

**United States Department of the Interior
National Park Service**

Dimension Limestone Industry in the Bloomington, Indiana area,
circa 1816 to 1967
Name of Multiple Property Listing

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State

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E. Statement of Historic Contexts

The history of the dimension limestone industry in Bloomington and Monroe County, Indiana, spans nearly two centuries. There is much continuity over time; however, the industry's development in the historic period may be divided into four distinct eras: the **Pioneer Era** (circa 1816 to 1870); **Era of Expansion and Innovation** (1871 to 1918); **Era of "Boom, Merger, and Overcapacity"** (1919 to 1933); and the **Modern Era** (1934 to 1967). Industrial developments in quarrying, milling, and fabrication have continued after the end of the historic period (1967); the industry remains important to the economy of Bloomington and Monroe County.

Geologically, a belt of limestone begins in southern Indiana and runs northwest to the central part of the state, extending from along the Ohio River in Harrison and Floyd Counties to Montgomery and Fountain Counties.¹ The limestone belt traces its origins to deposits made in the Mississippian Period, about 340 million years ago, when a shallow inland sea covered the land of present-day Indiana.² Fossilized deposits from this prehistoric era may be found in quarried stone. These geologic forces provided rich deposits of accessible limestone both below ground and jutting from creek banks and hillsides.

Limestone from a subsection of this larger belt—located in and around Bloomington, Indiana, and other areas of Monroe County and adjacent Lawrence County—possesses qualities that make this local limestone a superior dimension stone (stone used for building) than that found elsewhere in the United States: it is sturdy, but soft enough to be malleable and is not prone to splitting.³ After extraction, however, the stone hardens into a durable material suitable for carving.⁴ The stone's malleable texture has made it easier to quarry than the more brittle Niagara limestone found in Illinois and other states. Extraction is also easier in this region than in more northern parts of the state, or even other portions of the country, because the limestone is located relatively close to the surface. These characteristics make the limestone running from about Stinesville (in Monroe County) to Bedford (in Lawrence County) unique.⁵ The rock was first termed "Oolitic Limestone" during a geological reconnaissance of the state in the 1830s and re-defined as "Bedford Oolitic Limestone" as part of a later reconnaissance in 1859-1860.⁶ Since 1901, stone in this stretch of land has been termed "Salem Limestone," although it is often referred to simply as "Indiana Limestone."⁷ Quarrying and milling resources in the Bloomington area represent just a portion of the larger Indiana Limestone industry centered in Monroe and Lawrence Counties, an area sometimes referred to as the "stone belt."⁸

The limestone industry built Bloomington and the surrounding area. Pioneers harvested stone visible on the surface as a natural material for the fences, walls, roads, culverts, bridges, and foundations of homes and barns. At other times, antebellum builders set limestone blocks to create simple but durable homes. In the postbellum era, quarrymen turned to mining the deposits below the earth's surface, extracting large blocks of dimension—or building—stone and fabricating the cut stone by milling or sculpting it into columns,

¹ John B. Patton and Donald D. Carr, *The Salem Limestone in the Indiana Building-Stone District*, Department of Natural Resources Geological Survey Occasional Paper, vol. 38 (Bloomington, Ind: Department of Natural Resources, 1982), 4.

² Bill McDonald, *A Short History of Indiana Limestone* (Bedford, Ind: Lawrence County Tourism Commission, 1995), 1-2.

³ McDonald, *Short History of Indiana Limestone*, 2; Patton and Carr, *Salem Limestone in the Indiana Building-Stone District*, 1, 5.

⁴ McDonald, *Short History of Indiana Limestone*, 12.

⁵ McDonald, *Short History of Indiana Limestone*, 2; Patton and Carr, *Salem Limestone in the Indiana Building-Stone District*, 4-5.

⁶ T.C. Hopkins and C.E. Siebenthal, "The Bedford Oolitic Limestone of Indiana," in *Indiana Department of Geology and Natural Resources Annual Report 21* (Indianapolis: Department of Geology and Natural Resources, 1896), see notes on 298.

⁷ Patton and Carr, *Salem Limestone in the Indiana Building-Stone District*, 7.

⁸ McDonald, *Short History of Indiana Limestone*, 2.

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window hoods, and quoins for buildings and monuments. Beginning in the nineteenth century, the limestone extraction practices created a unique, industrial, manmade landscape in Bloomington and adjacent areas as quarries were opened, exhausted, and finally left behind, leaving abandoned equipment, stacks of stone, and scores of limestone pits across the area. The material influenced the appearance of Bloomington's built environment as well. Many of Indiana University's oldest buildings were constructed of the material; it was also used for local public buildings and dwellings, as well as foundations and trim on countless buildings.⁹

In addition to its impact on the local landscape and the built environment, the Indiana Limestone industry occupied a vital part of the economy of Bloomington and the surrounding area, employing hundreds of local workers, particularly during the industry's peak in the early twentieth century. While statistics are difficult to obtain specifically for the Bloomington area, the State Department of Inspection (which oversaw industrial operations like quarries, manufacturers, mercantile businesses, laundries, renovating works, bakeries, and printing offices) provides a snapshot of this industry at the turn of the century. In 1900, limestone operations employed approximately 47 percent of the industrial labor force recorded in the city of Bloomington.¹⁰

More typically, statistics about limestone's impact provide insight for a larger area. Joseph A. Batchelor, a professor of economics at Indiana University whose primary research subject was the economic impact of the Indiana Limestone industry, notes that by 1912 "there were in operation seventeen stone quarries, twenty-two stone mills and fifteen complete cut-stone plants" within Monroe County valued at about two million dollars. The stone industry by that time "furnished steady employment to hundreds of workers at good wages." He further notes that the limestone industry in 1913 was "the leading industry of the county and a wealth producer."¹¹ Indeed, even with Bloomington's population growth and the establishment of new industries in the early twentieth century, limestone quarrying and production still employed approximately 37 percent of the male industrial workforce recorded by the State Bureau of Inspection for the city of Bloomington.¹² By 1920, local quarry and milling operations were producing 70 percent of the nation's building stone.¹³ Batchelor points out that at the industry's peak between 1925 and 1926, the approximate number of men employed in both quarries and mills in the stone belt was 5,000—and may have included as many as 6,500-7,000 during peak times. While Monroe County had a smaller percentage of the Indiana Limestone business than did its neighbor Lawrence County, a significant number of these production and employment totals were in the Bloomington area of Monroe County.¹⁴

The Indiana Limestone industry spurred investment in local infrastructure, particularly those related to transportation. Railroads laid track to the area to transport the stone and with that brought investment in the local community. The construction of the New Albany & Salem Railroad (later known as the Louisville,

⁹ Daniel F. Harrington, "The Old Crescent," National Register of Historic Places Inventory—Nomination Form (Washington, D.C.: National Park Service, 1980); Dana D'Esopo, "Monroe County Courthouse," National Register of Historic Places Inventory—Nomination Form (Washington, DC: National Park Service, 1976); and Joanne Raetz Stuttgen, "Vinegar Hill Historic District," National Register of Historic Places—Registration Form (Washington, D.C.: National Park Service, 2005).

¹⁰ In 1900, 271 workers were employed by quarries or mills out of a total 577 recorded that year. Indiana Department of Inspection, *Fourth Annual Report of the Department of Inspection of the State of Indiana* (Indianapolis: Wm. B. Burford, 1901), 5, 27.

¹¹ *History of Lawrence and Monroe Counties, Indiana: Their People, Industries, and Institutions* (Indianapolis: B. F. Bowen & Co., 1914), 361, 366.

¹² In 1913, 523 males out of 1428 were employed by quarries or mills. Indiana State Bureau of Inspection, *Annual Report of the State Bureau of Inspection Relating to Manufacturing And Mercantile Establishments, Laundries, Bakeries, Quarries, Printing Offices, Hotels, Public Buildings, Mines And Mining, Boilers, Labor Commission And License Issued* (Indianapolis: Wm. B. Burford, 1913-1914), 40-42.

¹³ *Year Book for the State of Indiana for the Year 1919* (Indianapolis: Wm. B. Burford, 1920), 392-393.

¹⁴ Joseph A. Batchelor, *An Economic History of the Indiana Oolitic Limestone Industry*, (Bloomington, Ind.: School of Business, Indiana University, 1944), 133, 157, 257.

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New Albany & Chicago Railroad and eventually the Monon line) made it easier for quarries and mills to be opened and their products to be exported to destinations outside of Bloomington.

Besides its effects on the local landscape, built environment, and economy, this industry had a profound impact on the built environment of the nation. Indiana Limestone has been used to construct scores of local, national, and international buildings, ranging from modest residences to massive public structures all over the world.¹⁵ In the United States, the Empire State Building, the Chicago Tribune Tower, the National Cathedral in Washington, D.C., the Boston Federal Reserve Bank, the Pentagon, Yale Graduate School, many state capitols, and numerous other churches, banks, government buildings, university buildings, hospitals, skyscrapers, libraries, houses, and commercial and office buildings were built or faced with Indiana Limestone.¹⁶ In the post-World War II era, Ranch-style homes especially were faced with split-faced limestone veneer, pioneered in Bloomington.¹⁷

Stone stacks, quarry pits, and old buildings along county roads, along with local and state architectural landmarks and majestic buildings in prominent cities nationwide testify to the role of Indiana's limestone industry in creating "the building fabric of America."¹⁸

A Note on Terminology

Within the ensuing discussion of the dimension limestone industry, the word "district(s)" has several distinctly different meanings. When referring to "stone districts," the word means specific geographic areas associated with quarried beds of limestone. Stone districts were created when quarries (and mills) were opened in proximity along the narrow bed of limestone. For the purposes of this study, references will be made to stone districts that ran through, and around, Bloomington. Typically, the stone districts were accessed by railroads. It is important to note that the term "stone district" is used within the dimension limestone industry and has no implication with respect to National Register of Historic Places (NRHP) eligibility. When used within this nomination, the term "stone district" will not be capitalized.

The area in and around Bloomington is the subject of this context. The Bloomington area stone districts include: Hunter Valley, Bloomington, North Clear Creek, Clear Creek, Sanders, and Victor. There are other stone districts associated with Indiana Limestone in Monroe County outside of the Bloomington area, such as those in nearby Ellettsville and Stinesville. Immediately south of Monroe County, and also located within the Indiana Limestone Belt, is the Lawrence County limestone industry and its associated stone districts.

NRHP "districts" are areas that possess "a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development."¹⁹ All NRHP districts must have integrity and meet one or more of the criteria for eligibility. Within the context of this nomination, NRHP districts will be called "historic districts" to signify that they have been listed in

¹⁵ John R. Hill, "Indiana Limestone," *Indiana University Geological Survey*, accessed May 25, 2017, <http://igs.indiana.edu/MineralResources/Limestone.cfm>.

¹⁶ Buildings constructed of limestone from Monroe County are too numerous to list in this text. For additional information on specific buildings, see Katherine Ferrucci, *Limestone Lives: Voices from the Indiana Stone Belt* (Bloomington, Ind.: Indiana University Press, 2004); McDonald, *Short History of Indiana Limestone*.

¹⁷ "3,500 Men Employed in 37 Mills and 24 Quarries of 24 Stone Firms," *Bloomington (IN) Daily Herald*, December 10, 1949.

¹⁸ Peter Benjamin Steel, *Cutters of Stone* (Fort Collins: Documenta Productions; Indianapolis: Indiana Historical Society documentary, 1997).

¹⁹ "How to Complete the National Register Nomination Form," *National Register Bulletin 16A* (Washington, D.C.: U.S. Department of the Interior, National Park Service, 2002), 15.

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or are eligible for listing in the NRHP. The proper names of NRHP-listed or NRHP-eligible districts will be capitalized.

Producing Dimension Limestone in Indiana

Limestone is an extractive industry. Methods and technologies of extraction and milling have changed over time, but the most basic aspects of production have remained the same. This section provides a general overview of production. Technological advances or methods specific to a certain era will be discussed within the historic contexts.

The first step in limestone quarrying is to identify a suitable location. Viable sites can sometimes be identified visually, by looking for outcrops of stone along ledges or waterways. In other cases, more invasive methods, such as core drilling, are necessary. Once a site is identified, workers clear it of any overburden—including soil layers or unusable rock (also known as Mitchell Stone and often called “bastard rock”).²⁰ Once workers have cleared an area of overburden, they begin cutting and extracting stone from the ledge. Extracted stone is then left to season before being transported for milling or building, depending on the era and the level of detail required of the stone.

Cutting and fabrication take place at the mill. Work may range from simply sawing and squaring large blocks for transport to carving elaborate architectural details. Probably all stone mills undertake the basic level of stone cutting; some mills go further and saw the stone into facing blocks, lintels, or any number of elements particular to a specific job. Others take the fabrication process to its finest degree, carving the stone into columns, friezes, and sculptures. The most intricate work requires the experience and precision of a skilled carver.²¹

The Pioneer Era (circa 1816 to 1870)

Indiana became a state in 1816, and quarrying activities are recorded shortly thereafter. As in other regions of the United States with natural stone deposits, the earliest Euro-American use of limestone in Indiana was probably quite localized. Surface collection was the easiest way to gather stone. Visible outcrops of limestone, as well as stream-bed deposits, provided good sources for small-scale extraction.²² These early builders used the existing natural environment to their best advantage to collect uncut pieces of limestone for homes, walls, fences, and other structures, or objects. By the mid-nineteenth century, owners and operators began to open quarry pits and saw mills, and some of the more innovative operators experimented with milling and sawing technologies and often employed nearby farm hands who could split their time between quarry work and farming. The arrival of the railroad was integral in developing a market for limestone. Quarry pits and small-scale early saw mills may still be present on the landscape from this era.

The first recorded use of Indiana Limestone for a public building occurred in 1819, when John Ketchum, the contractor for the first Monroe County Courthouse, gathered limestone for the building’s foundation,

²⁰ *Operations in the Quarrying and Fabrication of Indiana Limestone* (n.d.), CSC-001-003, Indiana Bedrock, accessed May 25, 2017, <http://cdm15078.contentdm.oclc.org/cdm/ref/collection/p15078coll7/id/2857>.

²¹ *Operations in the Quarrying and Fabrication of Indiana Limestone* (n.d.), CSC-001-019 to 21.

²² Patton and Carr, *Salem Limestone in the Indiana Building-Stone District*, 10. Examples of limestone pieces in stream beds occur in several places in southern Indiana, such as Dearborn County, where early English settlement homes, retaining walls, and culverts are all constructed of stone from nearby water sources. See: *Dearborn County: Interim Report* (Indianapolis: Indiana Division of Historic Preservation and Archaeology, 1983), especially York Township, and Weintraut & Associates, “Historic Property Report: Collier Ridge Road over West Fork Tanner’s Creek, CSX Railroad to Bonnell Road,” Prepared for the Federal Highway Administration/Indiana Department of Transportation, August 2011).

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window sills, and lintels on his farm eight miles from Bloomington near Ellettsville.²³ In the 1830s, the second county jail was also constructed with stone foundations.²⁴

Settlers used fieldstone and cut-block stone to build their homes. Several instances can be documented, among them, Daniel Stout's I-house constructed near Stout's Creek in 1828 of limestone he gathered from the hills surrounding his property. Stout's house (NRHP, 1973) still stands along modern Maple Grove Road.²⁵ Edward Borland used local limestone for the foundation of the Borland House [Indiana Register of Historic Sites and Structures, State Register (SR) 1995] in 1830.²⁶ Andrew Wylie, the first president of Indiana Seminary, also used limestone in the foundation of his house on East Second Street in Bloomington (NRHP, 1977).²⁷ Sometimes these limestone dwellings formed the basis of a larger, later home. Philip and Jane Murphy are believed to have constructed a hall-and-parlor plan home in the late 1840s from locally gathered, hand-cut limestone blocks. After Jonas R. May purchased the Murphy property in the late nineteenth century, he likely added the second-story, brick addition to the stone house.²⁸ The house is no longer extant but was located near present-day Rockville Road and Fullerton Pike.

Collected, uncut limestone remained a popular building material into the nineteenth century, especially as fences for farms and cemeteries in the area around Bloomington. Some of these fences remain on the landscape. The Borland family referenced above constructed a limestone fence around their property (only portions of which are still extant), and the Maple Grove Road Rural Historic District (NRHP, 1998) includes several dry-laid fences from the 1870s constructed of natural limestone.²⁹

The first commercial quarry in Monroe County opened in 1827, just eleven years after Indiana became a state. Richard Gilbert opened the quarry in Stinesville north of the Bloomington area; stone extracted from the quarry went to local building projects.³⁰ Joseph Batchelor has noted that little information about labor is available from this period, but most workers from this era "were largely unskilled farm hands from the neighborhood." Workers also typically alternated between work on a farming operation and work at the quarry.³¹

Commercial production of limestone at the beginning of this era was first accomplished by hand tools and non-mechanized equipment. Horses or other draft animals provided motive power. Scrapers, shovels, and

²³ Richard Perry, "The Indiana Oolitic Limestone Industry," unpublished manuscript, written for the State Planning Board of Indiana, April 8, 1937, 8, on file at the Indiana State Library, Indianapolis, Indiana; Forest M. "Pop" Hall, ed., *Historic Treasures: True Tales of Deeds with Interesting Data in the Life of Bloomington, Indiana University and Monroe County—Written in Simple Language and about Real People, with other Important Things and Illustrations* (Bloomington, Ind.: Indiana University Press, 1922), 14.

²⁴ *History of Lawrence and Monroe Counties*, 241.

²⁵ Mrs. Hubert A. Brown, "Daniel Stout House," National Register of Historic Places Inventory—Nomination Form (Washington, D.C.: National Park Service, 1973), Sect. 7. Unless otherwise noted, all National Register of Historic Places Inventory nomination forms were accessed through the Indiana Department of Natural Resources, Division of Historic Preservation's State Historic Architectural and Archaeological Research Database (SHAARD), <https://secure.in.gov/apps/dnr/shaard/welcome.html>.

²⁶ The Borland House is now part of the Indiana Register-listed Borland House and Carl Furst Stone Company Quarry in Bloomington Township on the south side of Tapp Road. The Carl Furst Quarry was not open until the twentieth century. Duncan Campbell and Kristen Brennan, Indiana Historic Sites and Structures Register Nomination Form for Borland House and Carl Furst Stone Company Quarry (Indianapolis: Division of Historic Preservation and Archaeology, 1999), Sect. 7, p. 1.

²⁷ Sherman N. Shewmaker, "Quarry Quest: A Field Trip Guide to the Indiana Limestone District, Monroe and Lawrence Counties, Indiana," Prepared for the Indiana Council for Social Studies Spring Meeting, April 27, 1991, 17.

²⁸ Commonwealth Cultural Resources Group, Inc. (CCRG), "I-69 Evansville to Indianapolis Tier 2 Studies: Historic Property Report, Section 4, US 231 to SR 37," Prepared for the Federal Highway Administration/Indiana Department of Transportation, August 29, 2006, 150-152.

²⁹ Weintraut & Associates field observation, 2012; Nancy Heistand, "Maple Grove Road Rural Historic District," National Register of Historic Places—Registration Form (Washington, D.C.: National Park Service, 1998), Sect. 7, p. 19.

³⁰ McDonald, *Short History of Indiana Limestone*, 7.

³¹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 13.

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picks removed overburden.³² Difficult to remove bastard rock was sometimes broken up by drilling holes in the rock and then inserting blasting powder. Though effective in removing overburden, blasting had the undesirable consequence of sometimes cracking otherwise good dimension stone.³³ Drills, chisels, and wedges loosened and eventually split stone from the quarry bed. Ropes pulled by wooden derricks removed stone from the quarry and transferred it to carts for transportation over short distances or to be stacked.

Scabbling, a process which squared off quarried stone for shipment, was usually completed at the quarry and often done by hand.³⁴ Early accounts of the limestone industry suggest that mills in this era primarily focused on basic activities such as cutting slabs.³⁵ A mill often consisted of a single piece of equipment, such as a gang saw, in a building that was little more than a roof and with several openings to run the stone through the saw blades. In the early years, wood derricks and ropes moved stone at a mill.³⁶ By the mid-nineteenth century, some stone operators were experimenting with steam power. In 1855, the Watts-Biddle Quarry north of Bloomington introduced the first steam-driven gang saw to the area.³⁷

The development of a broad market for limestone depended on reliable means of transportation. For much of the first half of the nineteenth century, a lack of navigable rivers or a uniform road system limited the portability—and commercial potential—of limestone in south central Indiana. When the railroad was constructed through the stone belt in the 1850s, physical geography gave the region a relative advantage. Railroad surveyors recognized that the gently rolling hills on which the belt is situated were “less rugged” than the dissected uplands bordering it to the east and west, making it a good location to lay track.³⁸ The first railroad completed through the area was the New Albany & Salem Railroad (later, the Louisville, New Albany & Chicago and eventually the Monon line), constructed through Bloomington in 1853 and north through Stinesville in 1854. Proximity to the railroad created new potential markets for Indiana’s limestone industry, as large blocks of stone could be transported via railcar over longer distances than previously feasible.³⁹ Joseph Batchelor identifies the importance of the railroad in *An Economic History of the Indiana Limestone Industry*. Batchelor writes that fourteen quarries opened in the stone belt before 1870. With the exception of Richard Gilbert’s quarry, all of these quarries were opened in 1853 or later, after the arrival of the first railroad.⁴⁰

With perhaps the exception of very small-scale stone extraction operations, the Indiana limestone industry was transitioning from a labor-intensive, non-mechanized endeavor to one that embraced emerging technologies. In the late nineteenth century, the arrival of the railroad made shipment of stone over long distances possible. Although some of the earliest quarrying operations in the limestone belt were located in Monroe County, the Bloomington area was slower than other parts of Monroe and Lawrence Counties to enter the limestone business.⁴¹ By the end of this era, integration of new technologies and better

³² Scott Sanders, “Digging Limestone,” *North American Review* 267:3 (1982), 67; Harley J. McKee, “Early Ways of Quarrying and Working Stone in the United States,” *Bulletin of the Association for Preservation Technology* 3:1 (1971), 54.

³³ Sanders, “Digging Limestone,” 67; McKee, “Early Ways of Quarrying and Working Stone in the United States,” 54.

³⁴ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 111.

³⁵ “Woodcut of an Early Steam Mill and Derrick” [photograph], Indiana Bedrock, accessed May 25, 2017, <http://cdm15078.contentdm.oclc.org/cdm/ref/collection/p15078coll7/id/1083>; “Limestone Industry Timeline,” Indiana Bedrock, accessed May 25, 2017, <https://mcpl.info/sites/default/files/Timeline.pdf>; Shewmaker, “Quarry Quest.”

³⁶ “Woodcut of an Early Steam Mill and Derrick.”

³⁷ Shewmaker, “Quarry Quest,” 36.

³⁸ Steven Visher, “The Indiana Oolitic Limestone Industry,” *Economic Geography* 7:1 (January 1931), 54.

³⁹ Visher, “The Indiana Oolitic Limestone Industry,” 54; Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 8.

⁴⁰ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 10.

⁴¹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 161.

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transportation networks positioned the Bloomington area and the larger stone belt to meet the demand for Indiana limestone that developed in the late nineteenth century.

Era of Expansion and Innovation (1871 to 1918)

The Indiana Limestone industry as a whole grew from modest to robust in the late nineteenth and early twentieth centuries. Although the development of Bloomington's limestone industry initially lagged behind its neighbors, by the 1880s, stone operations in and near the town began to prosper during a period of high demand for the product. By the turn of the twentieth century, the limestone industry represented a significant portion of Bloomington's industrial workforce. Limestone gained a national presence as the preferred building stone thanks to new architectural fashions and emerging theories on landscape design and urban living, even though it never highly ranked as a major revenue producer on the state level.⁴² Indiana Limestone was featured heavily in the rebuilding of cities damaged by fires and was used to create some of the most architecturally renowned private residences in the nation. Quarries and mills opened in rapid succession throughout the stone belt to meet the country's growing demand, while mechanical innovations helped stone extractors and millers fulfill orders. The number of quarries increased significantly from the 1870s through the 1890s, as did the associated labor force, even though the aforementioned mechanization required fewer laborers to perform job-related tasks. As the industry grew, more quarry pits dotted the landscape, and mills increased in size and scope, with some focusing more on fabrication for architectural details. Quarry pits, large mills and milling equipment, rail transportation networks and trestles, cranes and tramways, derricks, and quarrying machinery from this era may remain on the landscape in and around Bloomington.

Limestone's popularity increased in the late nineteenth century in part following significant fires in Chicago (1871) and Boston (1872) which created a demand for less flammable building materials.⁴³ Limestone and sandstone were the most common stones used in the rebuilding of Chicago.⁴⁴ The construction of Chicago's City Hall in 1878, using Indiana limestone from newly organized Chicago and Bedford Stone Company quarries, also helped the building material gain a regional and national prominence.⁴⁵

In the East, limestone's light color offered a contrast to the darker granite and brownstone that dominated the built environment after the Civil War.⁴⁶ The Beaux Arts style, which came into fashion in the last years of the nineteenth century, commonly favored the light-colored limestone as a building material; the emergence of this popular style further bolstered the stone's appeal.⁴⁷ Around the same time that Beaux Arts became fashionable, prosperity from the Gilded Age prompted some of the nation's wealthiest citizens to use limestone for their new estate houses or "sumptuous town residences."⁴⁸ The Vanderbilt family

⁴²United States Department of Commerce and Labor, *Bureau of the Census, Thirteenth Census of the United States Taken in the Year 1910*, Volume IX: Manufactures, 1909 (Washington, D.C.: Government Printing Office, 1912). There were 300 establishments producing "Marble and Stone Works" in the state, with products worth over \$6 million dollars—which ranked the industry 22nd in the state in terms of the value of the product. The *Indiana Geology Handbook* published a decade later shows the state's top twenty-seven industries according to the most recent census, and Indiana Limestone is not among them. It is however pointed out that "In the production of limestone for building purposes, Indiana stands far ahead of all others." Indiana Division of Geology, Department of Conservation, *A Handbook of Indiana Geology* (Indianapolis: Wm. B. Burford, 1922), 58.

⁴³ McDonald, *Short History of Indiana Limestone*, 12; Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 23-33.

⁴⁴ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 24.

⁴⁵ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 26-27.

⁴⁶ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 23-24.

⁴⁷ James C. Massey and Shirley Maxwell, *House Styles in America: The Old-House Journal Guide to the Architecture of American Homes* (New York: Penguin Studio, 1996), 169-172.

⁴⁸ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 29-30.

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commissioned several homes constructed with Indiana Limestone, including their Beaux Arts-style Newport, Rhode Island, residence “The Breakers” and the Chateausque-style “Biltmore” in Asheville, North Carolina, both completed in 1895.⁴⁹ These types of large projects brought favorable attention to Indiana Limestone.⁵⁰

Looking beyond single buildings, architects and city leaders embraced integrating natural elements with aesthetically pleasing structures into designed urban landscapes that could provide the “psychological relief that city dwellers needed.”⁵¹ The “City Beautiful” movement advocated beautiful, livable cities with boulevards, park systems, and Neo-Classical and Beaux Arts-inspired civic buildings and memorials.⁵² In the nineteenth century, many U.S. cities had experienced unprecedented growth and rapid industrialization which, by the early twentieth century, had resulted in “ugly” urban centers with a poor quality of life for many residents.⁵³ For example, in 1912, “considerable” soot deposits in the state capital of Indianapolis were accumulating at fifty-eight pounds per acre each day in the southeastern section of the city. The soot threatened residents’ health and stained the city.⁵⁴ Indiana Limestone was an ideal material for City Beautiful structures, since it held up well under exposure to coal smoke and the light, natural stone worked well with the movement’s preferred Neo-Classical and Beaux Arts architecture.⁵⁵ The Federal Courthouse (1905), City Hall (1910), and Indiana War Memorial Plaza (beginning in 1921) in Indianapolis were all constructed in the Beaux Arts style using Indiana Limestone and reflected tenets of the City Beautiful movement.⁵⁶ Indiana Limestone was used for City Beautiful monuments in other Midwestern cities such as Kansas City, Missouri, where it was used for the Liberty Memorial.⁵⁷

At the beginning of this period, Bloomington’s limestone operations struggled to keep up with the stone businesses located in surrounding areas of Monroe and Lawrence Counties. Most of the labor was furnished by local farmers and migrants from Kentucky and Tennessee.⁵⁸ European immigrants also comprised a portion of owners and workers as the industry developed in the late nineteenth century. Some English immigrants, who had experience quarrying and carving in their home country, were attracted to Indiana’s stone country. For example, David Reed came to the United States from England in 1871 and started a quarry the same year.⁵⁹ Reed operated many stone companies in south-central Indiana, including Reed Station in Bedford, Lawrence County.⁶⁰ John Hoadley, also from England, came to the United States at age twelve and began his career as a machinist in New Albany. He eventually moved to Monroe County

⁴⁹ McDonald, *Short History of Indiana Limestone*, 24-25.

⁵⁰ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 354.

⁵¹ Victoria Post Ranney, “Frederick Law Olmstead: Designing for Democracy in the Midwest,” in William H. Tishler, ed., *Midwestern Landscape Architecture* (Urbana, Ill.: University of Illinois Press, 2000), 47.

⁵² Janice L. Reiff, Ann Durkin Keating, and James R. Grossman, eds., *Encyclopedia of Chicago* (Chicago: University of Chicago Press, 2004), accessed May 25, 2017, <http://www.encyclopedia.chicagohistory.org/>, s.vv. “Architecture: The City Beautiful Movement.”

⁵³ *Encyclopedia of Chicago*, s.vv. “Architecture: The City Beautiful Movement.”

⁵⁴ David J. Bodenhamer and Robert G. Barrows, eds., *The Encyclopedia of Indianapolis* (Bloomington, Ind.: Indiana University Press, 1994), s.vv. “Smoke Abatement.”

⁵⁵ McDonald, *Short History of Indiana Limestone*, 13-14; William Mullen, “Cutting Edge,” *Sunday: The Chicago Tribune Magazine*, September 24, 1989, Sec. 10, 16.

⁵⁶ Bruce E. Goetzman, “Federal Building,” National Register of Historic Places Inventory--Registration Form (Washington, D.C.: National Park Service, 1973); Mary Jane Meeker and Eric Gilbertson, “Old Indianapolis City Hall,” National Register of Historic Places Inventory—Registration Form (Washington, DC: National Park Service, 1974); Suzanne T. Rollins, Katherine Martin, Lawrence Downey, and Bruce E. Goetzman, “Indiana World War Memorial Plaza,” National Historic Landmark Nomination Form (Washington, DC: National Park Service, 1994).

⁵⁷ “Liberty Memorial,” Historic American Buildings Survey, Kansas City, Missouri, accessed May 25, 2017, http://www.ahr-ke.com/reports/liberty_memorial/.

⁵⁸ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 56.

⁵⁹ Mullen, “Cutting Edge,” Sec. 10, 15.

⁶⁰ “Limestone Industry Timeline,” 12.

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where, in 1876, he started his quarry business.⁶¹ During labor shortages that occurred during this early period of industry expansion, owners often brought foreign workers to labor in the quarries and mills. David Reed brought twenty Italian laborers to work in his businesses in 1882. Other foreign-born workers came to the area for railroad work and stayed to work in the quarries, some as carvers, but most as laborers. These included Italians, Hungarians, Greeks, and Slavs, as well as English, Scotch, and Welsh cutters.⁶² The influence of European carvers remains visible within the city of Bloomington, where homes in the Vinegar Hill Historic District (NRHP, 2005) feature designs by European carvers that “have a distinctly Mediterranean flavor.”⁶³ In the early twentieth century, attempts by owners to import immigrants to fill shortages in unskilled labor were sometimes met with demonstrations and protests by native employees, leading many immigrants to leave the stone district.⁶⁴

Local newspaper accounts document the growth of the limestone industry in and around Bloomington before the turn of the century and tout the benefits of the local stone. One newspaper reported in 1881 that an Oolitic stone company headquarters had been established “in the building east of the Chas H. McPheeters grocery store.”⁶⁵ In the 1890s, another paper reported a quarry would be opened at the “Dolan Site,” west of the Showers Factory. (This quarry was, perhaps, part of the Central Oolitic Stone Company, which appears with a quarry on an 1892 map immediately west of the Showers Factory and eventually became the Shawnee Stone Company).⁶⁶ Still another noted that other local industries, such as Showers Brothers and S. C. Dodds & Company, were advertising the virtues of Bloomington and its limestone: “The firms are appreciative advertisers and have made Bloomington known throughout the United States. It seems as if her reputation has only started, as of late the oolitic limestone deposits around the little city are attracting the attention of capitalists throughout the country. . . . Fortunes are being made quarrying the stone, the demand being far beyond the supply.”⁶⁷ Dispelling the widespread belief that limestone—or at least the best quality limestone—was found only in Lawrence County (a belief which was perhaps encouraged by some in the Lawrence County stone industry), the *Bloomington Progress* noted in 1890 that:

It is a singular fact that the stone is known as ‘Bedford stone,’ and many persons think that it all must come from the town of Bedford. The secret of that is that Bedford was the first to ship this stone to distant points, but the deposit of limestone is confined almost exclusively to the counties of Lawrence and Monroe, in which Bedford and Bloomington are located.⁶⁸

Evidence of the limestone industry’s growth in the city of Bloomington was not just limited to the opening of businesses. Prominent buildings around the town were constructed or faced with Indiana Limestone. In 1884, when Indiana University moved to its current location, its architects and builders used Indiana Limestone for construction and accents on its new buildings.⁶⁹ The Old Crescent, which consists of the

⁶¹ *History of Lawrence and Monroe Counties*, 611.

⁶² Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 56.

⁶³ *Monroe County: Interim Report* (Indianapolis: Historic Landmarks Foundation of Indiana, 1989), xvi.

⁶⁴ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 139, 143.

⁶⁵ “Limestone Industry Timeline,” 11.

⁶⁶ “Limestone Industry Timeline,” 17; *Bloomington, Indiana* [maps], 1892, Scale not given, “Union List of Sanborn Maps,” Indiana University Libraries, accessed May 25, 2017, https://spatialdata.iu.edu/DOQQS/state/sanborn/public/pdf/1892/02269_1892-0001.pdf.

⁶⁷ *Bloomington (IN) Progress*, December 11, 1889.

⁶⁸ *Bloomington (IN) Progress*, January 22, 1890.

⁶⁹ Shewmaker, “Quarry Quest,” 37.

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university's oldest buildings, was listed in the NRHP in 1980.⁷⁰ By 1910, the third (and present) Monroe County Courthouse (NRHP, 1976) was completed in Indiana Limestone.⁷¹

Technological changes and innovations implemented in the late nineteenth century reduced costs and made limestone production more efficient. As discussed in the previous section, steam power had been introduced to the limestone belt in 1855. In 1872, John Matthews operated the region's first traveling crane, which also relied on steam power, at his stone operation in nearby Ellettsville.⁷² Just three years later, Matthews introduced the first steam channeling machine.⁷³ The steam channeler, which made stone extraction much easier, reportedly required the labor of two men to accomplish what had previously taken twenty-five workers.⁷⁴ Quarry laborers laid moveable, narrow-gauge rails on a quarry floor; the channeler moved back and forth along the rails, slowly cutting a narrow groove a few inches deep during each pass. The earlier channelers would usually cut seven feet deep.⁷⁵ Some quarries lined five or six channelers on a single track cutting in the same groove until the cut was deep enough.⁷⁶ Once the first strip was cut the length of a quarry, the channeler cut two additional grooves crosswise to create the sides of a block. (The first, four-sided cut in the quarry floor is called a key block.) Wedges were inserted at this stage, and the block was pulled loose using a derrick.

In addition to the use of steam to power channelers, other innovations were abundant during this period and the human- and animal-powered days of quarrying were quickly fading away. Quarry operators also applied steam power to drills and derricks. Of the ninety-six derricks used in the stone belt in 1891, only six were hand-powered and seven horse-powered. The rest were steam-powered.⁷⁷ The introduction of mechanized gang saws in 1885 and diamond saws in 1895 made production and fabrication more efficient.⁷⁸ Also in the 1890s, wire cables replaced ropes and increased load capacity for derricks. (The tensile cables that held the derrick in place were called guy wires). The bull wheel was installed near the base of a derrick and could be rotated by only one operator (compared to the several required to operate the earlier equipment).⁷⁹ Mills began running a mix of sand and water through their saws, which slowed equipment wear.⁸⁰ South of the Bloomington area, the Bedford Stone Company introduced electricity for lights and "travelers" (likely traveling cranes in the mill) in limited use in 1891.⁸¹ Two years later, the Chicago and Bedford Stone Company built a generator on site and used the electricity to power lights and travelers as well as derricks and channelers. *Stone* magazine estimated it was the "first quarry in the world to use electricity exclusively for all of its machinery."⁸²

It should be noted that while these technological changes and innovations did indeed reduce the labor needed for specific industry related tasks, Joseph Batchelor points out that "[i]t does not appear that the

⁷⁰ Harrington, "The Old Crescent."

⁷¹ Shewmaker, "Quarry Quest," 39; D'Esopo, "Monroe County Courthouse."

⁷² "Limestone Industry Timeline," 8.

⁷³ McDonald, *Short History of Indiana Limestone*, 19; Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 39-40.

⁷⁴ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 40.

⁷⁵ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 40.

⁷⁶ Steve Reed, "Quarrying Limestone in Monroe County," (unpublished field project for Folklore F101, Indiana University, Bloomington, Ind., April 26, 2006), n.p.

⁷⁷ Shewmaker, "Quarry Quest," 38.

⁷⁸ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 40, 42-43.

⁷⁹ Shewmaker, "Quarry Quest," 38; "Limestone Industry Timeline," 21; Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 110.

⁸⁰ "Limestone Industry Timeline," 13.

⁸¹ Shewmaker, "Quarry Quest," 38.

⁸² "Electric Power in a Quarry," *Stone: An Illustrated Magazine* (April 1893): 422-443. Although electricity was introduced in this era, Batchelor found it was not widely used for machinery until the early- to mid- twentieth century. See next context.

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improved methods of production lessened the total number of men employed in the industry. The decreased manpower necessary to produce a cubic foot of stone was more than offset by the expansion of production.”⁸³ As Bloomington entered the twentieth century, a significant number of employees in the industrial labor force were employed by stone operations. In 1900, limestone operations employed approximately 47 percent of the industrial labor force recorded in the city of Bloomington by the State Department of Inspection (which oversaw industrial operations like quarries, manufacturers, mercantiles, laundries, renovating works, bakeries, and printing offices).⁸⁴ Indeed, even with Bloomington’s population growth and the establishment of new industries, by 1913 approximately 37 percent of the male industrial workforce and 31 percent of the total workforce recorded by the State Bureau of Inspection for the city of Bloomington worked in the limestone industry.⁸⁵

As limestone’s popularity rose, favorable commodity rates helped the industry expand its market. Indiana Limestone enjoyed a significant market outside the Midwest, but even as late as 1881 the majority of limestone products went to projects in Indiana, Illinois, or Kentucky. By 1891, distribution expanded to a broader, national level and Indiana producers reported New York as their biggest market.⁸⁶ A report from 1896 listed Indiana Limestone as the primary building material for residences, public buildings, and office buildings in Illinois, Iowa, Kentucky, Massachusetts, Missouri, New York, Virginia, and Wisconsin.⁸⁷ Rail companies set commodity rates on limestone shipments to New York so low that it was as inexpensive to ship from the Midwest as it was to ship from a closer quarry in New Jersey, New England, or even within the state of New York. (Transportation prices would increase in later years.)⁸⁸

Railroad use expanded in the late nineteenth and early twentieth centuries and prompted the development of new quarry districts in the limestone belt. Railroad companies constructed three short lines in the Bloomington and Bedford areas, totaling fifteen miles, to transport limestone. Competition among railroads led to the laying of new tracks in other districts and created more opportunities for quarrying.⁸⁹ Easier transportation, combined with limestone’s popularity, allowed the industry in Bloomington and elsewhere to experience “fairly continuous” growth from the 1890s into the first decade of the twentieth century (except during a few economic recessions, most notably the depression following the financial panic of 1893).⁹⁰ In fact, by 1906, sales of Indiana Limestone accounted for more than fifty percent of all domestic production of building limestone.⁹¹

The popularity of Indiana Limestone made Hoosier quarries a good investment and introduced a speculative component to the industry. Investors from Illinois, New York, Kentucky, and Ohio were drawn to the industry’s growth.⁹² These investors bought land in the stone belt in anticipation of rail or quarry development. Company names—such as the Chicago and Bloomington Limestone Company and the Cleveland Quarry—reflect the presence of these outside investors.⁹³ In some instances, quarries were

⁸³ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 54.

⁸⁴ In 1900, 271 workers were employed by quarries or mills out of a total 577 recorded that year. Indiana Department of Inspection, *Fourth Annual Report of the Department of Inspection of the State of Indiana* (Indianapolis: Wm. B. Burford, 1901), 5, 27.

⁸⁵ In 1913, 523 males out of 1428 were employed by quarries or mills. Indiana State Bureau of Inspection, *Annual Report of the State Bureau of Inspection*, 40-42.

⁸⁶ McDonald, *Short History of Indiana Limestone*, 28.

⁸⁷ Hopkins and Siebenthal, “The Bedford Oolitic Limestone of Indiana,” 414-427.

⁸⁸ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 32.

⁸⁹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 92-93.

⁹⁰ Patton and Carr, *Salem Limestone in the Indiana Building-Stone District*, 5.

⁹¹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 82, table 9.

⁹² McDonald, *Short History of Indiana Limestone*, 26.

⁹³ McDonald, *Short History of Indiana Limestone*, 25-26.

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opened to provide material for a single project—or even as a leverage point for bidding on a project—and either closed following the project’s completion or continued only “on a half-hearted basis.”⁹⁴

Speculators played a significant role in the opening of new stone districts. In Monroe County, a few investors began buying land in the stone belt in anticipation of rail development. John Crafton optioned almost 7,000 acres of land in the county for quarry rights in the 1890s. As Crafton and his partners sold or leased the land they had optioned, a number of stone districts developed. In several cases, communities developed or expanded following the opening of quarries and mills.⁹⁵ South of downtown Bloomington, the community of Oolitic was founded by Newell and Carinne Sanders close to recently opened quarries in what became known as the Sanders stone district. The community was renamed twice, first as “Limestone,” in order to avoid confusion with the Lawrence County community of Oolitic, and shortly after as “Sanders,” for the town’s founders when it was discovered that the name “Limestone” was also a duplicate.⁹⁶ Smithville, another small railroad community south of Sanders, also grew in the late nineteenth century thanks to the quarry industry.⁹⁷

It was in the 1890s during the era of “increased demand” that a railroad switch was constructed northwest of Bloomington, spurring the opening of the Hunter Valley stone district.⁹⁸ Morton C. Hunter Stone Company first tapped the region for commercial quarrying in 1891. The Hunter Company conducted a number of core drillings that showed a rich deposit of Indiana Limestone in the area. This led to the construction of the Hunter Switch off the Louisville, New Albany & Chicago Railroad (later the Monon). The Hunter Company immediately began to quarry and also constructed a stone mill on site.⁹⁹ Shortly thereafter, the Chicago and Bloomington Stone Company (1892) and the Norton Stone Company (1892) developed quarries in the stone district. The Norton Stone Company constructed a mill soon after opening its quarry.¹⁰⁰ Perry, Matthews, and Perring started the Crescent Quarry (1893), and Star Stone Company opened Star Quarry (1895). Consolidated Stone Company bought the Norton quarry in 1895 and the Hunter Quarry in 1896. A number of quarries associated with the Hunter Valley district remain visible on the landscape and have been documented as recently as 2014.¹⁰¹ Unlike the Sanders stone district, no known community was established in the Hunter Valley stone district.

⁹⁴ Visher, “The Indiana Oolitic Limestone Industry,” 53.

⁹⁵ Al Hoadley, “History of the Belt” (unpublished manuscript, 1992), unnumbered map; *Monroe County Interim Report*, 44. An interesting side note: John B. Crafton’s wealth, earned from speculating on stone land in Indiana, bought him a first class ticket on the maiden voyage of the Titanic. Along with more than 1,500 other passengers, Crafton lost his life when that ship went down in the cold North Atlantic in 1912. See Hoadley, Sanders Area essay and John B. Crafton essay.

⁹⁶ While one county history (*History of Lawrence and Monroe Counties*, 426) indicates that the towns of Oolitic and Limestone were separate towns located very close together, with Oolitic platted by the Oolitic Stone Company and Limestone founded by Newell and Carinne Sanders, newspaper accounts from 1892 suggest that Oolitic and Limestone were the same town. The May 25, 1892 issue of the *Bloomington Progress* notes that “Newell Sanders’ new town, on the Miller Farm, is to be christened Oolitic” (*Bloomington [IN] Progress*, May 25, 1892). Two months later the same newspaper noted in its July 27, 1892 issue that “Some time ago Newell Sanders laid out a town on the old Ross place, calling it Oolitic. As there is a town in Lawrence County by the same name it created confusion in the mails. Now the name has been changed to Limestone, and a post office of that name will be established there. The town is five miles south of Bloomington on the railroad” *Bloomington (IN) Progress*, July 27, 1892. In 1903, the state passed an act changing the name of the unincorporated community of Limestone to Sanders since there was again already a town and post office by the name of Limestone. See: S. 307, Approved March 9, 1903, in Daniel E. Storms (Secretary of State), *Laws of the State of Indiana, Passed and Published at the Sixty-Third Regular Session of the General Assembly, Begun on the Eighth Day of January A.D. 1903* (Indianapolis: Wm. B. Burford, 1903), 222.

⁹⁷ *Monroe County Interim Report*, 62; *History of Lawrence and Monroe Counties*, 436.

⁹⁸ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 33, 36

⁹⁹ Hopkins and Siebenthal, “The Bedford Oolitic Limestone of Indiana,” 366-367.

¹⁰⁰ Hopkins and Siebenthal, “The Bedford Oolitic Limestone of Indiana,” 366.

¹⁰¹ Indiana Historic Sites and Structures Inventory (IHSSI) County Survey for Hunter Valley Quarry, 105-055-32001, State Architectural and Archaeological Research Database (SHAARD), accessed May 25, 2017, <https://secure.in.gov/apps/dnr/shaard/print.html?printType=countySurvey>.

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By 1896, there were seven active quarries and two mills located within the Hunter Valley stone district; an additional two mills associated with the Hunter Valley area operated in Bloomington.¹⁰² The 1898 Sanborn Fire Insurance maps for the city shows only two stone companies appearing as “Specials” in the map directory: the Central Oolitic Stone Company (present by 1892), and the Henley Stone Company (present by 1898). The Norton Mill, however, does not appear on these maps for Bloomington. (One other company, the H.B. Hugh Lime and Lumber Yard, is shown on maps and may have sold crushed lime from nearby quarries, but was not a stone company in the sense that it quarried or milled limestone.¹⁰³)

Southeast of Hunter Valley, the Clear Creek area was thought to contain “large and promising outcrops of Oolitic Limestone” but it was not located in proximity to a railroad. The *Annual Report of the Department of Geology and Natural Resources* (1896) notes those outcrops were located “some distance” from the main railroad—the Louisville, New Albany, Salem & Chicago / Monon Railroad—and attributed that distance as the “principal reason” the area had not developed.¹⁰⁴ (A community known as Clear Creek, which had its own post office, was home to a residential settlement directly adjacent to the main railroad). It was not until the construction of the Indiana Stone Railway in 1899, which was a branch of the Monon, that the area was opened to more quarrying activities.¹⁰⁵ The Clear Creek community expanded with residences for stone workers.¹⁰⁶ (Stone operations in the Clear Creek area became more active in the twentieth century.)

Without access to a rail line, land along Rockport Road southwest of downtown Bloomington had also not been opened to significant quarrying in the late nineteenth century. John B. Crafton, co-owner of the Buff and Blue Stone Company (along with Mike Edgeworth and others), had optioned much of the land in Van Buren, Indian Creek, and Clear Creek townships (including the Sanders district discussed above).¹⁰⁷ In the 1890s, Crafton began exploring the area along Rockport Road as a quarry district. Following the construction of the Indiana Stone Railway some distance away, Crafton opened a quarry in what would be known as the Victor stone district. The Victor area remained largely undeveloped, though, as no railroad actually reached the high bluff on which the stone was concentrated.¹⁰⁸ In 1901, the Oliver Brothers of South Bend (owners of Oliver Chilled Plowed Works and investors in other businesses such as the Studebaker Corporation) bought a large portion of Crafton’s holdings and partnered with Edgeworth.¹⁰⁹ Reputedly stock holders in the Illinois Central Railroad, the Olivers were in a position to encourage that railroad’s interest in the potential quarries near the railway.¹¹⁰

The Illinois Central Railroad became a competitor of the Monon when the former purchased the Indianapolis Southern Railway in 1906.¹¹¹ The Indianapolis Southern Railway had already begun a connection from Switz City, Indiana, to the Illinois Central line at Effingham, Illinois. When the Indianapolis Southern became a subsidiary of the Illinois Central, the Illinois Central sent geologists to the Victor area to evaluate its potential as a stone district. Apparently these geologists liked what they saw, for within a few years the Illinois Central began construction of a railroad line along the west side of Clear

¹⁰² Hopkins and Siebenthal, “The Bedford Oolitic Limestone of Indiana,” 366-367.

¹⁰³ *Bloomington, Indiana* [maps], 1892 and 1896.

¹⁰⁴ Hopkins and Siebenthal, “The Bedford Oolitic Limestone of Indiana,” 373.

¹⁰⁵ Oliver Lockhart, *The Oolitic Limestone Industry of Indiana*, Indiana University Studies nos. 9 and 10, Bloomington, Indiana, September 1910, 77.

¹⁰⁶ *City of Bloomington: Interim Report* (Bloomington, IN: City of Bloomington, 2004), 40.

¹⁰⁷ Hoadley, “History of the Stone Belt,” Victor Area essay, 1.

¹⁰⁸ Hoadley, “History of the Stone Belt,” Victor Area essay, 3.

¹⁰⁹ Hoadley, “History of the Stone Belt,” Victor Area essay, 1-4.

¹¹⁰ Hoadley, “History of the Stone Belt,” Victor Area essay, 4.

¹¹¹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 92.

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Creek between Clear Creek Station and what became known as the Victor stone district. The Illinois Central ran the railroad branch mostly along the creek valley and called this 8.83-mile portion of the line the Bloomington Southern.¹¹² In 1914, the spur line built trestles over the valleys near Victor, Indiana, and climbed the hill that had stymied access to the area that is today the Victor Oolitic Stone Company quarry land.¹¹³ Residential housing for workers, a school, and a village store soon located nearby.¹¹⁴

As noted in the earlier context, basic milling, such as the type done by operators who squared off waste stone before shipment, had been practiced at some quarries at least since the mid-nineteenth century.¹¹⁵ However, most companies in the limestone belt milled the quarried stone off-site in the late nineteenth century. If they were not working through a broker or supplying stone for a specific project, stone companies often shipped their rough blocks to stone yards and mills located in city centers for fabrication.¹¹⁶ For example, the Chicago and Bloomington Limestone Company sent their quarried stone to Chicago mills for sawing and fabrication.¹¹⁷ Stone yards offered slab or block stone in stock for builders, along with necessary masonry tools. Some yards had mills and performed fabrication and carving on site, though certain operators milled block stone on the quarry site and noted the advantage of not paying freight rates for shipping “waste” stone that could be removed prior to shipping.¹¹⁸ The efficiency, and subsequent savings, of vertical integration could be hampered if a stone yard cut ties with quarries that did their own milling.¹¹⁹

The end of the nineteenth century marked a change in the Indiana Limestone industry from one focused primarily on quarrying to one that focused on both quarrying and fabrication. In his study of the Indiana limestone industry, Joseph Batchelor specifically identified 1897 as the year the industry expanded its attention to include fabrication.¹²⁰ Local mills also began to focus on more complex or intricate work, such as turning columns.¹²¹ During this period, stone producers increased marketing efforts, promoting stone as a building product.¹²² By 1916, an estimated twenty-five percent of fabricated stone came from Hoosier mills.¹²³ Sanborn Fire Insurance Maps for the Bloomington area seem to reflect this shift in focus to local milling and fabrication. In 1892, two stone milling companies are listed on the directory. In 1913, the number of mills jumped to twenty-one.¹²⁴

With more limestone mills opening in Bloomington and with the rapid expansion of quarrying operations in the area, some stone industry employees settled in Bloomington’s working class neighborhoods, though evidence suggests that stone workers may have been transient in their residences. The Steele Dunning Historic District (NRHP, 2000) on the city’s near west side was located near the Chicago, Indianapolis & Louisville railroad along Morton Street and the growing number of mills operating along the line. By 1910, the neighborhood counted a “large minority of limestone workers” including a “contractor, mill foreman,

¹¹² Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 93.

¹¹³ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 93.

¹¹⁴ *Monroe County: Interim Report*, 56.

¹¹⁵ “Woodcut of an Early Steam Mill and Derrick” [Photograph].

¹¹⁶ McDonald, *Short History of Indiana Limestone*, 32-33.

¹¹⁷ Hopkins and Siebenthal, “The Bedford Oolitic Limestone of Indiana,” 366.

¹¹⁸ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 45.

¹¹⁹ McDonald, *Short History of Indiana Limestone*, 33.

¹²⁰ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 72.

¹²¹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 116.

¹²² Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 209.

¹²³ McDonald, *Short History of Indiana Limestone*, 33.

¹²⁴ *Bloomington, Indiana* [maps], 1892 and 1913.

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machinist, planerman, quarry engineer, [and] quarry watchman.”¹²⁵ Eliza Steelwater, author of the Steele Dunning NRHP nomination, notes that the working class jobs held by the Steele Dunning residents in the early twentieth century were “poorly paid and insecure, as reflected by the high number of multi-worker households” in the neighborhood.¹²⁶ (The Steele Dunning Historic District had a higher incidence of renters than other neighborhoods in Bloomington.¹²⁷) The seasonal nature of quarry work, the rapid expansion (and closure) of quarries and mills, and the advancing technologies which required fewer workers to perform the same tasks, may have contributed to the residential transience among Bloomington-area stone workers.

In the twentieth century, the processes of limestone extraction, milling, and finishing were refined. The industry became more vertically integrated, as limestone companies began quarrying, milling, and shipping their products and could control the process from extraction to the point of sale. Derricks were replaced by rails as the preferred method to transfer blocks for fabrication on the quarrying site.¹²⁸ The mill site also changed in that previously stand-alone components, such as cranes and saws, were combined under the roof of a single mill, which, by the early twentieth century, was usually a rectangular, gable-roofed structure.¹²⁹ In the milling process, quarried stone passed through the main mill building on flat-bed cars traveling along narrow-gauge rails. Sometimes additional saw buildings outside the mill were also connected by rail. Cranes and tramways moved stone inside and outside of buildings. Fabricated stone was usually loaded onto train cars to travel by rail to its final destination where it was used for foundations, decorations, or veneer. Milling operations were also experimenting with electricity, but its use was not widespread in the Bloomington area at this time. In Lawrence County, the Chicago and Bedford Stone Company powered its gang saw with electricity when it began generating its own power in 1893.¹³⁰

Numerous attempts were made to create secondary industries with the significant by-products of the building stone companies in the early twentieth century, including the production of fertilizers, cement, glass, and steel. Many of these attempts did not flourish on a large scale, but several small companies in Monroe and Lawrence Counties did succeed in purchasing these by-products and offering them for sale.¹³¹

Improved technology, favorable commodity rates, and an expanding transportation network helped the Indiana limestone industry expand in this era. By the end of the period, Indiana Limestone accounted for up to 80 percent of all sales of building limestone in the United States.¹³² The start of the Great War (World War I) at the end of this period posed some difficulties in the transportation of, and increased fuel costs associated with, shipping stone.¹³³ When the war drew to a close, a nationwide building boom and concerted promotional efforts bolstered the Indiana Limestone industry to its most prosperous decade.

¹²⁵ Eliza Steelwater, Ph.D. “The Steele Dunning Historic District,” National Register of Historic Places—Registration Form (Washington, D.C.: National Park Service, 2000), Sect. 8, p. 20-21.

¹²⁶ Steelwater, “The Steele Dunning Historic District,” Sect. 8, p. 20.

¹²⁷ Steelwater, “The Steele Dunning Historic District,” Sect. 8, p. 20.

¹²⁸ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 112.

¹²⁹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 112.

¹³⁰ “Electric Power in a Quarry,” 428.

¹³¹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 179-180.

¹³² Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 82.

¹³³ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 356

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Era of “Boom, Merger, and Overcapacity” (1919 to 1933)

By the early twentieth century, limestone was a significant component of Bloomington’s relatively diverse local economy of education and manufacturing.¹³⁴ A building boom, similar to the one in the late nineteenth century that gave Indiana Limestone its regional and national prominence, struck again in the 1920s.¹³⁵ The Indiana stone industry increased its marketing efforts, targeting architects and architectural schools, contractors, and the general public.¹³⁶ Rapid expansion of quarry operations, refinements in technology, and subsequent mergers of stone companies caused economist Joseph Batchelor to call the era from 1919 to 1933 a “Period of Boom, Merger, and Overcapacity.”¹³⁷ The *Year Book of the State of Indiana for the Year 1919* notes that “Lawrence and Monroe [Counties], contain 36 large quarries which produce more than 70 percent of the stone used in the United States for building purposes. Fifty-five mills prepare the stone for the market, handling more than ten million cubic feet per year.”¹³⁸ While the economic impact of this industry is particularly difficult to quantify specifically for the Bloomington area, the participation of Bloomington area companies in producing this large percentage of the nation’s building stone, the opening of new quarries and mills, and the subsequent company mergers testifies to the importance of the industry to the local economy.

As one might suspect, Indiana’s limestone sales were at an all-time high in the flush times of the “Roaring Twenties.” In 1926, Indiana’s limestone industry sold its highest quantity ever of rough blocks. Two years later, the industry had the highest quantity of sales of both sawed and semi-finished stone. In the following year, the industry boasted the largest amount of cut stone ever sold by mills.¹³⁹ During this period, the technology of quarrying and milling was refined, as operators transitioned to electricity as the primary power source and as new materials, like steel, were used to make longer lasting and more durable equipment. Large mills, streams and ponds, power houses, quarry pits, transportation networks, electric machinery, administrative facilities, and blacksmith/machine shops were common at mills and near quarries; these resources are still found throughout the stone belt and in the Bloomington area today. Other elements that might be present at both quarry or mill sites are waste piles, slurry ponds, dammed creeks, piping, and electrical lines. (Waste piles associated with mills are typically of smaller stone and include the “roughback” remaining after a block has been cut.)

Both quarry and mill operations continued to grow and expand in the Bloomington area and throughout the belt. The growth in the number of mills after World War I was evident on many local properties. In 1923, Vernia Mill was built to replace a late nineteenth-century mill in Hunter Valley. Vernia Mill as a building is no longer extant, but the ruins, including the tramway and other machinery, are clearly discernible on the landscape.¹⁴⁰ Hoadley-Cline Stone (B.G. Hoadley) Company opened a mill northwest of Bloomington in the Hunter Valley area in the late 1920s.¹⁴¹ The mill remains in use at the site today and even utilizes the original gang saws. Sanborn maps for Bloomington show 1927 as the peak year for the number of mapped

¹³⁴ Patton and Carr, *Salem Limestone in the Indiana Building-Stone District*, 6.

¹³⁵ Scott R. Sanders, *Stone Country* (Bloomington, Ind.: Indiana University Press, 1985), 26.

¹³⁶ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 209-211.

¹³⁷ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 183.

¹³⁸ *Year Book for the State of Indiana for the Year 1919*, 392-393.

¹³⁹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 204 (Table 26), 207.

¹⁴⁰ Michael Baker Jr. Inc. “Historic Property Report: Additional Information, I-69 Evansville to Indianapolis: Tier 2 Studies, Section 5, SR 37 South of Bloomington to SR 39.” Prepared for the Federal Highway Administration/Indiana Department of Transportation, January 2012, 142-143; Weintraut & Associates field observations, 2011.

¹⁴¹ Stuckey, “Gazetteer of Limestone Mills of Owen, Monroe, and Lawrence Counties to 1950,” Indiana University Libraries, accessed May 25, 2017, <http://bl-libg-doghill.ads.iu.edu/gpd-web/gazetteeroflimestonemills.pdf>, 18.

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stone companies and mills with twenty-seven (compared to just two stone companies recorded on the 1898 maps).¹⁴²

Around this time, the Indiana Limestone Company (ILCO) organized and changed the face of the Indiana Limestone industry. In 1925, after a year of negotiations, twenty-four limestone industry firms from both Monroe and Lawrence Counties merged to form ILCO. This merger included more than half of the companies in the region, and the consolidated organization represented 85 to 90 percent of the capacity of the stone belt.¹⁴³ In the Bloomington area, ten mills and five quarries joined ILCO.¹⁴⁴

Consolidation was ILCO's primary aim, but the formation also had the consequence of creating a small boom of new operations. Immediately following the merger, there were only nineteen companies in the district. That number quickly grew; in the next year, owners "who had sold out to the merger" opened ten new companies.¹⁴⁵ Additionally, another five stone mills were constructed by stone contractors "who decided that in view of the merger and the increased intensity of competition, they could not survive outside the district."¹⁴⁶ The opening of local mills, constructed on or near quarrying sites, continued a trend that had begun at the end of the nineteenth century.¹⁴⁷

Just before the ILCO merger, in 1924, Mike Edgeworth had purchased the Oliver brothers' interest in the Victor stone district. Not long after the purchase, Edgeworth began recruiting other limestone companies to come to the Victor area. While this action may have been a way to negotiate lower freight rates for his own company, it is also possible that Edgeworth recognized the need for independent operators to prevent ILCO from raising prices. In fact, shortly after the merger, ILCO did raise prices, but when the independent companies did not follow this move, ILCO had to lower them to remain competitive.¹⁴⁸ Though Edgeworth's motivations are unknown, it is a testament to the booming health of the local limestone industry in the 1920s that he could afford to recruit competitors to the area.

In this era of "boom, merger, and overcapacity," quarries and mills in the North Clear Creek area started operations as part of a "late-developed pocket" of industrial activity.¹⁴⁹ Development in the North Clear Creek district—north of the established Clear Creek district and south of Bloomington proper—was greatly aided by the completion of a railroad switch, likely sometime in the late 1920s.¹⁵⁰ Limestone activities in the North Clear Creek area were also aided by a branch of Clear Creek running through the quarry and mill sites, which provided valuable hydraulic power and water supply for milling activities. The Maple Hill Quarries Company, Inc. organized in 1925, and purchased the land in the North Clear Creek district for the Maple Hill Mill and Quarry in 1927.¹⁵¹

Other local companies that had not participated in the ILCO merger decided it would be advantageous to join with neighboring operators. A second merger took place in 1927; the Chicago and Bloomington Limestone Company, Maple Hill Quarry Company, and the Hoadley-Cline Cut Stone Company formed the

¹⁴² *Bloomington, Indiana* [maps], 1898 and 1927.

¹⁴³ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 268.

¹⁴⁴ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, fig. 15, 269.

¹⁴⁵ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 268-270.

¹⁴⁶ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 268-270.

¹⁴⁷ McDonald, *Short History of Indiana Limestone*, 32-33.

¹⁴⁸ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 289.

¹⁴⁹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 183; Eliza Steelwater, Ph.D. "Woolery Stone Company," National Register of Historic Places-Registration Form (Washington, D.C.: National Park Service, 2001), Sect. 8, p. 35.

¹⁵⁰ Hoadley, "History of the Belt," Bloomington Limestone Company essay.

¹⁵¹ Hoadley, "History of the Belt," Bloomington Limestone Company essay.

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Bloomington Limestone Company (BLCO). Two years later, the company also acquired the Indiana Oolitic Limestone Company.¹⁵² Following this merger, the BLCO also acquired three mills and a number of quarries; the company operated out of a central office on South Walnut Street in Bloomington.¹⁵³ A third merger took place in 1928 between the Shawnee Stone Company and the Central Oolitic Stone Company.¹⁵⁴

Meanwhile, more mills and quarries continued to open in the Bloomington area. In the North Clear Creek area, the NRHP-listed Woolery Stone Company opened in 1928, and the State Register-listed Furst Quarry Stone Company opened in 1929 north of Maple Hill. By 1931, University Quarry (ILCO), Crane Quarry (ILCO), and Smith Quarry occupied land or opened quarries near modern Tapp Road.¹⁵⁵

In the Victor stone district, Indian Hill Stone Company and Fluck Cut Stone Company built spurs to their mill buildings off the Illinois Central branch line, which ran along Indian Creek. Indian Hill Stone Company organized in 1924 and built a mill and limestone office building north of Victor Oolitic.¹⁵⁶ Fluck Stone Company, owned by Hugh W. Fluck, opened a new, modern mill at the corner of current-day Fluck Road and Victor Pike. At Fluck Mill, the railroad spur ran inside the building through a sliding door at one end. Indian Hill Stone Company and Fluck Cut Stone Company placed their buildings along the Illinois Central Railroad.

By the time these facilities opened, the Monon Railroad had built a competing branch line along the east side of Clear Creek, running mostly parallel to the Illinois Central track. The Monon ran spurs to new quarries on the west side of the Victor stone district, including the Independent Limestone Company and the Shawnee Stone Company.¹⁵⁷ The spur line to both of these quarries ran west across Victor Pike, then across Indian Hill Stone Company land. The spur split west of Indian Hill, one line running northwest to the quarries on the north side of Tramway Road and the other running due west to the tramway at Shawnee Stone Company.¹⁵⁸

Residential construction related to the limestone industry also occurred in Bloomington proper during this era. Unlike the stone communities, neighborhood divisions in Bloomington appeared to have been influenced more by income and wealth than by occupation or industry affiliation. Some stone workers reportedly moved to a neighborhood west of Maple Street on the city's near west side and lived among laborers at nearby factories, such as the Showers Brothers Furniture Factory.¹⁵⁹ On the other side of town, the first home in the Vinegar Hill neighborhood was completed in 1926. The Vinegar Hill Historic District (NRHP, 2005) is a unique example of a residential neighborhood largely built and occupied by both prominent stone industry families and master carvers, though the neighborhood was also home to other prominent citizens of the city and administrators and educators who worked at Indiana University.¹⁶⁰ The neighborhood includes a mix of grand, architect-designed residences (many of which were owned by stone

¹⁵² Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 270.

¹⁵³ *Quarries and Mills* 1:2 (1929), available through Indiana Bedrock, accessed May 25, 2017, <http://cdm15078.contentdm.oclc.org/cdm/compoundobject/collection/p15078coll7/id/785/rec/2>, BLCp-01-0067; "Interview with Harold Hickman," Indiana Bedrock, accessed May 25, 2017, <http://cdm15078.contentdm.oclc.org/cdm/singleitem/collection/p15078coll7/id/2831>.

¹⁵⁴ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 271.

¹⁵⁵ *Map of Indiana Oolitic Limestone District* [cartographic material] (Building Stone Association of Indiana, 1931).

¹⁵⁶ Stuckey, "Gazetteer of Limestone Mills," 38.

¹⁵⁷ Hoadley, *History of the Belt*, Independent Stone Company-Norton essay, 1.

¹⁵⁸ W&A observed the location of this rail bed split at the western edge of Indian Hill's property but the spur has since been removed.

¹⁵⁹ Steelwater, "The Steel Dunning Historic District," Sect. 8, p. 17; *City of Bloomington: Interim Report*, 19-21.

¹⁶⁰ Stuttgart, "Vinegar Hill Historic District," *A Walk through the Vinegar Hill Limestone Historic District*, Historic Tour Guide No. 5, City of Bloomington, accessed May 25, 2017, <https://bloomington.in.gov/media/media/application/pdf/509.pdf>.

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company owners) as well as more modest, though architecturally noteworthy, dwellings (many of which were occupied by master carvers).¹⁶¹ Stone communities just outside of Bloomington proper remained strong in this era, and modest homes continued to be constructed in Clear Creek, Sanders, and Smithville in the 1920s.¹⁶²

Technological changes took place in tooling within the mill buildings over the decades, but the buildings themselves looked very much the same from the turn of the century into the 1940s, and beyond. Several mills around Bloomington were expanded or constructed in the late 1920s and early 1930s utilizing the frame construction that was common in this era.¹⁶³ The Fluck mill was constructed in seven weeks by the Abell-Howe Company of Chicago with units of framed fabricated structural steel on a reinforced concrete foundation. The building was finished with “obscure glass,” and the interior had two-inch tongue-and-groove lumber bolted to the framework. Inside was a 7.5-ton Northern Engineering Works crane on rails twenty-two feet above the floor.¹⁶⁴ It is not known if the Abell-Howe Company erected other buildings in the Indiana limestone region, although the article notes that the Abell-Howe Company had given several estimates to other companies in the stone belt.¹⁶⁵ By August 1931, the Fluck Cut Stone Company had added another “unit” to their Abell-Howe mill building. This new addition was equipped with a railway siding, crane, and two “automatic electrical transfer cars” for transferring stone from the mill to railroad cars.¹⁶⁶ Railroads continued to be the primary means of transporting stone.¹⁶⁷

While the previous era was characterized by technological innovation in limestone production, Batchelor notes this era focused on “refinement and improvement” of the established technologies. Increased block size in the 1920s led many quarries to replace wood derricks with new steel models.¹⁶⁸ The new steel derricks were costly at six thousand dollars per unit, but were a worthwhile investment during the industry’s period of prosperity.¹⁶⁹ Electric channelers slowly gained prominence as operators replaced or converted their steam channelers.¹⁷⁰ The new channelers cut deeper than their predecessors, reaching depths of ten to twelve feet, compared to the standard seven feet of the previous period.¹⁷¹ Some operators, including those at Maple Hill Quarry and Bloomington Limestone Company, experimented with using wire saws to replace channelers in the 1930s; these quarries exhibit a smoother cut face when compared with channeler-cut quarries.¹⁷²

There were also innovations in the removal of overburden. Quarries opened in this era often had a heavier layer of overburden and operators turned to hydraulic drilling and modified blasting techniques to clear the soil.¹⁷³ Quarry floors could then be cleared by power shovels.¹⁷⁴ Quarries also experimented with faster

¹⁶¹ *A Walk through the Vinegar Hill Limestone Historic District.*

¹⁶² *Monroe County: Interim Report*, 40-42, 44-45, 62-64.

¹⁶³ In 1928, the H. A. Woolery Stone Mill was constructed (see Woolery Stone Company NRHP nomination), Indian Hill expanded in 1929 and the same year, J. M. Hoadley built a new mill. *Quarries and Mills* (November 1929), 45.

¹⁶⁴ *Quarries and Mills* 2:8 (April 1931), 7.

¹⁶⁵ *Quarries and Mills* 2:8 (April 1931), 7.

¹⁶⁶ *Quarries and Mills* 2:8 (April 1931), 17.

¹⁶⁷ Most limestone was shipped by rail as late as the 1950s. In 1946, for example, only 6 percent of limestone was transported by truck. By 1949, the amount had increased, but still comprised only 20 to 30 percent of all shipments. “3,500 Men Employed in 37 Mills and 24 Quarries of 24 Stone Firms,” *Bloomington Daily Herald*, December 10, 1949.

¹⁶⁸ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 238-239.

¹⁶⁹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 238-239.

¹⁷⁰ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 235-237.

¹⁷¹ *Operations in the Quarrying and Fabrication of Indiana Limestone* (n.d.), CSC-001-004.

¹⁷² Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 237.

¹⁷³ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 235.

¹⁷⁴ McKee, “Early Ways of Quarrying and Working Stone in the United States,” 54.

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ways to deal with waste stone. Batchelor described one new method whereby operators “cleaned up a space big enough to channel out the key blocks and then placed dump boxes in this opening, pushed the debris into boxes by using bulldozer tractors, and then emptied the dump boxes by derricks.”¹⁷⁵

Some companies put their waste or extra stone to good use or found unique ways to store it. The Carl Furst Stone Company created a railroad trestle of stacked stone. The Shawnee Stone Company operated the “largest tramway in the district” in the Victor area. According to mill researcher Clay Stuckey, the tramway was “one thousand feet long and served as the stacking yard for the Shawnee Stone Company whose quarry was nearby.”¹⁷⁶ Footings of the tramway are still extant west of the Indian Hill Stone Company and along Tramway Road. Like the Furst Company, Shawnee used waste stone to create the tramway base.¹⁷⁷

At the mill, technology also continued to evolve. The gang saw was improved to make an additional ten to twenty-five more strokes per minute. (The B.G. Hoadley Mill still uses gang saws from the 1920s in its milling.) The diamond saw now had a new tooth design and faster cutting rate.¹⁷⁸ “Milling machines” allowed for faster completion of more specialized or intricate work. These devices featured a rotating head to which various cutting tools could be attached. Milling machines were generally used for “roughing out ornamental work, cutting tracery, cutting ‘dentil’ work in cornices, taking deep recesses, or outlining letter or intricate patterns.”¹⁷⁹ Air hammers, powered by compressed air, were used to finish lathe work. Most mills and quarries in this period generated their own power on site at power houses, although mills operating in Bloomington likely purchased power from the electric company.¹⁸⁰

Gang and diamond saws required water from a creek, a pond, or tank to cool the saws. Streams were sometimes dammed to provide water that was then piped to the sawing area. Companies such as Woolery Stone Company immediately took advantage of nearby waterways, constructing a dam as one of its first activities.¹⁸¹ In the North Clear Creek stone area, a dam and pump house are visible from Rockport Road between Tapp Road and Fullerton Pike east of State Road 37.

Indiana’s limestone industry did not immediately feel the effects of the Great Depression, in part due to the ongoing nature of many projects started before the stock market crash in 1929.¹⁸² Limestone was most often used for non-residential buildings, which continued to be constructed in the first years of the Depression. Public buildings and hospital institutions did not reach their peak of production until 1931; education buildings had peaked in 1929.¹⁸³ As noted above, the Carl Furst Stone Company opened a quarry north of Maple Hill Quarry in 1929, several months before the stock market crashed. By August 1929, the track had been laid on site and the land had been cleared.¹⁸⁴ In 1929, stone companies were operating at an estimated 30 to 40 percent higher capacity than the amount of stone sold in the previous year. Small companies, attempting to recover costs, engaged in aggressive price cutting.¹⁸⁵

¹⁷⁵ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 235-236.

¹⁷⁶ Stuckey, “Gazetteer of Limestone Mills,” 40.

¹⁷⁷ W&A field survey, November 2011.

¹⁷⁸ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 240.

¹⁷⁹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 241.

¹⁸⁰ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 242.

¹⁸¹ Steelwater, “Woolery Stone Company,” Sect. 7, p. 16.

¹⁸² Patton and Carr, *Salem Limestone in the Indiana Building-Stone District*, 5.

¹⁸³ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 186.

¹⁸⁴ *Quarries and Mills* 1:2 (1929).

¹⁸⁵ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 295-296

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While the effects of the Great Depression on Indiana's limestone industry may have been temporarily delayed, workers in this industry suffered with the rest of the country during this period. Quarrying was seasonal work, and most quarries were only a few months from finishing their season when the stock market crashed in October 1929. By the following October, concerns about work were emerging, although *Quarries and Mills* magazine optimistically reported that, for local mills, the trend of business was upward, and most were operating at a level close to normal.¹⁸⁶ But in November 1931, *Quarries and Mills* reported that the dimension limestone industry was finally feeling the effects of the Depression.¹⁸⁷ In 1931, there were 866 employees working in Indiana's stone quarries and 1,407 working in the mills. By 1933, those figures had both dropped to 478 employees in the quarries and 586 in the mills.¹⁸⁸ Sales of Indiana Limestone (rough block, sawed, and/or semi-finished) experienced the lowest sales of the era in 1933.¹⁸⁹ As this era drew to a close, overcapacity and price-cutting created instability that hinted at the difficulty the stone industry would encounter later in the 1930s and into the 1940s.

The Modern Era (1934 to 1967)

The Indiana stone industry faced challenges in the 1930s and later as new building materials, such as concrete, steel, and glass, gained popularity. Batchelor calls the period 1934 to 1941 a time of "frustration" for the stone industry.¹⁹⁰ In the period from 1933 to 1942, which took place in part during the Great Depression and World War II, total employment was less than half of what it had been in the 1920s.¹⁹¹ During this period, quarry and mill sites changed little from the previous era, although trucks were increasingly used for transporting stone between the quarry and mill and between the mill and the product's final destination. Visible characteristics of the landscape of a working mill include the buildings, structures, and objects, noted above, but by this time they may also include scales or scale buildings and garages to accommodate the increasing use of trucks. Visible transportation networks from this period may show both rail and truck transportation routes.

The first significant drop in production was evident in 1935 when limestone production fell from the 1922 high of 9.6 million cubic feet to 3.5 million cubic feet.¹⁹² From 1934 to 1941, the use of limestone in public buildings also dropped significantly, especially after the federal government's New Deal Public Works Administration adopted a resolution in 1935 requiring the use of local materials in building projects.¹⁹³

In addition to the effects of the Great Depression, technological advances in the use of other building materials and the development of quarry operations in other states affected the viability of Indiana Limestone over the next century. Proponents of the mergers had promised more efficient production and extraction, increased range of sales, and potential to lower costs in a way that would be competitive with new and cheaper building materials.¹⁹⁴ Despite these promises, a number of competing products, including cast stone and concrete, emerged in the 1930s.¹⁹⁵ Other areas of the country, including the states of Alabama and Texas and Midwestern states, such as Missouri and Minnesota, increased their limestone

¹⁸⁶ *Quarries and Mills* (October 1930).

¹⁸⁷ *Quarries and Mills* (November 1931).

¹⁸⁸ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 257.

¹⁸⁹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, table 26, 204.

¹⁹⁰ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 297.

¹⁹¹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 312.

¹⁹² Patton and Carr, *Salem Limestone in the Indiana Building-Stone District*, 5.

¹⁹³ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 308.

¹⁹⁴ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 265.

¹⁹⁵ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 192.

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production capabilities.¹⁹⁶ The increase in Texas production was in part due to the fact that Indiana stone operators, including ILCO and BLCO, opened quarries there after discovering that Indiana quarrying techniques could be easily adapted to the state.¹⁹⁷

In the Bloomington area, the Reed Quarry opened east of State Road 37 in the Hunter Valley vicinity, shortly after the merger of BLCO. The Reed Quarry was founded by Harry Johnson (of BLCO) and George Reed, the grandson of David Reed. The quarry operated for a time as “Texas Quarries Company,” possibly in connection with BLCO’s activities in the Lone Star state.¹⁹⁸ Victor Oolitic Stone Company reorganized at the end of 1937, and John and Terry Edgeworth, the sons of Mike Edgeworth, eventually took over the operation.¹⁹⁹

Indiana’s stone industry had weathered the first years of the Depression, but did not fare as well in its later years or during World War II. In January 1931, there were twenty-two mills and fifteen quarries operating in Monroe County. In June of 1942, that number had dropped to twelve mills and seven quarries.²⁰⁰ Some recovery between 1937 and 1939 was tempered in the early 1940s as trends in construction favored cheaper materials. By 1942, sales were at a lower point than they had been in 1918, and the industry continued to operate at overcapacity.²⁰¹ As revenue dropped, communities that had been associated with stone districts, such as Sanders, Clear Creek, Smithville, and Victor, began to decline.²⁰²

Because of the weak sales, most of the advancements in production during these early years focused on improving existing machinery and developing more cost-efficient methods. For example, some operators combined channeling with the use of wire saws to cut down on wasted stone as wire sawing did not require the removal of additional stone.²⁰³ Since companies were producing less, many operators retired outdated or broken machinery. With the exception of diamond saws, most stone industry operators were using significantly fewer machines than they had in the previous decade.²⁰⁴

During World War II, limestone producers contributed to the war effort in various ways. The demand for steel created by defense production resulted in some companies donating steel derricks and cranes for the war effort.²⁰⁵ The Sare-Hoadley Stone Company mill was dismantled, and its traveling cranes were sold to Kaiser Industries in Oakland, California for use in shipbuilding during World War II. The Monon Railroad then removed the rails leading to the mill for use in the war effort.²⁰⁶ (After the war, the H. A. Woolery Stone Company purchased the now-empty Sare-Hoadley building, moved it to the site of the Woolery mill,

¹⁹⁶ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 201.

¹⁹⁷ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 202.

¹⁹⁸ Hoadley, “History of the Belt,” Reed essay.

¹⁹⁹ Hoadley, “History of the Belt,” Victor essay, 6-7

²⁰⁰ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, table 57, 349.

²⁰¹ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 349-352; 362.

²⁰² *Monroe County: Interim Report*, 40, 44.

²⁰³ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 330.

²⁰⁴ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, table 53, 332. Batchelor gives the following statistics:

Numbers of Certain Machines Reported by the Indiana Stone Industry in April, 1930, Compared with October, 1940						
Date	Planers	Diamond Saws	Cranes	Derricks	Milling Machines	Channelers
April, 1930	473	121	130 (estimated)	266	30	361
October, 1940	297	135	111	50	20	164

²⁰⁵ Batchelor, *Economic History of the Indiana Limestone Industry*, 332;

²⁰⁶ Hoadley, “History of the Belt,” after ILCO essay.

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and added it to the Woolery mill building.)²⁰⁷ Many mills simply closed in the war years, as stone production was considered a non-essential industry. As a result, many mills and quarrying resources associated with the period of “Boom, Merger, and Overcapacity” are no longer extant.

Some of the mills that did not close were converted to production for the war effort. Wartime conversion was often a costly endeavor, since equipment used for stone milling was not always compatible with the production needs of the military.²⁰⁸ Woolery Mill on Tapp Road was converted to war production.²⁰⁹ The Cline and Wylie mills of BLCO produced war equipment and received the Army-Navy Production Award in 1944 “for great achievement in the production of war equipment.” The company’s Monon Mill was also converted for wartime use, but did not receive the production award.²¹⁰ Maple Hill Mill was not used by BLCO during its war activities, according to a history of the company. (It is interesting to note that Maple Hill’s mill is smaller than the Wylie, Cline, and Monon mills. It is unclear if the mill’s smaller size made it less viable for wartime conversion.) By the early 1940s, the dimension limestone industry in Monroe County had declined to its lowest ebb: the war had effectively shut down operations. Many of the quarry and mill buildings and structures once present on the landscape, connected by the cross-hatched threads of rail lines, were vacant or torn down.

There was one promising development in the limestone industry during these otherwise bleak years. During and after the war, dimension stone companies began producing “split-faced” stone—thinly cut limestone used as a non-structural veneer. This style of limestone veneer was popular for new homes in the area and was “perfected” by the BLCO, which had absorbed Maple Hill in the late 1920s merger.²¹¹ BLCO had been experimenting with the thin stone since 1930. Before the war, BLCO had sold “three or four times as great a proportion of their total sales in this type of stone as did the industry as a whole” prompting Batchelor to call the veneer “one of the most encouraging developments that has occurred in the Indiana stone district since 1933.”²¹² In the post-war building boom, Maple Hill Mill (now C&H Mill) produced stone veneer that faced many mid-twentieth-century houses, including some in the Bloomington area and beyond.²¹³

During this era, transportation depended less on railroads as operators relied increasingly on truck transportation, which required less handling and resulted in less breakage. Truck transportation of limestone had been introduced in limited use in late 1920s and early 1930s and increased steadily. For example, BLCO had established a policy of shipping its split-face stone via truck to any destination within a 150-mile radius. Truck transportation of stone products rapidly increased from 3 percent of products in 1946 to an estimated 20 to 30 percent of products in 1949.²¹⁴

Changing architectural tastes led to another decline in the Indiana limestone industry beginning in the 1960s. In the 1940s, Batchelor had recognized that “future of the skyscraper and the monumental building

²⁰⁷ Steelwater, “Woolery Stone Company.”

²⁰⁸ “Announcement of Army-Navy Production Award given to Bloomington Limestone Corporation, December 9, 1944,” Indiana Memory Digital Collections (access via Indiana Bedrock), accessed October 22, 2014, <http://cdm1819-01.cdmhost.com/cdm/singleitem/collection/p15078coll7/id/1873/rec/6>.

²⁰⁹ Steelwater, “The Steele Dunning Historic District,” Sect. 8, p. 40.

²¹⁰ “Announcement of Army-Navy Production Award.”

²¹¹ “3,500 Men Employed in 37 Mills and 24 Quarries of 24 Stone Firms,” *Bloomington (IN) Daily Herald*, December 10, 1949. “Limestone Industry Timeline.”

²¹² Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 310-311

²¹³ Michael Baker Jr., Inc., “Historic Property Report, Additional Information,” 41.

²¹⁴ Batchelor, *Economic History of the Indiana Oolitic Limestone Industry*, 235, 309-310; “3,500 Men Employed in 37 Mills and 24 Quarries of 24 Stone Firms.”

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styles of the 1920's" would affect the popularity of the Indiana Limestone in the coming decades.²¹⁵ Indeed, the increased popularity of the unadorned International architectural style, with its emphasis on steel and glass, created less demand for limestone, and Indiana's limestone industry declined as a result.²¹⁶ Skyscrapers, likewise, utilized lighter building materials like steel to build curtain-wall buildings that stretched higher than a stone structure could. The number of active Indiana Limestone quarries in the stone belt dropped from thirty-four in 1955 to twenty in 1970.²¹⁷ Indiana's limestone industry experienced fluctuations in demand in the last two decades of the twentieth century similar to those experienced in the first part of the century.

Conclusion

The unique geologic history of the limestone belt in the Bloomington area and this section of south central Indiana made the dimension limestone industry possible, but in turn, the dimension limestone industry helped create a unique manmade landscape. In 1931, historian Stephen Visher observed that the Limestone industry was a dominant part of the Bloomington-area landscape:

The quarries are conspicuous features of the landscape in the limestone district. The great derricks are often visible for miles. The largest quarries have faces more than a mile long. . . . Other effects on the local topography are caused by the numerous short railroads to the scattered quarries, along which cuts are numerous.²¹⁸

In addition to creating a unique industrial landscape, the Indiana Limestone industry has, over the past two centuries, influenced the economic and cultural life of the people who worked and lived in the area, created a built environment that reflected the importance of limestone in the daily lives of the people in the region, and influenced national architectural trends. By the 1940s, the quarries and mills had provided the limestone that built the Indiana University campus, the Monroe County Courthouse, business blocks in downtown, and stone residences along the city streets and in the suburbs of Bloomington. The impact of the local dimension limestone industry on the town of Bloomington is apparent not only in its high-style public and private buildings but in more modest areas. Like the workers' lives, most of the town's homes, including those in the formerly segregated African-American sections of town, were built on foundations of local limestone. Beyond this region, Indiana's limestone industry helped build the nation. From its use in the construction of state capitols and other public buildings, early skyscrapers, and monuments, limestone from this small region of Indiana is found in buildings and structures all over the world.²¹⁹

Within the Bloomington area of Monroe County, active quarrying or milling continues at B.G. Hoadley (with locations on Arlington Road and Rockport Road at the site of the former Maple Hill Quarry), Reed Quarry, and at the C&H Stone Company (which operates at the site of the former Maple Hill Mill). Many of the workers and operators at these active operations have family ties to the industry that go back two or more generations.²²⁰ The Reeds and Hoadleys are just two of the families that can trace their involvement

²¹⁵ Michael Baker Jr., Inc., "Historic Property Report, Additional Information," 363-364.

²¹⁶ McDonald, *Short History of Indiana Limestone*, 43.

²¹⁷ Patton and Carr, *Salem Limestone in the Indiana Building-Stone District*, 6.

²¹⁸ Visher, "The Indiana Oolitic Limestone Industry," 58.

²¹⁹ Hill, "Indiana Limestone."

²²⁰ Most histories of the limestone industry talk about families which had multiple generations working in quarries and mills, including Ferrucci, *Limestone Lives*.

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in the industry to the nineteenth century. About 2.7 million cubic feet of Indiana Limestone are quarried each year, and the industry continues to account for about \$26 million annually in revenue.²²¹

F. ASSOCIATED PROPERTY TYPES

Property types associated with the Dimension Limestone Industry in the Bloomington area may vary based upon their associated historic contexts and periods of significance. The **Pioneer Era (circa 1816 to 1870)** was a period of small-scale extraction with less focus placed on finishing or fabrication. During the **Era of Expansion and Innovation (1871 to 1918)** operators introduced new quarrying machinery and fabrication was likely to be done on site or near quarries. Railroad transportation became key to getting products to market. In the **Era of “Boom, Merger, and Overcapacity” (1919 to 1933)** the number of quarries and mills expanded as operators focused on refining existing technology and purchasing better equipment. This was also the era of company mergers and new companies sometimes established central office headquarters away from the quarry or milling operations. By the **Modern Era (1934 to 1967)**, transportation networks changed to allow truck shipping and the industry began to transition to limestone veneer products.

Property Types

There are four property types associated with the Bloomington-area Dimension Limestone Industry: (1.) Quarry Pits ([Site](#)), (2.) Buildings, (3.) Structures, and (4.) Historic Districts.

1. Quarry Pits

A **quarry pit** is the site of limestone extraction. It is typically a deep, large hole from which limestone and the overburden soil and other rock have been removed. The walls of the quarry often show the techniques of stone removal; quarry pits may be stepped or smooth-faced depending on the cutting method. Abandoned quarries are often filled with water and/or waste, may be surrounded by an area of secondary growth, may contain abandoned machinery, and may display large blocks of limestone stacked at its edges. Active quarries usually contain machinery for drilling, chiseling stone, or moving large blocks, though an inactive quarry is more likely to feature machinery and equipment from the period of significance. Other site features for both inactive and active quarries might include a stone stacking yard, stone waste piles, buildings or remnants of buildings, as well as pieces of equipment such as large hooks, drill bits, and other debris.

- **Stone stacking or storage yard:** Extracted stone—usually squared or partially finished—left for a period to “season” before it is sold.
- **Stone waste piles:** These groupings of stones typically consist of overburden stone and block stone that can be used for various purposes. Stone in a waste pile is usually unfinished, broken, irregularly shaped, or flawed. Waste piles may also be called “**grout piles.**” However, “grout” may also refer to pieces of cut stone (or other stone by-product) rather than a piece of extracted stone that is somehow flawed.
- **Machinery and equipment** on a quarry site may include:

²²¹ Hill, “Indiana Limestone.”

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- **Derrick:** Large wood or metal structure used to move cut stone blocks from the quarry pit or around a site. A derrick consists of mast, boom, guy wires/cables, and hooks, all used to lift and move stone.
- **Channeler:** A machine (usually steam or electric-powered) that cuts grooves in a quarry pit to form removable blocks. This machine moves across a quarry floor on rails.
- **Wire saw:** An alternative to a channeler and a later method of extracting stone from a pit. This equipment type is more rare than the channeler.
- **Quarry Building:** In some cases, a building directly tied to a quarry may be considered a component of the site. Examples of quarry buildings are discussed in the Buildings property type below.

The location of quarries follows the bedrock limestone, as shown on geological maps. Railroad lines or spurs help locate dimension limestone resources since railroads were the main means of transporting the material during the eras of **Expansion and Innovation (1871 to 1918)** and **“Boom, Merger, and Overcapacity” (1919 to 1933)**. A railroad line may even indicate a quarry’s location from the **Pioneer Era (1816 to 1870)**, though it is much less likely. Modern and historic aerial photographs also help locate the distinctive quarry pits among the trees and secondary growth.

A full quarry pit may not be visible on the landscape. Once the limestone was depleted, the crew sometimes used the pit as a repository for grout and waste. (According to a report from the 1980s, some companies began completely refilling modern pits with the removed overburden, but did not fill older pits to avoid disturbing the ecological environment that developed once those pits were abandoned.²²² However, historians have observed aerial photographs that show some evidence of complete infilling occurring at older pits.) Secondary growth may be visible but should not detract from the site’s integrity, according to the National Park Service’s *Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties*.²²³

The boundaries of these sites may include the quarry pit and may also include buildings and structures, or their ruins, as well as abandoned machinery that contribute to the site.

Significance of Quarry Pits

Quarry Pits, where material for stone building products were extracted by man, are the most basic of resources associated with the dimension limestone industry in the Bloomington area.

To be eligible, the pit must be mostly free of infill (fifty percent or less filled) and must visibly demonstrate something about the extraction of limestone, whether it is the hand method of quarrying prior to channelers, the use of channelers, or the use of wire saws to cut the blocks. If the pit was opened for the construction of a single building of exceptional national importance, the pit could be eligible because of that association.

Quarry pits may be associated with one or multiple historic contexts (although typically will represent only one) and may be eligible under the following NRHP criteria:

²²² “Stone Country: Region Rich in Quarry Tradition,” *Bloomington (IN) Sunday Herald-Times*, October 2, 1988.

²²³ Bruce J. Noble and Robert Spude, “Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties,” *National Register Bulletin [42]* (Washington, D.C.: U.S. Department of the Interior, National Park Service, 1992; rev. 1997), 14.

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Criterion A: Quarry pits that are associated with the history of the dimension limestone industry in the Bloomington area must significantly demonstrate something about the larger trends in the area's industry to be eligible under Criterion A.

Criterion C: The quarry pit's appearance may embody characteristics of a particular type, period, or method of extraction. A quarry pit may be eligible if it visibly demonstrates a technological innovation or means of cutting along its face (workmanship). The walls and bottoms of quarry pits may illustrate the evolution of technology.

Criterion D: The quarry pit should be likely to yield information important to the history of the dimension limestone industry in the Bloomington area. A filled quarry pit could yield information regarding the introduction or widespread use of extraction methods. A pit that is associated with a particular significant project might be eligible under this criterion.

Registration Requirements for Quarry Pits

A quarry pit must have high integrity and possess exceptional significance to be individually eligible for listing in the NRHP. A pit that has several or more of the defined site features beyond the pit itself, such as machinery remnants or waste piles, is considered to have the highest level of integrity. A pit may be the sole survivor of a significant limestone operation that is associated with buildings of national or international significance and/or demonstrate a technique of quarrying that revolutionized the industry. The firm and technique must be specifically documented.

Because of the nature of a quarry pit, the design and workmanship would most likely be the two essential elements of integrity. A quarry with high integrity would illustrate basic elements of the extractive process and retain evidence of original workmanship. (Material as an aspect of integrity for a quarry is not relevant because the quarry pit is by definition of this context always comprised of limestone.) Association with a particular stone district or a notable building would enhance a quarry pit's eligibility. Quarry pits abandoned during the historic period tend to have higher integrity of feeling than those at active sites. With an abandoned quarry, secondary growth or proximity to some modern development should not render a quarry ineligible. However, secondary growth sometimes creates an association with the quarry that is not historically accurate. For instance, when in operation, the area around the quarry often looks like a "moonscape" with little vegetation evident. In general, setting and material are less important to the integrity of a quarry than location, feeling, design, workmanship and association. Association with specific operations or operators should be discussed. Pits that are more than 50 percent obscured by infilling or vegetation should be investigated by an archaeologist to the satisfaction of the person preparing the nomination and the SHPO before nomination.

2. Buildings

Ideally, limestone industry buildings will be associated with a district. However, there are certain situations in which an individual building might be considered for listing in the NRHP.

Examples of individually eligible resources may include buildings associated with an important limestone operation that is no longer in existence or remote parts of an operation, such as a mill or an office located in town away from the industrial site. The most likely building to be considered individually eligible will be a mill.

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A **mill** is a building in which stone sawing or fabrication occurs. Mid- to late nineteenth-century mills are simple rectangular structures of wood construction; most have gable roofs or shed roofs that shelter a single piece of machinery, such as a gang saw. These buildings were usually the only mill on a site at the time of their construction. They were generally smaller than later examples.

Twentieth-century mills tend to be rectangular, side-gable-roofed buildings (although some may have shed roofs) with large banks of multi-pane metal windows for natural light (sometimes referred to as daylight mills). Some have roof monitors that provide additional light. In the early years of the twentieth century, mills were clad with wood siding, although metal eventually replaced wood as the favored exterior covering. The primary function of a mill is to house machinery for sawing and planing limestone into blocks or slabs, as well as machinery for moving blocks within the facility, such as cranes or tramways. Some mills include multiple work stations under one roof, such as various saws, a warehouse, and an office, while others have separate buildings for these functions. A mill's frame often includes a metal truss roof and piers supported by concrete or limestone-block footings (pedestals/foundation); steel or asbestos panels as well as limestone are common materials used to enclose the structure. Large openings in the gable end or side elevations enable stone to be transported into the mill and to accommodate large stone pieces that are fabricated in these buildings. Rails often enable the transport of large blocks between work stations within the mill. Some mills may include additional space or machinery—such as milling machines or air-powered tools—for more detailed treatment of stone like turning or carving.

Buildings on a quarrying or milling site may also be considered individually eligible if they are determined to be particularly rare or high-style in type or are the only extant resource associated with a significant limestone industry operation that is no longer in existence. In addition to the mill, examples of individually eligible buildings may include:

- **Office Building:** Facility that houses the site's administrative or managerial staff, which is sometimes referred to as an Administration Building. For larger operations, this building may include space for drafting/design work. An office building may have a higher quality of finish, such as stone walls or decorative trim, than other buildings on a quarrying or milling site.
- **Saw building(s):** Buildings where a single treatment, or less detailed treatment, of a stone takes place. Saw buildings may also be used for squaring off stones or ripping slabs or strips. Saw buildings may house scabbling planers, diamond saws, drag saws, or gang saws. Unlike the small, mid- to late nineteenth-century mills that may feature only one saw or piece of equipment, twentieth-century saw buildings are not designed as stand-alone facilities but are an interconnected part of the milling and finishing process.
- **Machine shop/blacksmith shop:** Building used for repairing the equipment on the quarry or mill site. Workers in the machine shop/blacksmith shop may also take drawings from a drafting department and create specific tools to craft decorative finishes.
- **Scale or weigh house:** Building with incorporated or adjacent scales used to weigh the stone coming out of a quarrying site or into or out of a milling site by rail or truck.
- **Stone grinding plant:** Building where waste stone is collected and machines grind it.
- **Power house:** Building that provides electricity for machinery or operations at quarry and/or mill sites. Power houses are present at operations that generate their own electricity.
- **Control house:** An enclosure from which machinery, such as derricks, is operated; used primarily in the extraction/quarrying process.

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In very rare cases, buildings, such as pump houses, garages, and store buildings, that are usually considered to be minor support buildings may represent the historic contributions of a company if there are no other remaining traces of that company and if the building has sufficient character and integrity.

With the exception of the mill building, which is usually quite large, most of these types are modest-sized buildings, square or rectangular in shape, of wood frame or metal frame construction, with wood, metal, or sometimes asbestos siding and gable or shed roofs. Occasionally buildings, such as office buildings or even those used for pump houses, may be built of stone or concrete. High-style buildings are rare and are most often located in Bloomington near the railroad; most buildings located on the industrial site are functional and often have been updated based on necessity rather than style. Buildings not in use for their original purposes are often used for storage.

Significance of Buildings Associated with the Dimension Limestone Industry

Buildings are important to this context because the work of processing stone, drafting, design, and guiding the industry takes place in buildings. Generally, eligible buildings should be prominent, identifiable resources associated with the limestone industry, such as mills or office buildings. An office building may have more of a high-style design or quality of finish, such as stone walls or decorative trim, than other buildings associated with a quarrying or milling operation.

Other types of buildings may be considered if they are identified as a rare type of resource or one associated with an important operation that is no longer extant. Buildings constructed of Indiana Limestone but not directly associated with quarrying and milling are not eligible under this context, unless that building was constructed as a demonstration unit as part of the promotional activities of the Indiana Limestone industry. Historians are not aware of any buildings that meet this definition in Bloomington area. (For example, the Old Crescent collection of buildings on the campus of Indiana University were constructed of Indiana Limestone but are listed in the NRHP in the areas of education and architecture, not for their association with the industry.)

Individual, privately built, residential buildings owned or occupied by stone industry workers or owners similarly are not eligible for inclusion under this MPDF. However, a collection of residential buildings may be eligible for the NRHP. (See “4. Historic Districts,” below.)

Buildings associated with the dimension limestone industry usually tell only a portion of the story of limestone extraction, finishing, or transportation. However, these buildings may have significance in the area of architecture or history of a particular company or they may have the potential to provide important historical information. Buildings may be associated with one or multiple historic contexts and may be eligible under the following NRHP criteria:

Criterion A: Buildings may be associated with the history of the dimension limestone industry in the Bloomington area.

Criterion B: Buildings may be “associated with the lives of persons significant in our past.” This association with a person or persons should demonstrate something of importance to the history of the dimension limestone industry in the Bloomington area and the productive life of the individual (or lives of individuals). The person or persons may have brought an innovative extraction, manufacturing, or business

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organization technique to the Bloomington area that can still be associated with a particular building. Persons important to the history may include, but are not limited to: John Ketcham, David Reed, John Hoadley, John Crafton, Morton Hunter, and Michael Edgeworth.

Criterion C: Buildings may embody “the distinctive characteristics of a type, period, or method of construction,” or “represent the work of a master,” or “possess high artistic values,” or “represent a significant and distinguishable entity whose components may lack individual distinction.” To be eligible under Criterion C, the building may embody characteristics of a particular type, period, or method of construction or be a significant example of architecture constructed of limestone and associated with the limestone industry.

Criterion D: Buildings may be likely to yield information important to the history of the dimension limestone industry in the Bloomington area. However, it would be rare that a building would be eligible under this criterion.

Registration Requirements

Buildings associated with the dimension limestone industry in the Bloomington area must possess high integrity and be eligible under at least one NRHP criterion and may be eligible under multiple criteria.

Integrity for an individual building must be higher than integrity for a building that contributes to a district. Most buildings will be located on the site of the quarry or mill so buildings will usually be associated with a larger quarrying or a milling site. However, a dedicated office or a warehouse may also be associated directly with a company and located remotely, generally in the city of Bloomington, or near or along a railroad. In the case of a mill or other functional building, the cladding may have changed so that evidence of materials and workmanship will not be as important as design. For example, a mill that retains its fenestration and has been re-sided, yet retains many original pieces of machinery, can still be considered eligible. A mill building should retain basic original form, evidence of workflow networks (such as narrow gauge railroads or connecting drives), and pre-1960 machinery (e.g., mills in the Bloomington area that have saws dating to the 1920s). Offices that are individually eligible will show evidence of administrative spaces, drafting rooms, show rooms, or rooms serving other company functions. In general, buildings where company personnel interacted with clients or the public should retain fenestration patterns and exterior materials from the period of significance.

Aspects of the historic setting will enhance the integrity of the mill building. In addition, a building’s integrity may be enhanced if features associated with the milling process are located nearby, such as slag piles and connecting rail networks.

Significance is likely to come from exceptional artistic activity that occurred within the building, the architecture of the building, being a rare example of a type of building that is diminishing in number, or being the only surviving building associated with a particular business or era of the context. Association with specific operations or operators should be identified and documented, along with the firm’s history and significance.

3. Structures

To be considered individually eligible for the NRHP, a structure associated with the dimension limestone industry must be a structure of high profile and of high significance that was used as an important part of

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the limestone extraction or production process (such as quarrying, milling, technology, powering or storing machinery, project design, administration, or transporting the raw or finished product), be connected with an operation that is no longer extant, or represent a major technological advancement. A structure may also be so remote in distance from its related property that it may be considered individually. Most structures that may be considered eligible are associated with the movement of people or limestone on the quarry or milling property or with the circulation of water on the property. Structures may include:

- **Tramway:** A set of elevated rails, often used in connection with a crane, usually utilized for the purpose of moving stone blocks or fabricated stones. Tramways are commonly constructed of iron and/or steel, though they may have stone or concrete bases.
- **Railroad Trestle:** An elevated, short-span frame that carries a railroad over difficult-to-cross terrain or waterways; wood and stone are common construction materials for trestles in the Bloomington area.
- **Bridge:** A structure built to carry a road or railroad over a waterway or transportation obstacle. A bridge may be single- or multi-span and span lengths that are typically longer than railroad trestle spans. Common materials used to build bridges may be wood, iron, steel, or concrete.
- **Dam:** A structure, usually concrete, used to harness hydraulic power from a natural water source.
- **Water Tanks and Cooling Towers:** Structures which hold water either for providing power or cooling saws.

Significance of Structures Associated with the Dimension Limestone Industry

Structures associated with the dimension limestone industry usually tell only a portion of the story of limestone extraction, finishing, or transportation. However, these structures may have significance in the area of engineering or industrial history or may have the potential to provide important historical information. Structures may be associated with one or multiple historic contexts and may be eligible under the following NRHP criteria:

Criterion A: A structure may be associated with the history of the dimension limestone industry in the Bloomington area.

Criterion C: A structure may “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.” To be eligible under Criterion C, the structure may embody characteristics of a particular type, period, or method of construction and be associated with the limestone industry. A tramway that is evocative of an early example may be eligible under this criterion. A railroad trestle connecting multiple operations or connected to the extraction or milling process might also be eligible.

Criterion D: A structure may be likely to yield information important to the history of the dimension limestone industry in the Bloomington area.

Registration Requirements for Structures

To be considered individually eligible for the NRHP, a structure associated with the dimension limestone industry must be one of high profile and of high significance that was used as an important part of the limestone extraction or production process (such as quarrying, milling, technology, powering or storing

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machinery, project design, administration, or transporting the raw or finished product), be connected with an operation that is no longer extant, or represent a major technological advancement. Structures must possess integrity and be eligible under at least one NRHP criterion, and may be eligible under multiple criteria. Structures with integrity will be those that have the majority of their structure and materials intact and were used prior to 1967. Structures that were built or funded by a stone company, subsidiary, or key figure in the limestone industry and meet registration requirements because of their ability to tell one portion of the story of extracting, fabricating, or transporting dimension limestone might be eligible.

Structures may have been moved within a site or from site to site (as was common when operations moved from one site to another) but should be located in their historic environment as opposed to a museum environment. Therefore, to qualify, structures should retain integrity of location within their historic environment, setting, design, materials, and workmanship; feeling and association are less important for structures.

4. Historic Districts

Historic districts may be found in previously defined quarry areas (sometimes called “stone districts”) in the Bloomington area, such as Hunter Valley, Victor, Sanders, Clear Creek, or North Clear Creek. A dimension limestone historic district may include resources associated with a single limestone business operation, whether it is extraction, milling and fabrication, or a combination of those activities, or multiple limestone businesses. A historic district may be associated with one or more historic contexts and may contain discontinuous parcels if these parcels are related but not in proximity during use.

There are five subtypes associated with historic districts: Quarrying Districts, Milling Districts, Industrial Landscape Districts, Stone Communities, and Residential Neighborhoods.

Subtype: Quarrying Districts. A quarrying district always includes a historic or active quarry and other associated resources such as buildings, structures, objects, transportation and circulation networks, landscape features, and sites. Certain buildings support the business of quarrying. Equipment is repaired at machine shops/blacksmith shops. Storage buildings shelter machinery when not in use. Often an office building serves as a site for managerial duties, and at other times, a break room for the workers. At the Furst Quarry, a train car once provided shelter and served as a break room.²²⁴ Objects include derricks, guy wires, waste/grout piles, and stacking yards. Sites include the quarry pit and may also include building and structure ruins. Landscape features may include ponds, tree lines, fence lines, signage, archaeological sites (such as below-ground buildings, foundations, and earth-filled quarries), and other features.

Subtype: Milling Districts. Resources associated with a milling district always include a historic or active mill and may include associated resources such as buildings, structures, objects, transportation and circulation networks, landscape features, and sites. With the exception of the mill building, which usually dominates the site due to its massing, most buildings on a milling site are modest in size and basic in form, usually square or rectangular buildings of wood or metal framing with wood, metal or sometimes asbestos siding and gable or shed roofs. Many buildings were considered temporary or moveable since quarrymen moved them within one site or between multiple sites. Some buildings may have served multiple purposes over time as needs dictated. Office buildings and sometimes pump houses may have been built of limestone. Objects may include tramways and cranes used to move heavy stone to different locations.

²²⁴ Campbell and Brennan, “Borland House and Carl Furst Stone Company Quarry,” Sect.7, p. 9 and map 2.

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Landscape features may include tree lines, fence lines, signage, and visible transportation networks, such as paths, rail lines and roads. Waste piles are another common element of the landscape, but differ characteristically from those located at quarry pits. Waste piles associated with mills are typically of smaller stone and include the “roughback” remaining after a block has been cut. Electric power poles and lines are contributing elements related to **Era of “Boom, Merger, and Overcapacity”** and the **Modern Era**. Finally, other contributing elements related to the movement of water may include slurry ponds, streams, dammed creeks, channels, and piping. An eligible district may contain some or all of these contributing resources, all of which are connected functionally and through transportation networks.

Subtype: Industrial Landscape Districts. Historic industrial landscape districts (“landscape districts”) may be found in previously defined quarry areas (sometimes called “stone districts”) in the Bloomington area, such as Hunter Valley, Victor, Sanders, Clear Creek, or North Clear Creek, but may contain multiple individual milling and/or quarrying business operations. A landscape district can be either a contiguous area with few intervening non-contributing resources or a discontinuous area of related properties with some separation either geographically or through unrelated development in between. A landscape district often contains a rich collection of contributing resources representing multiple historic districts or multiple resources, creating a complete physical environment. The significance of the dimension limestone industry can most completely be told through landscape districts. With a variety of different types of related contributing resources, landscape districts are generally larger than a single property district and show the process of limestone extraction and/or fabrication at a given time or across several historic eras, and possibly by different firms.

Subtype: Stone Communities. Stone communities may include a collection of buildings, structures, and/or objects that developed in response to a quarrying or milling operation located nearby. Since these communities usually developed organically, with individual property owners constructing homes and commercial buildings to suit their tastes and needs, architecture styles and construction dates within the district may vary. Eligible stone communities should include some combination of worker or owner homes; commercial enterprises; and/or community or civic structures, such as churches, post offices, schools, and fraternal halls. Communities that have apparently been abandoned and no longer appear on the landscape may still possess archaeological potential.

Subtype: Residential Neighborhoods. Residential neighborhoods differ from stone communities in that they developed within the city of Bloomington and resulted from residential choices made by quarry workers. These neighborhoods are class-based and do not typically have their own community buildings but rather rely on those of Bloomington. These resources convey a collective significance that individual worker or owner houses do not typically possess. The Steele Dunning Historic District and the Vinegar Hill Historic District have been identified as residential neighborhoods occupied by stone industry workers, carvers, and owners. Both are listed in the NRHP.

Significance of Historic Districts

The significance of the dimension limestone industry can best be told through historic districts. This is especially true with functional districts that contain a variety of different types of related contributing resources and show the process of limestone extraction and/or fabrication at a given time or across several historic eras. Primarily the area of significance will be industry, with secondary areas of significance that may include commerce, transportation, architecture, engineering, or community development. Owners of stone companies periodically hired foreign-born workers for both skilled and unskilled labor. These workers do not appear to have constituted a large portion of the stone industry’s labor force, but on

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occasion, such as with the Italian stone carvers, who lived in the Vinegar Hill neighborhood, made a visible mark on the built environment and make a case for significance in the area of Ethnic Heritage. Historic districts may be associated with one or multiple historic contexts and may be eligible under the following NRHP criteria:

Criterion A: Historic Districts may be associated with the history of the dimension limestone industry in the Bloomington area. Properties associated with this criterion should demonstrate the quarrying and/or milling process and contain visible remnants of the workings of the extraction and/or milling processes.

For residential communities associated with the stone industry, documentation (through census and other research) should show a high percentage of residents associated with the industry or with a particular company. In some cases, such districts might have close association with ethnic groups whose presence constituted one of the few communities of foreign-born residents in town. Villages platted specifically due to stone industry activities affected patterns of settlement, and can meet Criterion A as a result.

Criterion B: Historic Districts may be “associated with the lives of persons significant in our past.” In order to be eligible under Criterion B, a district’s association with a person or persons should demonstrate something of importance in the history of the dimension limestone industry in the Bloomington area and the productive life of the individual (or lives of individuals). The person or persons may have brought an innovative extraction, manufacturing, or business organization technique to the Bloomington area that can still be associated with a particular historic district. Persons important to the history may include but not be limited to: John Ketcham, David Reed, John Hoadley, John Crafton, Morton Hunter, and Michael Edgeworth.

Criterion C: Fewer historic districts may be significant under Criterion C, which applies to those 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.” To be eligible under Criterion C, the district must embody characteristics of a particular type, period, or method of construction. If the design or layout of the district exemplifies an innovative or distinctive method or design of manufacture through the placement of buildings, structures, sites, objects and landscape features, it may qualify for listing under Criterion C. Communities of neighborhoods may meet Criterion C due to their display of stone working skills (such as Vinegar Hill), but most often, application of Criterion C to these property types will be tangential and separately justified.

Criterion D: Many historic districts, particularly of the quarrying or milling type, may be significant at least in part under Criterion D as being likely to yield information important to the history of the dimension limestone industry in the Bloomington area. Privies, midden, and foundations of buildings or structures may reveal much about the functioning of such a district.

Registration Requirements for Historic Districts

In order to qualify for listing in the NRHP, historic districts eligible for their association with the dimension limestone industry must possess integrity. Criterion A may be the most common criterion for listing. For residential communities associated with the stone industry, documentation (through census and other research) should show a high percentage (40 percent or above) of residents associated with the industry or with a particular company.

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With historic districts, the whole is greater than the sum of its parts and thus, the integrity threshold for contributing resources is less than that of a resource being considered individually. Individual buildings or resources within a district might have been altered to a certain degree without losing contributing status. For example, windows that have been replaced on an office building or the addition of replacement siding to a building would not necessarily render the building as non-contributing to the district. Buildings were at times moved within a site or from one site to another. If a building has been moved to the district within the period of that site's significance, the building may contribute to the district. Residential districts, because of the moderate income of the workers, are likely to have alterations. Nomination preparers should focus on building forms and fenestration patterns, as well as association, when preparing nominations for residential districts.

While individual buildings may have been moved within a site, integrity of location for the whole site is absolute. Integrity will be demonstrated through the functioning of the parts of the district as it relates to significance. Districts that demonstrate the key aspects of stone extraction or processing by having existing array of mills with equipment, rail lines, quarries, and/or support buildings will be eligible. The more complete the array of extant contributing resources, the higher the integrity, even though individual resources may have been modified somewhat. The design and layout of the operation, thus, may be more important than the integrity of individual buildings and structures. Documenting the physical workflow is a significant part of a nomination.

With functional or operational districts (or districts once operational), the integrity of materials and workmanship is less important than the design of the whole. Evidence of equipment in buildings and in work yards can add to the integrity of a district.

As with quarrying or milling districts, landscape districts demonstrate the key aspects of stone extraction and processing, usually within a larger geographical area. This subtype also includes waste piles, water sources, remnants of machines, transportation networks, and other resources in addition to buildings and structures, that show the complex operations of the limestone industry and the relationships among separate companies or within a single company's operations.

In abandoned quarrying or landscape districts, secondary growth should not diminish the integrity of the district. However, secondary growth sometimes creates an association with the district that is not historically accurate. For instance, when in operation, quarrying districts often look like a "moonscape" with little vegetation evident.

Most of these districts are located in what were once rural areas; the setting of the district may have changed with creeping urbanization and/or suburbanization. However, even though this change may have somewhat diminished the integrity of the district, it would not disqualify it. Setting is less crucial to integrity than is the design/layout of the operation and the association that the design of the district evokes.

Boundaries should include all possible historically associated resources regardless of current ownership. Boundaries may include discontinuous parcels if substantiated relationships among the various parts (such as individual operations within a specific stone district that are separated by non-contributing resources or distance) may be eligible. For example, a company may have extracted stone at one site and milled it at a nearby, but distinct, parcel. In addition, the facilities of several companies may have been established, and operated, within the same stone district, close to each other but not in a contiguous fashion. (This will not

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generally be the case for the subtype of communities and neighborhoods, which are expected to have contiguous resources.) With landscape districts, nominators should document the association and lineage of a landscape with particular firms throughout the landscape's active period.

G. GEOGRAPHICAL DATA

The geographical area focuses on a geological formation known as Salem Limestone or Indiana Limestone, located in and around Bloomington, Indiana. This geological formation does not conform to municipal, township, or county boundaries. Therefore, there are companies just outside of Bloomington that quarried in this limestone belt and communities near Bloomington that have historic ties to Bloomington's limestone industry and contribute to the historic fabric of the dimension limestone industry of the area. For the purposes of this study, the Bloomington area includes any resource within the modern municipal limits of the City of Bloomington, Monroe County, Indiana as well as any resource identified as part of *Bloomington, Indiana*, even as a "Special," in the historic-era Sanborn Fire Insurance Maps (1883 to 1963). This includes resources along the Indiana Limestone Belt found in parts of several townships in and around Bloomington, including, but not necessarily limited to, Bloomington, Perry, Clear Creek, Van Buren, and Indian Creek. The Indiana University—Bloomington Libraries hold copies of these Sanborn maps (some have also been digitized and are available via the Internet. See Section I of this nomination for more information.)

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H. SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

This Multiple Property Documentation Form for the Dimension Limestone Industry from circa 1816 to 1967 in Bloomington, Indiana, and its environs represents the culmination of approximately ten years of intermittent, but at times, intense, research that occurred as part of Section 106 consultation for the I-69 Evansville to Indianapolis Studies, a project initiated by the Federal Highway Administration (FHWA) with the Indiana Department of Transportation (INDOT). Section 106 of the National Historic Preservation Act of 1966 requires that federal agencies take into account the impacts of their undertakings upon historic properties.

The I-69 Evansville to Indianapolis Tier 1 Memorandum of Agreement (MOA) stipulated that the preparation of “Brochures, Guides, and Educational Materials” would be investigated in the Tier 2 studies.²²⁵ Surveys for both the Tier 1 and Tier 2 studies occurred in and around Bloomington, Indiana. The purpose of these studies was to identify themes and individual resources that could be impacted in the construction of the interstate highway. One of the themes identified during the studies was the Dimension Limestone Industry. As part of Section 106 study for the interstate highway’s construction in the Bloomington area, historians developed a report that had recommended three historic landscape districts eligible for listing in the NRHP within the Area of Potential Effects.²²⁶

In order to disseminate information from that report on the dimension limestone industry, a Tier 2 MOA was drafted that included the preparation of a Multiple Property Documentation Form for the dimension limestone industry in the Bloomington area as one of its stipulations. The agreement specified:

FHWA and INDOT or their representatives shall fund the preparation of a Multiple Property Documentation Form nominating the Dimension Limestone Industry in Bloomington, Indiana, to the NRHP, in order to disseminate information about the history and potential property types relating to the aboveground and archaeological historic properties in the limestone industry within Section 5 of the Tier 2 Study. The Multiple Property Documentation Form shall be offered as a paper copy to selected repositories in Monroe County and in an electronic format for posting on selected websites and may include but not be limited to those of the NRHP (National Park Service), Indiana Department of Natural Resources/Division of Historic Preservation and Archaeology, and INDOT. This nomination shall be considered to satisfy, for the Section 5 Project, the commitment in Stipulation II.C.2. of the 2003 I-69 Tier 1 MOA (i.e., “Memorandum of Agreement Between the Federal Highway Administration and the Indiana State Historic Preservation Officer Regarding the Selection of a Corridor for I-69, From Evansville to Indianapolis, Indiana”).²²⁷

The language of the MOA limited the study area to Bloomington, but the historians learned that a wider area was historically directly part of the Bloomington Dimension Limestone Industry. The historians based the geographical area for this study of the dimension limestone industry on those areas included as

²²⁵ Memorandum of Agreement between the Federal Highway Administration and the Indiana State Historic Preservation Officer Regarding the Selection of a Corridor for I-69, from Evansville to Indianapolis, Indiana, December 3, 2003.

²²⁶ Michael Baker Jr. Inc., “Consideration and Findings regarding Dimension Limestone Resources within the I-69 Area of Potential Effects, I-69 Evansville to Indianapolis Tier 2 Studies,” prepared for the Federal Highway Administration/Indiana Department of Transportation, January 24, 2012. (Weintraut & Associates, Inc. prepared the historic context for this report.)

²²⁷ Memorandum of Agreement “MOA” among the Federal Highway Administration, the Advisory Council on Historic Preservation, and the Indiana State Historic Preservation Officer, Pursuant to 36 CFR Section 800.6(b)(iv) regarding the I-69 Evansville to Indianapolis Project: Section 5, SR 37 South of Bloomington to SR 39 in Bloomington, Perry, Van Buren, and Washington Townships, Monroe County, Indiana; and Washington Township, Morgan County, Indiana, May 9, 2013.

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“Specials” on the historic Sanborn Fire Insurance maps for the city of Bloomington. While the geographic area could have been much larger, for the limestone belt is expansive, the limits imposed by the MOA proved helpful because it is an area that can be manageably included in such a nomination. Further, if appropriate, the geographical area could be expanded at a later date in an amendment.

In preparing the Multiple Property Documentation Form, the historians pulled relevant research materials that had been collected over the past ten years. These materials included primary sources, such as histories, geological maps and surveys, and historic maps, as well as notes taken from interviews with stone company owners and managers, field observations from site visits that dated from 2002 to 2014, and photographs taken over the same period. They also further examined and mapped for their internal use historic limestone resources identified in various research sources or encountered during field observations. In addition, they reviewed county histories, city directories, and Sanborn maps as they related to the limestone industry, as well as related NRHP multiple property documentation forms for mining resources in other locations. The National Park Service’s bulletin on identifying, evaluating, and registering historic mining properties also guided preparation of this document.²²⁸

The historians had developed a historic context for Section 106 purposes that they modified to fit the NRHP requirements. Then, they expanded and clarified contexts by re-examining some of the sources that had formed the basis of the previous study. The periods of the context are loosely based on the research of Joseph A. Batchelor, a professor of economics at Indiana University who identified five important eras in the economic history of the Indiana limestone industry (ending in 1941). In advance of accepting Batchelor’s divisions, the historians field tested Batchelor’s hypothesis and temporal divisions for its specific applicability to the Bloomington area. Field observation combined with documentary research resulted in the identification of four historic contexts. These distinct contexts combined some eras Batchelor had identified and also addressed the period after 1941, the year that Batchelor ended his study.

Property types arose out of the contextual study of the process of extracting, fabricating, and transporting of limestone and from the survey of active and abandoned quarry and milling operations in the Bloomington area. The past does inform the present and the process informs the property types. Technological advances and economic fluctuations helped historians identify the historic context(s) with which a property type may be associated.

Historians reviewed local architectural survey information in the form of the *Monroe County Interim Report* (1989) and the *City of Bloomington Interim Report* (2004), as well as NRHP nominations completed for properties in the Bloomington area that had direct or indirect associations with the Indiana limestone industry. Nominations consulted included: Daniel Stout House (1973), The Old Crescent (1980), The Steele Dunning Historic District (2000), Woolery Stone Company (2001), and the Vinegar Hill Historic District (2005). Historians also consulted the State Register nomination for the Borland House and Carl Furst Quarry (1999). Finally, historians reviewed survey information about quarries and mills identified in the I-69 Tiers 1 and 2 studies.

The historians had been thinking about and writing about integrity as it relates to the dimension limestone industry for many years. Meetings and site visits had occurred with the Survey and Registration team at the Indiana Division of Historic Preservation & Archaeology since 2002; these ongoing discussions formed the basis for the above discussions of integrity. The proximity of a modern highway to dimension limestone

²²⁸ Noble and Spude, “Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties.”

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resources had also forced the historians, as well as the federal and state agencies, to consider integrity issues. In real time, the group had to resolve the importance of setting, design, materials, workmanship, location, feeling and association to the various property types.

The resulting NRHP Multiple Property Documentation Form may have come from the offices of the historians, but truly represents the collective efforts of individuals including consulting parties and government agencies at all levels to resolve issues concerning this unique set of resources.

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**United States Department of the Interior
National Park Service**

Dimension Limestone Industry in the Bloomington, Indiana area,
circa 1816 to 1967

Indiana

Name of Multiple Property Listing

State

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