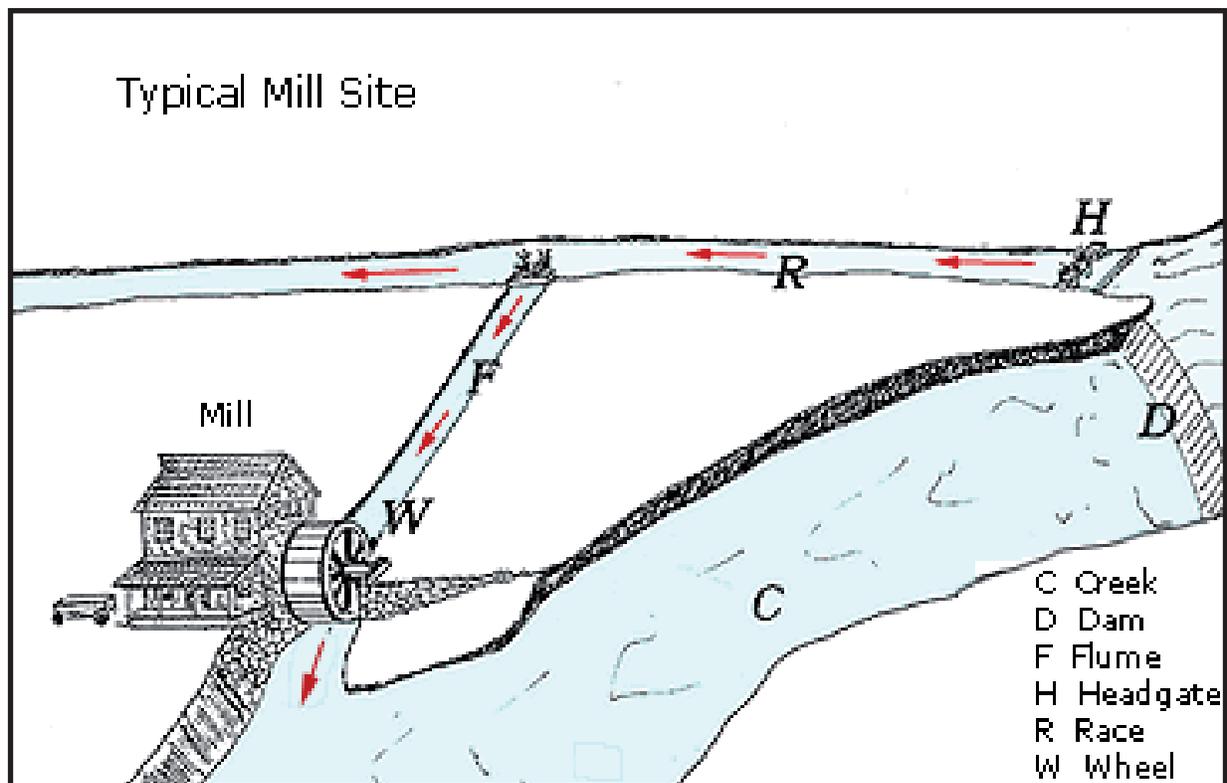


Figure 9: Typical mill site plan (Source: Robert Howard and Thmoas Sweeny III, *Waterpower. How it Works* (Greensville, Delaware: Eleutherian Mills Hagley Foundation, Inc., 1979).

37 Theodore Hazen, "Historically: How to Site a Mill," <http://www.angelfire.com/journal/millrestoration/site.html> (accessed February 2, 2012).

38 Timber cribs were timber framed dams filled with masonry and stone. Hazen, "Historically: How to Site a Mill."

39 Braley, 12.

Races, a few feet to over 2,000 feet in length, carried water to and from the mills, serving one to multiple milling operations. The head race was a small canal located upstream that delivered water from the dam to the mill; it allowed the mill to be constructed above the flood plane protecting the site from potential harm. In order to prevent erosion, the races were often lined with stone.⁴⁰ A sluice gate controlled the flow of water into the head race that connected to a flume that conveyed the water toward the mill's wheel. A second race called the tail race diverted the expended water from the mill site back towards the stream or river.

Water powering the mill turned either a horizontal (parallel with the ground) or vertical wheel. Early millers used tub wheels, a basic horizontal wheel design that generated power via the impact of water striking the paddles. Large wood tubs surrounded the wheel to harness a greater percentage of the water prior to its release. In general, tub wheels lacked power and were inefficient when compared to vertical waterwheels.

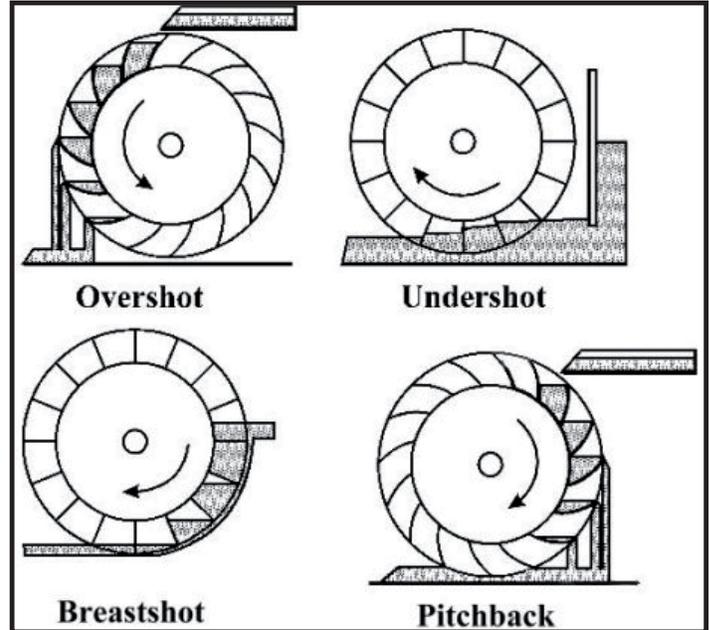


Figure 10: Basic vertical waterwheel types (Source: David Lindsey, "Fort End Watermill: A Short History and Guide," <http://www.fordendwatermill.co.uk> (accessed February 20, 2012).

Vertical wheels were divided into four main categories: overshot, pitchback, breastshot, and undershot (Figure 10). Millers determined the type of wheel to construct by analyzing the fall height and the flow of the water:

The water either exerts its force on the float-boards, which are situated on the under part of the wheel (undershot-wheel), or it flows into the buckets at half the height of the wheel (breast-wheel), or else it is conducted in a channel over the wheel and falls into buckets on the front, in which case the wheel is called an overshot-wheel. In the undershot wheel the water acts by its velocity, and in the breast-wheel it produces rotation by its weight and force, whilst in the overshot-wheel it acts chiefly by its weight.⁴¹

After 1850, vertical waterwheels were gradually replaced by turbines, which were more efficient and required less maintenance.⁴² Turbines were the culmination of waterwheel development:

The turbine combined the operating virtues of the reaction wheel with the high efficiency and capacity of bucket wheels of the overshot-breast type. Within little more than a decade of its first practical introduction, the new motor was being built with a capacity of hundreds of horsepower, aiding the transition to an ever larger scale of industrial production.⁴³

40 Braley 22.

41 Friedrich Schoedler, *The Treasury of Science, Natural and Physical* (London: Ward, Lock, & Tyler, 1872), 44.

42 National Register of Historic Places, Grist Mills in Berks County MPS.

43 Braley, 20.

Early turbines utilized in mills still produced a similar horsepower to overshot wheels, but were considerably smaller and much easier to maintain (Figure 11).⁴⁴ For example, during Edward Parker’s ownership of Benjamin Rice Mill in the late nineteenth century, the site had both an overshot wheel and a turbine with a 9-foot and a 26½- inch breadth, respectively.⁴⁵

The waterwheels and turbines generated power to operate the millstones. The stones or burrs had an essential role in milling process as they determined the coarseness of the grind impacting the quality of the product.⁴⁶ Inside the mills, the stones, typically four feet in diameter, were arranged vertically in pairs called a “run of stone.” The lower stone or “bed stone” remained in a fixed position. The upper stone or “runner stone” was attached to a wood spindle extending from the center of the bed stone that connected to the gears below; the runner stone rotated with the turning of the spindle, grinding the grain between the two stones (Figure 12). Each set of stones contained a matching set of grooves called furrows that provided a cutting edge and assisted in channelling the flour off the stone and into the bins.⁴⁷



Figure 11: Pierce Mill, Washington, D.C., water turbine (Courtesy of the National Park Service, date unknown).

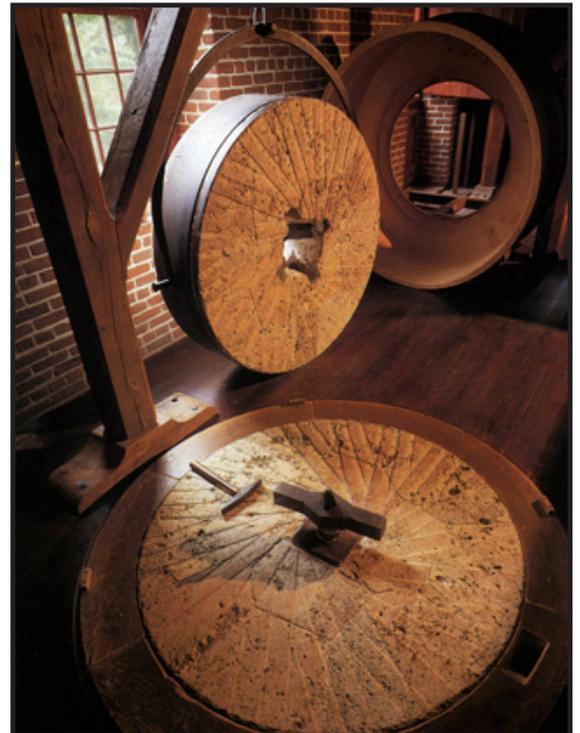


Figure 12: Upper and lower mill stone (Source: *Mill: The History and Future of Naturally Powered Buildings* by David Larkin).

44 Braley 20.

45 United States Census Bureau, Special Schedules of Manufacturers, 1880, Maryland State Archives, SM61-346.

46 Flour had five grades (from highest to lowest quality): pastry white, white, seconds, thirds, and middlings. The coarser part of the grain, the bran and pollard, were discarded or fed to livestock. For more information, see Frances C. Robb, Teresa S. Moyer, Paula S. Reed, and Edith B. Wallace, *Miller and Mechanics: A History of Industry in Mid-Maryland* (Frederick, Maryland: Catocin Center for Regional Studies, 2011), 3.

47 Robb, et al., *Miller and Mechanics: A History of Industry in Mid-Maryland*, 27.

CHAPTER 3: HISTORICAL OVERVIEW: DEVELOPMENT OF AGRICULTURE AND INDUSTRY IN FREDERICK COUNTY, MARYLAND

FREDERICK COUNTY: GEOGRAPHY

When formed in 1748, Frederick County comprised the entire state of Maryland, to the west of Prince George's and Baltimore Counties. Today, its boundaries are Montgomery County to the southeast, the Monocacy River to the east (separating Frederick County from Carroll County), Pennsylvania to the north, the Potomac River to the south, and the South Mountain Ridge separating it from Washington County. Frederick County is located within the Piedmont Plateau geographical region. This area has a rolling terrain that is cut through by valleys, such as the Middletown Valley within which the Benjamin Rice Mill is located (Figure 13).⁴⁸

Historically, the Piedmont region has been dependent on agriculture. With a climate not conducive to growing tobacco, its counties have focused on wheat and other crops.⁴⁹ Writing in 1853, Richard Swainson stated that "Drained by the Monocacy river and Catoctin creek, affluents of Potomac river, and having a soil varied in quality, in some parts formed of decomposed slate, in others of red shales, and in others of limestone, its agricultural capacities are excellent, and as a grain or grazing region it has few superior or more practicable competitors."⁵⁰

Through the middle of Frederick County, running its length from north to south, is the Catoctin Mountain Range. It extends parallel to the South Mountain (the local name for the Blue Ridge Mountain Range).⁵¹ Sitting between the two mountain ranges is the Middletown Valley, which is about thirty miles in length by nine miles at its greatest width.⁵² The Catoctin Creek passes through two-thirds of its length. Its course runs more than twenty miles, at some points becoming a wider, rapid creek. At its end point, the creek enters the Potomac River.⁵³ Writing in 1932, historian Harry Gross noted "The source of power by which most of the mills [in Frederick County] could grind the flour was derived from Catoctin Creek."⁵⁴

48 Thomas Williams and Folger McKinsey, *History of Frederick County Maryland* (Baltimore: Regional Publishing Company, 1967, reprint of original 1910 edition), 2: 648.

49 Chidester, 1.

50 Richard Swainson Fisher, *A New and Complete Statistical Gazetteer of the United States of America* (J.H. Colton and Company, 1857), 71. <http://books.google.com> (accessed February 2, 2012).

51 Williams, 2: 648.

52 J. Thomas Scharf, *History of Western Maryland* (Philadelphia, PA: Lippincott and Company, 1882), 1-2: 24.

53 Scharf, 1-2: 25.

54 Gross, 46.



Figure 13: Part of Issac Bond's 1858 Map of Frederick County, District Two, Maryland. (Courtesy of the Library of Congress).

FREDERICK COUNTY: HISTORICAL OVERVIEW

Settlement in western Maryland occurred in the early eighteenth century, and from this period onward mills were recorded in the region. Historians state that the first settlements within Middletown Valley occurred circa 1740 by settlers of English descent, who were soon followed by German immigrants from Pennsylvania.⁵⁵ In 1745, Frederick-Town (established as City of Frederick in 1817) was laid out by Daniel Dulaney. He encouraged further development of the region with grain farms, envisioning the town as a regional market center for area farmers.

By 1748, the area had attracted enough settlers to form the County of Frederick. On December 10, 1748, an Act of Assembly officially created the county, which at that time included about three-fourths the total land area of the state, including present-day Montgomery, Washington, Allegany, Garrett and portions of Howard and Carroll Counties.⁵⁶ During this same period, the Maryland Legislature began making land grants to settlers who would erect water-mills, in order to encourage flour manufacturing for export.⁵⁷ The earliest known mills in Frederick were the Henry Ballenger's Mill (circa 1729) and Davis Mill (circa 1739).⁵⁸

As noted, the earliest land grants in the region were conveyed to English-speaking settlers, some of whom came from nearby St. Mary's, Charles, and Prince George's Counties.⁵⁹ Soon, this culture converged with German farmers who emigrated from Pennsylvania and bought or leased land from the original English speculators. The settlers' emphasis on small grains contrasted with the tobacco-focused farming prevalent in eastern and southern Maryland. The German settlers' grain-based agricultural and industrial economy was reflected in the prominence of grist milling in Frederick County. Grist and flour mills were quickly established to convert wheat, rye, oats, and corn into marketable flour or meal. By 1769, 45,868 tons of flour and bread were exported from the port of Baltimore.⁶⁰ In *History of Frederick County Maryland*, published in 1910, authors Williams and McKinsey report the observations of Dr. J.F.D. Smith, who they call a "celebrated Tory" and note as a visitor passing through the county in 1775. Smith recorded his observations at the time, and stated that "area inhabitants 'carry on almost every kind of manufactures' as well as a considerable share of trade." He specifically noted that "There is abundance of mills, forges, furnaces, and iron works."⁶¹ Additionally, distilleries and breweries were constructed alongside the mills to process whiskey, ale, and related products.

By 1790, Frederick County had experienced rapid growth and the nation's first census recorded 30,791 citizens

55 Williams and McKinsey, 2: 323.

56 Scharf, 58. In 1776, Montgomery and Washington Counties formed from Frederick County (Williams, 26). In 1836, Baltimore and Frederick Counties split to form Carroll County (Richard Walsh and William Lloyd Fox, *Maryland a History, 1632-1974* (Maryland Historical Society, January 1, 1974), 211.

57 John Leander Bishop, *A History of American Manufactures from 1608 to 1860* (Philadelphia: Edward Young & Co., 1866), 146. <http://www.books.google.com> (accessed February 2, 2012).

58 Reed, *Miller and Mechanics: A History of Industry in Mid-Maryland*, 3.

59 Williams and McKinsey, 2: 1.

60 Bishop, 147.

61 Williams and McKinsey, 73.

in its boundaries.⁶² Many new settlers located in outlying sections of the county where they cultivated wheat and constructed grist mills to process it. In 1791, as many as 80 grist mills were identified within the county.⁶³ Additionally, between 300 and 400 stills were recorded, along with 47 tanners, two glass works, two iron forges, two forges, and two paper mills.⁶⁴ By 1810, an estimated 100 mills were located in Frederick County, more than any other county in the state.⁶⁵ Washington and Frederick Counties accounted for over \$1.5 million in milled products, equaling more than all the other Maryland counties combined.⁶⁶ The importance of wheat to the state's economy continued to grow. By 1815, most farmers outside of Prince George's County had ceased growing tobacco as their main crop. At the time, other minor industries included quarrying, lime burning, and brick making.⁶⁷

Although wheat cultivation continued to develop and mature through the beginning of the nineteenth century, a growing number of farmers in Western Maryland faced certain challenges. Poorly maintained roadways prohibited farmers from selling their products in nearby towns and cities. However, the lack of accessibility to markets such as Baltimore or Georgetown had the indirect effect of creating a prosperous local manufacturing business.⁶⁸ Entrepreneurs constructed mills within the rural areas, such as Middletown Valley, since processed grain in the form of flour or whiskey was more manageable to transport and ship.

Beginning in the second quarter of the nineteenth century, local manufacturers were more easily able to sell their products to larger markets with the development of canals and improved turnpikes. A more significant improvement came with the completion of railroad lines in the early 1830s. The completion of the Chesapeake and Ohio (C&O) Canal and the Baltimore and Ohio (B&O) Railroad provided a critical link between rural and urban areas and proved to be a major stimulus to the region (Figure 14).

In 1840, the census recorded 36,405 residents (compared to 40,450 in 1820), reflecting a population depletion caused by the separation of Carroll County from Frederick County. By 1850, though, it had increased to 40,987 residents.⁶⁹ The rise in population was also reflected in growing industry in the county. In 1840, the county produced 734,767 bushels of wheat, 221,550 of rye, 706,694 of Indian corn, 3520 of buckwheat, and 307,181 of oats. To process this quantity of grains, the county recorded 46 flour mills and 55 grist mills.⁷⁰

62 Fisher, 71.

63 Scharf, 369.

64 Paula S. Reed and Edith B. Wallace, "Thematic Context – Agriculture," 2. <http://cityoffrederick.com> (accessed February 2, 2012).

65 Reed, *Miller and Mechanics: A History of Industry in Mid-Maryland*, 21.

66 Paula Reed notes in *Miller and Mechanics* that in 1810, Washington County had 52 mills. Reed, *Miller and Mechanics: A History of Industry in Mid-Maryland*, 21.

67 Chidester, 7.

68 Richard Walsh and William Lloyd Fox, eds., *Maryland – A History, 1632-1974* (Baltimore: Maryland Historical Society, 1974), 175.

69 Fisher, 71

70 John Ramsay McCulloch, *McCulloch's Universal Gazetteer; A Dictionary, Geographical, Statistical, and Historical of the Various Countries, Places, and Principal Natural Objects in the World*, (New York: Harper & Brothers, 1847), 1: 946. <http://www.books.google.com> (February 2, 2012).

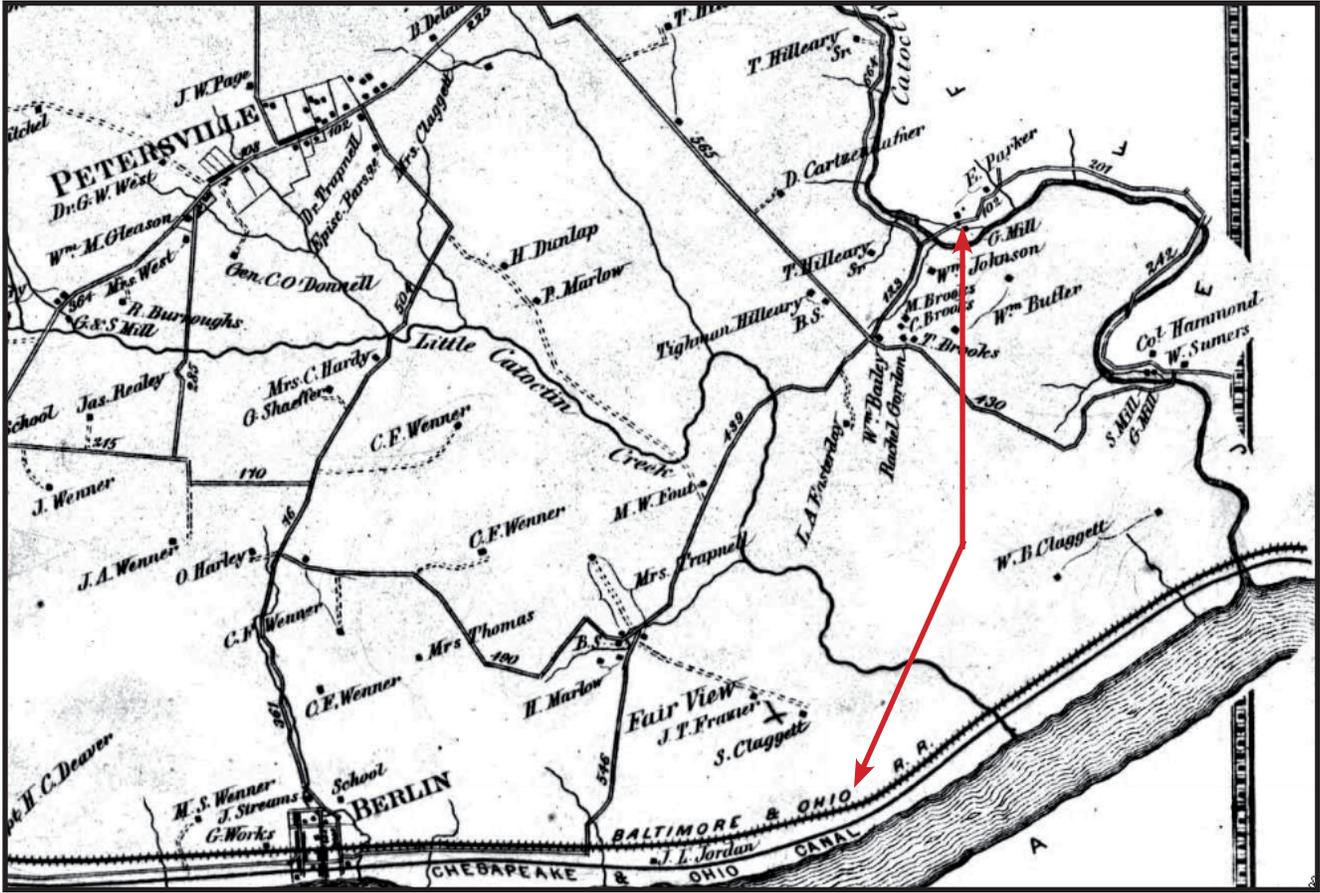


Figure 14: DJ Lake's 1873 Map of Frederick Maryland. The red arrows point to the Rice Mill, then known as Parker's Mill, and the Baltimore and Ohio Railroad and Chesapeake and Ohio Canal. (Courtesy of Ancestry.com).

The 1850 Manufacturers Schedule recorded 70 grist mills, 13 saw mills, 43 tanneries, and four iron forges.⁷¹ The Census further noted a variety of smaller manufactories including five brick fields, 12 coopers shops, two potteries, one distillery, one lime kiln, one paper mill, and four wheelwright shops.⁷² In a sampling of four of Frederick County's 14 townships listed in the 1850 United States Census, 65 millers were listed living within Jefferson, Middletown, Buckeystown, and Catoctin. There were also millwrights living in the four townships: one in Middletown and two in Buckeystown.⁷³ In Jefferson, the location of the Benjamin Rice Mill, the United States Census enumerated 17 individuals with the occupation of miller.⁷⁴ In addition, there were seven distinct mills producing approximately \$100,000 of milled products yearly.⁷⁵

71 Frederick County Division of Planning, 57.

72 Fisher, 72.

73 The millwrights were Eli Hyatt, Henry Parker, and Amos L. Welling. United States Census Bureau, United States Federal Census, 1850. <http://www.ancestry.com> (accessed February 15, 2012).

74 United States Census Bureau, United States Federal Census, 1850. <http://www.ancestry.com> (accessed February 15, 2012).

75 United States Census Bureau, Schedules of Manufacturers, 1850, Maryland State Archives, SCM5165-2.

After years of growth, the summer of 1854 saw the first signs of a downturn in Maryland's wheat market. That season, a drought affected the work of local grist mills because water was so low in the streams that the mills could not perform their work.⁷⁶ The number of barrels of flour shipped from Frederick Station that year was 75,670, an 18,000 barrel decrease from the year before.⁷⁷ In 1857, a nationwide economic recession set in that continued into the Civil War. Manufacturing decreased in Baltimore and throughout western Maryland, although flour and meal were still among the leading manufactures in 1860.⁷⁸ Following the Civil War, recovery promoted several trends that would last into the twentieth century, including industrialization and a population shift away from rural communities and into urban centers.

Mills in the region responded by upgrading to new technologies. The overshot wheel was largely replaced by turbines and steam engines. Turbines required less water to operate and allowed for milling to continue even during dry seasons. Additionally, as waterwheels became outdated, millers no longer need to be located on the county's large and powerful streams or creeks. As a result, mills were located closer to city centers. In *Tillers of the Soil: A History of Mid-Maryland*, Paula S. Reed stated, "The fact that Frederick, Carroll, and Washington Counties were still producing large amounts of wheat and corn while decreasing mill output suggests that grain was being shipped unprocessed to markets or mills in Baltimore...."⁷⁹ In order to survive, mill owners were forced to adapt to the changing technology.⁸⁰

Another technological change was the introduction of roller mills in the United States (Figure 15). Centered in Minnesota and Wisconsin, roller mills exponentially increased production capacity and created a more desirable and higher-quality product. Maryland millers were forced to adopt the new technology. "By the end of the 1880s, it was reported that all the mills in Washington County had been outfitted with roller mills."⁸¹ The updating of mill technology to match the mid-west increased local competition as well. Reed contends that:

It was bad enough to have Minneapolis as a competitor, but the local mills were competing with each other every time they installed a roller unit to increase daily output to 30 to 50 barrels. Even with growing city populations, a region that had been adequately served by the milling capacity of 1880 could scarcely justify such a build-up in a mere decade or two....⁸²

As a result, the high costs of upgrading to the roller mill technology were not recuperated by the millers as the market was flooded with flour and prices dropped. Many mills were forced into foreclosure.⁸³ In 1880, however,

76 Williams and McKinsey, 278.

77 Williams and McKinsey, 278.

78 Reed and Wallace, "Thematic Context History – Industry," 10.

79 Paula S. Reed, *Tillers of the Soil: A History of Agriculture in Mid-Maryland* (Frederick, Maryland: Catoctin Center for Regional Studies, 2011), 63.

80 Reed, *Miller and Mechanics: A History of Industry in Mid-Maryland*, 39.

81 Reed, *Miller and Mechanics: A History of Industry in Mid-Maryland*, 40.

82 Robb, et al., *Miller and Mechanics: A History of Industry in Mid-Maryland*, 64.

83 Robb, et al., *Miller and Mechanics: A History of Industry in Mid-Maryland*, 64.

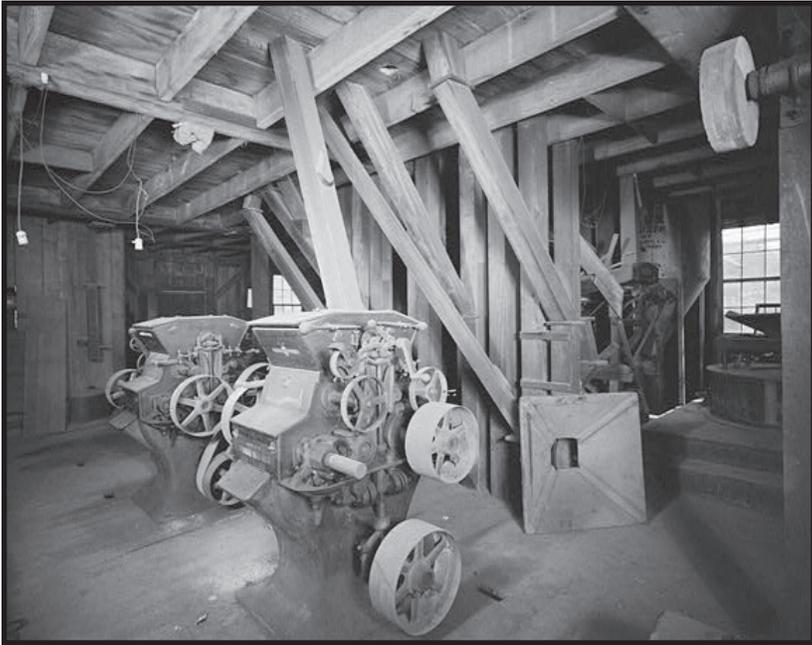


Figure 15: Two remaining roller mills at Easton Roller Mill, Morganstown, West Virginia, 1974 (Courtesy of the Library of Congress).

the manufacturing census listed 85 mills in Frederick County that produced over \$1,000,000 worth of flour, showing that grist and flour milling remained an important sector of the manufacturing industry, even as new trends began to emerge.⁸⁴

Through the last half of the nineteenth century, the Mid-Atlantic region and western Maryland specifically began to experience pronounced competition from mid-western grain agriculture and processing. Although agriculture in the state during this period lost significance relative to agriculture in the nation as a whole, within the state of Maryland, Frederick County maintained its agricultural prominence.⁸⁵ The county continued to hold its position among the highest producers of corn and wheat in the state. Changes were apparent even there, though. The 1860 Agricultural Census showed

that Frederick County led the state in the value of livestock, suggesting the emergence of the dairy industry in the county, which now had the necessary transportation routes, including the B&O Railroad, the Western Maryland Railroad (1869), and the Frederick & Pennsylvania Line (1872), to transport products to surrounding markets.⁸⁶

In 1882, it was reported that the “greatest proportion” of Middletown Valley remained covered by large farms, including those raising wheat, rye, oats, and corn.⁸⁷ By the end of the century, however, the rise of steam-powered mills, the railroad, and large grain farms in the mid-western states prompted Frederick manufacturers to increasingly turn to the production of agriculture-based commodities like fertilizer and canned produce.⁸⁸ The dairy processing industry also continued to grow in the county to meet the shift towards dairy farming. By 1900, the dairy industry had rapidly expanded.⁸⁹ In that year, dairy products led Maryland farm products at \$5,228,698, followed by poultry products, then fruit, and corn, then wheat falling to fifth, with 19,766,510 bushels.⁹⁰ In 1910, the leading crops for the state, in order of value, were corn, wheat, hay and forage, potatoes, and tobacco.⁹¹ Between 1850

⁸⁴ Reed, *Miller and Mechanics: A History of Industry in Mid-Maryland*, 40.

⁸⁵ Walsh and Fox, 398.

⁸⁶ Reed and Wallace, “Thematic Context – Agriculture,” 5.

⁸⁷ Scharf, 25

⁸⁸ Reed and Wallace, “Thematic Context – Agriculture,” 1.

⁸⁹ Maryland Writers Project, *Maryland: A Guide to the Old Line State* (NY: Oxford University Press, 1940), 64.

⁹⁰ Henry Gannett, *A Gazetteer of Maryland* (Washington, D.C.: Government Printing Office, 1904), 9.

⁹¹ Walsh and Fox, 401.

and 1910, the average size of a Maryland farm fell from 212 acres to 103 acres. By 1910, 44% of farms contained between 50 and 174 acres of land, with only 18% over that number.⁹² By 1914, more Maryland residents worked in industry than in agriculture, and as expected, the population was concentrated in urban centers.

In 1920, Maryland was 60% urban, and by the end of the decade, the number of Maryland's farms had decreased by 4,704. The change to vast amounts of farmland for use as dairy farms or orchards therefore led to a decrease in the county's traditional agricultural and particularly related milling and other attendant industries.⁹³ In 1929, wheat still acted as a large agricultural income producer in the state, with an estimate gross income of \$9,053,000. At this time, most of the state's wheat was still grown in Frederick County, along with Washington and Carroll Counties. However, wheat production's in gross income fell well below the sales of milk that year, which was recorded as \$25,156,000.⁹⁴

Following World War II, new technology and a changing agricultural economy nationwide prompted an almost complete move away from agriculture in Frederick County. The development of Washington, D.C. and Baltimore at this time with government and administrative facilities drew more and more people into the cities. The construction of the Eisenhower Defense Highway (Interstate Routes 70 and 270) beginning in 1956 further encouraged travel into both cities. Its impact then and now on Frederick County was significant.

92 Walsh and Fox, 398.

93 Reed and Wallace, "Thematic Context – Agriculture," 7.

94 Reed and Wallace, "Thematic Context – Agriculture," 8.

COMPARISON OF MILLING OPERATIONS IN JEFFERSON, FREDERICK COUNTY, MARYLAND

1850 Milling Operations in Jefferson

The 1850 United States Census Manufacturing Schedule (Figure 16) listed 18 individuals as millers in 9 distinct households in Jefferson.⁹⁵ Seven of the households who owned and operated a water mill include: Kemp, Charlton, Parish, Cartzendafner (owner of the Benjamin Rice Mill), Dickson, Edmond, and Feaster.⁹⁶ Cartzendafner had the second largest milling operation in Jefferson. The majority of the millers' yearly income was from grinding wheat, producing an average of 2,843 barrels of flour worth approximately \$5 per barrel. Rye and corn accounted for less than one percent of their yearly income; however, only two millers exclusively ground wheat.⁹⁷

Name	Capital Invested	Laborers	Average Monthly Wage (\$)	Materials			Products		
				Kind	Quantity (bushels)	Value (\$)	Kind	Quantity (bbl/bsh)	Value (\$)
Joseph Cartzendafner	7,500	2	23	Wheat	23,000	23,000	Flour	5,000 (bbl)	25,000
Jacob Feaster	3,050	1	22	Wheat	10,000	10,000	Flour	840 (bbl)	4,400
				Rye	50	25	Chops	55 (sh)	27
James Edmond	6,000	3	18	Wheat	13,500	13,500	Flour	3,000 (bbl)	15,000
William H. Dickson	3,000	2	19.50	Wheat	8,000	8,000	Flour	1800 (bbl)	9,000
				Corn	50	25	Meal	55 (bsh)	27
N.M. Parish	3,000	2	18	Wheat	9,000	9,000	Flour	2,000 (bbl)	10,000
				Corn	250	125	Meal	275 (bsh)	137
				Rye	200	100	Chop	250 (bsh)	125
John Charlton	6,000	2	20	Wheat	8,000	8000	Flour	1,760 (bbl)	8,800
				Corn	200	100	Meal	220 (bsh)	110
				Rye	200	125	Chop	250 (bsh)	125
David Kemp	9,000	2	28	Wheat	25,000	25,000	Flour	5,500 (bbl)	27,500
				Corn	200	100	Meal	220 (bsh)	110
				Rye	200	100	Chop	220 (bsh)	110

Figure 16: 1850 Milling Operations, United States Census Manufacturers Schedule, Jefferson, Frederick County, Maryland.

95 United States Census Bureau, United States Federal Census, 1850. <http://www.ancestry.com> (accessed February 15, 2012).

96 United States Census Bureau, Schedules of Manufacturers, 1850, Maryland State Archives, SCM5165-2.

97 United States Census Bureau, Schedules of Manufacturers, 1850, Maryland State Archives, SCM5165-2.

1880 Milling Operations in Jefferson

The 1880 United State Census Manufacturing Schedule (Figure 17) listed four mill owners in Jefferson, Frederick County, Maryland: Edward Parker (owner of the Benjamin Rice Mill), Basil Lewis, John Schafer, and Milton Briggs. Parker's, Lewis', and Brigg's mills, located on the Catoctin Creek, functioned as merchant and custom mills. Parker invested the largest amount of capital into his milling operations and had four "runs of stone" (sets of grinding stones) grinding a maximum of 150 bushels per day.⁹⁸ One of Parker's sets of stone, however, was utilized for grinding gypsum and lime for plaster. Other machinery included an elevator with a maximum capacity of 1000 bushels that eliminated the labor necessary to carry the grain to the mill's various floors. In comparison, Lewis and Briggs had two and three "runs of stone" grinding a maximum of 100 and 150 bushels per day, respectively. John Schafer's Mill was the smallest scaled mill and only ground corn and wheat for local farmers. The mill had one complete set of grinding stones with a maximum capacity of 60 bushels per day and an elevator.

All four mills had overshot or turbine wheels. Parker was the only miller with both technologies, featuring an overshot wheel and turbine, 9-feet and 26½ inches in breadth, respectively. The diameter of the overshot wheel was determined by the height of the fall, typically requiring at least a fall of 10 feet.⁹⁹ As a result, Parker's shallow 10 foot fall required a 9 foot (breadth) wheel to generate 10 horsepower. In comparison, Lewis's and Shafer's 23 and 24 foot falls required 3 and 3½ foot (breadth) overshot wheels to generate 10 and 14 horsepower, respectively. Parker's turbine represented advancement in mill technology and a shift from the overshot wheel. Parker's 26½ inch turbine was considerably smaller than his overshot wheel, but created a similar force. In comparison, Briggs Mill's single 35 inch (breadth) turbine generated 18 horsepower. However, as the technology improved, turbines generated far more horsepower with greater efficiency.

Lewis Mill was the most productive of the four mills. Lewis ground 6,000 bushels of wheat and 3,000 bushels of other grain. The total value of all Lewis's products equaled \$10,910, 67% more than Parker's \$6,500. The difference resulted from grinding more bushels of wheat, thereby producing twice the amount of flour. Shafer Mill did not procure any wheat, but focused on corn meal.

All of the mills, except Briggs Mill, operated every month and between 10 to 12 hours per day. Parker employed six employees compared to Brigg's two. Both owners paid their skilled mechanical workers \$1.75 per day and their unskilled laborers \$0.75 per day.¹⁰⁰

98 United States Census Bureau, Special Schedules of Manufacturers, 1880, Maryland State Archives, SM61-346.

99 Braley, 16.

100 It is unknown how many workers were employed at the other two mills. United States Census Bureau, Special Schedules of Manufacturers, 1880, Maryland State Archives, SM61-346.

Name	Materials						Products				
	Wheat (bushels)	Value (\$)	Grain (bushels)	Value	Value of Mill Supplies	Total Value	Flour (barrels)	Corn meal (lbs)	Feed (lbs)	Hominy (lbs)	Total value of products
Edward Parker	3000	3600	3000	1500	210	5310	600	162,888	48000	---	6500
Basil Lewis	6000	7500	3000	1500	120	9000	1200	167,500	92000	2500	10910
John Shafer	---	---	3000	1500	20	1500	---	162,000	60000	---	1800
Milton Briggs	3000	4200	2500	1500	50	5750	600	350,000	47000	---	6800

Figure 17: 1880 Milling Operations, United States Census Manufacturers Schedule, Jefferson, Frederick County, Maryland.

CHAPTER 4: OVERVIEW OF THE BENJAMIN RICE MILL

DESCRIPTION: BENJAMIN RICE MILL PROPERTY

The Benjamin Rice Mill and its site were not accessible for the purposes of this phase of the project, as access was denied by the property owner. The following property and building descriptions are mainly summarized from a Maryland Inventory of Historic Properties *Addendum* prepared for Benjamin Rice Mill (F-2-46) by SHA Architectural Historian Anne E. Bruder and Archeologist April L. Fehr. The report was prepared based on a site visit by Bruder and Fehr on February 11, 2008. The buildings described include several outbuildings and a dwelling on the site. SHA notes that aerial photographs of the site show additional buildings in the northern portion of the property that SHA was not able to assess; the buildings may remain extant but were not included in SHA's survey. The following descriptions are supplemented by information from the site's original MIHP form, prepared by Janet L. Davis of the Frederick County Planning & Zoning Department in August 1991.

The *Addendum* notes that the mill building has been described in several sources over a period of about thirty years, including in John McGrain's *Molinography of Maryland* (published in 1976), Davis' MIHP form (prepared in 1991), and Peter Maynard's *In Search of Our History: The Water-Powered Flour and Grist Mills of the Brunswick Region* (published in 2003). Of interest, it is noted that although the accounts were written at various times, the descriptions do not vary, reflecting the limited access granted to historians to study the property. It also appears that few alterations, if any, have been made to the building in the decades since it ceased operation in the 1950s. Unfortunately, as a result of this disuse, the building is currently falling into a ruinous state.

LOCATION

The Benjamin Rice Mill is located at 2609 Point of Rocks Road (now MD 464, historically known as the "road to Berlin"), south of the town of Jefferson in Frederick County on the Catoctin Creek (Figure 18). The 2008 *Addendum* additionally notes a dwelling and five outbuildings on the property, as well as associated mill appurtenances. The mill is located on the east bank of Catoctin Creek, with the house and three of the outbuildings situated on the hill above it. Two additional outbuildings are set to the northwest of the mill near the driveway that extends to Point of Rocks Road.

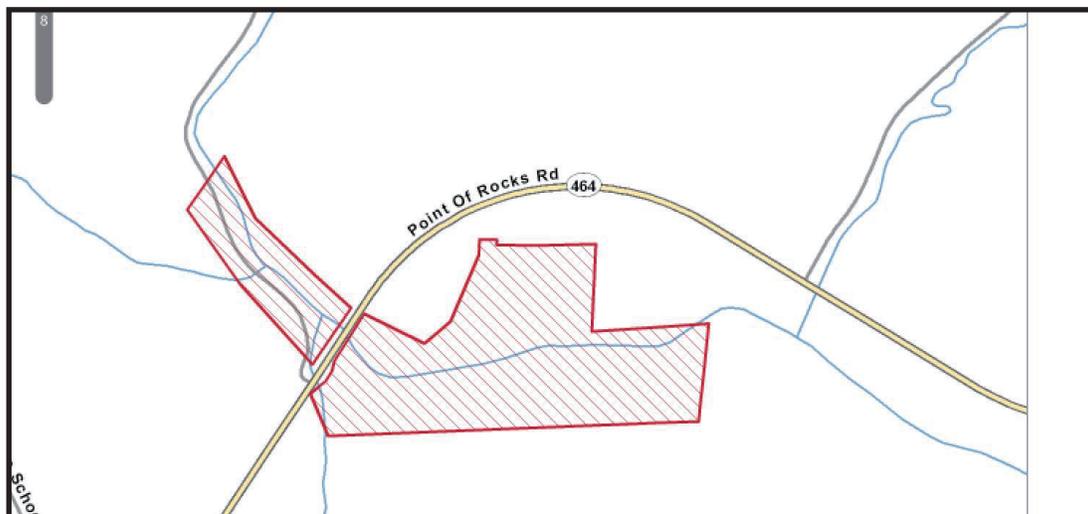


Figure 18: Plat for current mill property owned by William Bell's descendents, 2012 (Courtesy of Frederick County GIS). William E. Barrett, Photographer, 1974.

EXTERIOR

The Benjamin Rice Mill sits two-and-one-half stories high (some historic accounts describe the building as four stories high, as the author is including the attic and basement as full stories) and three bays wide at its principal west elevation. The rectangular building measures about 70 feet by 60 feet, and is set on a raised coursed rubble stone foundation that extends to the sill level of the first-story windows. The building is constructed of three-course American-bond brick, a pattern that the Frederick City architectural context states to have been the typical bonding pattern found there from the late eighteenth century through about 1820. The mill is capped by a gable roof running north-south that is now covered in standing-seam metal. A boxed cornice accents the roof, and the upper gable ends are clad in German wood weatherboard.

The façade (west elevation) is marked by a central entrance holding a single-leaf, Dutch door of vertical boards that is surmounted by a five-light transom (Figure 19). Marks on the brick surface above the first-story openings indicate that a one-story porch was once attached to the façade. The porch sheltered the door and the south window bay, and may have been connected with a frame structure on the south (side) elevation that is now in ruins (Figure 20). The outer bays at the first-story façade hold six-over-six windows capped by gauged brick arches. The second-story openings hold nine-over-six windows with gauged brick arches.

The two-bay wide north elevation reveals the mill's German-sided gables. A loading door is located at the center of the second story. A mill stone rests near the foundation of this elevation. The south (side) elevation features the ruins of a frame structure, which historically sheltered the wheel. Each gable wall contains two windows at the attic, and one window in the peak of the gable. The east (rear) elevation reveals the clearest view of the raceway as it enters the base of the mill through a round stone arch (Figures 21 and 22).



Figure 19: Benjamin Rice Mill, looking southeast towards west elevation, 2008 (Courtesy of the State Highway Administration).



Figure 20: Benjamin Rice Mill, looking west towards east elevation, 2008 (Courtesy of the State Highway Administration).



Figure 21: Benjamin Rice Mill, looking northwest towards south elevation, 2008 (Courtesy of the State Highway Administration).

INTERIOR

Since the closing of the mill in the early 1950s, historians have not been granted access to the interior of the mill structure. What is known of the interior is based on historic descriptions and general knowledge of mills from its period of construction and use. For example, an advertisement from the *American Miller* published April 1, 1880 describes the millwheel as an overshot wheel that was 9 feet broad. A large millstone currently leans against the side of the structure. Based on general knowledge of mills from this era, the grain would have been cleaned in the attic, with other equipment located on the ground floor at the same level as the waterwheel. SHA noted in 2008 that it appeared from the exterior that much of the milling machinery continues to be present. The current owner of the nearby Lewis Mill indicated that Charles Bell, the last operator of the Rice Mill, worked at the Lewis Mill in the 1960s and 1970s. Bell took milling equipment away from the Lewis Mill when it closed and brought it to the Benjamin Rice Mill.¹⁰¹

ASSOCIATED MILL FEATURES

The following descriptions are based on the *Addendum* prepared by SHA in 2008 and photographs taken by SHA staff in 2006, 2008, and 2010. Since that time, components of the mill race adjacent to the bridge have been demolished along with the demolition of the 1934 pony truss bridge.

¹⁰¹ Anne Bruder and April Fehr, Benjamin Rice Mill, Historic Properties Addendum, 2008.



Figure 22: Benjamin Rice Mill, looking southwest towards mill race, 2008 (Courtesy of the State Highway Administration).



Figure 23: A discarded millstone still remaining at the Benjamin Rice Mill, 2008 (Courtesy of the State Highway Administration).

MILL FEATURES IN THE APE

The main portion of the mill property is located well east of the 1934 State Roads Commission (SRC) Bridge No. 1009100. However, the 1933 as-built plans for the bridge illustrated that a number of features associated with the mill were located in and adjacent to Catoctin Creek under the bridge (Figure 24). These features included a bridge (no longer present) leading from the “Old County Road” to the mill property, a stone mill dam, a concrete race gate, the mill race, and the mill pond.

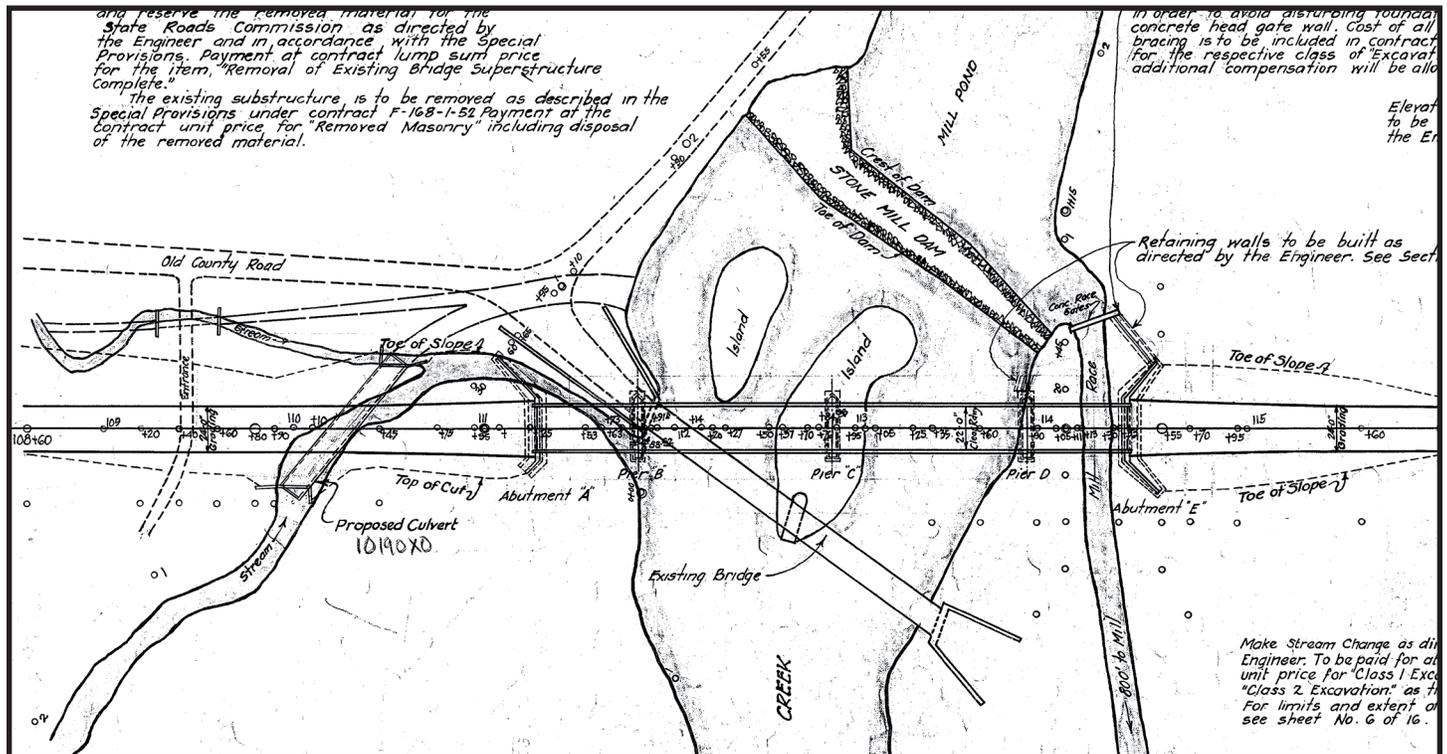


Figure 24: Plan and Profile for the Bridge over Catoctin Creek, Contract F168-1-52 (Courtesy of the State Highway Administration).

Pre-1933 bridge

The 1933 plan for construction of the Pony Truss Bridge illustrated the location of a pre-1933 bridge leading from the “Old County Road” across Catoctin Creek to the mill property (Figure 24). The pre-1933 bridge is also illustrated on SHA Right-of-Way Plat No. 677 from 1933 (Figure 25). This plat shows that the bridge included a “wheel guard” and that the “Old County Road” was in fact the road to Brunswick and Point of Rocks, continuing across the mill race on a plank bridge. A 1933 photograph of the construction of Bridge No. 1009100 from the SHA archives shows two of the stone abutments of the pre-1933 bridge (Figure 26). Figure 27 is a 2006 photograph of remnants of one of the pre-1933 bridge stone abutments. The concrete retaining wall in front of the former abutment does not appear on SHA’s 1933 plans and may represent a later wall put in place by the property owner. No description of the pre-1933 bridge has been located. The 1933 photograph (Figure 26) shows wooden debris near the eastern abutment that may represent the remains of a wooden superstructure and the presence of the wheel guard shown on the 1933 plat suggests that the bridge had no parapets.



Figure 27: Ruins of pre-1933 Bridge Abutment, 2006 (Courtesy of the State Highway Administration).

Stone Mill Dam and Mill Pond

The 1933 SHA plan for Bridge No. 1009100 shows the stone mill dam and mill pond as they were situated prior to construction of the 1934 bridge (Figure 24). The mill dam is located approximately 1,000 feet north of the mill. The 1880 advertisement referenced above describes it as a dam with a 10-foot fall. The mill dam was maintained during construction of the 1934 bridge and was still in use after that time. The dam is clearly visible on the 1933 photograph of construction of the bridge (Figure 26), which shows how water was channeled from the mill pond into the race behind the “new” bridge abutments. By 2006, the mill dam was in ruins and cribbing from the dam was visible in the creek (Figures 28, 29, and 30).



Figure 28: Mill-dam ruins, 2006 (Courtesy of the State Highway Administration).



Figure 29: In-stream remains of frame cribbing from no longer extant dam, 2006 (Courtesy of the State Highway Administration).



Figure 30: Remaining underwater frame cribbing from the no longer extant dam, 2008 (Courtesy of State Highway Administration).

Concrete Race Gate and Mill Race

Information obtained from the property owner in 2008 indicated that the mill continued to operate until at least the 1950s. One of the interesting aspects of the Benjamin Rice Mill is the way that the necessary mill features were integrated into the “new” 1933 State Roads Commission bridge. For example, concrete walls were incorporated into the bridge to serve as supports for the head race gate and the mill race was retained. Figure 24 shows how Abutment E and Pier D were configured to act as supports for the head race gate. A photograph taken in 1933 during construction of the bridge shows the concrete race gate walls with the mill dam leading into the race (Figure 31). Photographs taken in 2008 illustrate the wall added to Pier D and the mill race remnant (Figures 32 and 33).



Figure 31 and 32: 1933 Photograph of construction of Bridge No. 1009100 by Hughes C.L.C. Photographers for State Road Commissioners, showing race gate walls and mill dam (left) and race gate on Pier D, view west, 2008 (Courtesy of the State Highway Administration).



Figure 33: Mill race remnant looking east from Bridge No. 1009100, 2008 (Courtesy of the State Highway Administration).

Other Mill Related Features

Additional mill-related features were observed during SHA's 2008 site visit. The head race runs along the north bank of the creek and although it is overgrown it is still clearly visible. The mill pond and wheel well are visible adjacent to the creek (Figure 21) and a tail race extends back to Catoctin Creek east of the mill. SHA staff was not allowed to enter the mill; however, it appears from the outside that the milling machinery is still present. An arched stone wall between the wheel pit and the tail race allows water to run through it.

SINGLE DWELLING

The single-family dwelling, located on the east bank of the Catoctin Creek above the mill, is an example of a double-pen building (Figure 34). The log-house appears to date from the same period as the mill building; historic research did not reveal a more accurate date of construction. Portions of the exterior have been covered with German weatherboard, stucco, and vinyl siding. It is set on low stone piles and concrete blocks, and it was not possible to determine if there is a basement. The side-gabled roof has recently been covered in standing-seam metal. The roof has been extended to form a shed roof over the front porch, which extends across the full width of the façade (west elevation). The porch is supported by square wood posts. The façade holds an entry door leading to a center hall at the interior, with one window set to either side of the entrance. A second entrance is set immediately to the south, and is paired with a window to the south and what is now an interior chimney of stone that may have been an exterior chimney at one time. The double front entrance suggests that the smaller room was used by the public and the mill owners for conducting mill business. The first-story windows are two-over-two sash. Smaller, fixed windows mark the second story. An attached kitchen wing is set to the south of the main pile. It is marked by a center entrance, and one window to each side of the door. An exterior chimney of uncoursed rubble stone rises at the south elevation. Each chimney has been whitewashed or stuccoed.



Figure 34: Log dwelling, 2008 (Courtesy of the State Highway Administration).

OUTBUILDINGS

Three outbuildings are located southeast of the dwelling (Figure 35: Outbuildings A, B, and C). Two of the outbuildings (A and B) are capped by shed roofs while the third (C) is covered by a front gable roof. Each wood-frame building is clad in vertical siding or weatherboard. The largest shed (A) is marked by a series of windows and a panel door. The middle shed (B) has a door with six lights in the upper portion. The third shed (C) is entered through a sliding door. The *Addendum* notes that each appears to currently be used for storage, but that they may have once functioned as a stable, hen house or other small domestic outbuilding.

A one-story, three-bay building (D) is located northwest of the mill at the base of the hill. Capped by a hipped roof of standing-seam metal, it is clad in German siding. Three entry doors mark the building. It appears to be an early-twentieth-century garage, according to the *Addendum*. Immediately to the west of this building sits a two-story barn (E). This barn is set on a base of decorative concrete blocks and is clad in vertical siding. It is capped by a gable roof of standing-seam metal. As of 2008, the barn did not appear to be in active use.

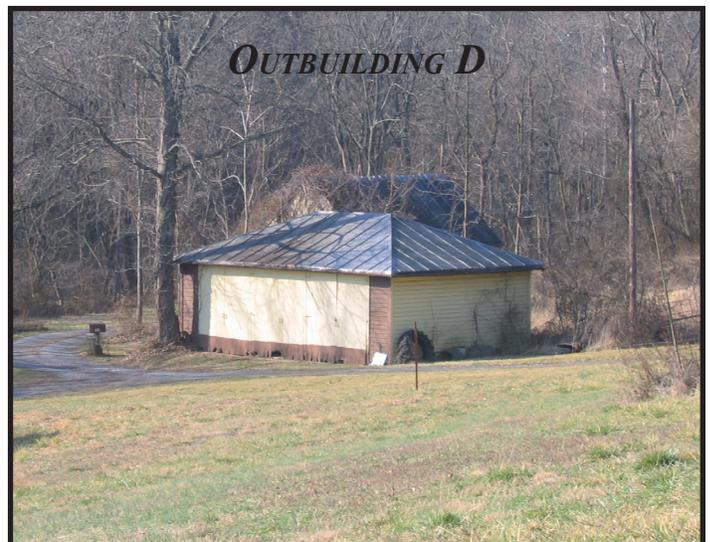
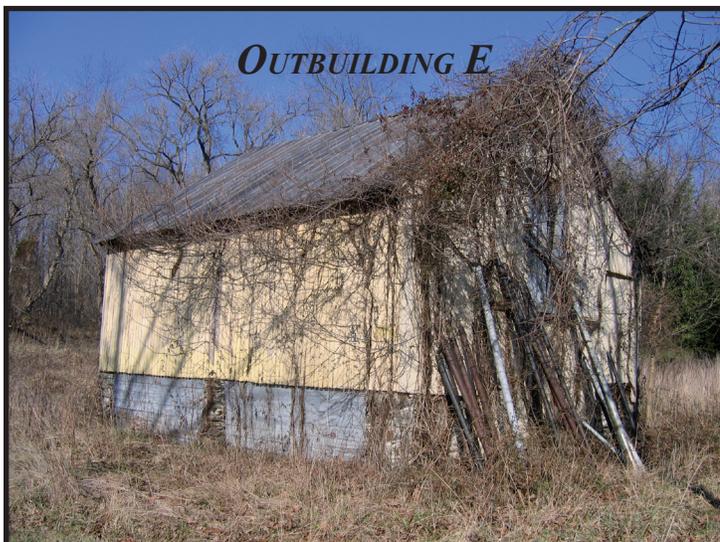


Figure 35: Outbuildings A, B, C, D, and E (clockwise), 2008 (Courtesy of the State Highway Administration).



Figure 36: Aerial photograph, 2008. The yellow line in the head race carrying water from Catoctin Creek to the mill (G) circled in red. The blue line is the tail race that conveys the exhausted water from the mill back to the creek. Two outbuildings (D and E) are in proximity to the mill (G) and the dwelling (F) is to the north. Northeast of the dwelling are outbuildings A, B, and C (Map of courtesy of Frederick County GIS).

HISTORICAL OVERVIEW: BENJAMIN RICE MILL

BENJAMIN RICE

The history of the Benjamin Rice Mill begins with Rice himself, who acquired land in Frederick County in the late eighteenth century. Rice married Parnell Hook on February 4, 1782, in Middletown, Frederick County, Maryland. The couple had two sons, John Clifford and James, and five daughters, Sarah, Eleanor, Jemimah, Ruth, and Mary. In the late eighteenth century, Benjamin Rice acquired parts of two separate but adjacent land patents along the Catoctin Creek. On March 2, 1791, William and Sarah Housemer conveyed to Rice 80 acres located in the land patent known as Huntington Bottom.¹⁰² The following year, on October 10, 1792, Alexander Thomas Hawkins sold Rice 47¾ acres located in the land patent known as Fielderia for the sum of 153 pounds.¹⁰³

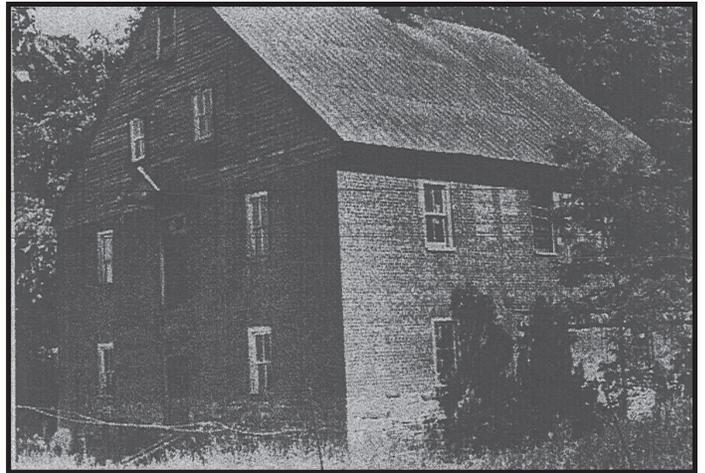


Figure 37: Benjamin Rice Mill, 1973 (Source: John McGrain's *Molinography of Maryland*).

While Rice was in possession of the land on which the mill building sits by 1792, research indicates that the brick mill and its associated buildings were not constructed until after 1798. Tax assessments for that year valued the two properties at only \$106, listed zero improvements since the previous assessment, and did not indicate the presence of a mill.¹⁰⁴ If a mill existed, it would have been temporary in nature. The 1808 Varle map of Frederick and Washington Counties shows multiple mill symbols near the location of the Benjamin Rice Mill. Previously, historians have speculated that the Rice Mill was one of these noted mills. The first empirical evidence for the existence of the Rice Mill, though, was a report of August, 29, 1812 in the *Frederick Herald* newspaper. The article stated that Rice was making improvements to the mill site and petitioned the county for better local roads.¹⁰⁵ Improvements may not have been directly referencing the mill building, but the possible addition of the saw mill, machinery within the building, and any number of outbuildings.

Research therefore suggests that the current mill building was completed sometime between 1798 and 1812. The two-story, three-bay brick mill is set on a raised coursed rubble stone foundation, and is capped by a gable roof. The mill is similar in appearance to the Lewis Mill (F-2-001), a brick mill built on the Catoctin Creek circa 1810.

¹⁰² Frederick County Court (Land Records), *Liber WR 9*, Maryland State Archives, CE 108-29 (1790-1791): 647-648. <http://www.mdlandrec.net> (accessed February 2, 2012).

¹⁰³ Frederick County Court (Land Records), *Liber WR 11*, Maryland State Archives, CE 108-31 (1792-1793): 148-159. <http://www.mdlandrec.net> (accessed February 2, 2012).

¹⁰⁴ Other properties had such details listed in the remarks column of the tax assessment. Frederick County Commissioners of the Tax (Assessment Record), *Real Property*, 1798, Maryland State Archives, C7555-2.

¹⁰⁵ Maryland Historical Trust, "Benjamin Rice Mill." State Historic Inventory Form, 1991. <http://www.mdihp.net> (accessed February 22, 2012).



Figure 38: Construction of the 1933 truss bridge with Benjamin Rice mill in background (Courtesy of the State Highway Administration).

In 1813, the Benjamin Rice Mill was described as a “merchant and saw mill” in *An act to open a road from John Cain’s tavern, to Berlin, in Frederick county*:

A road not exceeding thirty feet in width, beginning at or opposite the tavern of John Cain, on the main Harper’s Ferry Road, from thence passing between the lands of Abraham Easterday and Perry Hilleary, thence along the lane dividing the lands of George Dutterow and Theodore Mitchell to Benjamin Rice’s merchant and saw mills, thence through the lands of Thomas Hawkins, by the widow Nyswonger’s to Thomas Frazier’s, and along his land as now established to James Fenley’s spring, thence to the mouth of the lane dividing the land of Roger Nelson and Tobias Belt, thence as the road now runs to Berlin on the river Potomac.¹⁰⁶

Little information is known regarding the early history of the Rice Mill until Benjamin Rice’s death on June 19, 1820. His will, written and signed on April 14, 1820, provides insight into the property, dwelling, mill, and other support buildings. Rice left his wife, Parnell, the mansion house, kitchen, furniture, gardens, associated outbuildings, and a female slave named Eliza. His son, James, inherited the merchant and saw mill, and was permitted to live in the house with his mother with full use of all outbuildings. The metes and bounds for the properties noted “the head of the mill dam” and “the abutment of the dam of said mills” deeded to Benjamin by Thomas Hawkins. In addition, eight acres below the existing copper shop were to be sold to James. The will directed James to pay his mother \$100 annually for her support. Also, he was instructed to pay each of his five sisters \$750 in five equal annual payments as compensation for the real estate conveyed to him.¹⁰⁷ Benjamin’s other son, John Clifford, received the remainder of the real estate and plantation. Likewise, he had to make the same payments to his mother and sisters.¹⁰⁸

Also in 1820, the United States Census recorded six males engaged in agriculture on Benjamin Rice’s property: four white males and two slaves.¹⁰⁹ The slaves’ role regarding mill operations is unknown.

DANIEL LEAKIN

On October 7, 1823, John Clifford Rice sold to James Rice his portion of real estate for \$105.¹¹⁰ Shortly thereafter, James Rice and Parnell Rice sold the mill, dwelling, and the land to Daniel Leakin for \$7000.¹¹¹ In 1825, Leakin expanded the property and owned parts of both Fielderia (and Brother’s Lot) and Huntington Bottom consisting

106 Session Laws of 1813, Volume 632, page 87: “Chapter 94. *An act to open a road from John Cain’s tavern, to Berlin, in Frederick county*. Section 1.

107 The five sisters listed were Sarah Skaggs, Eleanor Keefer, Jemima Kellenberger, Ruth Dutrow, and Mary Jacobs.

108 Norah Rice, “[Transcription of the] Will of Benjamin Rice,” <http://www.archiver.rootsweb.ancestry.com> (accessed February 20, 2012).

109 United States Census Bureau, United States Federal Census, 1820. <http://www.ancestry.com> (accessed February 15, 2012).

110 Frederick County Court (Land Records), *Liber JS-18*, Maryland State Archives, CE 108-86 (1823-1824): 547-549. <http://www.mdlandrec.net> (accessed February 2, 2012).

111 Frederick County Court (Land Records), *Liber JS-18*, Maryland State Archives, CE 108-86 (1823-1824): 550-552. <http://www.mdlandrec.net> (accessed February 2, 2012).

of 279 and 17¼ acres, respectively.¹¹² The Fielderia parcel contained a two-story house, while Leakin's merchant mill was located on the adjacent Huntington Bottom parcel. The combined properties were assessed at \$2,483.¹¹³

Leakin owned eleven slaves: two males between 14 and 45 years old, two females between 14 and 36 years old, and seven slaves (gender not listed) under eight years old or over the age of 45 and 36. The total value of all the slaves was \$565 and Leakin had an additional \$105 in personal property.¹¹⁴ It is unknown whether the slaves worked in the mill and associated support buildings, or were laborers on the plantation.

Leakin placed the property for sale in 1829. The *Herald* ran an advertisement for a brick mill with one pair of burrs "ready to receive another" and one pair of country stones.¹¹⁵ On July 16, 1829, the Court of Equity appointed John Nelson, Esq., as trustee. He conveyed the property to Joseph Catzendorfner. Legal issues regarding the sale of the property were not settled until October 15, 1833.¹¹⁶

JOSEPH CATZENDAFNER

The 1835 Tax Assessment Records listed Catzendorfner as owning 41 acres containing a grist and saw mill assessed at \$721.¹¹⁷ He had no slaves and his personal property was valued at \$77.¹¹⁸ By 1850, the Census of Manufactures noted Cartzendorfner as having a \$7,500 capital investment in the business. He and two other employees ground 23,000 bushels of wheat valued at \$23,000. The mill produced 5,000 barrels of flour worth \$25,100. The average monthly cost of labor was \$46.¹¹⁹ Cartzendorfner had a profit margin of \$1,548.

Cartzendorfner lost control of the property in 1860. The Circuit Court of Frederick County appointed Charles W. Ross as trustee to sell the property.¹²⁰ A classified ad ran in the *Baltimore Sun* describing the property known at that time as Mountain Mills:

112 Leakin acquired the additional land of Fielderia from Henry and Julia Clagett on March 6, 1824. Frederick County Court (Land Records), *Liber JS-44*, Maryland State Archives, CE 108-112 (1833): 210. <http://www.mdlandrec.net> (accessed February 2, 2012)

113 Frederick County Commissioners of the Tax (Assessment Record), *Real Property*, 1825, Maryland State Archives, C7555-3.

114 Frederick County Commissioners of the Tax (Assessment Record), *Personal Property*, 1825, Maryland State Archives, C7555-4.

115 John W. McGrain, *The Molinography of Maryland: A Tabulation of Mills, Furnaces, and Primitive Industries*, 2d ed. (Towson, MD: Maryland Historical Society, 2007).

116 For further information see Frederick County Court of Equity Case #977. Frederick County Court (Land Records), *Liber JS-44*, Maryland State Archives, CE 108-112 (1833): 210. <http://www.mdlandrec.net> (accessed February 2, 2012).

117 Frederick County Commissioners of the Tax (Assessment Record), *Real Property*, 1835, Maryland State Archives, C7555-5.

118 Frederick County Commissioners of the Tax (Assessment Record), *Personal Property*, 1835, Maryland State Archives, C7555-6.

119 United States Census Bureau, Schedules of Manufacturers, 1850, Maryland State Archives, SCM5165-2.

120 For more details regarding Frederick County Court of Equity Case #2881, see Frederick County Court (Land Records), *Liber BGF-5*, Maryland State Archives, CE 61-15 (1859-1860): 740. <http://www.mdlandrec.net> (accessed February 2, 2012).

By virtue of a decree of the Hon. Madison Nelson, judge of the Circuit Court for Frederick co., sitting in equity, the subscriber will offer at public sale, on SATURDAY, June 16th, 1860, at the City Hotel, Frederick, Md., at 10 o'clock A.M., the following valuable MILL PROPERTY, known as the Mountain Mills, formerly belonging to Joseph Cartzendstiner [Catzendafner], situated in Middletown Valley, on the Catoctin Creek, 2 ½ southwest of Jefferson, 2 ½ miles north of the Baltimore and Ohio Railroad and the Chesapeake and Ohio Canal. It is located in an excellent wheat growing country, and has the advantage of a fine plaster market, and can always command a large country patronage and retail business. The Mill is a four-story [including basement and attic] Brick Building, runs three pair of burrs and one plaster stone. The whole property is in excellent condition. Attached to it is a first-rate Saw Mill, also in good order, having been recently repaired. The dam is built of stone, is in good condition, and is one of the most substantial in the country. There is connected with the mill property 43 ACRES OF LAND, which has on it the following improvements: THREE DWELLING HOUSES, Cooper House, Spring House, Carriage House, double Corn House, and Wagon Shed; a new barn, with stabling sufficient to accommodate from ten to twelve horses and eight to ten cows, and a good Blacksmith's Shop, an elegant Apple and Peach ORCHARD, of the most choice varieties of fruit; also, a large number of other fruit trees, such as Pears, Plums, Apricots, etc./ For particulars apply to W.R. HOWARD, 69 West Pratt street, or CHARLES W. ROSS, Trustee, Frederick, WM B. TABLER, Auctioneer.¹²¹

This classified advertisement is the first full description of the property revealing a prosperous mill and farm. Catzendafner expanded milling operations by adding two pairs of burr stones (one replaced a country stone) and a plaster-stone to grind gypsum or lime for plaster. The two additional dwellings possibly housed Cartzendafner's family who were living and working on the property; the eldest three sons were millers and the youngest son was a clerk.¹²² The additional living spaces may also have housed laborers as the 1850 United States Census listed John Parker, a free African American living on the property.¹²³

On July 20, 1860, Charles W. Ross sold Cartzendafner's property to John and Catherine Sinn; they proceeded to sell the property to Maria Louisa Parker the following month for \$4,000.¹²⁴ She owned the mill with her son, Edward Parker, who was listed on the mortgage with his mother.¹²⁵ After the death of his mother, he gained sole ownership of the property having purchased it from his mother's heirs.¹²⁶ Edward was likely the head miller on the

121 Baltimore Sun, "Classified Ad 11," *Baltimore Sun*, June 11, 1860, <http://www.proquest.com> (accessed February 3, 2012).

122 The 1860 Census listed the following individuals and ages residing on the property: Joseph (65), Perry (33), Ann (30), Joseph (25), Edward (23), William (21), and Alice (16).

123 United States Census Bureau, United States Federal Census, 1850. <http://www.ancestry.com> (accessed February 15, 2012).

124 For land conveyance from Ross to Sinn, see Frederick County Court (Land Records), *Liber BGF-5*, Maryland State Archives, CE 61-15 (1859-1860): 740. <http://www.mdlandrec.net> (accessed February 2, 2012). For land conveyance from Sinn to Parker, see Frederick County Court (Land Records), *Liber BGF-6*, Maryland State Archives, CE 61-16 (1860-1861): 35. <http://www.mdlandrec.net> (accessed February 2, 2012).

125 The mortgage with John Sinn was for two notes valued each at \$1333. Land Record BGF-6 35-36. Frederick County Court (Land Records), *Liber BGF-6*, Maryland State Archives, CE 61-16 (1860-1861): 35. <http://www.mdlandrec.net> (accessed February 2, 2012).

126 Frederick County Court (Land Records), *Liber TG-11*, Maryland State Archives, CE 61-46 (1879): 712-714. <http://www.mdlandrec.net> (accessed February 2, 2012).

property, but it is possible that Maria Louisa also worked at the mill in some capacity, as women did historically contribute to mill operations.¹²⁷

EDWARD PARKER

The 1873 county atlas showed the mill as E. Parker's mill. It also appears to have been known as Catoctin Mill No. 10.¹²⁸ In December 1875, Parker advertised the property in the *American Miller*: "A four-story brick mill, 44 x 44, with three run of burrs, located at Petersville Md., is offered for sale. In connection with mill are 43 acres of land, dwelling, stables, and all other necessary out houses. Mill is situated two-and-a-half miles from the Baltimore and Ohio Railroad and Chesapeake & Ohio Canal and has a yearly retail custom of fifteen hundred barrels flour. Price, \$8,000."¹²⁹ Parker apparently had some difficulties selling the property. On September 6, 1875, Isaac T. McComas, who had just sold Hoods Mills in Carroll County, visited the property. Deciding not to purchase the mill, he recorded his visit in his diary stating it was: "a very lonely place, besides I did not like the mill. The building is very old. I do not like the way the mill is geared. Two burrs are run from a turbine with straps."¹³⁰

By 1880, Parker was still in possession of the mill. The 1880 United States Census of Manufactures listed Parker with a \$4,500 capital investment in a market and custom mill. The mill contained \$210 of mill supplies, a 1,000 bushel capacity elevator, and four "runs of stone" capable of grinding a maximum of 150 bushels per day. Further, it noted the property was on a 10-foot fall on Catoctin Creek, driving an overshot wheel 9 feet broad and a 26½ inch turbine generating 10 hp. Annual outputs were 600 barrels of flour, 81 tons of corn meal, and 24 tons of feed valued at \$6,500.¹³¹ The census data does not correspond with the annual output of flour listed in the 1875 advertisement. Possibly, Parker was overestimating the mill's capacity to entice interest. In conjunction with McComas's diary entry, the census data suggests that the overshot wheel and turbine each powered two sets of burrs.

Parker had not given up on selling the property, still advertising the mill in the *American Miller*, as recorded on April 1, 1880. On June 16, 1880, the *Md. Union* ran an advertisement for an auction scheduled on June 16, 1880, describing it as four-story brick building with 3 pair of burrs and one of plaster stones. It also noted a stone dam, a recently repaired sawmill, three distilling houses, a cooper shop, blacksmith shops, and notes "the former property of House and Co."¹³² As the chain of title from Benjamin Rice to Edward Parker is complete, the reference to House and Co. is unclear. For the first time, the property was listed as having distilling houses, a typical enterprise undertaken by nineteenth-century millers. The results of the scheduled auction are not clear,

127 Mill historian Theodore Hazen states that a miller's apprentices were often his children, including daughters and that historically there were female millers and blacksmiths (Hazen, "Report on Mills and Millers." <http://www.angelfire.com/journal/millbuilder/interview.html> (accessed March 2012).

128 McGrain, 26.

129 McGrain, 26.

130 McGrain, 26.

131 United States Census Bureau, Special Schedules of Manufacturers, 1880, Maryland State Archives, SM61-346.

132 McGrain, 25-26.

as another advertisement ran in the *American Miller* on September 1, describing “a country trade which keeps it constantly running at full capacity. In good order.”¹³³

On April 2, 1886, Edward Parker sold the property, now known as “Parker’s Mills,” and containing 43 acres, to William T. Peters and Grafton A. Duvall.¹³⁴ On February 11, 1886, the Baltimore *American* reported “The Parker Mill property, near Petersville, this county, was sold to day [*sic*] by Colonel J.B. Thomas & Son, real estate agents, to Wm. A Peters and G.A. Duvall. It is one of the best pieces of property in the county. The price paid was \$4,000.”¹³⁵ On May 19, 1888, Grafton and Mary Duvall sold his portion of the property to Peters and his wife, Sarah E. Peters, for \$1,950.¹³⁶ Peters defaulted on their mortgage and lost the mill. On March 2, 1895, William D. Bell purchased the property for \$900.¹³⁷ It has since been known as “Bell’s Mill” and has remained in the Bell family to the present date.

WILLIAM BELL

At the time of the United States Census of 1900, William Bell (born July 1864) operated the mill and resided in the dwelling with his wife, Mary B. (born October 1868), and their sons Clifton A. (born 1894) and Orman (born 1896). Additionally, Charles J. Peters (born 1860), listed as a laborer and miller, lived and worked on the property.¹³⁸ By 1910, William and Mary had two more sons, Charles W. (born 1900) and George R. (born 1902). By this time, Peters no longer lived and worked at Bell’s Mill, but Mary’s brother, Carrey G. Taylor, resided on the property and worked as a flour miller.¹³⁹ Bell’s wife and children inherited the property when he died on December 11, 1911.¹⁴⁰ The 1920 United States Census listed Mary Bell as head of the household and general farmer with Orman operating the mill; ten years later, Charles and George were listed as operating the flour mill.¹⁴¹

Charles William Bell operated the flour mill from the 1930s until milling operations ceased in the late 1950s. In 1932, he acquired 38 additional acres of land adjacent to the mill property located at “...about two miles Southeast of the village of Petersville, at the crossing of the public road leading from Kinney’s blacksmith shop

133 McGrain, 27.

134 Frederick County Court (Land Records), *Liber WIP-1*, Maryland State Archives, CE 61-60 (1885-1887): 241-242. <http://www.mdlandrec.net> (accessed February 2, 2012).

135 McGrain, 27.

136 Frederick County Court (Land Records), *Liber WIP-6*, Maryland State Archives, CE 61-65 (1888-1889): 276-277. <http://www.mdlandrec.net> (accessed February 2, 2012).

137 Frederick County Court (Land Records), *Liber JJJ-7*, Maryland State Archives, CE 61-80 (1894-1895): 702-703. <http://www.mdlandrec.net> (accessed February 2, 2012).

138 United States Census Bureau, United States Federal Census, 1900. <http://www.ancestry.com> (accessed February 15, 2012).

139 United States Census Bureau, United States Federal Census, 1910. <http://www.ancestry.com> (accessed February 15, 2012).

140 Frederick County Court (Land Records), *Liber 1212*, Maryland State Archives, CE 61-1057 (1983): 196-197. <http://www.mdlandrec.net> (accessed February 2, 2012).

141 United States Census Bureau, United States Federal Census, 1920. <http://www.ancestry.com> (accessed February 15, 2012). United States Census Bureau, United States Federal Census, 1930. <http://www.ancestry.com> (accessed February 15, 2012).

to Bell's mill...."¹⁴² After the death of Mary Bell on March 27, 1948, Charles, Orman, and George inherited the property. On February 1, 1950, George and Orman conveyed all 43 acres to Charles.¹⁴³ Shortly thereafter, he acquired an additional six acres of land located near Catoctin Creek. Bell resided on the mill property until his death on February 11, 1983.¹⁴⁴

Marcelene S. Bell, the wife of Charles Bell, and their two children, Ariel and Marilyn, inherited the property. The deed conveyed to Marcelene one-half interest in the property, and Ariel and Marilyn each a one-quarter interest.¹⁴⁵ Ariel and Marilyn Bell are the current owners of the property.

142 Frederick County Court (Land Records), *Liber 385*, Maryland State Archives, CE 61-230 (1932): 443. <http://www.mdlandrec.net> (accessed February 2, 2012).

143 Frederick County Court (Land Records), *Liber 482*, Maryland State Archives, CE 61-327 (1949-1950): 340-341. <http://www.mdlandrec.net> (accessed February 2, 2012).

144 Frederick County Court (Land Records), *Liber 510*, Maryland State Archives, CE 61-355 (1952-1953): 298. <http://www.mdlandrec.net> (accessed February 2, 2012).

145 Frederick County Court (Land Records), *Liber 1212*, Maryland State Archives, CE 61-1057 (1983): 196-197. <http://www.mdlandrec.net> (accessed February 2, 2012).

CHAPTER 5: APPLICATION OF THE HISTORIC CONTEXT

IDENTIFICATION AND EVALUATION OF HISTORIC PROPERTIES

The National Historic Preservation Act of 1966, 80 Stat. 915, 16 U.S.C. 470, as amended through 1992, established the National Register of Historic Places, and authorized the Secretary of the Interior to expand and maintain it, as an official list of resources composed of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering, and culture. The National Register is maintained by the Secretary of the Interior, and administered by the National Park Service. The Department of the Interior has developed regulations defining the procedures for listing properties in the National Register (36 CFR Part 60).¹⁴⁶

Section 106 of the National Historic Preservation Act, as amended, requires Federal agencies to consider the effects of their undertakings on historic properties. Federal agencies are required to determine whether their undertakings could affect historic properties.¹⁴⁷ In order to assess the effects of their actions, these agencies must identify and evaluate properties to determine their eligibility for inclusion in the National Register of Historic Places. As such, the Secretary of the Interior has developed standards and guidelines for identification and evaluation of resources.

IDENTIFICATION OF HISTORIC PROPERTIES

In order to begin the preservation planning process as summarized above, historic properties must first be identified. The guidelines for this process are available through the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (48 FR 44716).¹⁴⁸

Before the identification process begins, the objectives of the identification activity must be defined in order to determine the appropriate identification methodology. Once the objectives of the identification process have been determined, the appropriate methodology to obtain the information can be selected. Archival research and field survey are the two primary means by which historic properties are identified.

EVALUATION OF HISTORIC PROPERTIES

When properties have been identified under the processes described in the previous section, the historic significance and integrity of those properties can be evaluated. This process is also described in detail in The Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (48 FR 44716).

EVALUATING SIGNIFICANCE OF HISTORIC PROPERTIES

The Secretary of the Interior describes the importance of evaluation of historic properties in the planning process:

¹⁴⁶ National Park Service, "National Historic Preservation Act of 1966," <http://www.nps.gov/history/local-law/nhpa1966.htm> (accessed February 20, 2012).

¹⁴⁷ Advisory Council on Historic Preservation, "Section 106 Regulations Summary," <http://www.achp.gov/106summary.html> (accessed February 20, 2012).

¹⁴⁸ National Park Service, "Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines," http://www.cr.nps.gov/local-law/arch_stnds_0.htm (accessed February 20, 2012).

The evaluation of historic properties employs criteria to determine which properties are significant. Criteria should therefore focus on historical, architectural, archeological, engineering and cultural values, rather than on treatments.¹⁴⁹

The criteria used to evaluate historic properties are the *National Register Criteria for Evaluation* (36 CFR Part 60.4) which were developed to assist in the evaluation of properties eligible for inclusion in the National Register. The National Park Service publication *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* provides detailed guidance on applying the criteria.¹⁵⁰ As the National Register of Historic Places is a major focus of preservation activities at the Federal, State and local levels, the criteria have been widely adopted for various preservation planning activities.

The *National Register Criteria for Evaluation* are:

Criterion A: Properties that are associated with events that have made a significant contribution to the broad patterns of our history; or

Criterion B: Properties that are associated with the lives of persons significant in our past;

Criterion C: Properties that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

Criterion D: Properties that have yielded, or may be likely to yield, information important in prehistory or history.¹⁵¹

A property could be significant under one or several Criteria, and for one or several areas of significance. Areas of significance include, for example, agriculture, commerce, and industry, all themes that are associated with the Benjamin Rice Mill. Other example areas of significance that might be evaluated for other properties include commerce, invention, medicine, religion, or literature.

National Register Bulletin 15 notes that an historic context may also be represented by a variety of important property types. An historic context for a community could be based on a distinct time period of development, therefore it might include numerous property types. A specific era of industrialization in a region could include property types as diverse sawmills, paper mills, flour mills, grain elevators, furniture factories, commercial buildings, workers housing, transportation facilities, and so on.¹⁵²

Historic properties can also be categorized under several defined types: buildings, sites, districts, structures,

149 National Park Service, "Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines."

150 National Park Service, "How to Evaluate a Property within its Historic Context," http://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_5.htm (accessed February 20, 2012).

151 National Park Service, "National Register Criteria for Evaluation," http://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_2.htm (accessed February 20, 2012).

152 National Park Service, "How to Evaluate a Property within its Historic Context."

objects, and districts. The following definitions for each category are quoted from *National Register Bulletin 15*.¹⁵³ Examples of properties that might be found on an historic grist mill site such as Benjamin Rice Mill are provided to illustrate these categories:

Building: A building, such as a house, barn, church, hotel, or similar construction, is created principally to shelter any form of human activity. “Building” also may refer to an historically and functionally related complex, such as a courthouse and jail or a house and barn. Examples of buildings include grist mill, sheds, barn, miller’s dwelling, or commercial store.

Structure: The term “structure” is used for constructions erected for purposes other than creating human shelter. Examples of structures include bridge, canal, dam, earthwork, or grain elevator.

Object: The term “object” is used for resources, other than buildings and structures, that are primarily artistic in nature or are relatively small in scale and simply constructed. Although it may be, by nature or design, movable, an object is associated with a specific setting or environment. Examples of objects include boundary marker, milepost, or waterwheel.

Site: A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archeological value regardless of the value of any existing structure. Examples of sites include ruins of a building or structure, a trail, or a mill village site.

District: A district is a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development. An example of a district would include a rural village surrounding a grist mill, that would include the grist mill itself, structures like a mill pond, dam or grain elevator, supporting buildings like the dwelling house of the miller and outbuildings.

EVALUATING INTEGRITY OF HISTORIC PROPERTIES

In order to be listed in the National Register of Historic Places, a property must have integrity in addition to possessing significance within an historic context. In this context, integrity is defined as the ability of a property to convey its significance. Seven aspects of integrity are applied to evaluate a property. To retain the necessary level of integrity to convey its significance, a property will possess several, and often most, of these aspects.

The seven aspects of integrity, as quoted in bold from *National Register Bulletin 15*, are:

1. Location

Location is the place where the historic property was constructed or the place where the historic event occurred. Complemented by its setting, location is considered particularly important in recapturing a sense of historic events and people. With few exceptions, the relationship between a property and its historic associations is usually considered destroyed if the property is moved.

¹⁵³ National Park Service, “How to Define Categories of Historic Properties,” http://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_4.htm (accessed February 20, 2012).

2. *Design*

Design is the combination of elements that create the form, plan, space, structure, and style of a property. Design is the result of conscious decisions made during conception and construction of a property and includes elements like organization of space, scale, ornamentation and materials. It reflects historic function, technology and aesthetics. In districts, design can apply to the way includes buildings, sites, and structures relate to one another.

3. *Setting*

Setting is the physical environment of an historic property. Where location refers to the specific place a property was built or where an even occurred, the setting refers to the character of the place. It generally reflects the basic physical conditions under which a property was built, and can also involve the way in which the property was positioned in its environment. For example, an historic barn constructed in an open, rural setting that has now been heavily subdivided and developed, would likely be assessed as having low or no integrity of setting.

4. *Materials*

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form an historic property. Materials can reveal the preferences of those who constructed the property and also indicate the availability of particular types of materials and technology. Materials indigenous to a particular region can help define an area's sense of time and place. A property must retain its key exterior materials dating from its defined period of significance.

5. *Workmanship*

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. Workmanship is considered to be evidence of the artisans' labor and skill in constructing an historic resource. It is important because it can provide evidence of historic technology, illustrate aesthetic principles of a period, and reveal local, regional or national applications of technological and aesthetic practices. Examples would include carving, painting and joinery.

6. *Feeling*

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. Feeling results from the presence of physical features which together convey the property's historic character. For example, high integrity of setting, materials and design might result in high integrity of feeling.

7. *Association*

Association is the direct link between an important historic event or person and an historic property. A property has integrity of association if it is the place where a defined event or activity occurred and if it is sufficiently intact to convey that relationship. Feeling and association are not sufficient alone to support eligible for the National Register and depend on the presence of physical features and other more definable aspects of integrity.¹⁵⁴

154 National Park Service, "How to Evaluate the Integrity of a Property," http://www.nps.gov/history/nr/publications/bulletins/nrb15/nrb15_8.htm (accessed February 20, 2012).

In accordance with National Park Service guidelines, assessing integrity requires several steps. Defining the essential physical features that must be present to represent significance; determining whether these features are visible enough to convey significance; determining whether the property needs to be compared with similar properties; and determining which aspects of integrity are particularly vital to the property and if they are present.¹⁵⁵

Essential physical features are considered to be those that define why and when a property was significant. Specifically, under Criteria A and B, a property is considered eligible if it retains the essential “features that made up its character or appearance during the period of its association with the important event, historical pattern, or person(s).”¹⁵⁶ Under Criterion C, a property that is important for illustrating a particular architectural style or construction technique must retain most of its physical features that represent that style or technique. Under Criterion D, archeological sites in particular do not exist as they were formed, and cultural and natural processes continue to alter the deposited materials. Therefore, for Criterion D, integrity is based on the property’s potential to yield information that addresses research questions.¹⁵⁷

IDENTIFICATION OF PROPERTY TYPES IN RURAL FREDERICK COUNTY

ASSOCIATED PROPERTY TYPES

As evidenced in *Chapter 2* presented in this report, historic rural grist and flour mill properties may reflect a variety of themes beyond the milling industry and its technological developments. Historically, communities and villages commonly grew up around historic mill sites. These mills were not just industrial manufacturing buildings, but were often a symbolic core of the community, where agricultural products were converted to valuable commercial products, around which workers constructed their homes, and often as an important social center. It was not uncommon, then, for a rural mill building to be located within a larger rural complex that might include some agricultural activity, dwellings for workers, stores to sell the mill products as well as other goods needed in the community, and sometimes adjacent transportation networks that allowed products to be brought to cities or ports. Today, an extant rural mill site may reflect several of these themes in addition to industry, through a variety of property types, including buildings, structures, objects, and sites, and may be represented within districts if multiple resources exist in concentration.

A number of buildings may be located on a rural grist or flour mill property in addition to the mill building itself or remain extant after the mill has disappeared from the landscape. First, additional industrial or manufacturing buildings were often built adjacent to the mill. Distilleries were commonly built near grist and flour mills, as surplus grain could be used to manufacture spirits. Saw mills were also often constructed in conjunction with grist mills, as they could be run on the same wheel, and the wood produced could be used to make barrels for the manufactured products. A cooper shop and a blacksmith’s shop were also commonly located on site. The cooper shop was conveniently located to manufacture barrels or “casks” necessary for storage and shipping. A blacksmith shop would commonly be included in any small community, available to make a variety of necessary products including nails and tools. A larger rural community or village might have also included a general store, to provide for the needs of the workers and their families. As most rural mill sites incorporated some agricultural component,

155 National Park Service, “How to Evaluate the Integrity of a Property.”

156 National Park Service, “How to Evaluate the Integrity of a Property.”

157 National Park Service, “How to Evaluate the Integrity of a Property.”

agricultural buildings may also be found within a property, including a barn and sheds. The barn would have been used to store cereal crops and hay, for example. A corn crib (or corn house as it was referred to at Benjamin Rice Mill) may have been present to dry and store corn. Associated domestic buildings were also present historically, to house the mill owner and other community members. Other buildings might include outbuildings like a carriage house, wagon shed, and a spring house for storage of food. If a transportation network was closely associated with the mill, a railroad station stop, for example, may remain extant.

Structures are an important associated resource type found within rural mill properties and, as such, these resources are critical to expressing the technological nature of a mill site. Water-powered mill sites necessarily had a structural network in place to operate the water-powered mills. These structures included those permanent elements built into the landscape to power and operate the mill, including a mill dam, pond, head race and tail race, and sluice gates. The specific features of these structures are discussed in detail in *Chapter 2*. Other associated structures that may be found near a mill site include visible transportation networks, including an adjacent historic road, or a canal path or railroad line and their associated networks.

A number of associated objects were located within the interior of grist mills and may be extant today. Equipment was often removed from mills upon termination of milling activities, either to a different mill site (as was the case when equipment from the Lewis Mill was moved to the Benjamin Rice Mill upon its closing), or removed to allow for a new use. It is considered more temporary in nature as compared to the structural landscape elements discussed above. Described in greater detail in *Chapter 2*, such objects would include the miller's gears and shafts found at the basement level, mill grind stones or burrs and hopper at the first floor, and tools for storage and cleaning of unprocessed grains at the second floor. Larger technological objects would include a grain elevator, a horizontal or vertical waterwheel, or turbine. A variety of related tools used by millers and workers could also potentially be found within the interior of mills and their associated buildings. Historic signage may also be present at a mill site.

As discussed in the previous section, a site might include standing structures, including those buildings, structures, and objects just noted, or may include ruined or archaeological resources within a mill property. Ruins may exist of any of the buildings discussed above, for example, the foundations of mill buildings can often be found within the rural landscape. Remains of the technological structures discussed above may also be found buried within the landscape in varying condition.

IDENTIFICATION

Over the course of its history, Frederick County is thought to have had hundreds of operating mills to process the agricultural products of its land. The county's mill sites were recorded on maps, in deeds, censuses, tax assessments, and other records, and it is probable that many more were never recorded at all.

In his *Molinography of Maryland*, historian John McGrain provides what is likely the most exhaustive published list of historic and extant mill sites in the county, as recorded in available historic documents.¹⁵⁸ Even so, McGrain states in his introduction to the work that "Perhaps no list of the mills and primitive industries of Maryland will ever be complete."¹⁵⁹ He notes for example that mill's ownership constantly changed, that they were often rebuilt

158 Molinography is defined as the geographical study of the distribution of mills within a given area, for example, in a county, state or country.

159 McGrain, 7-8.

and modified, and the name of the mill reflected the current owner. Further, a single reference by name or vague location may be found once in such a source, then not appear in the historic record again, with no additional information on the site available.

Although there are varying accounts concerning the exact number and location of mills in the county's history, what is known with certainty is that only a fraction remain today. Mill historian Marjorie Lundegard has published an extensive study of grist mills and their ruins throughout the state, and compiled the results in a series of booklets devoted to each county. In *Mills and Covered Bridges of Frederick County, Maryland*, published in 2001, Lundegard notes specifically that the Catoctin Creek at one time had over twenty mills, but today only two remain, the Benjamin Rice Mill and the Lewis Mill.¹⁶⁰

With so few grist mill buildings extant today, it appears more valuable to identify remaining resources rather than to identify and locate all historic mill sites.¹⁶¹ Today, few rural water-powered grist mill buildings have been identified that remain standing in rural Frederick County, and several are in varied states of deterioration.¹⁶² These buildings are: Araby Mill (F-7-057); Benjamin Rice Mill (F-2-046); Buckey's Mill (F-8-112); Carroll Mill (F-1-005); Ceresville Flour Mill (F-8-042); Kinna's Mill (Kinna's Mill District: F-6-050) Lewis Mill (F-2-001); Michael's Mill (F-1-077; also known as Monocacy Mills); and Sam's Creek Mill (F-8-102). With the exception of the Benjamin Rice Mill, which has been discussed in-depth, each mill will be summarized briefly here, including its location, estimated date of construction, construction material, and general condition if that information is available.

¹⁶⁰ Lundegard, 5.

¹⁶¹ McGrain's *Molinography* is an invaluable resource for this information.

¹⁶² Several mill buildings, such as Ramsburg's Mill (also known as Jacob Bentz' Mill or Old Town Mill) and the old Mountain City Mill (FHD-1030, currently the Delaplaine Visual Arts Center) remain extant in Frederick City, but are not discussed here as they are not rural mill sites.

EXISTING MILLS IN FREDERICK COUNTY

ARABY MILL (F-7-057):



Figure 39: Araby Mill, 2010 (Source: Robert Kinsey, <http://www.millpictures.com>).

Araby Mill, also known as Gambrill Mill, is located at the north side of Route 355 at its intersection with Araby Church Road, in Araby, Frederick County. Constructed circa 1830, the two-and-a-half-story mill features a square form, a low hipped roof, and is constructed of coursed field stone. In the 1920s, the upper story of the mill was removed and the mill race partially filled in when the building was rehabilitated for use as a dwelling. Original mill equipment does not remain within the building, though it is believed some could be buried nearby, and the raceway remains visible in the landscape. Today, the mill is used by the National Park Service for office space.¹⁶³

BUCKEY'S MILL (F-8-112):



Figure 40: Buckey's Mill, 2009 (Source: <http://www.panoramio.com>).

Also known as Simpson's Mill, this building is located on Simpson's Mill Road, in Johnsville, Frederick County. The frame mill was constructed in 1909, replacing an earlier mill that burned in 1908. An MIHP form completed for the mill in 1991 stated that the mill's original weatherboard siding had been covered in vinyl and the roof sheathed with corrugated sheet metal. In the 1950s, a concrete block addition was added to the east elevation. In 1991, the site still included a stone and frame barn, dating from the same period as the mill, and other agricultural outbuildings like a corn crib and sheds, as well as two dwelling houses from the mid- to late nineteenth century. In addition, the mill building housed a vinyl and aluminum siding company.

¹⁶³ The information is located in two sources, Maryland Historical Trust Inventory of Historic Properties, "Araby Mill," F-7-57, 1977. <http://www.mdihp.net> (accessed February 19, 2012). Also, see National Park Service, "Gambrill Mill (Araby Mill)," http://www.nps.gov/mono/historyculture/gambrill_mill.htm (accessed February 19, 2012).

CARROLL MILL (ALSO, DOUB'S MILL, F-1-005):



Figure 41: Buckey's Mill, 2009 (Source: Steve Spring, <http://www.panoramio.com>).

Carroll Mill is located at the edge of Pleasant View Road in Doubs, Frederick County. Constructed circa 1812, the sandstone structure was built as a flour mill by Charles Carroll. Three stories high, the mill is capped by a gable roof. The mill served the needs of Carroll's tenant farms on Carrollton Manor and is said to have operated well into the twentieth century. Today, the mill remains standing, but appears significantly deteriorated.

CERESVILLE FLOUR MILL (F-8-042):



Figure 42: Ceresville Mill, 2007 (Source: Robert Kinsey, <http://www.millpictures.com>).

Ceresville Flour Mill is located on the south side of Route 26 in Mt. Pleasant, Frederick County. Constructed circa 1813 by General Otho Williams, this three-and-one-half-story grain mill is constructed of limestone and is capped with a gable roof. After passing through many owners, the mill operated as the Kelly Feed Mill until 1988. The mill was then sold to a new owner, who removed its office of records and the flour mill machinery. As of 2008, the mill still sat vacant.¹⁶⁴ At the time of completion of its MIHP form in the 1980s, numerous frame buildings including a warehouse and wagon shed were located on the premises and may still be extant.

¹⁶⁴ Rebecca McClay, "Builders See Centuries-Old Homes, Barns as the Ultimate Fixer-Uppers," *Maryland Community Newspapers Online*, February 15, 2008, <http://ww2.gazette.net> (accessed February 20, 2012). For images of the building, see Historical Society of Frederick County, "Ceresville (Kelly's) Mill," http://www.hsfcinfo.org/Photo_Catalog/Catalog_P0610.htm (accessed February 20, 2012).

KINNA'S MILL (F-6-050):



Figure 43: Kinna's Mill, 2007 (Source: Robert Kinsey, <http://www.millpictures.com>).

Kinna's Mill is located at 16251 Foxville-Deerfield Road in Sabillasville, Frederick County. Located directly between Owens Creek and the road, the stone mill sits two-and-one-half stories high. The building was constructed circa 1770. It features many typical architectural features of a mill, including a front gable roof, weatherboard clad upper gable ends, and symmetrical fenestration. Today, the mill sits within a district including six other buildings associated with milling operations.

LEWIS MILL (F-2-001):



Figure 44: Lewis Mill, 2008 (Source: Robert Kinsey, <http://www.millpictures.com>).

The Lewis Mill is located on the west side of Poffenberger Road, one-and-a-half miles from Maryland Route 180 in Jefferson, Frederick County. Located on the banks of the Catoctin Creek, this three-and-a-half-story (sometimes described as four story) mill was constructed circa 1810 by owner William Johnson. Set on a random fieldstone foundation, the mill's second and third stories are constructed of common bond brick, and its upper gable end of wood framing. The mill was purchased by Basil Lewis in 1869 and operated as a saw mill and grist mill, until it closed in 1925. Today, part of the mill wheel remains within the building.¹⁶⁵ The mill was listed in the National Register of Historic Places in 1982. The Lewis Mill is considered significant as an early-nineteenth-century mill complex important for its contribution to the Jefferson area's agricultural and commercial growth. It is also considered distinct

for its brick construction, in contrast to the area's predominant stone construction of mills. Today, the Lewis Mill complex includes a dwelling, spring house, wagon shed, corn crib, and barn, as well as remains of an earlier mill race. The mill building itself is currently used as a pottery shop. The mill is of particular importance in the context of this report for its resemblance to the Benjamin Rice Mill, also located on the Catoctin Creek.

¹⁶⁵ Maynard, 36-38.

MICHAEL'S MILL (MONOCACY MILLS) (F-1-077):



Figure 45: Michael's Mill, 2007 (Source: Craig Swan, <http://www.hmdb.org>).

Michael's Mill, also known as Monocacy Mills, is located along the Monocacy River, on the north side of old Route 80, one mile east of Buckeystown in Frederick County. Constructed circa 1824, this six-story flour mill is constructed of stone at its lower three stories, of brick at its fourth story, and of wood at its fifth and sixth stories. The mill operated until 1957, at that time under the management of Leo Michael. At the time of the completion of an MIHP form for the mill in 1981, much of the mill's power and milling equipment and the mill dam remained extant. The mill building itself remains standing in good condition today.¹⁶⁶

SAMS CREEK MILL SURVEY DISTRICT (F-8-102):



Figure 46: Sams Creek Mill, 2008 (Source: Robert Kinsey, <http://www.millpictures.com>).

Sams Creek Survey District is located at the intersection of Sams Creek Road and Oak Orchard Road at Sams Creek in Unionville. A milling community developed around the present mill, built circa 1875. The district includes four dwellings and an abandoned house, as well as the mill itself, a one-story Flemish-bond brick building capped with a gambrel roof and set on a stone foundation. Today, the mill remains in a highly deteriorated condition as sections have collapsed; however, its basic form, fenestration, gearing, and mechanical structures remain intact. In addition, there are two millstones braced against the side of the building.¹⁶⁷

¹⁶⁶ For photographs of the mill, see "Michael's Mill," <http://millpictures.com/> (accessed February 20, 2012). "Michael's Mill, Michaels Mill Rd, Buckeystown, MD," <http://www.panaramio.com> (accessed February 20, 2012).

¹⁶⁷ For photographs of the mill, see "Sam's Creek Mill," <http://millpictures.com/> (accessed February 20, 2012).

OTHER MILL SITES

Certainly a number of other mill sites exist that today include only ruins of a mill building, but such sites are difficult to identify and offer diminished information to aid in our understanding of historic rural grist milling in the region. One such site that has been recorded by historians and is of note is Augusta Mill in Pleasant Valley near the junction of present-day Yarrowsburg Road with Route 67. There is no sure date for its construction, though it definitely existed at the site by 1867 when a line of the Baltimore and Ohio Railroad was constructed through the area, passing about 75 feet from the mill.¹⁶⁸ Of note, the mill was brick on a stone foundation, when appears to be a rare material choice for rural mills in this region, and seen only at the Lewis Mill and the Benjamin Rice Mill. Today, only portions of three walls remain, as well as some charred timbers. Additionally, some of the sluiceway and part of a stone wall that may have channeled the water remain visible.¹⁶⁹

As documented in the “Associated Property Types” section of this chapter, a variety of resource themes and types may be associated with rural grist mill sites. Several such extant properties have been identified through MIHP documentation that demonstrate this concept. At the Greenfield Mills (F-1-28) site for example in Licksville, a town was centered around the four-story stone flour mill. Although the mill itself was destroyed by fire, an adjacent sawmill remains on the site. The Parks Mills Survey District (F-7-26) in the Urbana vicinity included grist and sawmills and a distillery, though today the site is represented only by historic dwellings and a store. In the Monrovia vicinity, the Rinehart-Shearer House (F-7-86) was built by 1852, adjoining an earlier grist mill that may have been built as early as 1835. Although the mill was demolished probably around the mid-twentieth century, the two-story log dwelling remains. The Ijamsville Mill site located on Mussetter Road along Bush Creek was recorded by Lundegard in her study of Frederick County mill sites. The late-nineteenth-century mill building has vanished but evidence of a mill race remains as evidence of a technological structure. Finally, Garrott’s (or Garrett’s) Mill in Pleasant Valley represents transportation resources that may be connected with mill sites. Located a mile north of Weverton on Israel Creek, the mill was constructed circa 1820. When the Hagerstown Branch of the B&O Railroad was constructed through the area in 1867, an informal stop was placed near the mill. The mill is no longer extant, but the railroad crossing remains visible in the landscape.¹⁷⁰

EVALUATION OF RURAL GRIST MILL PROPERTIES IN FREDERICK COUNTY

RELATIONSHIP TO THE NATIONAL REGISTER SIGNIFICANCE CRITERIA AND INTEGRITY ASPECTS

Historic rural grist mill sites in Frederick County are most likely to be evaluated under Criteria A, C, or D. These rural sites may be considered under Criterion A for their association with the development of agriculture and industry in Frederick County. From the late eighteenth through the late nineteenth centuries, Frederick County was built on the success of grain agriculture and the grist milling industry, particularly in its rural areas. Numerous mills were constructed to process the abundance of wheat and other grains, and further development followed as a result. Communities often grew up around the mill sites, and improved transportation networks were constructed to meet their needs. The last several decades of the nineteenth century saw a gradual decline in wheat agriculture and milling in the region, as the agricultural industry shifted to western states, and the population of eastern states

168 Maynard, 39.

169 Maynard, 39.

170 Maynard, 39.

began to shift from rural areas to city centers. Only a small number of millers were able to successfully adapt to new technologies and continue into the twentieth century. Today, the presence of extant grist mills and sites in Frederick County's rural landscape reflects this history of wheat agriculture and grist milling in the region.

Historic rural grist mills and mill sites may be considered under Criterion C for their significance in architecture and engineering. Beginning in the eighteenth century, most mills generally followed the designs established by Oliver Evans' *The Young Mill-Wright and Miller's Guide* (1795), which advocated that the building's massing, scale and spatial arrangements reflect the storage and processing of grain. Mill architecture was also influenced by regional preferences and prevalence of particular building materials, and mill construction typically conformed to the styles common to their building period and location. Mills are unique in that they not only reflect the architecture at the time of construction, but reflect the evolution of mill technology over time. Although other industries were likely to demolish earlier buildings when technological processes were instituted, the grain milling industry commonly made technological improvements within older buildings without destroying original components. Surviving grist mills, then, may provide insight into technological changes over decades or even across centuries. Although a new mill was sometimes built on the same site as an earlier, temporary structure, in many cases the main structure was retained, with new equipment installed only where necessary. For example, new power generating equipment might be installed in an older wheel pit structure, with a turbine replacing an older wooden overshot wheel. In addition to the mill building itself, then, mill sites that retain technological features like grinding and processing equipment of the mill's interior, and more permanent landscape features like the mill race and dam, may be eligible under Criterion C for engineering.

Historic rural grist mills and mill sites may be considered eligible under Criterion D for the information they may provide through archaeological evidence. Mill sites where technological features such as head and tail races, mill ponds and dams and so on have been buried within the landscape may be eligible under Criterion D for this reason. Additionally, other mill equipment and tools that might provide further insight into local milling operations and the use of power and change in technologies may be found around a mill site, even if the building itself is no longer extant. The site of an historic village surrounding a former mill site might contain archaeological resources that help to tell the story of the agricultural, social, and commercial life that surrounded the mill.

As discussed, mill buildings or sites must retain integrity to be eligible for significance under Criteria A, C, or D. Integrity of location is imperative to meet each Criterion. As with all historic properties, the relationship between a mill building or site and its historic associations or context are usually considered destroyed if the property has been moved. Integrity of setting is of particular importance in reflecting the historical associations of rural grist mills, particularly under Criteria A or C. Integrity of setting allows a grist mill to continue to reflect the basic conditions under which it was built. Additionally, as has been noted several times, mills did not exist in isolation but belonged to their surrounding community. Retention of a rural grist mill's connection to its original water power source is particularly important to setting. This integrity is further strengthened by preservation of the surrounding area's historic rural character. This can help to place the building within its larger agricultural context, relating the building to its purpose within its historic rural setting. A mill building that displays these aspects would be considered to have strong integrity of setting. This integrity would be further strengthened by the presence of related resource types, as discussed in the "Associated Property Types" section. Extant associated milling technology structures such as a mill raceway that directly connects the mill to its landscape setting greatly strengthen integrity of setting. Although not necessary to express setting, retention of supporting structures like a miller's house, blacksmith shop, or agricultural outbuildings can further strengthen a grist mill's ability to reflect its historic significance and context.

Under Criteria A and C, integrity of design, materials, and workmanship are particularly important in conveying the significance of rural grist mills. In reflecting the agricultural and historical significance of a mill, certain exterior architectural features should be present that visually express the mill's history as an agricultural and industrial building. Preservation of these features is also particularly essential to conveying architectural significance under Criterion C, as representative examples of rural grist mills in nineteenth-and-twentieth century Frederick County. To convey these significance themes, a grist mill building should retain its basic form, including foundation, walls, roof, and fenestration pattern. If the property is being evaluated as a large site or district, integrity would be strengthened by preservation and good condition of similar features in ancillary buildings. Often visible from a distance, a mill's visual presence within the landscape is important, and its form essential to expressing its historic function. Its size and shape may indicate its milling type, such as merchant or custom mill. Other features, like retention of a typical gable roof with hooded hoist extension, are significant to the design of the building. Mills usually have a number of door and window openings, equally as important to their function as to their aesthetic appearance. For example, large Dutch doors and attic openings are often among the most striking features found within mills. Preservation of their original fenestration pattern greatly strengthens integrity of design. As rural grist mills were constructed for function, not aesthetics, few feature any significant architectural embellishments. Nonetheless, retention of any such elements can help to reflect an individual mill's unique character. Such elements might include paint color for doors and trim, or having the mill's name painted at a prominent location on its exterior. With a relative lack of decorative embellishment, integrity of materials is particularly important in evaluating grist mills. The presence of wood siding, irregular stone coursing, or aged brick can particularly contribute to the historic and architectural character of mills.

Although preservation of exterior features discussed above is essential to conveying a property's significance, integrity of interior spaces also greatly strengthens the significance of a mill. The structural framework of a mill is a major aspect of its historic character. As mills were built for utilitarian purposes, no effort was made to conceal their structural system. The exposed framework of beams, braces, posts, and rafters are character-defining features of a mill's interior space.

Although the above discussion focuses on the ability of a mill to convey its historic significance under Criterion A and its architectural significance under Criterion C, grist mills may also have particular significance for their continued ability to convey technological or engineering significance under Criterion C. This significance can be conveyed by integrity of exterior structural elements such as the mill dam, pond, mill race, or sluice box, or by integrity of machinery at the interior of the mill such as grinding machinery, bins, and chutes. To reflect Criterion C under these themes, a mill must retain some or all of these features in order to clearly represent the technological function of the mill. As mill technology constantly evolved and machinery was often updated or replaced as necessary, it would not be useful to set forth a standard list of what must be extant for a property to remain eligible. If several of these elements remained extant in conjunction with the extant mill building, it would likely be considered significant for technology as a supporting theme.

To convey significance under Criterion D, a mill or mill site must retain some clear evidence of technology that would provide insight into local or regional milling operations, and the development of technology that took place throughout the eighteenth, nineteenth and twentieth centuries. Most mills or mill sites with strong integrity will meet Criterion D in addition to other applicable Criteria.

SIGNIFICANCE AND INTEGRITY EVALUATION OF THE BENJAMIN RICE MILL

The Benjamin Rice Mill is considered eligible for the National Register under Criterion A, as a representative of rural grist milling in Frederick County, Maryland, from the early nineteenth through the mid-twentieth centuries. The Rice Mill has been located at its site on the Catoctin Creek since at least 1812, but possibly as early as 1798. The mill functioned as a merchant grist mill in the nineteenth century, and acted as the center of a site that as of 1880 included a sawmill, multiple distilling houses, a cooper shop and blacksmith shop, and various agricultural outbuildings like a barn and corn house. Furthermore, the mill was importantly tied to transportation developments in the region, firstly by its location on the “old road to Berlin” (what is now MD 464) and by the mid-nineteenth century by its close proximity to the Chesapeake & Ohio Canal and then the Baltimore & Ohio Railroad. After Benjamin Rice’s death in 1820, the mill passed through various owners through the remainder of the century, until William D. Bell purchased the property in 1895. William’s son, Charles, became the miller in the 1930s, and he ran the mill until the late 1950s. The mill and its surrounding property have remained in the Bell family’s ownership into the present. The Benjamin Rice Mill, then, has represented the history and development of rural grist milling in Frederick County since at least the early nineteenth century, and conveys agricultural, community, industry, commerce, engineering, and transportation themes. In a period of over one hundred years, the Benjamin Rice Mill experienced the many changes in agriculture and technological development, and remains today as an example of the story of grist milling’s rise and fall within the county and the challenges experienced along the way.

The Benjamin Rice Mill is further eligible under Criterion C under architecture. Constructed by 1812, and possibly as early as 1798, the mill reflects the character-defining features of a rural grist mill at this time, that were greatly influenced by Oliver Evans’ designs and their function. The building represents typical grist mill construction during this period, generally two-and-one-half stories high, with a full basement and also an attic level, three bays wide, and capped by a steep gable roof. Further, the buildings were constructed of heavy timber or masonry on a heavy, solid foundation to withstand the vibrations grinding produced. Central doors for loading and symmetrical windows were common. The Rice Mill is rare in its brick construction, as mills in the county appear to have primarily been built of stone. The mill is likely also eligible under Criterion C for technology or engineering. Although recent work demolished some aspects of the mill race, portions of the mill’s power structure remain. Further, although access was not granted for this *Historic Context Report*, numerous studies in the past have indicated that it is very likely that milling machinery remains extant on the interior of the building. As the building has remained in the hands of one family for over a century, and appears to not have been altered in at least fifty years, it is very probable that such machinery remains, and it is possible that historic mill papers or other artifacts also remain at the interior. The presence of such resources would significantly represent the development of grist mill technology.

The Benjamin Rice Mill is further eligible under Criterion D of the National Register. The area surrounding the mill building itself as well as the larger site as a whole, including extant outbuildings, promises to yield important information concerning grist milling operations in the nineteenth and twentieth centuries, and possibly as early as the late eighteenth century.

The Benjamin Rice Mill retains strong integrity to convey its significance under Criteria A, C, and D. The mill retains strong integrity of location and particularly of setting. The mill’s position on the Catoctin Creek and remaining structural elements clearly demonstrate the purposeful location of the mill at this site. Further, the layout of the property clearly demonstrates the many themes that make the mill site significant, including industry, agriculture, domestic, commercial, and transportation themes. The presence of the adjacent dwelling demonstrates

the relationship between the property's domestic and industrial functions. Historically, the dwelling also acted as space for conducting mill business, speaking to the property's incorporation of commercial activities. The agricultural outbuildings and fields demonstrate the important connection between agriculture and industry in milling practice. Overall, the mill's setting continues to be rural and agricultural into the present, and therefore retains the ability to convey the sense of a nineteenth-century mill property.

The mill and site also retain strong integrity of design, workmanship, and materials. The mill building itself remained in use into the twentieth century, but was little modified on the exterior, and continues to clearly represent the feeling of a nineteenth-century grist mill. It retains all of its character-defining elements, including its gable roof and fenestration pattern, and with the exception of replacement material at the roof, appears to retain all of its original materials, including its original stone, brick, and wood windows and doors. Furthermore, it appears that the interior of the mill has not been modified since it discontinued operation in the mid-twentieth century. As such, its structural elements almost certainly remain intact, and mill machinery is likely also present. The log dwelling and extant outbuildings also retain original or in-kind replacement materials, and continue to convey their vernacular architecture and relationship to the mill structure.

The ability of the mill site to convey its technological and transportation aspects has been somewhat compromised by transportation construction in the twentieth and twenty-first centuries. In 1934, components of the Benjamin Rice Mill's raceway were incorporated into the new 1934 State Roads Commission Bridge over the Catoctin Creek. SHA Right-of-Way Plat 677 from 1933 presented features of the mill property at that time, including the historic bridge that had crossed the creek, the mill race, head race gate, and the mill dam. Although the construction work demolished the historic bridge, the mill dam was maintained, and the head race gate was incorporated into the new construction. In 2008, SHA began Project No. FR539B21, of which this *Historic Context Report* is part. The project resulted in the demolition of the circa 1934 Bridge No. 1009100 over the Catoctin Creek, and as it was attached to, and passed over, components of the Benjamin Rice Mill mill race, portions of that mill race were demolished along with the bridge. Fortunately, the site as a whole continues to maintain strong integrity in the various elements discussed above, and still conveys its technological significance through other remaining landscape features, and through the mill building itself, which likely contains historic mill machinery.

Finally, with integrity of location, setting, design, materials, and workmanship remaining, the mill property is considered to strongly convey integrity of feeling and association, as it clearly reflects its historic character as a nineteenth-century grist mill site in Frederick County, Maryland.

BIBLIOGRAPHY

- Advisory Council on Historic Preservation. "Section 106 Regulations Summary."
<http://www.achp.gov/106summary.html> (accessed February 20, 2012).
- Baltimore Sun. "Classified Ad 11." *Baltimore Sun*, June 11, 1860. <http://www.proquest.com> (accessed February 3, 2012).
- Brale, Chad O. *Mills in the Upcountry: An historic Context, and a Summary of a Mill Site on the Peters Creek Heritage Preserve, Spartanburg County, South Carolina*. Athens, GA: Southeastern Archeological Services, Inc., 2005.
- Bishop, John Leander. *A History of American Manufactures from 1608 to 1860*. Philadelphia: Edward Young & Co., 1866. <http://www.books.google.com> (accessed February 2, 2012).
- Chidester, Robert. "Industrial and Labor Heritage in Frederick County." *Journal of the Historical Society of Frederick County, Maryland* (Spring 2005): 4-49.
- Frederick County Commissioners of the Tax (Assessment Record). *Real Property*, 1798. Maryland State Archives, C7555-2.
- Frederick County Commissioners of the Tax (Assessment Record). *Real Property*, 1825. Maryland State Archives, C7555-3.
- Frederick County Commissioners of the Tax (Assessment Record). *Personal Property*, 1825. Maryland State Archives, C7555-4.
- Frederick County Commissioners of the Tax (Assessment Record). *Real Property*, 1835. Maryland State Archives, C7555-5.
- Frederick County Commissioners of the Tax (Assessment Record). *Personal Property*, 1835. Maryland State Archives, C7555-6.
- Frederick County Court (Land Records). *Liber WR 9*. Maryland State Archives, CE 108-29. 1790-1791. <http://www.mdlandrec.net> (accessed February 2, 2012).
- Frederick County Court (Land Records). *Liber WR 11*. Maryland State Archives, CE 108-31. 1792-1793. <http://www.mdlandrec.net> (accessed February 2, 2012).
- Frederick County Court (Land Records). *Liber JS-18*, Maryland State Archives, CE 108-86. 1823-1824. <http://www.mdlandrec.net> (accessed February 2, 2012).
- Frederick County Court (Land Records). *Liber JS-44*. Maryland State Archives, CE 108-112. 1833. <http://www.mdlandrec.net> (accessed February 2, 2012).

Frederick County Court (Land Records). *Liber BGF-5*. Maryland State Archives, CE 61-15. 1859-1860.
<http://www.mdlandrec.net> (accessed February 2, 2012).

Frederick County Court (Land Records). *Liber TG-11*. Maryland State Archives, CE 61-46. 1879.
<http://www.mdlandrec.net> (accessed February 2, 2012).

Frederick County Court (Land Records). *Liber WIP-1*. Maryland State Archives, CE 61-60. 1885-1887.
<http://www.mdlandrec.net> (accessed February 2, 2012).

Frederick County Court (Land Records). *Liber WIP-6*. Maryland State Archives, CE 61-65. 1888-1889.
<http://www.mdlandrec.net> (accessed February 2, 2012).

Frederick County Court (Land Records). *Liber JJJ-7*. Maryland State Archives, CE 61-80. 1894-1895.
<http://www.mdlandrec.net> (accessed February 2, 2012).

Frederick County Court (Land Records). *Liber 385*. Maryland State Archives, CE 61-230. 1932.
<http://www.mdlandrec.net> (accessed February 2, 2012).

Frederick County Court (Land Records). *Liber 482*. Maryland State Archives, CE 61-327. 1949-1950.
<http://www.mdlandrec.net> (accessed February 2, 2012).

Frederick County Court (Land Records). *Liber 510*. Maryland State Archives, CE 61-355. 1952-1953.
<http://www.mdlandrec.net> (accessed February 2, 2012).

Frederick County Court (Land Records). *Liber 1212*. Maryland State Archives, CE 61-1057. 1983-1983.
<http://www.mdlandrec.net> (accessed February 2, 2012).

Frederick County Court (Land Records). *Liber 2104*. Maryland State Archives, CE 61-1948. 1995.
<http://www.mdlandrec.net> (accessed February 2, 2012).

Frederick County Division of Planning. *Frederick County Historic Preservation Plan* Frederick, MD: Frederick County Division of Planning, 2007. <http://www.co.frederick.md.us/planning> (accessed February 14, 2012).

Fisher, Richard Swainson. *A New and Complete Statistical Gazetteer of the United States of America*. J.H. Colton and Company, 1857. <http://books.google.com> (accessed February 2, 2012).

Hazen, Theodore. "Historically: How to Site a Mill." <http://www.angelfire.com/journal/millrestoration/site.html> (accessed February 2, 2012).

Hazen, Theodore. "The Automation of Flour Milling in American, Part 2." <http://www.angelfire.com/journal/millrestoration/more.html> (accessed February 2, 2012).

Hazen, Theodore R. "The Preservation of Historic Mills, Preservation in Brief." <http://www.angelfire.com/journal/millrestoration/historicmills.html> (accessed February 4, 2012).

Benjamin Rice Mill Historic Context Report
SHA Project No. FR539B51, Replacement of SHA Bridge No. 1009100
MD 464 over Catoctin Creek, Frederick County, Maryland
EHT Traceries, Inc., 68
March 2012

Hunter, Brooke. "Industrial Espionage along the Delaware...and beyond." Department of History, Rider University, Paper Presented at the 28th Annual Meeting of the Society of Historians of the Early Republic. <http://www.spoommidatlantic.com> (accessed February 4, 2012).

Gannett, Henry. *A Gazetteer of Maryland*. Washington, D.C.: Government Printing Office, 1904.

Gross, Harry M. *A Brief History of Middletown Valley, 1849-1890*. Unpublished, 1932. <http://freepages.genealogy.rootsweb.ancestry.com> (accessed February 2, 2012).

Lanier, Gabrielle M. and Bernard L. Herman. *Everyday Architecture of the Mid-Atlantic: Looking at Buildings and Landscapes*. Baltimore, MD: Johns Hopkins University Press, 1997.

Lardner/Klein Architects. *Corridor Management Plan for the US 15 Catoctin Mountain Scenic Byway*. Prepared for Frederick County, Maryland (April 2004), 39.

Lundegard, Robert. "Country and City Mills in Early American Flour Manufacture and Export." (2007): 3. <http://spoommidatlantic.org/> (accessed February 2, 2012).

Maryland Historical Trust, "Benjamin Rice Mill." State Historic Inventory Form, 1991. <http://www.mdihp.net> (accessed February 22, 2012).

Maryland Writers Project. *Maryland: A Guide to the Old Line State*. NY: Oxford University Press, 1940, 64.

Maynard, Peter. *The Water-Powered Flour and Grist Mills of the Berlin/Brunswick—in Frederick, Washington, and Loudoun Counties*. Brunswick, MD: Brunswick Historical Press, 2003.

McCulloch, John Ramsay. *McCulloch's Universal Gazetteer; A Dictionary, Geographical, Statistical, and Historical of the Various Countries, Places, and Principal Natural Objects in the World*. Vol. 1. New York: Harper & Brothers, 1847. <http://www.books.google.com> (February 2, 2012).

McClay, Rebecca. "Builders See Centuries-Old Homes, Barns as the Ultimate Fixer-Uppers," *Maryland Community Newspapers Online*, February 15, 2008. <http://ww2.gazette.net> (accessed February 20, 2012).

McGrain, John W. *The Molinography of Maryland: A Tabulation of Mills, Furnaces, and Primitive Industries*. 2d ed. Towson, MD: Maryland Historical Society, 2007.

"Michael's Mill." <http://millpictures.com/> (accessed February 20, 2012).

"Michael's Mill, Michaels Mill Rd, Buckeystown, MD." <http://www.panaramio.com> (accessed February 20, 2012).

Moser, Harold. "The Grist Mills of Frederick County MD." *The Valley Register*, December 7, 1984. <http://freepages.genealogy.rootsweb.ancestry.com> (accessed February 2, 2012).

National Park Service. "Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines." http://www.cr.nps.gov/local-law/arch_stnds_0.htm (accessed February 20, 2012).

National Park Service. "Gambrill Mill (Araby Mill)." http://www.nps.gov/mono/historyculture/gambrill_mill.htm (accessed February 19, 2012).

National Park Service, "How to Define Categories of Historic Properties." http://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_4.htm (accessed February 20, 2012).

National Park Service. "How to Evaluate a Property within its Historic Context." http://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_5.htm (accessed February 20, 2012).

National Park Service. "How to Evaluate the Integrity of a Property." http://www.nps.gov/history/nr/publications/bulletins/nrb15/nrb15_8.htm (accessed February 20, 2012).

National Park Service. "National Historic Preservation Act of 1966." <http://www.nps.gov/history/local-law/nhpa1966.htm> (accessed February 20, 2012).

National Park Service. "National Register Criteria for Evaluation." http://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_2.htm (accessed February 20, 2012).

National Register of Historic Places. Grist Mills in Berks County MPS, Berks County, Pennsylvania, National Register # 64500529.

National Register of Historic Places, Grain Mills in Indiana MPS, Indiana, National Register #64500212.

National Register of Historic Places. Lewis Mill Complex, Jefferson, Frederick County, Maryland, National Register # 82002813.

Reed, Paula S. *Tillers of the Soil: A History of Agriculture in Mid-Maryland*. Frederick, Maryland: Catoctin Center for Regional Studies, 2011.

Reed, Paula S. and Edith B. Wallace. "Thematic Context – Agriculture." <http://cityoffrederick.com> (accessed February 2, 2012).

Reed, Paula S. and Edith B. Wallace. "Thematic Context History – Industry." <http://cityoffrederick.com> (accessed February 20, 2012).

Rice, Norah. "[Transcription of the] Will of Benjamin Rice." <http://www.archiver.rootsweb.ancestry.com> (accessed February 20, 2012).

Robb, Frances C, Teresa S. Moyer, Paula S. Reed, and Edith B. Wallace. *Miller and Mechanics: A History of Industry in Mid-Maryland*. Frederick, Maryland: Catoctin Center for Regional Studies, 2011.

Scharf, J. Thomas. *History of Western Maryland*. Vol. 1-2. Philadelphia, PA: Lippincott and Comany, 1882.

Schoedler, Friedrich. *The Treasury of Science, Natural and Physical*. London: Ward, Lock, & Tyler, 1872.

Swain, George F. "Report on the Water-Power of the Middle Atlantic Water-Shed." In *Reports of the Water-Power of the United States*, edited by the Department of the Interior Census Office. Washington, D.C.: Government Printing Office, 1885, 46.

United States Census Bureau. Schedules of Manufacturers, 1850. Maryland State Archives, SCM5165-2.

United States Census Bureau, Special Schedules of Manufacturers, 1880, Maryland State Archives, SM61-346.

United States Census Bureau. United States Federal Census, 1850. <http://www.ancestry.com> (accessed February 15, 2012).

United States Census Bureau. United States Federal Census, 1900. <http://www.ancestry.com> (accessed February 15, 2012).

United States Census Bureau. United States Federal Census, 1910. <http://www.ancestry.com> (accessed February 15, 2012).

United States Census Bureau. United States Federal Census, 1920. <http://www.ancestry.com> (accessed February 15, 2012).

United States Census Bureau. United States Federal Census, 1930. <http://www.ancestry.com> (accessed February 15, 2012).

Walsh, Richard and William Lloyd Fox, eds. *Maryland – A History, 1632-1974*. Baltimore: Maryland Historical Society, 1974.

Williams, Thomas and Folger McKinsey. *History of Frederick County Maryland*. Vol. 2. Baltimore: Regional Publishing Company, 1967, reprint of original 1910 edition.

Zimiles, Martha and Murray Zimiles. *Early American Mills*. NY: Clarkson N. Potter, 1973.