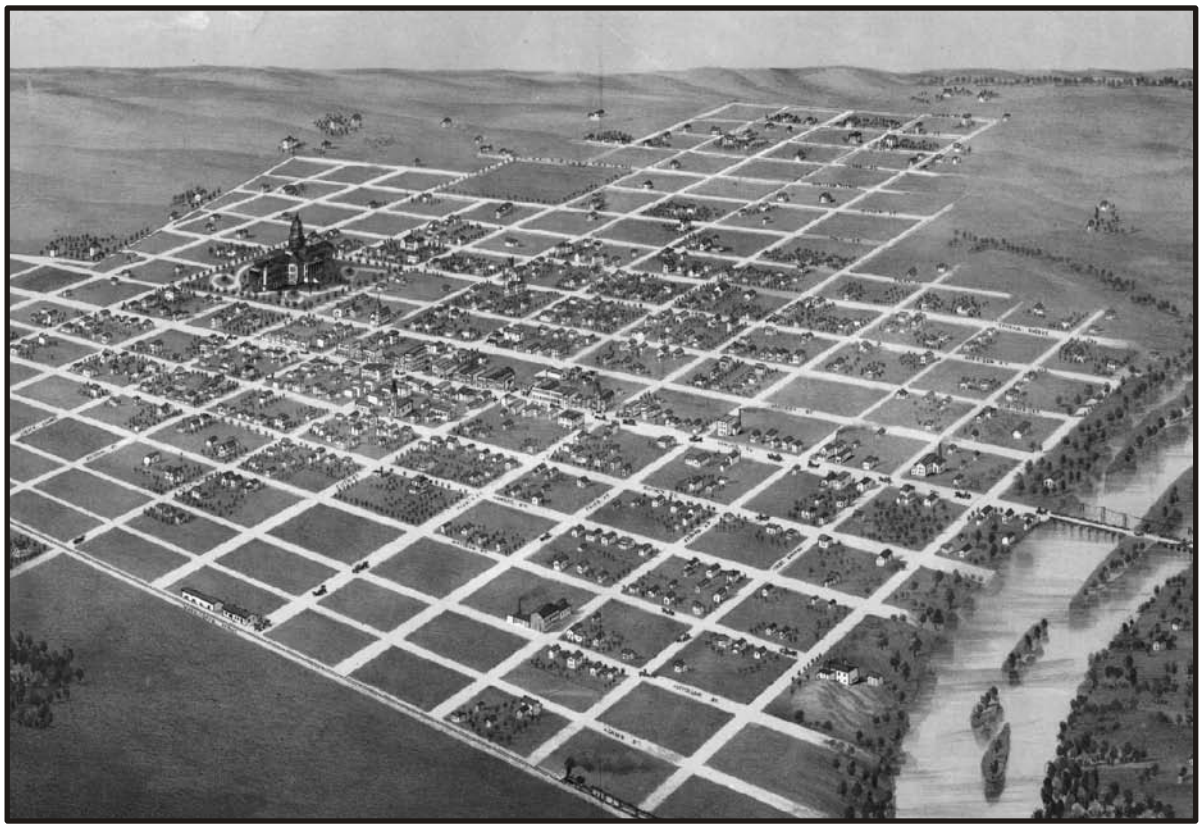
Archeological Monitoring and Limited Testing During 2001–2003 at the Monroe Elementary School and Playground Field, Brown v. Board of Education National Historic Site, Shawnee County, Kansas



National Park Service - Midwest Archeological Center

Archeological Monitoring and Limited Testing During 2001–2003 at the Monroe Elementary School and Playground Field, Brown v. Board of Education National Historic Site, Shawnee County, Kansas

By

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This report has been reviewed against the criteria contained in 43CFR Part 7, Subpart A, Section 7.18 (a) (1) and, upon recommendation of the Midwest Regional Office and the Midwest Archeological Center, has been classified as

Available

Making the report available meets the criteria of 43CFR Part 7, Subpart A, Section 7.18 (a) (1).

Abstract

Following the Civil War and Reconstruction Period, African-Americans struggled to find equal opportunity in the southern states. As a result of the Homestead Act of 1862 and continuing racial oppression, African-Americans began migrating westward during the late 19th and early 20th centuries in search of new economic and social opportunities. The "Exoduster" migration into Kansas and Nebraska caused a significant ethnic transformation that is still evident to the present day.

This report presents a detailed analysis and synthesis of the findings from eight archeological projects conducted by the Midwest Archeological Center from 2001 to 2003 at Brown v. Board of Education National Historic Site in Topeka, Kansas, documenting a working-class neighborhood settled during the westward expansion of the United States. Each of the monitoring projects was related to the rehabilitation of the Monroe Elementary School as the core historic resource for the park and for use as the park's visitor center.

Limited test excavations were also conducted during one of these projects to better define the stone foundation of a historic structure. Five historic structural foundations, one brick well, and numerous depositional features were identified in the course of the 2001–2003 monitoring projects. In all, 481 artifacts were collected during monitoring and testing, providing significant information concerning the late 19th- and early-20th-century occupation and lifeways of the Monroe School neighborhood prior to the construction of the Monroe Elementary School in 1926.

Acknowledgments

The author thanks numerous people who were directly involved with this project and its completion. First, I thank Superintendent Steve Adams for his wonderful encouragement and support of 2001–2003 projects. I also thank Chief of Maintenance Treva Harris for her invaluable help and onsite support of monitoring activities. Thanks to All Pro Construction employees and Forman Cal Pegram for their understanding, patience, and willingness to assist the archeological activities during the rehabilitation program. Thanks to Midwest Archeological Center Manager Dr. Mark J. Lynott and Park Archeology Program Manager Thomas D. Thiessen for their support and encouragement of the Brown v. Board of Education archeological projects.

I recognize all the Midwest Archeological Center archeologists who conducted fieldwork during the 2001, 2002, and 2003 seasons; their efforts were a great asset while writing this report. Special thanks to Doug Scott, Bill Hunt, and Tom Thiessen for reviewing copies of this report and—as always—providing valuable comments and insights. I also recognize and pay respects to the William Sudderth Memorial Library Collection at the Midwest Archeological Center; his extensive collection of books and manuscripts on historic material culture was a priceless resource, and without it I would have been lost in the sea of 20th-century artifacts.

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Introduction

From Fiscal Years 2001 to 2003 the Midwest Archeological Center (MWAC) conducted eight monitoring projects, including one with limited archeological testing (Chidley 2002), at Brown v. Board of Education National Historic Site (BRVB) in Topeka, Shawnee County, Kansas (Figure 1). These projects were undertaken as a result of rehabilitation work planned for the exterior of the Monroe Elementary School[1] and related lots on the BRVB property associated with the school's conversion to a National Park Service (NPS) visitor center. It is highly significant that the school constitutes the core historic resource for this NPS unit. Archeological monitoring was recommended during excavation activities so that BRVB could adequately comply with Sections 106 and 110 of the National Historic Preservation Act by determining the presence of any buried archeological resources and to document the nature and extent of archeological features uncovered during the excavations. An MWAC archeologist was also on site to provide guidance concerning the treatment of archeological resources and to act as an advocate for preservation of such resources by recommending plan alterations or archeological testing if necessary.

A previous geophysical survey combined with historic documentation—primarily Sanborn maps—and archeological testing had shown that there were possibly 18 structural remnants still intact on the Monroe Elementary School property (Nickel and Hunt 2002; Stadler 2002). As a result, monitoring by a qualified archeologist from the Midwest Archeological Center was recommended for any construction activities that potentially could have negative impacts on these and other buried cultural features. MWAC archeologists provided onsite technical guidance and advice to the construction crews, documented any structural remnants that were uncovered, and collected a representative sample of artifacts that would provide insights into the history of the Monroe Elementary School neighborhood. From 2001 through 2003, archeologists were able to gather valuable new information concerning the intact structural components on the BRVB property while also ensuring the preservation of any archeological remains that were uncovered during construction.

Construction projects were confined to the west, north, and east sides of the Monroe Elementary School property (14SH113) and the Playground Field on the east side of Monroe Street and generally included trenching with a backhoe or other excavation equipment. Foundational remains of five structures were identified during the trenching activities of 2001 and 2002 around the Monroe Elementary School. One historic well was uncovered under the basement of the Monroe Elementary School in 2003. Several dump and construction debris deposits were also discovered during the 2002 geothermal well trenching within the Playground Field lots, which yielded the largest collection of artifacts from BRVB. Four hundred eighty-one artifacts dating to the late 19th to early 20th centuries were recovered during the 2001–2003 archeological projects reflecting a diverse set of social and commercial influences such as domestic activities, building construction, and school related activities.

This report is a culmination of the eight projects undertaken by the Midwest Archeological Center during 2001, 2002, and 2003 and provides a detailed analysis and interpretation of the archeological evidence uncovered during the rehabilitation of the Monroe Elementary School. All materials including artifacts, excavation records (maps, notes etc.), and photographs are being stored at the Midwest Archeological Center with each project assigned separate accession numbers from MWAC and BRVB (Table 1).

[1] "Monroe Elementary School" refers to the school that operated from 1926 onwards, whereas "Monroe School" refers to the earlier, 19th-century school that existed in the Monroe School neighborhood.

The History and Development of the Monroe School Neighborhood

Previous investigations at BRVB have uncovered minimal amounts of prehistoric lithic debitage (Stadler 2002). Since no prehistoric materials were identified or collected during the 2001–2003 monitoring at BRVB, the following synthesis covers only the historic settlement and growth of Topeka and the Monroe School neighborhood. For overviews and discussion of Kansas prehistory and Native American cultural groups see DeMallie (2001), Wedel (1959), and Wood (1998).

In 1954, the segregated schools of Topeka were the impetus for significant change to the civil rights laws of the United States. Following the landmark U.S. Supreme Court case *Oliver L. Brown, et al. v. Board of Education of Topeka*, public schools could no longer segregate students using racial categories or ethnic backgrounds. With a unanimous decision the court ruled that "in the field of public education the doctrine of 'separate but equal' has no place … Separate educational facilities are inherently unequal" (Franklin Weekley 1999:195). This ruling repealed the 1896 *Plessy v. Ferguson* ruling, which sanctioned public school segregation, stating that racial segregation was inherently unconstitutional and any state in which school segregation was being practiced was in violation of the 14th Amendment to the U.S. Constitution. This ruling undoubtedly gave great strength to the growing civil rights movement that was beginning to gain momentum across the country, culminating with the Civil Rights Act of 1964 signed by President Lyndon B. Johnson (Tindall and Shi 1992:1353–1355). The events surrounding the Brown et al. civil rights litigation would later become the basis for the creation of Brown v. Board of Education National Historic Site in 1992. However, between the 1860s and 1926 the Monroe School neighborhood was an active, working-class community with numerous houses, outbuildings, and the late-19th-century Monroe School (Figure 2).

Initial Settlement of the John Ritchie Tract

Jacob Chase, one of the nine founders of Topeka, first owned the land where BRVB is located. He purchased one of the original one hundred shares of land, first apportioned among Topeka's nine founding members in December of 1854. In 1855, J. Chase sold Share No. 6, a 160-acre plot, to settlers John and Mary Ritchie who had recently moved from Indiana.

Initially, the Ritchies used the plot as a homestead and farm while also buying up other land and developments within Topeka. In 1856, the Ritchie family built a two-story limestone and brick home at 1116 Madison Street (King 1998). Although John Ritchie consistently described himself as a farmer for census records, he was also active in other business ventures such as real estate, "general business," a stone quarry, and a lime kiln located on his property (King 1998:36).

During the 1860s Ritchie began selling 75-ft by 100-ft parcels to free African-Americans and others migrating to the area (NPS 1999:1). A staunch supporter of the anti-slavery movement and the Underground Railroad, John Ritchie helped scores of African-Americans settle in Kansas throughout the Civil War period.

After the Civil War, John Ritchie continued to focus on his real estate ventures and built a larger second home at 11th and Quincy. Listed in the 1870 federal census, John Ritchie's real estate holdings were reportedly worth $55,000 and his farm was valued at $20,600 (King 1998:34). Following John Ritchie's death in 1887, the City of Topeka annexed portions of the Ritchie Tract and began developing the property and surrounding area.

African-American Settlement in Topeka

The Reconstruction Period: 1865–1877

With the start of the Civil War and continuing through the Reconstruction Period, African-Americans began moving into the new state of Kansas with prospects of acquiring land and establishing independent livelihoods. Between 1860 and 1865 the African-American population in Kansas grew from below one

percent to nearly nine percent, and by 1900 they constituted fourteen percent of the population in Topeka (Franklin Weekley 1999:9, 28). Conversely, following the Civil War, the attitudes about racial equality and civil rights championed by John Ritchie and the Abolitionist movement fell by the wayside. Throughout the Reconstruction Period, American values changed, placing more restrictions on African-American freedoms including the segregation of transportation, education, housing, and other public areas (Franklin Weekley 1999:29).

During the Reconstruction Period, development of a public education system became a top priority for most states. Freed slaves in the south viewed the public education system as the key to a prosperous future and greater equality with whites throughout the country (Painter 1976:44). However, education for African-Americans, which they had been denied for so long, angered many whites and caused a backlash against former slave populations. School segregation and the policy of "separate but equal" began to take shape between the late 1860s and 1870s. Many of the southern and border states passed segregation laws creating separate public schools for blacks and whites. Almost immediately after the conclusion of the Civil War, the Kansas State Legislature began passing laws mandating racial segregation of schools in large urban centers and left rural districts to decide via referendum (Cox 1982:27–28; Franklin Weekley 1999:42). Within Topeka one of the first African-American schools established was the Monroe School in 1868. A building on Lot 51 (in the old lot numbering system) was rented as a school for African-American children until 1874 when the building was determined unfit for use (NPS 1999:1). That same year, a new Monroe school with four rooms was completed on Lots 505, 507, and 509 at the corner of 15th and Monroe Streets (Franklin Weekley 1999:47; NPS 1999:1); see also the 1889–1913 Sanborn maps discussed below.

Throughout the south, Reconstruction Period economics kept freed African-Americans disenfranchised and poor. With the abolition of slavery, many former slaves entered into farming arrangements where they would rent a parcel of land from a land owner and then provide the materials and labor force for planting and harvesting crops. In the tenant farming system white land owners charged tenants exorbitant prices, sometimes collecting between one-half and one-third of the total harvest revenue, a practice that continues today in many parts of the southern United States. These high rent prices caused massive accumulations of debt, thereby keeping African-Americans economically bound to former slave holders and plantation owners. Freed African-Americans would not obtain equality until they became independent land owners controlling their own destiny. Kansas and the Homestead Act of 1862 would provide that opportunity for those willing to leave the southern states.

The Exodusters and Kansas Fever

During the 1860s and 1870s, African-Americans slowly began migrating out of the former slave states in search of free lands to the west. In Topeka, this migration was not a cause for concern among the white populace (Cox 1982:46). African-Americans were able to develop communities and enclaves within the city, particularly within Ward II, a fairly well off, predominately white neighborhood (Cox 1982:20). This slow influx would soon turn into a torrent of people migrating out of the ex-Confederate states into Kansas.

For the 1878 election, Louisiana voters elected a Democratic administration, thereby heralding the end of Republicanism in the state with most African-American Republicans isolated and cut out of the political process (Painter 1976:160). Election results from 1878 were also contested in Mississippi and South Carolina, creating a climate of violence and fear within African-American communities throughout Louisiana, Mississippi, Tennessee, and Texas. To many in these communities, Kansas and the unsettled western territories seemed a place to escape the persecution and repression perpetrated by hostile majorities in many of the former Confederate states.

The Exoduster migration began in March 1879 and continued into 1881, transplanting 25,000 African-Americans to Kansas (Cox 1982:41). The Exoduster migrants were ex-slaves seeking to claim lands and establish homesteads in the hope that they would gain freedom from the economic and social oppres-

sion that had always been a way of life in the south. Kansas fever was in full bloom and migrants sought every opportunity to claim all or part of the 160-acre plots as defined in the Homestead Act.

Topeka bore the full brunt of the Exoduster migration. Between April and August 1879, 7,000 emigrants passed through Topeka, which was the only city in Kansas with a social welfare and resettlement program (Cox 1982:46). The flood of people coming into Topeka aroused concerns in both the Euroamerican and established African-American communities. Although fully supportive of the Exoduster cause, Topeka's African-American population made it clear that the emigrants must "remember that in Kansas everybody must work or starve" (Cox 1982:48). However, the city and county governments were for the most part unaccommodating of the Exoduster migration. In fact, very little help was forthcoming from nearly all levels of government including the U.S. government. Most relief funds for poor and infirm emigrants came in the form of private donations and contributions administered by the State Central Relief Committee, which later became the Kansas Freedman's Relief Association. The primary goal of the Relief Committee was to give temporary aid to those who needed it and to assist the Exodusters in finding employment and housing (Cox 1982:45). At the beginning of 1880, the Relief Association had secured jobs for 10,000 workers in Kansas, Nebraska, Iowa, and Illinois (Cox 1982:65). By the end of the Exoduster migration in 1881 nearly 3,000 African-Americans had relocated to Topeka. This huge influx of new people caused a profound shift in the composition and structure of African-American society in Topeka.

The Birth of a New Century

By the 1890s, African-Americans lived in all five Wards and held a diverse array of business, professional, and skilled labor positions in the Topeka community. Racial segregation was very much a part of everyday life that recognized no status or class boundaries within the black community (Figure 2). African-Americans from Topeka, regardless of social status or wealth, began banding together to promote the cause of social progress (Cox 1982:98).

For African-Americans, school segregation continued as a contentious issue during the late 19th century. By 1886, the City of Topeka had constructed five schools for African-American students: Buchanan, Douglas, Lane, Madison, and Monroe (Franklin Weekley 1999:47). Constructed in 1874, the Monroe School was undoubtedly involved in the controversial Topeka School Board policy not to hire African-American teachers and staff for segregated schools (Cox 1982:112–113; Franklin Weekley 1999:49). This practice was reversed in 1894 when the Topeka School Board shifted to hiring only African-American school teachers. Unfortunately, this did not contribute to the defeat of segregation (Cox 1982:113; Franklin Weekley 1999:49).

Academic curricula and environmental conditions within African-American schools were poor and substandard when compared to Euroamerican schools. Cox (1982:112) has cited an 1879 *Colored Citizen* newspaper article stating "the management of the Monroe Street school has been such that many children in it are just where they were 2–3 years ago, and it is our deliberate opinion that they are purposely kept back to prevent their entering a mixed school." Other schools were also described as "unsanitary, inconvenient, undesirable, and a veritable cesspool" (Cox 1982:113). The substandard school conditions and second-class education provided to African-American children continued to be a significant racial issue throughout most of the 20th century, culminating with the *Oliver L. Brown, et al. v. Board of Education of Topeka* litigation that successfully defeated the practice of state-sanctioned school segregation.

Data from the 1890 U.S. census indicate that 30.9 percent of Topeka's African-American population held residence in Ward V, including the Monroe School neighborhood. In 1890, African-Americans accounted for 20 percent of the total Ward V population, and by 1900 the population had decreased slightly with African-Americans representing 17.9 percent of the total Ward V population (Cox 1982:205–206). At the beginning of the 20th century, Kansas was still overwhelmingly a rural and agricultural state. However, the City of Topeka continued to grow and develop into an urban center, with a population of 33,600 in 1900 and 50,000 in 1920 (Cox 1982:201). Increases in population within the Monroe School neighborhood in are evident from historic maps, particularly the 1889–1913 Sanborn maps, documenting the construction of numerous structures on Lots 505–531 on the west side of Monroe Street.

Historic Maps Documenting the Monroe Street Neighborhood

F. W. Beers Map, 1873

The F. W. Beers (1873) map shows three structures on Lots 511, 513, and 523 (Figure 3; Table 2). These probably represent the initial buildings on the BRVB property. Nickel and Hunt (2002:3) previously identified the structures on Lots 511 and 513 from the 1889 and 1896 Sanborn maps and labeled them Structure 5 (Lot 511) and Structure 7 (Lot 513).

The Beers map shows the name "J. Langston" associated with Lot 511 and Structure 5. Jesse S. Langston is listed in the 1874–1875 *Topeka City Directory* as a carpenter with residence on southwest Monroe between 15th and 16th Streets (Woodbury 1874). Also listed at this address were Jesse Langston's family members John C. and Viola Langston. Other neighborhood inhabitants at that time included John F. James, a "colored farmer" on the northwest corner of Monroe and 16th, as well as Jesse and Harriet London on Monroe Street between 15th and 16th Streets (Woodbury 1874). Jesse London is described as a "colored laborer" (Woodbury 1874). In 1885 the effective wage rate for a laborer was $1.25 a day, approximately $325 dollars a year (Cox 1982:214). By 1895 laborer wages had risen to $1.50 a day. The 1874–1875 *Topeka City Directory* provides some information about neighborhood inhabitants and the ownership of the property and indicates that John Ritchie had sold at least one lot in the Monroe School neighborhood by 1873.

Lot 523 is depicted with a "J. R." and is likely a reference to John Ritchie, who had originally owned all the neighborhood properties and may have built the Lot 523 structure as one of the first buildings on the block. The Lot 523 structure illustrated on the Beers map probably correlates to the 1913 Sanborn map showing a brick structure with a 12-ft porch in the same location. The building illustrated on the 1913 Sanborn map was labeled Structure 15 by Nickel and Hunt (2002:2). However, the copies of the 1889 and 1896 Sanborn maps that MWAC received from the Kansas State Historical Society, which would have positively linked the 1873 and 1913 maps, did not illustrate any of the lots south of Lot 515. Therefore, it is probable that the structure on Lot 523 from the Beers map and the 1913 Sanborn map are the same, but until other information becomes available this conclusion should be considered tentative.

George A. Ogle Map, 1898

The Ogle (1898) plat map illustrated the only public building in the neighborhood, the 1874 Monroe School (Figure 4; Table 2). However, the map is likely a general attempt at showing the school's location because it was drawn on the northeast corner of Lots 505 and 507 nearest Monroe Street. The Sanborn maps from 1889, 1896, and 1913 all show the school near the center of Lots 505 and 507 and should be considered more accurate depictions of the school location. Stadler (2001) was able to verify the school location when he uncovered the concrete steps leading to the school basement.

Sanborn Fire Insurance Maps, 1889–1913

When the 1889 Sanborn Fire Insurance map was published, at least nine structures existed on the lots west of Monroe Street and south of 15th Street (Figure 5; Table 2). This map depicts the1874 Monroe School (Structure 1) with three outbuildings (Structures 2, 3, 4) on Lots 505, 507, and 509. As indicated in Figure 5 and Table 2, these maps also show two dwellings (Structures 5 and 7) with at least two outbuildings (Structures 6 and 8) on Lots 511 and 513 (Nickel and Hunt 2002:3).

Structure 5 was illustrated as a framed structure, while Structure 7 was shaded as a masonry building. All outbuildings were shown as framed structures. Because Structure 15 is depicted on the 1873 Beers map and the 1913 Sanborn map, it is assumed to have existed on Lot 523 at this time. When compared to the Beers map, the 1889 Sanborn map clearly shows the effects of increased population and settlement in the neighborhood that occurred prior to 1889.

Construction of building additions as well as new structures continued over the next eight years. As indicated in Figure 5 and Table 2, by 1896 there were ten structures (1, 5, 7, 9, 10, 11, 12, 13, 14, and 15) on the property with many of the existing structures being replaced or enlarged (Nickel and Hunt 2002:3).

Structure 7 was extended with a rear addition to the west and to the east a new front porch was added. The original Monroe School was depicted as unchanged on the 1896 Sanborn map.

The school underwent extensive renovation in 1911 when a new west wing was added to the rear of the school. Illustrated on the 1913 Sanborn map, the school was nearly double its original size (Figure 5). The School Board then acquired Lots 513 and 515 for extra outdoor space to accommodate the increased school size and student population. By 1913 most of the 19th-century structures were gone except for two dwellings: Structure 5 (and the associated Structure 12 outbuilding) on Lot 511, and Structure 17 on Lot 525. The School Board later purchased Lot 511 sometime between 1913 and 1926. The 1913 map details four structures built south of the Monroe School, including a frame dwelling (Structure 15) and outbuilding (Structure 16) on Lots 521 and 523, a brick dwelling on lot 525, and another frame dwelling (Structure 18) on Lot 529 (Figure 5). Structure 15, which is shown as a frame building on the 1913 Sanborn map, probably correlates to the Lot 523 structure illustrated on the 1873 Beers map and was not built new between 1896 and 1913. However, by 1913, Structure 15 received additions to its east and south sides and was significantly larger than when it was originally constructed prior to the 1873 Beers map.

None of the Sanborn maps or historic maps illustrating the Monroe School neighborhood show any evidence of structures ever existing on the east side of Monroe Street within Lots 506–522 of the Playground Field. These lots remained empty during the 19th and early 20th centuries; they were later converted into a playground for the Monroe Elementary School.

Monroe Elementary School

The School Years, 1926–1975

Fourteen years after the enlargement of the original Monroe School it became apparent that existing space could no longer hold the number of students then attending school, with numbers surely to climb in the future. Therefore, the school board issued bonds and acquired new properties for the construction of a larger school building (NPS 1999). The school board purchased Lots 525, 527, 529, and 531 during 1926 in advance of construction for a new Monroe Elementary School. Throughout 1926, plans were finalized and construction of a new school was started. Following the completion of the new school in February 1927, all that remained was the destruction of the original Monroe School to make room for outdoor play space on the north side of the Monroe Elementary School (NPS 1999:4). The new Monroe Elementary School opened for classes in fall 1927.

The next addition came in 1933 when the school board purchased the triangular shaped piece of land on the east side of Monroe Street, south of 15th and west of the Atchison, Topeka & Santa Fe Railroad (Figure 5). This lot was used for recreational activities such as softball, tennis, and track and field events (NPS 1999:7). Though the space was heavily used, there is no evidence suggesting that any buildings or other features were constructed on the field between 1926 and 1975.

The 1945 Sanborn map shows the Monroe Elementary School surrounded by open play space and one outbuilding at the west end of Lot 523 (Structure 16, Figure 5). Many accounts from former students indicate that other features existed on the school grounds including mud scrapers, playground equipment, and a flagpole (NPS 1999:7). The Monroe Elementary School was used until it was classified as a substandard facility by the Department of Health, Education, and Welfare and was closed in June 1975.

Post-School Years, 1975–1993

Following its closure as a school, the school board used the Monroe building as a warehouse until 1978. Throughout the 1980s the Monroe School was sold on numerous occasions. In 1980, the building was sold to Richard C. Appelhans who made an unsuccessful attempt at turning the building into a private school. Appelhans then sold the Monroe building in 1982 to the Church of the Nazarene. The church members were also unsuccessful in their endeavor to develop an outreach program based at the Monroe building. Fortunately, both parties did little to significantly alter the historic fabric of the school and surrounding play areas.

The Monroe Elementary School property was again sold in 1988 to S/S Builders for warehousing construction materials and equipment (NPS 1999:24). In 1990, Mark Stueve, owner of S/S Builders decided to part with the property and was convinced by civil rights advocates to endorse the property's designation as a national historic site. On October 26, 1992, Brown v. Board of Education National Historic Site was created. The National Park Service purchased the property in 1993 and is committed to maintaining and rehabilitating the site to the time of interpretive significance, circa 1954–1955.

Previous Archeology at Brown v. Board of Education NHS

Archeology at BRVB has been limited since its creation in 1992. Only recently have archeological monitoring, survey, and testing projects been conducted on the Monroe Elementary School grounds and in the open field on the east side of Monroe Street (Hunt 1997; Nickel and Hunt 2002; Stadler 2002). In anticipation for rehabilitation of the school's exterior, BRVB and MWAC began a survey and testing program to ensure the preservation of the cultural resources located on the property.

William Hunt, 1997

In 1997 MWAC Archeologist William J. Hunt, Jr., was an onsite monitor for the replacement of a new gas line on the west side of the Monroe Elementary School. Four backhoe trenches were dug adjacent to the original gas line route that ran into the school. Fill documented in Trenches 1–3 had been disturbed by previous trenching for the old gas line. A limestone and concrete mortar foundation was located in Trench 4 approximately 3.7 m from and running parallel to the west foundation of the modern school building (Hunt 1997:2). This structure remained unidentified until Nickel and Hunt (2002) compiled historic information documenting the structures that had existed on the property. This identified the feature as an element of the coal bin and light well that were later investigated by Connor (2001). Cultural materials including whiteware, colorless pressed glass, flat glass, colorless bottle glass, wire nails, brick fragments, and a lead-filled filigree were recorded in Trenches 1 and 2 but were not collected. No artifacts were recorded for Trenches 3 and 4.

Robert Nickel and William Hunt, 1999

The 1999 survey project conducted by MWAC Archeologists Robert K. Nickel and William J. Hunt, Jr., is the initial comprehensive archeological study of the BRVB property (Nickel and Hunt 2002). Historic documents, particularly the Sanborn fire insurance maps from 1889, 1896, 1913, and 1945, were employed to determine the number and layout of previous structures on the Monroe Elementary School property. Copies obtained from the Kansas State Historical Society demonstrated the presence of eighteen structures existing in various locations and times on the school property (Nickel and Hunt 2002:3). However, since these structures were not visible above ground, geophysical exploration was used as a noninvasive survey technique to determine what structural remnants existed below the modern ground surface. Nickel and Hunt (2002) utilized ground-penetrating radar (GPR), magnetic, and resistivity surveys in order to obtain multiple data sets and comparable views of areas where feature anomalies might appear. Twelve 20-m grids on the north (Grids A, B, C), south (Grids G, H, I), east (Grids D, E, F) and west (Grids L, K, J) sides of the Monroe Elementary School were surveyed. The GPR was the only instrument used east of the school, and the resistance meter was the only instrument used on the west side of the school. Geophysical survey produced ample evidence of buried historical features, some of which were tested by Scott Stadler during 2000 (Stadler 2002).

Scott Stadler, 2000

In June 2000, MWAC Archeologist Scott Stadler conducted an archeological testing program of selected anomalies identified during the geophysical survey from the previous year (Stadler 2002). Three 1-x-2-m excavation units were placed over three separate geophysical anomalies suspected to represent buried historical features. One hand-dug trench was also used to examine a fourth anomaly recorded the previous year.

Test Units 1–3 were located to the south of the main school building (Stadler 2002:21). Each of the test units was excavated in arbitrary 10-cm levels to a total depth of between 90 and 110 cm below the surface (cmbs). The three excavation units all revealed similar stratigraphic profiles with minor variations in strata and construction debris. However, to the levels that they were excavated to, Test Units 1–3 did not produce any evidence of features that were depicted as anomalies during the geophysical investigations of the south play area. Artifacts recovered from these excavations included schoolyard items such as

marbles and jacks, domestic items, and construction debris. Several complete shell buttons and a freshwater mussel shell, with partially cut holes for buttons, were recovered from Test Unit 1. These materials might represent a cottage industry of shell button manufacture for household or commercial use (Stadler 2002:17).

Test Trench 4 was an exploratory trench dug by hand near the southeast corner of the original Monroe School foundation. A concrete slab was located approximately 1 m below the surface and was probably the basement floor of the first school (Stadler 2002:7). Due to time constraints, fill materials were not screened and the concrete slab was only partially excavated. The concrete slab was composed of four sections in length and two sections in width with each section measuring 88 cm wide (Stadler 2002:7). These investigations confirmed that the remains of the first school were approximately 4 m north of the north wall of the Monroe Elementary School.

The 2001–2003 Archeological Projects: Monitoring and Limited Testing

The following discussion is a compilation of eight projects conducted during the Fiscal Years 2001, 2002, and 2003 by MWAC on the Monroe Elementary School grounds (Chavez 2003; Chidley 2002; Connor 2001; Hunt 2002, 2003; Stadler 2001; Sturdevant and Hunt 2002). Monitoring procedures and schedules were outlined in the Work Plan developed for Fiscal Year 2001. All projects included monitoring of trenching activities in areas where historic structures were present. Michael Chidley also utilized limited testing of some areas to determine the location and extent of historic building foundations on the east side of the Monroe Elementary School. Although each project was initially documented as a trip report, the combined results are presented here as a final report with complete analysis of structure foundations and artifacts that were recovered.

Melissa Connor, June 2001 Monitoring

MWAC Archeologist Melissa Connor was the first to monitor construction activities near the Monroe Elementary School during 2001. Ground disturbances at this time included the installation of a power pole for one of the school rehabilitation contractors and the removal of fill from around the light well near the northwest corner of the Monroe Elementary School (Figure 6).

The power pole was placed in the northwest corner of Lot 515 approximately 13 m (43 ft) west of the Monroe Elementary School (Figure 6). An 18-in auger bit was used to drill the hole for the pole placement. Fill from this hole consisted of a clay loam similar to those uncovered by Stadler (2002) during the 2000 excavations of the south play area. No materials from the hole were screened but artifacts such as clinkers, a glass bottle bottom (unmarked), slate brick fragments, and a sawed long bone of a domesticated mammal (possibly a cow) were noted but not collected (Connor 2001:3).

A backhoe with a 42-in bucket was used to excavate the area around the light well on the northwest side of the school building (Figure 6). The contractor was required to excavate to the bottom of the light well for drainage purposes. For trenches, the Occupational Safety and Health Administration (OSHA) requires the excavation of two horizontal feet for every vertical foot; thus, the excavations ended 15 ft west of the limestone wall of the light well. Connor (2001:3) noted that the stratigraphic profile was consistent with the other areas of the schoolyard tested by Stadler (2002), with the playground sand stratum located just below the surface over the entire excavated area.

The only structural remnant uncovered during the excavation of the light well was the north wall of the coal bin (Figure 6). This brick wall feature was located at the south end of the excavated area and was removed because of the renovations to the light well (Connor 2001:4). The coal bin was used to store coal for the Monroe Elementary School furnace located in the basement on the north side of the school. Artifacts noted during the excavations included clinkers, bottle glass fragments, and recent brick. One brick fragment with an impressed FREDONIA maker's mark was the only item collected during the Connor 2001 monitoring project; refer to pp. 23–24 for more detail.

Scott Stadler, July 2001 Monitoring

In July 2001, MWAC Archeologist Scott Stadler monitored trenching from the northwest corner around to the north side of the Monroe Elementary School (Figure 6). Trenching with a backhoe allowed the rehabilitation crew to seal the north foundation of the school to keep water from leaking into it. The total area around the north side of the modern school was excavated with a backhoe, revealing structural components of the original Monroe School.

Trenching began north of areas observed by Connor (2001; see also above) and then turned east around the northwest corner of the modern school. The trench then followed the north side of the building to the northeast corner where it was stopped. Stadler (2001:1) estimates that the trench was 20 ft deep next to the Monroe Elementary School foundation and gradually stepped up and away from the building to comply with OSHA safety standards.

The south foundation of the original Monroe School was uncovered 3.9 m north of the Monroe Elementary School and 1.2 m below the modern ground surface (Figure 7). A majority of the south wall footing was exposed during trenching. The footing for the original Monroe School consisted of a single layer of limestone blocks averaging 60 cm x 110 cm x 25 cm (Stadler 2001:1).

A set of four concrete steps leading down into the basement of the original Monroe School was uncovered along the south foundation (Figure 8). Facing the steps on both sides were finished limestone retaining walls. These retaining walls continue around the south side of the top step to enclose the steps and entryway in a U shape leading down to the basement of the building (Stadler 2001:2). The steps proceed downward to an entryway floor of concrete similar to that used in the basement. The placement of the steps, west of the footings for the 1874 school, and the similarity of the concrete for both the entry and basement floors, indicates that these features were probably constructed and poured during the 1911 renovation of the Monroe School.

In profile, the stratigraphic sequence adjacent to the Monroe School is similar to other areas that have been documented in the schoolyard (Figure 9). Below the sandstone footing of the Monroe School is a black clay loam starting at 170 cmbs. Directly above the sandstone building footer was a construction rubble stratum 30 to 40 cm thick that contained fragments of brick, gravel, limestone, mortar, sand, and cinders. This rubble layer dates to some time after the 1874 construction of the Monroe School and before the 1911 construction of the west addition, which added the concrete basement floor directly above the rubble stratum.

The concrete basement floor measured 10 to 12 cm thick and was made up of coarse concrete mixed with brick and rock near the bottom and a 2 to 3 cm cap of fine, finished concrete on top. Above the concrete was a thin layer of tan sand followed by layers of clay loam, clay, and gravel (Figure 9). These strata have all been covered over by the modern asphalt parking lot now located on the north side of the Monroe Elementary School building.

William Hunt, April 2002 Monitoring

In April 2002 MWAC Archeologist William J. Hunt, Jr., was an onsite monitor for the installation of a new sewer line into the east side of the Monroe Elementary School (Figure 6). While trenching for the sewer line, a small structure foundation was located along the far west end of Lot 513 (Figure 10). The location of this foundation approximates the northwest corner of Structure 14 and the southwest corner of Structure 13 (Figure 5).

The original plan for the installation of the new 4-in sewer line called for using trenchless excavation to bore an 8-in underground line from the west side of the Monroe Elementary School exiting out the north cafeteria wall and extending across the school grounds to below the concrete alley west of the school. At both the east and west ends of the sewer line, a pit was planned to be dug down to the level of the sewer line. The pit dimensions as proposed were 15 ft long and 4 ft wide so the crew could effectively install a 12-ft by 3-ft metal shoring unit (Hunt 2002:2).

As the alley pit was being excavated, small sandstone slabs were discovered and signaled the presence of a structure foundation (Hunt 2002:3). After some hand excavation, the foundation corner of a structure was uncovered. The foundation was made up of irregularly shaped sandstone blocks that were dry laid with some areas being held together with decomposed lime mortar (Hunt 2002:3). Sloped at a slight angle, the top of the foundation at the north end was 60 cmbs, while the south end was 20 cm deeper at 80 cmbs. This slope reflected the original grade that the foundation was constructed upon. The uncovered portion of the east-west wall measured 140 cm (4.5 ft) long and 36 cm (1.2 ft) wide. The wall running north-south was uncovered to a length of 76 cm (30 in) and a width of 25.4 cm (10 in).

Since the stone foundation prevented the boring machine from digging a direct route to the Monroe Elementary School an alternative route around the foundation was selected. This route made an adjustment to the north in order to avoid the historic foundation. Trenching instead of boring was also utilized because the boring machine no longer had a direct route to the school building and could not bore through

or under the stone foundation. No other structural remnants were identified along the trench route to the west wall of the Monroe Elementary School.

Further examination of the stone foundation indicated that it was smaller than first anticipated. Initially Hunt (2002:5) expected that the foundation was for an outbuilding structure between 3 and 5 m wide that existed on Lot 513 (Structures 13 and 14). However, after removing the fill surrounding the foundation it became apparent that it had been a smaller structure only extending 1.3 m to the east, as opposed to the 3–5-m width that had been initially expected for the wall separating Structures 13 and 14 on the 1896 Sanborn map (Hunt 2002:4–5). Even though it was smaller than expected and shifted slightly to the west when compared to the 1896 Sanborn map, the foundation is most likely the remains of Structure 14, a small outbuilding for domestic Structure 7 on Lot 513. Hunt (2002:5) suggests that because of its size, shape, and location Structure 14 was in all probability a privy attached to the larger Structure 13, which might have been a barn.

Located between the modern alley concrete and the historic foundation was a stratum of rubble which contained glass bottle fragments, flat glass fragments, plain whiteware ceramic fragments, a glass mug, and two ceramic lids for a large vessel such as a chamber pot, large slop jar, or cracker jar. Artifacts that were collected from the fill within the foundation included four whiteware ironstone vessel fragments, a porcelain vessel fragment, and a torpedo-shaped soda bottle fragment (Table 4).

Michael Chidley, April–May 2002, Monitoring and Limited Testing

MWAC Archeologist Michael Chidley and three MWAC archeological technicians conducted monitoring and limited testing on the east side of the Monroe Elementary School in April 2002. During this round of monitoring, six foundation elements from at least three historic structures were uncovered and mapped. A large concrete and mortar block was also found east of the Monroe Elementary School. Chidley returned to BRVB in May 2002 to monitor the excavation of water utility line trenches, keyhole trench excavation for geothermal lines, and shallow drainage trenches to control runoff on the school grounds.

During the first round of monitoring the work began by removing the concrete pad and retaining walls east of the school. A backhoe was used to dig six trenches at angles perpendicular to the school building (Figure 6). The purpose of trenching the east side of the school was to locate and record any remains of Structures 5, 7, and 15 (Figure 5).

Limited archeological test excavation was used to locate the northeast corner and interior floor of Structure 5. Test Units 1 and 2 were 1-x-1-m units, while Test Unit 3 was an offshoot of Test Unit 2 and measured 1 by 0.5 m. Excavations were conducted using 10-cm arbitrary levels. All materials removed from the excavation units were dry screened using ¼-in hardwire mesh screen.

Structure 15

A portion of the south foundation of Structure 15 was uncovered in Trench 1 near the southeast corner of the Monroe Elementary School (Figure 11). This section was made up of two to three courses of dry-laid sandstone; it measured 3 m (9.9 ft) long and 49 cm (1.6 ft) wide and was oriented roughly east-west. The foundation was located 1.25 m (4.1 ft) below the surface, under debris fill possibly associated with the demolition of the historic structures on the lot and the construction of the Monroe Elementary School (Chidley 2002:2). Demolition fill included brick, clinker, cement, sandstone fragments, and flat glass. Below the demolition fill was a 10-cm (4-in) thick stratum of sterile yellow clay. The yellow clay band was followed by a second stratum of demolition fill that contained less construction debris. The second demolition stratum was found directly above the parent sediment consisting of a very dark gray silt loam.

A small section of a north-south foundation from Structure 15 was located in Trench 2 (Figure 11). This segment of the foundation is likely the north-south jog on the northeast corner of the house. The portion of foundation in Trench 2 measured 1.2 m (4 ft) long and 46 cm wide and consisted of three courses of dry-laid sandstone (Figures 12 and 13). Chidley (2002:2) notes that the low frequency of sandstone in

the fill surrounding the foundation and the distinct lack of the east-west reaches of the foundation indicate that much of the area has been disturbed or removed by the construction of the Monroe Elementary School to the west.

Artifacts found in association with the north foundation of Structure 15 included whiteware sherds, bottle glass, window glass, decorative window glass, unidentified metal fragments, cut nails, a ceramic/mica plug fuse, and a brass thimble (Table 5). Most of the items can be attributed to domestic activities or construction materials used on Structure 15. The presence of cut nails, whiteware, and the electrical fuse suggest a late-19th- to early-20th-century date for the deposits surrounding the north foundation.

Concrete Mortar Block

A concrete mortar block measuring 1.6 m (5.1 ft) long north-south and 1.25 m (4 ft) wide east-west was identified north of Trench 2 and south of the front entry to the school (Figures 11 and 14). The top of this feature was 20 cm (7.8 in) below the ground surface, 18 m (59 ft) from the southeast corner of the school and 1.14 m (45 in) from the school face. The concrete had been poured in place with wood planking used to hold the wet concrete until it set (Figure 14). Wood planks were preserved *in situ* on the south and west sides of the concrete block. Slots were formed on top of the concrete slab with dimensions resembling 4-x-6-in boards and one notch small enough to accommodate a 1-x-6-in plank. These slots might have anchored equipment such as a construction crane or derrick that utilized the solid concrete platform for lifting the heavy limestone facing blocks or roofing materials while constructing the Monroe Elementary School (Chidley 2002:3).

Structure 7

The south wall of Structure 7 was identified in the north wall of Trench 3 (Figure 15). The foundation was between 50 and 60 cmbs and oriented slightly southeast-northwest. It measured 3.7 m (12.1 ft) long and 24.4 cm (9.6 in) wide. Most of the foundation was constructed out of dry-laid unmodified sandstone. However, fragments of decomposed lime mortar were identified near the base of the foundation near the contact with the undisturbed parent sediment and also in other areas mixed with the sandy fill.

The north wall foundation of Structure 7 was discovered in Trench 4 (Figure 15). It matched the 50 to 60 cmbs recorded for the south wall foundation and was similar in construction with dry-laid sandstone, some lime mortar, and sandy fill (Figures 16 and 18). The portion of the north foundation that was uncovered was 3.6 m (11.8 ft) long and 24.4 cm (9.6 in) wide and was oriented slightly southeast-northwest (Figure 17). Neither of the corners at both ends of the wall was uncovered during this time.

Chidley (2002:4) also noted that the location of the wall foundations for Structure 7 was only 61 cm (2 ft) north of where the historic Sanborn maps had depicted it. However, the relative placement, orientation, and area between the north and south wall foundations suggest that Structure 7 is indeed in the right location. Substantial portions of the building are still intact below the modern ground surface and were not destroyed by the construction of the Monroe Elementary School. This information also suggests that Structure 7 utilized the same wall foundations for both structures that were shown on the Sanborn maps of 1889 and 1896. The maps illustrate buildings in the same location with slight modifications, suggesting that remodeling of the original house occurred between 1889 and 1896 without changing the original north and south foundations.

Artifacts associated with Structure 7 consisted almost entirely of domestic items including porcelain and stoneware vessel fragments, and a medicine bottle fragment (Table 5). Window pane fragments were the only other items recovered in association with Structure 7.

Structure 5

The north and south foundations for Structure 5 were discovered in the locations depicted on the 1889 Sanborn map (Figure 5). The two foundations were excavated using trenching methods similar to those used elsewhere on the site. Archeological test excavations were then conducted in order to locate the interior floor of the structure and the northeast corner where the north and east foundations were joined.

The south foundation was uncovered in Trench 5 at 3.76 m (12.33 ft) south of the northeast corner of the Monroe Elementary School (Figure 15). The foundation was shallow compared to others found on the site with the entire foundation extending only down to 80 cmbs (Figure 19). The exposed portion of the south wall measured 2.8 m (9.2 ft) long and 23.7 cm (9.4 in) wide. Construction and materials were similar to the Structure 7 foundations, using dry-laid sandstone blocks and very little mortar to bind the stones together.

The north wall for Structure 5 was the longest exposure of a foundational remnant uncovered during the project, measuring 4.4 m (14.5 ft) long and 24.4 cm (9.6 in) in width (Figure 15). It was first excavated using a backhoe to dig Trench 6 out from the northeast corner of the Monroe Elementary School building to the east. Located between 28 and 51 cmbs, this foundation was covered with multiple layers of demolition fill, mottled clay, yellow-orange clay, and black loam (Figure 20). The south profile of the north foundation also demonstrates a cut-and-fill event occurring prior to the deposition of the upper demolition fill stratum. This disturbance appears to be a hand-dug trench that cross cuts the north foundation of Structure 5. Since the excavation of this trench took place after the abandonment of the structure it might be related to the construction of the Monroe Elementary School in 1926. However, this conclusion remains unsubstantiated at this time.

Test Unit 1. Test Unit 1 (TU 1) was placed inside Structure 5 on the north side of the south foundation (Figure 15). The west side of the unit was 1.75 m east of the Monroe Elementary School building. TU 1 was a 1-x-1-m excavation unit, excavated in arbitrary 10 cm levels down to a depth of 73 cmbs. The primary goal of excavating TU 1 was to locate and identify the interior floor of one of the historic structures uncovered during monitoring and to assess the condition and content of the archeological deposits within Structure 5.

The fill above the interior floor of Structure 5 was made up of heavily disturbed black sandy loam mixed with construction debris above bright orange clay mixed with some debris. The floor of the structure was present in the form of mortar, rocks, and brick between 60 and 70 cmbs. Directly under the floor was the black loam parent sediment lacking any of the debris found in the layers above the floor stratum and represents the original 19th-century ground surface. Since the floor exhibited no evidence of use as a basement floor in the form of finished concrete it was probably used as a crawl space below the house.

Numerous artifacts were recovered from 0–40 cmbs of Test Unit 1 (Table 5). Construction materials included flat glass, cut nails, indeterminate nails, mortar, and a screw. Domestic items were also represented including whiteware, a terra cotta flowerpot fragment, bottle glass, a glass club sauce stopper finial, and the distal end of a domestic sheep (*Oves aries*) humerus. The sheep bone was cut at the shaft with a saw or other instrument producing a transverse regular cut.

Test Units 2 and 3. Test Units 2 and 3 were placed to identify the extent of the north foundation and location of the northeast corner of Structure 5. Test Unit 2 (TU 2) was a 1-x-1-m excavation unit located over the suspected area of the northeast corner of Structure 5 (Figure 15). TU 2 was placed 5.6 m (18.6 ft) east of the Monroe Elementary School and 5.57 m (18.3 ft) southeast from the northeast corner of the school. The crew first removed a clay stratum followed by a thin, dark gray demolition layer and then another clay band before reaching the top foundation stones (Chidley 2002:5). Once the north-south oriented foundation stones were identified then Test Unit 3 was begun to the north, in order to verify that these stones were the northeast corner of Structure 5.

Test Unit 3 was a 1-x-0.5-m excavation unit directly adjacent to the north side of Test Unit 2 (Figure 15). This unit revealed that the north-south foundation located in Test Unit 2 did not extend further north, and thus was able to accurately identify the northeast corner of Structure 5. The stratigraphic sequence for this excavation unit was similar to that described for TU 2.

The only artifact collected from Test Units 2 and 3 was a ceramic Bennington marble. The marble was a classic blue glazed marble with “eyes” or white spots created during the glazing process. This type of German-made marble first appeared at sites in the Midwest during the 1890s and were sold up to the time of World War I (Carskadden and Gartley 1990:57).

Keyhole Trench Monitoring

The second round of monitoring conducted by Chidley (2002) was for the removal of concrete and footings east of the Monroe Elementary School, trenching for water utilities on the east and west sides of Monroe Street, keyhole excavation for geothermal well lines running to the school, and investigation of shallow trenches dug to control water runoff on the west side of the school (Figure 6).

Water line trenching was done in order to access the main water line and to lay a new water pipe that ran under Monroe Street. To run a line from the east to west sides of the street, trenches were dug on both sides of Monroe Street (Figure 6). Trenchless directional boring was used to run the underground lines from the east side of Monroe Street to the Monroe Elementary School. The trenches measured approximately 20 ft north-south by 15 ft east-west and 6 ft deep. The stratigraphic sequence along both sides of Monroe Street included a sod layer followed by a dark gray silt loam 1.5 m thick with an orange-brown clay stratum directly below. Other than a small amount of demolition rubble evident in the west profile of the west trench there were no artifacts recorded or collected from the water line trenches.

Directional drilling was also used to bore a hole under the street and install geothermal pipes from the east side of Monroe Street to the Monroe Elementary School. These geothermal pipes would serve as return lines for the geothermal wells located in the Playground Field lots on the east side of Monroe Street. Trenches were dug on both sides of Monroe Street just north of the water line trenches (Figure 6). The geothermal trenches measured 3.05 m (10 ft) north-south and 2.14 m (7 ft) east-west. Directional boring began at a 20-degree angle downwards and then continued below Monroe Street at a depth of 1.6 m (5 ft 3 in). Bore hole diameter was drilled to no wider than 15 in. No artifacts were noted during the excavation of these trenches and the stratigraphy was similar to that described for the water line trenches.

A drainage trench was dug on the west side of the Monroe School Building to control water runoff using a 6 in drainage pipe. The trench was excavated to a depth of 6 in on the south end and 15 in at the north end of the school building. No archeological features or materials were encountered during the trenching for the drainpipe.

Jay Sturdevant and William Hunt, 2002 Monitoring at Playground Field Lots 506–522

Archeological projects were also conducted in the school's old playground during the installation of a geothermal well system for heating and cooling the Monroe Elementary School Visitor Center. MWAC Archeologists Jay T. Sturdevant and William J. Hunt, Jr., monitored trench excavation during the installation of the geothermal system in the Playground Field lots on the east side of Monroe Street across from the Monroe Elementary School (Figure 5; Sturdevant and Hunt 2002). The excavation of nine trenches revealed the presence of several archeological features and resulted in the recovery of 301 items of material culture that contribute significant information related to the late-19th and early-20th-century neighborhood community that once existed on and surrounding the BRVB property (Nickel and Hunt 2002; Stadler 2002).

Plans for the geothermal heating and cooling system installation required the excavation of seven trenches to connect each of the seventy geothermal wells, and two trenches for a return line to the Monroe Elementary School (Figure 21). The geothermal system was installed by Ground Source Systems, Inc., Buffalo, Missouri, a subcontractor to prime contractor All Pro Construction. The excavation of the keyhole trenches and installation of the return lines that run under Monroe Street and into the Monroe Elementary School were finished previously and were monitored by Mike Chidley on May 6 and 7, 2002, as summarized in the previous subsection. Prior to the trench excavation, 70 geothermal wells were drilled within the Playground Field lots. However, archeological monitoring of these wells was not conducted due to the small well size (approximately 10 cm in diameter), the vertical nature of the drilling operation, and that the drilling mud obscures the contents of the back dirt from the drill holes, all these factors making identification of materials from the holes problematic. BRVB Maintenance Chief Treva Harris did photograph some of the well drilling activities and has kept a detailed photographic record of all construction activities at the Monroe School site.

All trenches were excavated to a depth of approximately 5 ft using a backhoe with a 36-in bucket. Trenches 1 through 7 measured 62 to 76 m in total length and were generally oriented northeast to southwest; however, they are discussed here for convenience as north ends and south ends. A combined volume of approximately 758.6 m³ of fill was excavated from the nine trenches and manhole vault area. Each trench was numbered as it was dug. For safety reasons trenches were not dug in sequence. For example, if a trench (e.g., Trench 4) was between two others it was skipped until the surrounding trenches were backfilled and completed.

A Global Positioning System (GPS) receiver was used to record the well locations, feature locations, and the length of each trench in Universal Transverse Mercator (UTM) coordinates. Utilizing GPS to record site information and features provides precise (less than 1 m) measurement and location information that is easily transferred into Geographic Information System (GIS) software packages such as ArcView and ArcGIS.

Once a trench was excavated and all its features were recorded, the geothermal well lines were installed and tested by the Ground Source Systems, Inc., crew. Finally, each trench was backfilled starting with a layer of sand followed by the original fill and then compacted. Excess fill and sludge from the well drilling process was loaded onto trucks and transported offsite.

Jay Sturdevant, Monitoring November 4–15, 2002

Trench 1. Trench 1 was excavated on the east side of the Playground Field (Figure 21). Excavations revealed a brick and sand concentration that was labeled Feature 1 along with numerous historic artifacts. Trench 1 measured 76 m long and intersected with return line Trench A at its south end.

Feature 1 was initially identified in the west wall profile 30 m south of the north end of Trench 1 (Figure 21). The feature was a lenticular brick and sand concentration located at a depth below the surface of between 67 cm (top) and 94 cm (base), and was 3.40 m long (Figure 22). Located above Feature 1 were three fill strata composed of silt clay loam and a sandy loam (Figure 22). Numerous bricks and historic artifacts were mixed within the upper two silt clay loam strata, which was also the case over a majority of the Playground Field area. Located below the sand and bricks that comprised Feature 1 was a silt clay which was preceded by a layer of silt clay loam, the native prairie soil (Figure 22).

Feature 1 contained both orange and red bricks scattered throughout the deposit. The random arrangement of multicolored bricks mixed within a coarse to fine sand matrix suggests that Feature 1 was a dump of construction materials or materials from a demolished structure. Bricks and a single horseshoe were also noted in the east profile. No other features were discovered in Trench 1. Artifacts recovered from Trench 1 include glass bottle fragments, bricks, flat glass, and a ceramic doll part (Table 6).

Trench 2. Trench 2 was located west of Trench 1 between Trenches 4 and 5, measuring 63 m long (Figure 21). A second debris fill feature (Feature 2) was identified at 22 m south of the north end of Trench 2 (Figure 21). Debris from this feature included large and small limestone slabs, bricks, concrete fragments, a marble slab, bottle glass fragments, and porcelain power line insulators. Feature 2 was 3 m long and 60 cm deep from the ground surface. Other artifacts collected from Trench 2 include whiteware and ironstone ceramic sherds, drain tile fragments, an ink bottle, and a tin graniteware bowl (Table 6).

Trench 3. Trench 3 was the farthest west of the seven well trenches (Figure 21). Trench 3 measured 62 m in length and intersected the western portion of return line Trench A at its south end. The north end of Trench 3 exhibited the most general stratigraphic sequence of any trench dug during this project. From 0–70 cm was a black (7.5YR 2/5) silt clay loam. Below this stratum to a depth of 160 cm was a reddish brown (5YR 4/4) dense clay. This stratigraphic sequence represents the original silt clay loam prairie soil stratum underlain by the clay subsoil (Abmeyer and Campbell 1970). In the other areas of the Playground Field historic dump and fill deposits were located above the silt clay loam prairie soil stratum. No fill materials were observed in the north end of Trench 3.

During the excavation of this trench, strata containing significant amounts of late-19th- and early-20th-century material culture were observed and labeled Feature 3. This feature began 19 m from the

north end of Trench 3 and extended over a length of 35 m to the south (Figure 21). Some areas were harder to discern than others, but overall the debris strata extend over the entire southern portion of Trench 3. Feature 3 was made up of two distinct silt clay loam and sand strata that contain historic debris and artifacts between 40 and 80 cmbs (Figure 23). The upper stratum was a dusky red (10R 3/3) silt clay loam mixed with sand and historic debris. Below this was a brown (7.5YR 4/3) fine to coarse sand mixed with silt clay loam and historic debris, but decreased amounts of coal and cinders. These strata were overlain by a medium to coarse sand fill. Artifacts collected from Feature 3 include whole glass bottles, bottle fragments, glass jar fragments, whiteware sherds, and porcelain sherds (Table 6). Other items that were also noted from Feature 3 but not collected include coal, cinders, wood fragments, unidentified metal fragments, rope, wire, and bricks. Feature 3 covers much of the west side of the Playground Field; refer to the discussion of Trench 7 below. It is probably a large dump area that was used by neighborhood residents during the late 19th and early 20th centuries. The Kansas State Historical Society has assigned site number 14SH114 to the area encompassed by Feature 3. No structural or other features were recorded in Trench 3 (Figure 23).

Trench 4. Trench 4 was located between Trenches 1 and 2 (Figure 21). The north end of Trench 4 contained relatively few bricks or artifacts. The south end of Trench 4 contained an increasing amount of bricks, limestone fragments, and artifacts but no significant concentrations similar to the ones recorded in Trenches 1–3. Artifacts collected from Trench 4 include a ceramic lid to a cosmetic container, a whole glass bottle, and a stoneware sherd (Table 6). No features were recorded in Trench 4.

Trench 5. Trench 5 was located between Trenches 2 and 3 (Figure 21). Relatively few artifacts, bricks, and debris were noted at the north end of Trench 5. The south end of Trench 5 contained deposits similar to Feature 3 in Trench 3. Artifacts and debris began to increase as the excavations moved further south. Material culture items collected from Trench 5 include complete glass bottles, glass bottle fragments, a stoneware jug neck/body sherd, ceramic doorknob, whiteware and ironstone ceramic sherds, porcelain sherds, jewelry box, glass insulator, light bulb, and nails (Table 6). Items that were noted but not collected include bricks, limestone fragments, metal cable, coal, and cinders. Buried strata identified in Trench 5 were related to Feature 3 in that they were overlain by medium to coarse sand deposits and contained concentrations of historic artifacts and materials. However, the deposits in Trench 5 were not red or as dense in historic materials as Feature 3 strata in Trench 3. No other features were recorded in Trench 5.

Trench 6. Trench 6 was excavated to the southwest of Trenches 1–5, south of return line Trench A (Figure 21). A gravel layer and a stratum of silt loam fill over 1 m in depth were recorded in the southern portion of Trench 6 (Figure 24). The thickness of the deposit at the south end of the Playground Field was likely a result of increased drainage in this area because the ground surface slopes toward a sewer drain located a few meters south of Trench 6. A wire bedspring was found at the base of this fill, indicating that historic materials are covered by a thick silt loam deposit in this area. At the south end of Trench 6 there was no visible evidence of the light brown clay subsoil identified at the bottom of Trenches 1–5. However, because of the thickness of the upper silt loam deposit it is likely that the clay subsoil is deeper at the south end of the field. The excavation crew encountered a large amount of random limestone fragments and slabs at the midpoint of Trench 6 but relatively few artifacts. The north end of Trench 6 contained a few bricks and no artifacts. Artifacts recovered from the south end of Trench 6 include complete glass bottles, glass bottle fragments, stoneware sherds, porcelain sherds, a terracotta vessel fragment, and a tin graniteware bowl (Table 6).

Trench 7. Trench 7 was located west of Trench 6 and south of Trench 4 (Figure 21). This trench measured 63 m in length, intersecting return line Trench A at the manhole vault location. Numerous bricks and rocks were encountered in the southern portion of the trench. Fill deposits related to Feature 3 were also noted in the southern portion of Trench 7 (Figure 21). Artifact density seems to have been concentrated in and near to the Feature 3 deposits and began to drop off dramatically through the middle and northern portions of Trench 7. Artifacts collected from Trench 7 include complete glass bottles, glass bottle fragments, whiteware sherds, porcelain sherds, round and square floor tiles, a spoon, and a salt or pepper shaker (Table 6). No structural features or features other than Feature 3 were identified in Trench 7.

Manhole Vault. In order to connect the geothermal well lines from the seven well trenches a fiberglass manhole vault was installed near the intersection of Trenches 4, 7, and A (Figure 21). The well crew excavated a square area approximately 5 m by 5 m for the placement of the fiberglass manhole vault, which was set in concrete to permanently hold it in place. No features or historic materials were recorded in this area.

William Hunt, Monitoring November 17–19, 2002

Trench A. Oriented in an east-west direction, Trench A (Geothermal Field, Area A) started at the manhole vault and continued to just west of the concrete curb along Monroe Street (Figure 21). This trench was used for two purposes: to run well lines from Trenches 2, 3, and 5 in the northern series of trenches, and to route the 4-in supply and return lines from the manhole vault to Monroe School via a connecting "keyhole trench" on the east side of Monroe Street (Figure 6). The trench measured 19 m long and angled slightly toward the north as it approached the street. Excavation was halted at a point about 16 ft from the inside edge of the street's concrete curb. During the excavation process, a fairly large number of whole glass bottles were recovered from the west end of Trench 2 to the intersection with Trench B (Figure 21; Table 6). Other artifacts collected from Trench A include glass and ceramic vessel fragments, a door knob, a horseshoe, glass jars, glass tumblers, ceramic tile, and a dry cell battery rod (Table 6). All artifacts collected from Trench A were related to the dump and debris-filled strata equitable to Feature 3.

Trench B. Trench B (N-S Return Line Trench), a north-south trench paralleling the east margin of Monroe Street, was excavated west of Trench 3 (Figure 21). In order to avoid Feature 3 and the City of Topeka water line, Trench B was centered about 16 ft from the interior margin of the street's east concrete curbing. The trench started out on the south end centered at about 15½ ft but at its northern end, the center of Trench B was located about 18 ft from the curb. The north end of Trench B connected to a large rectangular opening or "keyhole trench," which was re-opened; see Chidley, above. Virtually no artifacts were recovered from the north half of Trench B.

The south end of Trench B connected to the west end of Trench A (Figure 21). A very large opening (approximately 4 m east-west by 3 m north-south) was dug at the intersection of Trenches A and B to stop the trench wall from collapsing because of thick sand deposits in that area, and Trench 3 intersected Trench A nearby. This larger opening also aided the backhoe operator since there was not a lot of room to maneuver in this location due to the trench locations and construction fencing along Monroe Street.

In general, the soils from Trench B consisted of the "prairie soil," which is a black chunky clay loam. This soil deposit is uniform over much of the Playground Field area, underlying the 19th-century historic deposits; it is much shallower on the north end than it is on the south end of the field. The yellow brown clay subsoil below the prairie loam is also much shallower on the north end than on the south. The top of the clay on the north end is at about 80 cmbs and is capped with what appears to be mixed fill rather than undisturbed "prairie soil." About halfway down Trench B, the top of the clay layer is at about 1.8 m and is capped by what appears to be an undisturbed black soil. The upper 50 cm or so of fill here is culturally derived and mixed. Artifacts usually occur in the lower 30–50 cm of this fill; this is similar to Feature 3. At the south end of the trench, the artifact-bearing layer is capped by a thick layer of sand, the south surmounted by a mixed layer of fill.

The entire Playground Field area is capped by a layer of gray sludge and clay, by-products of the well-drilling process. This, together with the passage of heavy machinery over the entire playground, has created a compacted soil layer about 30 cm thick capped by the almost cement-hard gray material. Future archeological investigations will encounter an upper fill that is very difficult to excavate by hand.

Near the center of Trench B in its east profile, a small isolated pocket of complete and broken bottles, ceramics, and other household debris was discovered. Occurring immediately above the black soil about 30–50 cmbs, it might have been the source of artifacts noted near the center of Trench B. Judging by the concentration's content, mass, and orientation of the materials (nearly all bottles were oriented north-south), this concentration might represent the garbage from a single household, possibly the result of a single discard event. It includes food and condiment jars, the remains of one beer bottle, a ceramic

creamer, a porcelain cup, a souvenir plate, and an ivory toothbrush fragment (Table 6). There were metal can fragments, but they were in very bad condition and were not collected. Other artifacts collected from Trench B include glass and ceramic vessel fragments, bone fragments, a leather strap, a non-ferrous metal spoon, and a glass furniture coaster (Table 6).

Monitoring Brick Well Discovery Associated with Structure 7, 2003

During the winter of 2003, while BRVB contractor All Pro Construction was excavating an elevator shaft, a circular brick structure was located under the Monroe Elementary School adjacent to the north side of the chimney in the southeast corner of the basement, approximately 4½ ft below the basement floor and between 10 and 14 ft below the original grade, roughly the first floor of the Monroe School (Figure 6). After consulting with MWAC Archeologists Jeffrey J. Richner and Jay Sturdevant, the feature was recorded by Midwest Regional Office Historic Architect Mark Chavez and the BRVB staff (Chavez 2003; Sturdevant 2003). The structure is constructed of dry-laid bricks and filled with gravel or limestone and construction waste materials. There was apparently no parging or mortar anywhere on the bricks, the lack of which indicates that this feature was not used as a cistern. Structure diameter was difficult to determine but was estimated at about 36 in (91.44 cm). Since the structure was not parged and because of its construction, size, and location relatively deep below the original grade surface, it was interpreted as a well. This feature was constructed prior to the 1926 Monroe Elementary School and is located on Lot 513 in the back yard of the historically significant Structure 7, which dates to 1873 or later (Figure 6).

William Hunt, Monitoring Sign Installation, 2003

The purpose of this fieldwork was to monitor the excavation of a trench where concrete footings were to be placed for the National Park Service sign at the Monroe Elementary School. Excavation was conducted with a small, tracked backhoe using an 18-in bucket. The trench was located 3.65 m west of the west edge of the north-south sidewalk bordering Monroe Street and 4.60 m south of the south edge of the east-west sidewalk paralleling 15th Street (Figure 6). It was 5 m long (north-south), 56 cm wide, and excavated to a depth of 1 m. No artifacts were recovered from the trench fill, although a piece of slate and several broken bricks were noted. Stratigraphy at this location was not complex. The upper 10 cm of fill is a yellowish brown clay mixed with black loam. Between 10 and 20 cmbs, the fill is composed of a light tan sand containing small amounts of broken brick and mortar. From -20 cm to the base of the pit, the fill is a black loam mixed with some construction material. Clearly, the trench did not penetrate below the historic level as the original pre-1926 ground surface was not reached.

The excavation encountered two trenches. One of these, bearing a tile drain, was located in the extreme northern end of the footing trench. The tile and its trench angled southwest to northeast, the center of the tile being 24 cm from the trench's northeast corner and 82 cm from the trench's northwest corner. While the north edge of the old trench's edge was not encountered, the south margin of the trench was noted at 62 cm from the northeast corner of the footing trench angling to a point 1.05 m from the northwest corner of the footing trench. Another trench of unknown origin and purpose crossed the footing trench at a right angle. This trench was 52 cm wide and was centered 1.61 m from the north end of the footing trench.

Ann Bauermeister, Monitoring Sewer Line Installation, 2003

In August 2003, MWAC Archeologist Ann C. Bauermeister monitored the installation of a sewer line west of the Monroe Elementary School. The purpose of the monitoring was to evaluate and document a deposit of historic materials that had been exposed by the construction crew during trench excavations. Onsite monitoring by an archeologist was not initially required for the sewer line installation. However, All Pro Construction Forman Cal Pegram had worked with archeologists on previous projects at BRVB where archeological materials were encountered and agreed to notify MWAC in the event of such findings if an archeologist was not present. Following the discovery of the buried historic materials, it was

decided that an archeologist would record the deposit and monitor the remainder of the excavations. A small sample of cultural materials was collected from the 2003 sewer line trench.

The 2-ft-wide sewer line trench is oriented approximately south-north and parallels the school building 7 m to the west (Figure 6). Plastic pipe for the sewer line was laid at the base of the trench as the excavations proceeded in a northerly direction. Trenching was nearly complete when the archeological deposit was encountered, leaving just a small portion yet to be excavated. Once the archeological features were recorded, the 2003 sewer line trench was extended to the north until it intersected the main sewer line, which runs west to the alley from the west foundation of the Monroe Elementary School between the north cafeteria wall and the light well. Archeologist Hunt identified a historic sandstone foundation while monitoring the excavations for the main sewer line in April 2002; see above discussion. This feature was identified as the remains of Structure 14 (Figure 5). The main sewer line trench was rerouted following this discovery to avoid impacting the foundation (Hunt 2002).

The exposed portion of the archeological deposit measured 3 m north-south, occurring 50–75 cm below the asphalt surface in a 40-cm-thick layer of dark brown loam fill heavy with friable material. The upper 50 cm is a lighter brown sandy clay loam fill and below the deposit is a layer of very dark brown clay loam. The deposit consists of soft orange bricks of varying size and completeness, mortar, plaster, concrete, and burned materials—all of which were very loosely consolidated with no discernable pattern (Figure 25). In relation to location of the trench, the closest structure depicted on the composite map is Structure 13 (Figure 5). However, based on the different layers of fill material and the mixed nature of the contents within each strata, it was obvious that the materials had been deposited following the demolition of a building and did not represent the remains of an *in situ* historic structure. These archeological features date to the demolition of the pre-1926 structures that preceded construction of the Monroe Elementary School.

Material Culture from 2001–2003 Monitoring

The material culture collection made for each monitoring project is presented here in detail for several reasons. Each assemblage represents a distinct functional and depositional context when compared to other areas on the BRVB property. For example, the occupied lots on the west side of Monroe Street reflect the primary deposition of household and surrounding yard contexts. In contrast, the deposits found on the east side of Monroe Street are clearly related to dumping on a neighborhood scale. For analytical and comparative purposes it is important to keep these assemblages separate so that variations in cultural behavior may be better understood when comparing domestic (i.e., lots with structures) to neighborhood dump areas (i.e., Playground Field, Feature 3) where neighborhood inhabitants have been depositing trash and other discarded materials.

Another aspect that must be understood in the contexts and confines of these archeological monitoring projects is that collections were not made in a statistically comparable manner. Utilizing methods of random sampling and more comprehensive data recovery techniques that are typically part of modern archeological excavations would in all likelihood produce a material culture assemblage much higher in smaller-sized objects and fragmentary items (i.e., bottle glass fragments, beads, decorative items, and ceramic sherds). Because of the substantial amounts of sediment being removed by the backhoe during trenching, it was difficult to recover items other than whole items or large fragments. However, an attempt was made by all the MWAC archeologists to collect the most diverse set of items in order to produce as close an estimate as possible to the overall nature of the BRVB archeological assemblages represented on both sides of Monroe Street. In this regard, the artifact analysis presented below is a significant and accurate reflection of the material culture contained within BRVB, which can be used to better understand the cultural behaviors of the neighborhood residents.

The artifacts were classified using the following functional categories: Food Distribution and Consumption, Medicine and Health, Household Items, Personal Items, Construction and Electrical Materials, and Animal Husbandry. Each of these functional categories could include numerous artifact and material types but each is reflective of a certain activity or implied function of an item. The primary focus of this analysis will be on the most numerous items recovered, glassware and ceramics. In all, 481 items were collected during the 2001–2003 monitoring projects.

Both glass and ceramic vessels were initially sorted by complete item or vessel fragment. The vessel fragments were then sorted by several attributes such as color, decoration, and vessel shape. Ceramics were broken down into types including Whiteware, Porcelain, Ironstone, and Stoneware. Glassware items were further broken down into the functional categories defined by Jones and Sullivan (1985:71) including Household, Medicine, Foodstuff, Liquor, Drink, Ink, Toiletry, Preserving, Tableware, Tumblers, Indefinite, and Unidentified (Table 7). Vessel form was added to the type designation for both glass and ceramic vessels with each being further broken down into categories such as Cups, Plates, Saucers, Bottles, Jars, Unidentified, etc. Vessel fragments were grouped together as an individual lot based on similar characteristics such as object type, color, decoration, etc. Complete containers were each analyzed individually.

Because of the high number of complete and nearly complete glass containers in the Sturdevant and Hunt 2002 collection, specific vessel attributes were also recorded including finish, body, and mold types (Figures 26 and 27). Bottle finishes in particular can provide valuable information concerning vessel function, closure type, etc. As shown in Figure 26, a bottle finish is defined as the area above the neck and shoulder and includes the lip, string rim, and bore (Jones and Sullivan 1985:76).

Artifacts from Connor 2001 Monitoring

Construction Materials

One incomplete brick (BRVB 216; Figure 28) labeled FREDONIA was the only item collected by Connor (2001). During the early 20th century, brick manufacture was a prosperous business throughout

many areas surrounding Topeka including Pittsburgh (Kansas), Leavenworth, Fort Scott, Wichita, amounting to over $1.7 million in revenue in 1914 (Conelley 1918; Jochims n.d.).

The FREDONIA brick was manufactured in the town of Fredonia, Kansas, which was settled in 1868 (Connor 2001:3). Two companies have been identified from Fredonia that manufactured bricks in the early 20th century. Fredonia Brick Company is listed in the 1904, 1908, and 1912 *Gazetteers* (Jochims n.d.). The Excelsior Brick Manufacturing Company is also listed in the 1908 and 1912 *Gazetteers* (Jochims n.d.). The early-20th-century dates for these companies are reasonable and fit well with the other known data sets from BRVB. Conversely, exact dates for when these companies were in business have yet to be determined, making precise dating of the FREDONIA brick somewhat speculative.

Artifacts from Stadler 2001 Monitoring

Numerous artifact types and a total of 30 items from both domestic and school contexts were recovered during the Stadler 2001 monitoring project (Table 3). A cache of seven glass bottles and six glass jars in a metal bucket was found on the concrete basement floor of the original Monroe School just inside the southeast foundation corner (Figure 7). Included in this cache of bottles were foodstuff, medicine, household, ink, toiletry, and miscellaneous bottle types. All of the bottles from the cache, except for one incomplete bottle (FS 19), were recovered in complete and good condition.

Food Consumption and Distribution

Bottles, Jars, and Lid Liners. Two foodstuff containers (1 bottle, 1 jar) were associated with the cache from the Monroe School. The bottle was a colorless, Oval Ring Pepper Sauce bottle (Putnam 1965:210) with the body decorated with numerous horizontal ribs (Table 3). The maker's mark is from the Owens Bottle Co. dating between 1911 and 1929 (Toulouse 1971:393). The pepper sauce bottle had a double ring finish and was made using an automatic Owens Bottle Machine with a two-piece post bottom mold.

The second foodstuff container (FS 16; Table 3) was a jar and ferrous metal lid similar in form to the Universal Condiment Jar illustrated by Putnam (1965:225). This jar has a continuously threaded finish used to accommodate the screw-on metal lid and a maker's mark similar to the pepper sauce bottle's Owens Bottle Co., 1911–1929 (Toulouse 1971:393).

Three jar lid liners made from white milk glass were also recovered during the Stadler (2001) monitoring project (Table 3). Each lid measures 2.5 in (6.35 cm) in diameter and 0.2 in (0.5 cm) in thickness. These lid liners were used to seal the tops of canning jars used during the early to mid-20th century.

Personal Items

Toiletry Bottles. A relatively fancy toiletry bottle with its stopper was recovered with the bottle cache by Stadler in 2001 (FS 17; Table 3). This colorless, opaque bottle was comparable to the Gothic Extract Panel bottle published by Putnam (1965:55). The toiletry bottle has paneled sides that taper up and an extract finish used to accommodate a stopper-type closure. Located on the bottle base is the maker's mark of an 'I' inside a diamond indicating that the bottle was manufactured by the Illinois Glass Co. sometime between 1916 and 1929 (Toulouse 1971:264).

Medicine and Health

Bottles and Jars. Containers for medicine were the most common with five medicine jars (FS 10–14) and two medicine bottles (FS 15 and 22; Table 3). All five medicine jars are similar to the Common Sense Pomades with a continuous threaded finish (Putnam 1965:44) and are embossed with / TRADE MARX / VASELINE / CHESEBROUGH / NEW-YORK /, Table 3). Discovered in 1859 by Robert A. Chesebrough, Vaseline™ was first patented in 1871 (Fike 1987:56; McGuire 1991:637). Vaseline™ is a petroleum-based ointment that will not spoil or become rancid (Bastedo 1918:33). Classified as an emollient, Vaseline™ is used to soften the skin or sooth skin rashes and irritations (McCormick 1906:785, 793). Cork bottle enclosures were discontinued and replaced with metal screw-on lids after 1908 (Fike

1987:56). Since all the Vaseline™ jars recovered from the bottle cache had continuous threaded tops, they must date to 1908 or later.

One medicine bottle is an Ideal Oval shape (Berge 1980:62) with flat sides and round corners, and has a Patent finish (FS 15; Table 3). This bottle is embossed with / C.A. MURDOCK MFG. CO. / KANSAS CITY. / on both of the shorter sides of the container. The bottle was manufactured using a three-piece cup bottom mold and exhibited an Owens scar on its base from an automatic Owens Bottle Machine. The maker's mark is that of the Illinois Glass Co. and dates from 1916 to 1929 (Toulouse 1971:264).

The other medicine bottle from the corner of the Monroe School was similar to the Round Prescription bottles illustrated by Putnam (1965:29) with a round vessel shape and a Prescription finish (FS 22; Table 3). The maker's mark on this bottle was used by the Metro Glass Bottle Co. from Jersey City, New Jersey, during the years 1935–1949 (Toulouse 1971:342–343).

Household Items

Ink Jar and Decorative Glassware. Also in association with the bottle cache bucket was a Sanford's two-ounce ink jar with the cork stopper still intact (FS 21; Table 3). The jar is embossed with the Sanford Manufacturing Company logo on one side and SANFORD's on the base. The form is similar to the Square Ink bottle type illustrated by Putnam (1965:59) with a squat body and well-defined shoulder and neck with an extract finish. This type of jar dates from circa 1916 or later (Sanford Manufacturing Company 1916) and probably to the 1930s or 1940s because of the valve mark on its base.

Domestic artifacts from household contexts include a glass teacup fragment and fragments of a decorative glass vase (Table 3). It is likely that these items were associated with one of the houses that were located nearby.

Marble and Miscellaneous Items. Other items such as pencil fragments, a marble, a ceramic doll arm, and a plastic bead are likely associated with the school children and student activities on the site (Table 3). The marble is a German handmade glass variety with a white laticino core and ribbon spirals of blue and green. The marble dates from the mid 19th to the early 20th centuries (Randall 1971:104–105) (Table 3).

Artifacts from Hunt 2002 Monitoring

Food Consumption and Distribution

Ceramics. Ironstone, sometimes called Granite or Hotel ware, is a highly fired, semi-vitreous earthenware that was produced in England throughout the 19th and 20th centuries as an alternative to the porcelains made in China (Godden 1966:xxiii-xxiv). One ironstone fragment recovered by Hunt included a transfer-printed maker's mark with the words / ALFRED M… / and / ENGLA… / (Table 4). This mark was used by the Alfred Meakin Ltd. pottery company in Staffordshire, England, between 1881 and 1897 (Godden 1964:425; Thorn 1947:74). These dates fit within the expected time range for Structure 14 illustrated on the 1889–1896 Sanborn maps.

Glass Drink Bottle. One Drink bottle was recovered during the Hunt 2002 monitoring (BRVB 241; Figure 29; Table 4). Bottles with rounded bases, also called torpedo-shaped bottles, were created with the specific purpose of not allowing the bottle to stand up (Munsey 1970:105). Because cork contracts when dry, the cork stoppers needed to be kept moist in order to expand and seal the bottle opening. Round bottom bottles containing soda and mineral water were manufactured from 1860 to 1913 (Newman 1970:73). The round-based bottle fragment found near Structure 14 was mold blown using light green glass. The historic date range for this type of bottle fits well with the dates from the various Sanborn maps, which illustrated structures on the west side of the Monroe Elementary School property.

Artifacts from Chidley 2002 Monitoring and Limited Testing

When compared to the other monitoring projects undertaken at BRVB, the Chidley 2002 monitoring is most reflective of primary deposition of domestic materials in contexts directly related to individual structures within the Monroe School neighborhood. During this monitoring project, 137 items were collected.

Food Distribution and Consumption

Ceramics. The most numerous items associated with food distribution and consumption are the sixteen ceramic vessel fragments that were collected (Table 5). Ceramic types represented in the collection included porcelain, whiteware, ironstone whiteware, and stoneware vessels. Most of the vessel forms were unidentified except for an ironstone saucer fragment.

Porcelain had the highest count with a total of eight individual vessel fragments (Table 5). Porcelain differs from refined earthenware in that it is a translucent ware that is vitrified when exposed to the high firing temperatures during manufacture. Made from kaolin clays and fired at 1300–1450°C, the porcelain manufacturing process produces vessels with an extremely hard body that is impenetrable by water. Originally developed in China during the late 6th century, porcelain was not successfully manufactured in Europe until the early to mid 1700s (Godden 1966:xvii; Rice 1987:16–17, 19). Since the manufacture of porcelain continues to the present day, undecorated porcelain sherds are not a reliable chronological marker for dating the age of the deposits from BRVB. However, all porcelain vessel fragments collected by Chidley (2002) were decorated either with polychrome floral decals, transfer printing, gold gilding on the rim, or decorative molding (Table 5). Four porcelain sherds were decorated with floral print decals and gilding (BRVB 471; Table 5). The introduction and use of decal print decorations is usually referred to as "decalcomania." This technique was developed in 1845 and came into widespread use in the 1860s and has continued to the present (Derven 1980:123). The use of gold paint or gilding along the rim also began during the mid-19th century and continued into the early 20th century (Derven 1980:132). The molded floral designs are known as "Repousse" or "Relief Molding" and were used from the 1820s to 1900s, with its peak popularity after 1860 (Derven 1980:125). Based on the dating of decorative motifs found on the porcelain sherds, the porcelain assemblage is consistent with the known dates for occupation of the Monroe School neighborhood from the late 1860s to 1920s.

One undecorated whiteware sherd was collected from TU 1 within Structure 5 (BRVB 516; Table 5). Whiteware became popular during the 1830s when it replaced Pearlware, and has been used up to the present time (Noël Hume 1969:130). Pearlware vessels are characterized by a blue tint imparted by Cobalt mixed within the glaze in places where the glaze has pooled on the vessel, i.e., crevices at foot rings and handles (Noël Hume 1969:130). Whiteware differs from Pearlware in that its glaze is clear over the entire vessel and looks closer to true white than does Pearlware. Whiteware ceramics are typically mold manufactured using a refined earthenware paste which is porous and requires glazing in order to prohibit absorption of liquids or moisture (Newcomb 1946:230). Decorative techniques used on whiteware vessels include transfer printing, hand painting, sponging, spattering, polychrome decals, molding, (i.e., shell edged) and colored slips. Three body sherds of plain whiteware were recovered by Chidley (2002).

Unlike the more porous whiteware Ironstone, is a relatively high-fired, semi-vitreous earthenware first produced in England during the 1840s and then throughout the 19th and 20th centuries as an alternative to the porcelains made in China (Godden 1966:xxiii-xxiv; Wetherbee 1980:18). Raw materials used to create ironstone had to undergo a multi-step production process in order to produce ironstone vessels. First, a kaolin clay is mixed with pulverized flint powder and then fired to produce what is known as "China Stone or China Clay" (Wetherbee 1980:31). This China Stone was then subjected to a further reduction process where it was crushed and ground into a powder suitable for making a paste. Cobalt Oxides were added if whiter pastes were desired (Wetherbee 1980:31). Initially, ironstone wares were glazed with lead. However, because lead glazing was later determined to be toxic, feldspar or alkaline glazes have been used to give vessels a clear glossy finish. Also named Flint ware, Granite ware, Hotel ware, and Stone China, ironstone is a durable ceramic ware that is usually formed into large vessels and serving

containers such as pitchers, bowls, serving dishes, cups, and plates. Ironstone wares also tend to be decorated using molded ornate designs and appendages that are separate parts attached to the overall vessel. Four ironstone vessel fragments were recovered by Chidley in 2002. Two sherds were decorated with polychrome floral decal prints (BRVB 470; Table 5). One of the polychrome decal-decorated sherds was from a saucer and had a partial maker's mark of / TO … NTO / OHIO /. This manufacturer was probably the American China Company from Toronto, Ohio, which produced ceramic dinner sets, toilet sets, and sets of odd dishes from 1894 to 1910 (Lehner 1980:23).

Glass Bottle Stopper. A colorless glass finial from a club sauce type bottle stopper was recovered from the upper 40 cm of fill from TU 1 (BRVB 517; Table 5). The stopper is broken off at the neck and is missing the lower shank portion. The disc-shaped finial portion measures 24.44 mm (0.963 in) in diameter and 6.08 mm (0.240 in) thick. The finial top is dome shaped in cross section with no maker's mark or embossing. Club sauce type stoppers used for small-mouthed commercial bottles and numerous content types are common at late-19th- and early-20th-century archeological sites (Jones and Sullivan 1985:152).

Spoon. One non-ferrous metal spoon is part of the Chidley 2002 General Collection (BRVB 459; Table 5). This was the only food-related utensil recovered during the monitoring on the east side of the Monroe Elementary School. It is an undecorated tablespoon and measures approximately 21.59 cm (8.5 in) long and is missing a portion of its bowl.

Medicine and Health

Bottles and Jars. Eight glass vessels used as containers for medicine and health-related products were represented in the Chidley collection (Table 5). The medicinal product assemblage included two complete jars (BRVB 468, 486), three whole bottles (BRVB 463, 469, 487), and three sets of bottle fragments (BRVB 461,462,496). Only one bottle fragment (BRVB 496) was recovered from the Structure 7 foundation, the other containers were part of the General Collection provenance (Table 5). The two complete jars forms were vessel types that would have contained ointments or pomades when purchased by the consumer.

One container is a white glass jar with a continuous thread finish and a mold seam over the top of the vessel lip indicating it was manufactured using an automatic bottle machine sometime after 1904 (BRVB 486; Table 5). This jar is labeled with the manufacturer's mark / ME[NTHOL]ATUM / …EC / TRADE MARK /. The Yucca Company was started in Wichita, Kansas (Figure 30), in 1889 by Albert Alexander Hyde (Fike 1987:83). However, the Mentholatum brand was not formally patented by the Yucca Company until 1894 (McGuire 1991:409). After the growing success of his Mentholatum salve, Albert Hyde dissolved his Yucca partnership and created the Mentholatum Company in 1906. During the late 1930s the company grew and moved its headquarters to Buffalo, New York (Historic Preservation Alliance 2003). Mentholatum continues to be sold commercially in the United States.

The other medicine jar (BRVB 468; Table 5) was also manufactured to contain pomades or ointments. It is made from white glass and resembles the circular body with continuously threaded finish of the Tall Ointment type shown by Putnam (1965:93). This jar has no identifiable maker's mark and its origin could not be determined.

A bottle that had once contained petroleum jelly was labeled / C. R. BAILEY's / CELEBRATED / PETROLEUM JELLY / NEW YORK / (BRVB 469; Table 5). This round jar with a relatively pronounced neck is made of colorless glass, with a vial finish, and is similar to the Round Pomade Bottle type illustrated by Putnam (1965:44). Charles R. Bailey was in business in New York circa 1890s to 1910s (Fike 1987:238). This date coincides with the manufacturing signatures left on the bottle including the presence of seams resulting from a two-piece cup bottom mold and mold seams that stop at mid-finish on the bottle neck, with the lip and upper finish portions completed with a lipping tool. Two-piece cup bottom molds and lipping tool finishes were used extensively for bottle manufacture between the 1850s and 1920s (Jones and Sullivan 1985:43, 45).

A complete bottle (BRVB 487; Table 5) is similar in form to the Round Pomades No. 285 type illustrated by Putnam (1965:44), with a well-defined neck and constriction at the shoulder. This bottle was manufactured using a two-piece post bottom mold and has a continuous thread finish. A valve mark is located on the base indicating that this bottle might have been made during the 1930s or 1940s when machines producing valve marks were popular (Munsey 1970:40–41).

One medicine bottle fragment is embossed with / PURE DRUGS / [T]OPEKA / [K]ANSAS / (BRVB 461). This bottle is colorless, and its form was with at least one flat side and rounded corners. Based on its markings, the bottle was sold in one of the local Topeka drug stores. Thirteen commercial druggists and retail drug stores were listed in the 1874–1875 *Topeka City Directory* and the 1912 *Polk's Kansas State Gazetteer and Business Directory* (Table 6). During the late 19th and 20th centuries, it was common practice for drug sellers to manufacture and bottle their own medicines for sale to the public.

Household Items

Bottles. One complete bottle was classified as a household bottle (BRVB 523; Table 5). This bottle was similar to Hopkins Square in horizontal shape (Putnam 1965:33), but the overall form of the bottle, with a relatively long and well-defined neck, closely resembles the Long Necked Blake type as illustrated by Putnam (1965:57). The maker's mark on the base of the bottle, an 'O' inside a square, was used by the Owens Bottle Co. from 1911 to 1929 (Toulouse 1971:393). The household bottle could have been used to contain oil or some other type of non-medicinal or non-food liquid.

Three colorless ink bottles collected by Chidley (2002) were of unknown provenance and were included in the General Collection (BRVB 523; Table 5). Two of the three ink bottles had scaring on the base typical of the Owens Bottle Machine and were manufactured using two piece cup bottom molds. These bottles date to the 1904 introduction of the Owens Bottle Machine or later. One of the machine made ink bottles was embossed with / WATERMAN's INK /. The other ink bottle had a mold seam to mid-finish and was manufactured using a two-piece post bottom mold. Since the finish on the non-machine made bottle was created using a lipping tool, this bottle probably dates to between the 1850s and 1920s (Jones and Sullivan 1985:43, 45).

Ceramics. Another ironstone item of interest is a chamber pot lid fragment (BRVB 472; Table 5). The circular lid is dome shaped and has a diameter of approximately 5 in (12.7 cm). Around the base is a heavy vertical flange used to seat on top of the chamber pot vessel. The only decoration was an unidentified molded mark or decorative seal on the lid top.

Personal Items

Personal Items are defined here as objects or parts of objects that would have belonged to and been used by a single individual. A total of seven *Personal Items* including three marbles, two pencil fragments, a Prosser (China) button, a shell button, a purse clasp, and a thimble were collected by Chidley (Table 5).

Marbles. The three marbles recovered during the monitoring included two ceramic marbles (BRVB 489, 522) and one undecorated glass marble (BRVB 482; Table 5). One ceramic marble (BRVB 522), known as a Bennington marble, came from Test Units 2 and 3 at the northeast corner of Structure 5. The marble has a diameter of 23.94 mm (0.943 in) and weighs 15.4 g. The surface of the marble is irregular in places and has a small hole in one side that might have been drilled or the result of an inclusion that has since fallen out. The Bennington marble has a blue glaze with "eyes" or white spots created during the glazing process. This type of German-made marble first appeared at sites in the Midwest during the 1890s and were sold up to the time of World War I (Carskadden and Gartley 1990:57).

The second ceramic marble type is an undecorated porcelain or China marble (BRVB 482) from the Chidley 2002 General Collection. This marble measures 11.30 mm (0.445 in) in diameter and weighs 1.9 g. Porcelain marbles are made from kaolin clays fired at extremely high temperatures to achieve a vitrified ceramic body. Introduced prior to the 1840s, porcelain marbles were a popular alternative to the more expensive glass marbles during the middle to late 19th century (Carskadden and Gartley 1990:58)

With the introduction of industrialized glass marble manufacture, porcelain marbles became scarce during the 1900s and were no longer manufactured after 1910 (Carskadden and Gartley 1990:58). Therefore, this porcelain marble (BRVB 482) probably dates to between the 1870s and early 1900s.

The undecorated colorless glass marble (BRVB 482) is also part of the General Collection. This marble shows no signs of hand manufacture and is probably of recent origin. It is possible that this was a decorative marble or a marble unrelated to traditional marble games or uses (Jason Jurgena, personal communication March 18, 2003).

Buttons. Two Prosser (China) buttons and one shell button were collected by Chidley (2002) as part of the General Collection (BRVB 483 and 492; Table 5). The two Prosser buttons are of the four-holed dish type and have diameters of 13.50 mm (0.532 in) and 13.17 mm (0.519 in). Prosser or "china" refers to the Prosser manufacturing process where fine clay is mixed with quartz or finely ground ceramic material and then fired at high temperatures to create essentially a porcelain button. Because there has been some controversy over the material nature of these buttons, Sprague (2002:111) is emphatic that "china buttons must be identified in archeological reports as ceramic, *not* glass" (emphasis in original). One morphological difference between Prosser and glass buttons is that the underside surface of a Prosser button tends to be rough and pitted when compared to the "mirror-like" underside surface of a glass button (Sprague 2002:111). Prosser buttons were patented in 1840 by Thomas Prosser in London, England in 1841 by his brother Thomas Prosser of New Jersey (Sprague 2002:113). Along with reflecting functional uses and meanings for the user, Prosser Buttons also represent mass production within the button industry, i.e., there was a shift from hand-made buttons, such as the shell button described below, to mass-produced buttons in large quantities. This shift effectively reduced prices so that the mass-produced buttons would have been available to most economic levels of society (Sprague 2002:124).

A single disc-shaped shell button (BRVB 492; Table 5) with a carved ring near its outer edge was recovered by Chidley (2002). The button is a two-hole sew-through variety utilitarian button. It measures 17.91 mm (0.705 in) in diameter and 1.79 mm (0.071 in) in thickness. Freshwater shell buttons are distinguished from marine shell buttons by their less brilliant and dull luster (Hunt 1986:11). However, fancy shell buttons were carved with intricate and ornate designs that rival other button types and were also carved as shell inlays for other types of metal buttons. Ground and carved shell buttons have been reported previously within BRVB as well as at numerous other 19th-century archeological sites throughout the United States (Claassen 1994; Gradwohl and Osborn 1984; Hunt 1986; LeeDecker et al. 1992; Stadler 2002). Unlike the ceramic Prosser buttons, which were mass produced at relatively low cost, the manufacture of freshwater shell buttons was a labor-intensive cottage industry, even with the introduction of machine manufacture during the late 19th century (Claassen 1994:65; Hunt 1986:11; Luscomb 1967:177). Major sources of freshwater shell buttons during the early 20th century were the small factories at Muscatine, Iowa, along the Mississippi River. In the early 1900s several rivers in Kansas were also musseled for button raw materials (Claassen 1994:43). Claassen (1994:80) has demonstrated that freshwater shell button production and usage peaked from 1898 to 1930, further confirmation that the utilitarian use of freshwater shell buttons would have been commonplace in the Monroe School neighborhood during its residential occupation.

Metal Items. The non-ferrous metal thimble is from the North Foundation of Structure 15 (BRVB 505; Table 5). The thimble is conical in shape, tapering near the top and is decorated with stamped stippling on the top and sides. It has a maximum diameter of 16.78 mm (0.656 in) and a diameter of 12.23 mm (0.482 in) at the top and measures 21.31 mm (0.839 in) long. Thimbles are common to many archeological sites throughout the United States dating from the early 17th century or later (Noël Hume 1969:255–256). They can vary in size, shape, and decoration depending on the intended user and functional role for the thimble (Noël Hume 1969:255–256).

A non-ferrous metal purse clasp fragment was collected with the General Collection artifacts (BRVB 477; Table 5). The clasp fragment is made out of a relatively thin piece of metal and was probably machine manufactured. At one end of the clasp fragment is a round eyelet, which would have been used to attach a small chain or string used to carry the purse. There were no other decorative features on the clasp.

Construction and Electrical Materials

Tools. One iron spokeshave (BRVB 473) is the only woodworking tool in the Chidley (2002) collection (Table 5). The spokeshave would have been primarily a woodworking tool and would have functioned similar to a plane used to shave and smooth wood surfaces, only it would be pulled toward instead of pushed away from the body. A spokeshave is defined as "a tool … with handles formed at each end and a blade mounted to its bottom. The body helps control the angle and depth of cut" (Gaynor and Hagedorn 1993:116). The spokeshave from BRVB measures approximately 228 mm (9 in) long and would have had handles on both sides. However, both sides were broken off at narrow sections of the handle, with one handle missing completely. The blade probably measured 52.60 mm (2.08 in) long and would have been seated at an angle in the center of the spokeshave and been held in place with a cap and tightening screw. This spokeshave was cast manufactured and resembles the Stearns' Iron Spoke Shave Model No. 3 as illustrated by Barlow (1991:194).

Window Glass. Broken window glass is one of the most common items found on nearly all historic archeological sites. Eleven pieces of broken window glass were collected in association with Structures 5, 7, and 15 (Table 5). All of the window pane glass was light blue and measured between 2.12 mm (0.08 in) and 4.28 mm (0.16 in) in thickness with an average thickness of 2.97 mm (0.11 in). One window glass fragment (BRVB 502) was decorated with a molded swirl and starburst pattern.

Nails. Along with window glass, nails are another artifact common to most historic archeological sites. Sixteen nails were recovered by Chidley (Table 5). Seven were identified as cut nails, the remaining nine were in relatively poor condition and were classified as indeterminate nails. By the early 19th century cut nails were entirely machine made, being cut from thin sheets of iron plate and headed using automatic machines (Adams 2002:68; Wells 1998:83–86). Cut nail manufacture began during the late 18th century and continued into the 1880s with the introduction of the wire nail (Wells 1998:92). However, the dating of cut nail use has recently been revised to include British manufactured wire nails that date to the 1860s, as well as lag time and recycling of cut nails during the early 20th century has made the general 1890s date for wire nail use not as concrete as once thought (Adams 2002). Because of the age range of the late-19th- and early-20th-century structures at BRVB, further archeological investigations would be well suited to provide a new source of evidence concerning the transition and use of different nail technologies during the 1880s and early 1900s.

Door Knob. A single door knob was collected as part of the Chidley 2002 General Collection (BRVB 481; Table 5). The knob is round and made of white ceramic with an iron shaft extending from the back that would have attached to the door latch mechanism. It has a diameter of 57.57 mm (2.26 in) and weighs 79.3 g. Similar white porcelain door knobs are listed in the 1897 Sears & Roebuck catalog for 8 cents apiece or 87 cents a dozen (Sears, Roebuck & Co.1897:90).

Electrical Hardware. Hardware related to home electricity and power sources included one ceramic plug fuse (BRVB 497) and a carbon battery rod (BRVB 475; Table 5). The plug fuse measures 32.40 mm (1.28 in) in diameter and has continuous threads near the midsection that were used to hold the fuse in place. Plug fuses were used during the first half of the 20th century as a way to control power surges and the overloading of electrical circuits that could cause a fire. The fuse functions as a "weak link" in the electrical circuit and will cut off the flow of electricity by destroying its inner wire, thereby disconnecting the circuit (Philbin and Ettlinger 1988:361).

The carbon battery rod (BRVB 475) measures 98.63 mm (3.88 in) long and has a diameter of 11.29 mm (0.45 in). One end of the rod is tapered and then flattened at its point. The other end is heavily worn and was probably used as a battery post with an attachment clamped on to the end.

Artifacts from Sturdevant and Hunt 2002 Monitoring

The artifact assemblage collected by Sturdevant and Hunt during the geothermal well monitoring project constitutes the largest artifact collection made during the various 2001–2003 monitoring projects at BRVB. The Playground Field materials are considered as a distinct analytical unit from other collec-

tions made at BRVB because the Playground Field lots are located on the east side of Monroe Street and have always been separated spatially from the occupied lots with structures on the west side of the street. The Playground Field assemblage represents a distinct functional and depositional context when compared with assemblages recovered from the west side of Monroe Street, which primarily reflect household and surrounding yard depositional contexts. For analytical and comparative purposes it is important to keep these assemblages separate so that variations in cultural behavior may be better understood when comparing domestic (i.e., lots with structures) to neighborhood dump areas (i.e., Playground Field, Feature 3) where neighborhood inhabitants have been depositing trash and other discarded materials.

Because of the substantial amounts of sediment being removed by the backhoe during the geothermal well trenching, it was difficult to recover artifacts other than whole or large items. However, an attempt was made to collect a sample of the most diverse set of artifacts possible in order to produce a reasonable estimate of the Monroe Neighborhood dump assemblage. In this regard, the artifact analysis presented below is a significant and accurate reflection of the material culture contained within the dump site, which can be used to better understand the cultural behaviors of the neighborhood residents.

In all, 301 items were collected from the Playground Field lots during the geothermal well trench monitoring (Table 7). Artifact counts were highest on the west side of the Playground Field lots in the area of Feature 3. Trench B had the highest numbers of artifacts with 104 items and Trench 4 the lowest count with 3 items (Figure 31). Overall, the artifact assemblage from the Playground Field reflects dumping of domestic and construction related materials. Most items that are non-construction in nature consist of domestic goods such as glassware, ceramic tableware, metal containers, faunal remains, and personal items. Artifacts that were related to house construction or utilities indicate the use of numerous material types and technologies that were incorporated into the buildings. The materials collected during the geothermal well trench monitoring have provided a wealth of information concerning the late-19th- and early-20th-century residents of the Monroe School neighborhood.

Food Consumption and Distribution

Glass Foodstuff Containers. Glass containers for packaging foodstuffs are defined by Jones and Sullivan (1985:71) as "sold prepackaged with food, sauces, spices … or empty, with the intention that it be filled in the home and stored until required." This category includes Foodstuff Bottles and Jars, with total of 29 complete vessels (25 bottles, 4 jars) and 10 vessel fragments (4 bottle, 6 jar; Table 7). Glass foodstuff containers account for 9.6 percent of the total Playground Field artifact assemblage and 29.3 percent of the total glassware recovered during the geothermal trench monitoring (Figure 32).

Several unique finish types were recorded on foodstuff bottles. The finish types most frequently represented on foodstuff bottles were the cap seat (n = 9) and continuous thread (n = 8) types (Table 8). Three foodstuff bottles had crown finishes that were for crown cap closures. Crown caps are crimped over a rounded bottle lip, effectively sealing the container and its contents. This closure type was patented by William Painter in 1892 and has seen continued use into the 21st century (Jones and Sullivan 1985:163). Other lip types on foodstuff bottles and jars included the packer, trumpet mouth, and vial (Table 8). These three lip types would have accommodated some form of cork or glass stopper.

In terms of manufacturing techniques, a narrow majority of the foodstuff bottles were machine made (53.6 percent), while mold blown bottles utilizing two- or three-part molds represented 35.7 percent of the total (Table 8). Because it is difficult to distinguish semi-automatic and fully automatic machine made bottles on the basis of morphological attributes alone, only bottles with a scar on the base from an Owens bottle machine or a valve mark could be positively identified as coming from fully automatic bottle machines.

The use of semi-automatic bottle machines began in the late 1880s and continued into the 1920s, although there was drastic decline in their use after 1904. The Owens bottle machine was patented in 1904 and came into widespread use during the first quarter of the twentieth century. The Owens machine was the first automatic bottle machine and required no manual labor in the production process. Fifty percent of the machine-made bottles from the Playground Field exhibited an Owens scar characteristic of automatic

machine-made bottles. Valve marks were identified on three milk bottles and date to the 1930s and 1940s (Munsey 1970:40–41).

Bottles used for packaging food or condiments were generally colorless with circular, straight-sided shapes (Table 8). However, other forms did occur such as round with paneled sides and rectangular with flat chamfered corners (Table 8). Glass foodstuff containers can be further divided into preserve wares (bottles and jars) and foodstuff liquid bottles. Preserve wares were used to hold solid food items (i.e., olives and pickles) or condiments (i.e., mustard and horseradish). Several bottles were designed to hold contents in a liquid form (i.e., milk, olive oil, ketchup, hot sauce).

Foodstuff: Preserve Ware Bottles. The most numerous and uniform preserve ware shape are five bottles (BRVB 302, 435, 444, 445, 449; Table 7) similar to the "Chicago Cylinder Olive" type illustrated by Putnam (1965:205). The bottles have a circular cross section, a relatively straight body with a slight constriction at the shoulder, which defines the start of the neck, and either a cap seat or trumpet mouth finish. These bottles would have been used for the commercial packing and sale of whole olives. No maker's marks were found on any of the Chicago Cylinder Olive bottles. Four bottles (BRVB 435, 444, 445, 449) were identified as having been machine manufactured, which dates them generally between the 1880s and the 1920s, when semi-automatic and later automatic bottle manufacturing technologies were developed. Two bottles (BRVB 435, 449) had an Owens scar on the base and date to 1904 introduction of the Owens automatic bottle machine.

There were five preserve ware bottles (BRVB 280, 294, 347, 376, 451; Table 7) with continuously threaded finishes. These bottles would have used a metal screw on cap to seal the bottle contents. Three bottles with threaded finishes were used to contain condiments such as mustard and horseradish. Two condiment bottles (BRVB 280 and 294) were similar to the "American Metal Cap Horseradish" bottles illustrated by Putnam (1965:192). These two bottles are both blue-green in color with rectangular, straight-sided bodies with flat chamfered corners. Above the shoulder on each bottle, the neck is circular with a continuously threaded finish. Both bottles had an Owens scar on the base that dates to 1904 or later (Table 8). Bottle BRVB 294 had a diamond maker's mark from the Diamond Glass Co., Royersford, Pennsylvania, which was used from 1924 or later (Toulouse 1971:550–552).

One preserve bottle with a threaded top was embossed "Gulden's Mustard Bottle" (BRVB 376). This squat bottle with a wide body, relatively long neck, and threaded lip was patented by Charles Gulden in 1875 (Zumwalt 1980:191), and was used to package mustard well into the 20th century.

Two of the threaded-top preserve bottles are formed with circular bodies that taper below the shoulder towards the base and have a slight neck between the shoulder and finish (BRVB 347 and 451). One bottle (BRVB 347) resembles the "Tapered Preserve Screw Top" illustrated by Putnam (1965:218) and has an Owens scar on its base which dates it to 1904 or later. The other bottle (BRVB 451) is similar to the "Pineapple Honey" type (Putnam 1965:213). This bottle also had an unidentified 'B' maker's mark on its base. It is machine manufactured and dates to circa 1880s to 1920s.

Four wide-mouth preserve ware bottles were identified in the Sturdevant and Hunt 2002 collection (Table 7). Two of the wide-mouth bottles have circular bodies with paneled sides and a well-defined neck above the shoulder (BRVB 278 and 428). Bottle BRVB 428 had fourteen panels with a flared lip and cap seat finish and was labeled with / THE OTTO KUEHNE PRS. Co. / on the vessel base. The company maintained headquarters in Topeka and Denver during the late 19th and early 20th centuries (OKGENWEB 1998). The Otto Kuehne Preserving Company is listed in the 1912 *Topeka City Directory* at 515 N. Topeka Avenue, with Otto Kuehne as company President (Distant Cousin.com 2003). The other paneled bottle (BRVB 278) is similar to the "Octagon Preserve" type as illustrated by Putnam (1965:220); it is colorless glass with a cap seat finish. This bottle has no maker's mark, but it does have a valve mark on its base, indicating it was made sometime during the 1930s or 1940s.

Two wide-mouth preserve ware bottles were round with straight sides (BRVB 363 and 427; Table 8). Bottle BRVB 363 has a well-defined neck and a flared lip with a cap seat finish; it resembles the "Straight Pickle" type shown in Putnam (1965:190). There were no maker's marks on BRVB 363, but its manufac-

turing signatures suggest that it dates to circa 1880s to 1920s. Wide-mouthed preserve ware bottle BRVB 427 was also circular with straight sides, but it has a shorter, less-defined neck with a vial finish and resembles the "Long Round Preserve" type illustrated by Putnam (1965:218) This bottle was machine manufactured and had an 'H' maker's mark on its base, which was used by Hart Glass Manufacturing from 1918 to 1938 (Toulouse 1971:232).

Two circular candy bottles with eighteen panel sides and cap seat finishes were collected by Sturdevant and Hunt 2002 (BRVB 371 and 433; Table 7). Both bottles have a definite constriction above the shoulder but have short necks below the finish. These bottles resemble the "Stick Candy" type shown by Putnam (1965:66). The smaller of the two bottles was embossed / Bunte / within an oval on the side of the bottle (BRVB 433), indicating it was manufactured by the Bunte Brothers candy company from Chicago, Illinois (Zumwalt 1980:62). During the late 19th and 20th centuries, Bunte Brothers candy company specialized in the manufacture of hard candies, the company was later sold to the Chase Candy Company in 1954 (Chase Candy Company 2003). Based on bottle landmarks, the manufacture dates for both candy bottles are in the range of the late 19th and into the first quarter of the 20th century.

One blue-green glass preserve bottle was similar to the "Oblong Pickle" type (Putnam 1965:186) with a rectangular body and chamfered corners and a well-defined shoulder (BRVB 431; Table 7). Above the shoulder, the neck changes to a straight-sided round shape with a packer type finish. There was no maker's mark on this bottle, and based on bottle landmarks such as mold seams and finish, this bottle was probably manufactured during the late 19th or early 20th century using a two-piece cup bottom mold with a lipping tool finish.

Foodstuff: Preserve Ware Jars. A minimum of eight Foodstuff jars (4 complete, 4 sets of vessel fragments) were collected during the Sturdevant and Hunt 2002 monitoring (Table 7). Foodstuff jars were distinguished by the lack of a well-defined neck and an orifice that was not substantially reduced from the widest portion of the container (Table 7). A majority of the jars were straight sided and circular in shape, and were either machine made or press molded.

Three jars were manufactured using the press molding technique (BRVB 364, 388, 418; Table 7). Two of these (BRVB 388, 418) have tapered sides and resembled the "Jelly Tumbler" type in Putnam (1965:201). Both have embossed patent dates on their base from 1903, which indicates a manufacture date of 1903 or later.

Jar BRVB 364 (Table 8) is similar to the other two press-molded jars, including its anchor finish, but is much larger and with straight sides resembling the "Switzer Hinge Top Jar" shape shown by Putnam (1965:215). This jar had a maker's mark on its base of / JW BEARDSLEYS SONS / NEW YORK USA /. J. W. Beardsley's and Sons was a sardine and boneless herring packing factory in Eastport, Maine, that was started in the 1870s (Eastport, Maine, and Quoddy Maritime Museum 2002). It is probable that this jar served as a container for pickled herring since this type of fish was commonly packaged in clear glass jars (William J. Hunt, Jr., personal communication April 9, 2003). This jar dates to the 1870s or later.

Foodstuff jars used for non-commercial canning and preserves, such as Mason jars, typically had threaded lips to accommodate a screw-on lid that sealed the contents within the container (Table 7). Two jars (BRVB 422, 429) had embossed labels / Masons Patent Nov 30 1858 / (Table 8). These types of jars were patented in 1858 but one bottle showed a valve mark that dates to the 1930s and 1940s. The date of the other Mason jar is unknown but is probably 1880s or later.

Foodstuff: Liquid Bottles. Sauce bottles were the most numerous of the liquid foodstuff containers recovered during the Sturdevant and Hunt 2002 geothermal well trench monitoring (n = 4; Table 7). Two colorless sauce bottles (BRVB 439 and 440; Table 8) are equal to the "Champagne Catsups Screw Top" type with a straight-sided circular shape including a gently sloping shoulder, relatively long neck, and a continuously threaded finish. There was no maker's mark on either of these bottles, but the manufacturing signatures on both suggest that they were produced between the 1880s and 1900s.

Two sauce bottles are circular with paneled sides and crown finishes (BRVB 277 and 337). Both bottles are identical to the "Fluted Champagne Catsups" type in Putnam (1965:194). Bottle BRVB 277 has a twelve-paneled body and was manufactured using a two-piece cup bottom mold. The second bottle (BRVB 337) was smaller and has a sixteen-paneled body with an unidentified marker's mark "ECHB" on its base. Because of the crown cap finish, both bottles date to 1892 or later.

A single "Olive Oil" type bottle (Putnam 1965:209) is also part of the liquid foodstuff container class of bottles (BRVB 436; Table 7). This colorless glass bottle was formed using an automatic Owens bottle machine, producing a tapered body with a well-defined neck and a crown finish. The maker's mark, an 'O' within a square, was used by the Owens Bottle Co. from 1911 to 1929 (Toulouse 1971:393).

There are three complete (BRVB 317, 318, 437) and three fragmentary (324, 343, 430) milk bottles represented in the Sturdevant and Hunt 2002 collection (Table 7). Two of the complete milk bottles (BRVB 317 and 318) and one vessel fragment (BRVB 324) clearly resemble the "Common Sense Milks" type illustrated by Putnam (1965:232). These bottles are circular with a gently sloped shoulder, an elongated neck, and a cap seat finish with a round lip. Each of these three bottles also have an embossed circle on one side of the body that was probably used to attach a manufacturer's label. Two of the Common Sense milk bottles (BRVB 317, 324) were embossed with a maker's mark. Bottle BRVB 317 has a "B-C" mark near its base below the embossed label circle. The B-C mark was used by the Bartlett-Collins, Co. in Sapulpa, Oklahoma, from 1921 or later (Toulouse 1971:75). The other Common Sense bottle (BRVB 324) is embossed with / WINDSOR FARM / within the label circle (Table 8). This label was probably a reference to the historic Windsor Farm Dairy that operated out of Denver, Colorado, which began in the 1880s and continued into the 20th century (Fletcher and Fletcher 2001). The Windsor Farm bottle has an Owens scar on its base and dates to 1904 or later (Table 8).

The second milk bottle type is similar to the other circular milk bottles with gradually sloping shoulders, but instead of a cap seat finish, it has a continuously threaded finish to accommodate a metal screw-on cap (BRVB 437; Table 8). The bottle is embossed with / HORLICK's MALTED MILK /. Horlick's Malted Milk was first produced in 1883 by James and William Horlick of Racine, Wisconsin (Zumwalt 1980:249–250). It soon became a popular item and has been produced and marketed up to the present. This Horlick's Malted Milk bottle recovered at BRVB was manufactured using a three-piece mold with separate base part and had an unidentified maker's mark. It was probably manufactured sometime between 1883 and the early 1900s.

Glass Drink Bottles. This type of bottle is used for non-alcoholic beverages including soft drinks, soda water, and ginger beer (Jones and Sullivan 1985:71). Drink bottles account for 4.1 percent of the total glassware assemblage (n = 5; Figure 32) and 0.02 percent of the total artifact assemblage collected during the geothermal well trenching. Three drink bottles (BRVB 338, 349, 441) were recovered complete and in good condition; the other two (BRVB 350, 443) were incomplete and missing portions of the overall vessel (Table 7). All drink bottles are circular in shape with straight sides (Table 8). The four bottles with complete finishes were the crown type (Table 8). A single bottle from the collection was colorless; the rest were blue-green or green. One bottle (BRVB 349) has a maker's mark 'F' on its base from the Fairmount Glass Works in Indianapolis, Indiana, dating to 1930 to 1945 (Toulouse 1971:201).

A bottle labeled / COCA-COLA BOTTLING WORKS TOPEKA, KANSAS / was the only commercial vendor identified for the drink bottle category (BRVB 441; Figure 33; Table 7). This bottle also had a maker's mark "ROOT" embossed on its base from the Root Glass Co. in Terre Haute, Indiana. In 1914, the Root Glass Co. won a design contest sponsored by Coca-Cola, and by 1915 had patented their Coca-Cola bottle design (Toulouse 1971:446). Therefore, this bottle must date to between 1915 and the discontinuation of use for this maker's mark in 1932 (Toulouse 1971:445). It is important to note, however, that this bottle was probably made in Topeka by a Coca-Cola bottling subsidiary.

Glass Liquor Bottles. Nearly half (42.9 percent) of the Liquor bottles from the Playground Field lots were very similar to drink bottles in terms of bottle shape, the main difference being darker colors and a champagne or wine bottle constructed using a turn/paste mold instead of a two-piece mold or machine

manufacture (Table 7). Liquor bottles are defined as "a narrow-mouthed bottle whose color, shape, and size are associated with the packaging and selling of alcoholic beverages" (Jones and Sullivan 1985:71). A majority of the Liquor bottles were machine made using automatic Owens machines which left the characteristic Owens scar (Table 7). These bottles date to 1904 or later.

Liquor bottles accounted for a fairly small percentage of the total glassware collection from the Playground Field lots (n = 7; 5.7 percent; Figure 32). Two of the complete bottles were similar to the Putnam's (1965:258) Pint Champagne Beers types 72L (BRVB 332) and 73A (BRVB 442; Table 7). Both of the champagne beer bottles have crown finishes that date to 1892 or later, and one (BRVB 332) has an Owens Bottle Machine scar on its base, which dates to 1904 or later (Table 8).

Three of the complete Liquor bottles recovered are flask types with wide, oval-shaped bodies (BRVB 283, 286, 452; Table 8). Two of these were made from colorless glass and one from dark amber colored glass (Table 8). The colorless glass flasks were similar to the Eagle Flask type illustrated by Putnam (1965:378) with rounded sides and a distinct foot at the base. Both colorless flasks had stopper finishes with a ledge around the bottle bore used to keep the stopper from being pushed too far down into the bottle. One of the colorless flasks had a maker's mark of an 'I' within a diamond from the Illinois Glass Co., that was used from 1916 to 1929 (Toulouse 1971:264).

The dark amber flask has a slightly modified shape from the Eagle Flask type with strapped sides, a packer finish, and lacks a foot around its base (BRVB 283; Table 8). This bottle most resembled the Baltimore Oval type illustrated by Putnam (1965:173), although it had a packer finish instead of the brandy finish on the illustrated bottle. The bottle was manufactured with an Owens Automatic Bottle Machine (see Owens scar on base) and has a marker's mark from the Fairmont Glass Works in Indianapolis, Indiana, used from 1930 to 1945 (Toulouse 1971:200–201).

Based on the dates from several of the Liquor bottles and the overall BRVB collection, it is possible that many of the Liquor bottles were used during the years leading up to or through the Prohibition Era from 1920 to 1938. During the prohibition movement, many social activist groups were mobilized against what they saw as the moral degradation caused by the consumption of alcoholic beverages. By 1919, Congress had passed the 18th Amendment to the Constitution, which banned the distribution and sale of alcoholic beverages, and sent it to the states for ratification, three-quarters of which were already 'dry' (Tindall and Shi 1992:1031). During the 1920s and 1930s, commercial sale of alcoholic beverages was prohibited; however, bootleggers and organized crime syndicates provided mass quantities of alcoholic beverages to the general public through illegal sales and underground venues known as "Speak Easys." It is especially interesting that several of the bottles described above were clearly manufactured and used to contain alcoholic beverages during the Prohibition Era.

Glass Tableware and Tumblers. Tableware (n = 3) and Tumblers (n = 3) accounted for only 4.8 percent of the total glassware assemblage from the Playground Field lots (Figure 32; Table 7). Tableware is defined by Jones and Sullivan (1985:127) as "glassware used on the table and associated with food and drink, as well as some items of decorative glassware, such as vases." A majority were colorless with only two items tinted light green. Tableware items include a castor bottle, stemware base, and a possible carafe base (Table 7). The castor bottle was decorated with an etched floral design and the possible carafe fragment had a press-molded star burst motif in the center of the base. All three Tumblers were decorated with press-molded vertical flutes running up the sides. All the colorless Tableware and Tumblers probably date to the 1880s or later, when colorless glass became common.

Castor bottles, similar to the one mentioned above, were sold in sets and used to dispense condiments such as sugar or peppers (Jones and Sullivan 1985:133). An example of a castor bottle set similar to the one collected during geothermal trenching was illustrated in the 1908 Sears, Roebuck & Company catalog at a cost of $2.36 (Sears, Roebuck & Co. 1908:340).

One glass saltshaker was collected during the excavation of the South End, Trench 7 (BRVB 335; Table 7). The saltshaker has a metal screw-on cap with multiple holes in the lid, allowing the contents to

pour through. The body of the shaker is made of glass with eight-sided panels, alternating with herringbone decorated and non-decorated panels. The base of the shaker has a starburst design.

Ceramic Tableware and Containers. Ceramic tableware and container fragments constitute the second largest set of artifacts recovered during the geothermal well monitoring (n = 74; Table 7). Fifty-nine percent of the ceramic items were collected by William Hunt from Trenches A and B (n = 44). The entire ceramic collection is dominated by whiteware vessel fragments with porcelain, stoneware, ironstone, and terra cotta fragments found in smaller quantities. Many of the vessel fragments recovered were large portions of the original vessel, while in other cases complete or nearly complete vessels were reconstructed using vessel fragments that mended together. The intact character of many vessels made for much easier determination of vessel shape and other morphological characteristics. These ceramic vessels continue to reinforce interpretation that the BRVB assemblage is primarily domestic in nature.

Whiteware and Ironstone. Whiteware became popular during the 1830s, when it replaced Pearlware, and has been used up to the present time (Noël Hume 1969:130). These vessels are typically mold manufactured using a refined earthenware paste which is porous and requires glazing in order to prohibit absorption of liquids or moisture (Newcomb 1946:230). Decorative techniques used on whiteware vessels include transfer printing, hand painting, sponging, spattering, polychrome decals, molding (e.g., shell edged) and colored slips.

Whiteware vessel fragments collected during the geothermal trenching project include numerous vessel forms and decorative types representing 67.5 percent of the total ceramic assemblage (n = 50; Table 7). Vessel forms were classified using the overall vessel shape as a category. Plates are the most common of the identifiable whiteware vessels (n = 7; Table 7). Other vessel shapes represented include cups (n = 2), bowls (n = 2), saucers (n = 2), pitcher (n = 1), and lid (n = 1). Unidentified vessel fragments contributed the highest total to the whiteware category (n = 12; 34.7 percent). Decorative styles include flow-blue transfer-printed, brown transfer-printed, decal-printed, hand-painted, gilded, and molded decorations (Table 7). The decorations found on the whiteware vessels all are consistent with the late-19th- and early-20th-century time period.

Four whiteware sherds are decorated with a flow-blue transfer-printed design (BRVB 268). The design pattern was identified as a "Willow" pattern. Unfortunately, without an identifiable maker's mark to precisely identify the manufacturer, "Willow" patterns are ubiquitous during its period of use. Unlike traditional Victorian transfer-printed patterns, which have well-focused designs and patterns, flow-blue transfer printing was a decorative process developed in England during the 1820s where the transfer-printed design was allowed to "flow" or become blurred during the firing and glazing process. Flow-blue transfer printing was popular from the mid-19th into the early 20th centuries (Gaston 1983:8).

One whiteware sherd (BRVB 271) with a brown transfer-printed design was labeled with the mark of "J. & G. Meakin Ltd." from Hanley, England, which dates to 1907 or later (Godden 1964:427). Launched in 1845 in Laughton, England, by James Meakin, and later moved to Hanley, England, the Eagle Works was a family business eventually handed down to the sons James and George Meakin in 1852 (Jewitt 1878:75). In 1868 the Eagle Works was expanded to accommodate increasing demand on British pottery manufactories during the mid to late 19th century (Dupree 1995:57; Jewitt 1878:75). Similar to many towns throughout England during that time, a majority of the employment opportunities were tied to single industries and factories within a very localized area. Because of this, Hanley became the commercial center for its region (Dupree 1995:72).

One incomplete whiteware plate is decorated with multiple styles including flow-blue transfer printing, gold floral decals, gilding, and edge molding (BRVB 375). This plate also has a maker's mark on its base with the initials "O. C." within a triangle and surrounding a vase. This mark was used by the Ohio China Company in Monroe, Michigan, from 1931 to the present (Lehner 1988:328).

A second maker's mark on an undecorated bowl fragment (BRVB 381) was identified as the Homer Laughlin China Co. and dates to circa 1904–1907 (Kovel and Kovel 1986:70; Lehner 1988:247). Based in East Liverpool, Ohio, the Homer Laughlin China Company was started by the brothers Homer and

Shakespere Laughlin between 1869 and 1874 and has continued as a leader amongst American ceramic manufacturers ever since (Lehner 1988:245–246; Welch n.d.). In 1905, Newell, West Virginia, became the site of the world's largest pottery factory, built and operated by the Homer Laughlin Company (Lehner 1988:246). This site was made the home of the company in 1935 and continues to be America's largest manufacture of domestic pottery at the present time.

Ironstone, sometimes called Granite or Hotel ware, is a highly fired, semi-vitreous earthenware that was produced in England throughout the 19th and 20th centuries as an alternative to the porcelains made in China (Godden 1966:xxiii–xxiv). Two rim sherds from an undecorated ironstone vessel(s) were collected from Trenches 2 and 5 (BRVB 255 and 291; Table 7).

Porcelain. Identifiable porcelain vessel shapes were primarily made up of cups (n = 2), plates (n = 4), saucers (n = 2), and a dish (Table 7). Similar to the whiteware assemblage, porcelain vessels would have been part of whole dinnerware sets and served domestic needs such as serving food and drinks. Since the manufacture of porcelain continues to the present day, the undecorated porcelain sherds found during the geothermal trenching are not a reliable chronological marker for dating the age of the deposits from the Playground Field lots.

Numerous decorative motifs were found on porcelain ceramics from the Playground Field lots. Polychrome decals, gilding, and decorative molding seem to have been preferred styles with a few examples of hand-painted decorations and one sherd with a black and olive color decorative glaze (Table 7).

A porcelain plate fragment (BRVB 265) has a printed maker's mark with "R. C." and / VERSAILLES, OAVARIA / [*sic*] printed on its base. The "R. C." refers to the Phillip Rosenthal & Co. manufacturer from Kronach, Bavaria, Germany, and dates to between 1901 and 1956 (Kovel and Kovel 1986:83). Founded in 1879, the Rosenthal Glass and Porcelain Company continue to manufacture ceramic tablewares at the present time.

One porcelain vessel fragment of interest was printed with a decorative decal showing the Glendale Hotel in Sailor Springs, Illinois (BRVB 417; Figure 34). This plate was probably a tourist novelty or keepsake from the hotel. Constructed in the mid 1890s, the Glendale Hotel was the centerpiece hotel in the small Victorian town of Sailor Springs, Illinois (Figure 34). With one hundred rooms and rates between $7 and $14 per week, the Glendale Hotel offered reasonable accommodations for travelers and tourists (Miller 2002). However, on May 18, 1917, the hotel was consumed by a fire and was never rebuilt (Miller 2002). Since the Glendale Hotel was destroyed by fire in 1917, this would place the date of manufacture and sale of this plate fragment somewhere between 1894 and 1917.

Stoneware. Four stoneware vessel fragments were recovered during the geothermal trenching project (Table 7). One stoneware item of note (BRVB 297) was a rim and neck/handle from a stoneware jug. Similar cylindrical jugs with pronounced square shoulders became popular during the last decade of the 19th century and into the early 20th century (Ketchum 1983:14).

Spoons. Two non-ferrous metal spoons were collected from Trench B and Trench 7, South End (BRVB 331, 355; Table 7). Each is a teaspoon-sized spoon with molded decorations on the handle. Spoon (BRVB 331) measures 15.24 cm (6 in) long and has a decorative floral pattern on the front and back of the handle. The other spoon (BRVB 355) measures 15.88 cm (6.25 in) in length. Because of much heavier corrosion, the decorative pattern was indeterminate on the second spoon; however, both spoons seem to be of a similar shape and design.

Medicine and Health

Glass Medicine Bottles and Jars. Medicine bottles (n = 18) were the second most numerous category (14.6 percent) of identified bottles recovered from the Playground Field lots (Figure 32). Medicine bottles are defined as "used for storage, dispensing, and sale of medications" (Jones and Sullivan 1985:71). Both medicine bottles and jars were identified in the collection. Medicines and pseudo-medicines in the Sturdevant and Hunt 2002 collection include bitters, ointments, salves, pills, tonics, and liniments.

Medicine bottles were all straight sided with eight different horizontal shapes represented (Table 8). Finish type was also variable, with the vial type being most common, followed by oil (ring), patent, continuous thread, packer, prescription, and the Perry Davis types (Table 8). Fifty percent of the medicine bottles were machine made, with many of them exhibiting the Owens scar typical of the early automatic bottling machine process.

One of the most famous—or notorious—patent medicine bottles in the BRVB collection is THE GREAT DR. KILMER's SWAMP-ROOT KIDNEY LIVER & BLADDER REMEDY (BRVB 276; Table 7). During the 1870s, S. Andral Kilmer studied medicinal practices in obstetrics and operative surgery before becoming a salesman of commercial patent medicines (Wilson and Wilson 1971:124). Dr. Kilmer's Swamp Root remedy was introduced in 1881 and was sold into the 20th century (Fike 1987:270). Marketed as a kidney, liver, and bladder remedy, Dr. Kilmer's Swamp Root had questionable curing properties even to medical experts of the time. In 1921, Dr. Arthur J. Cramp of the American Medical Association describes the Swamp Root Remedy as "essentially alcohol, sugar, water, and flavoring matter with a slight laxative principle" (1921:207). With no real medicinal ingredients the remedies primary content was alcohol (9 percent by volume), which in all likelihood had a considerable negative effect on someone suffering kidney, liver, and bladder ailments. Dr. Kilmer's Swamp Root was so detested by Dr. Cramp (1921:207) that he finished with these words:

> To sum up: While there is nothing in Swamp Root which will cure the patient of any of the diseases specified in its promises, there are at least two main ingredients which will, in afflictions for which the nostrum is prescribed, give the sufferer a helping hand toward the grave.

An additional brand with alcohol as the main ingredient was a bottle labeled / HOSTETTER's STOMACH BITTERS / (BRVB 275; Table 7). The formula was initially developed by Dr. Jacob Hostetter of Pittsburgh, Pennsylvania, and was commercially introduced by David Hostetter and George W. Smith in 1853. Hostetter's became commonly used throughout the late 19th and early 20th centuries and was sold until 1958 (Fike 1987:36; Switzer 1974:76–77). Fluctuating between 25 and 40 percent alcohol, Hostetter's Stomach Bitters was promoted as a cure-all for "children, delicate ladies, persons in a debilitated state" and soldiers during the Civil War (Switzer 1974:77). Not only did Hostetter's provide a heavy dose of alcohol, but it also contained small amounts of *Nox vomica*, commonly referred to as strychnine, which was used as a stimulant to the nervous system (Switzer 1974:77). The Hostetter's bottle collected at BRVB had a mold seam over the top of the finish, indicating the bottle was machine made. However, the lack of other distinct features such as an Owens scar made it unclear as to whether or not the bottle was made using a semi-automatic or automatic machine. This bottle generally dates to between the 1880s and 1920s.

A third type of patent medicine bottle found in the collection are two cobalt blue Bromo-Seltzer bottles (BRVB 245 and 450; Table 7). A patent was filed with the U.S. Patent Office for Bromo-Seltzer by Isaac E. Emerson in 1889 (McGuire 1991:86). Bromo-Seltzer was marketed and sold in these bottles by the Emerson Drug Company, Baltimore, Maryland, from 1889 to 1928 when they stopped using cork stopper enclosures (Fike 1987:111). One of the bottles (BRVB 450) was likely an earlier version lacking a maker's mark, possibly made by the Cumberland Glass Mfg. Co. between 1889 and 1907 (Toulouse 1971:161–162). After 1907, Bromo-Seltzer bottles were manufactured exclusively by the Maryland Glass Corporation, a subsidiary of the Emerson Drug Company. The circled 'M' maker's mark on the second Bromo-Seltzer bottle (BRVB 245) was initially used by the Maryland Glass Corporation in 1916 (Fike 1987:111; Toulouse 1971:339–341). Taken to relive headache symptoms, Bromo-Seltzer was made up of three main ingredients: potassium bromide, acetanilid, and caffeine. In small doses acetanilid is a useful antipyretic and antispasmodic drug used to fight typhoid fever, rheumatism, epilepsy, influenza, and migraine headaches (Potter 1902). Effects of the drug include reduced nervous system reaction, reduced body temperature, and slowing of the heart rate (Potter 1902). However, taken in large doses, acetanilid can cause severe poisoning and even death. Within the first decade of the 20th century, Bromo-Seltzer and other headache medicines containing acetanilid were implicated in the deaths of numerous individuals (Adams 1905; American Medical Association 1912:494–497, 499–500). The cause of death was given as

heart attack or overdose following ingestion of headache medicines containing acetanilid. Modern forms of acetanilids such as flutamide are being used today as an antiandrogen in new prostate cancer drugs (e.g., EULEXIN), with occasional deadly results due to liver failure (Schering Corporation 1999).

Another bottle of interest was labeled / Rowley DRUGS / TOPEKA / KANSAS / (BRVB 434; Figure 36; Table 7). This is a straight-sided and rectangular bottle with round corners and a prescription lip. It was manufactured by Whitehall-Tatum & Company between 1857 and 1938 (Toulouse 1971:544). Because this bottle was colorless and manufactured using a two-piece mold with separate base part it probably dates to the 1880s or later. The 1874–1875 *Topeka City Directory* lists the Rowley Bros. drugstore at the southeast corner of Sixth and Kansas Avenue, with three brothers James P., Henry K., and Robert E. associated with the establishment (Table 6). The 1912 *Topeka City Directory* also lists the Rowley Drug Store owned by James P. Rowley at 600 Kansas Avenue (Table 6). Located in north Topeka on the north side of the Kansas River, the Rowley Drug Store would have been approximately twenty blocks north of the Monroe School neighborhood, probably a substantial distance at the turn of the century.

One circular, straight-sided medicine bottle (BRVB 330; Table 8) with a vial finish is similar to the "Square Shouldered Round" type illustrated by Putnam (1965:34). This colorless bottle was manufactured using a two-piece mold with separate base part and has a mold seam that extends only to mid-finish was labeled "Evans" on its side. The Evans label probably refers to the Dr. Evans Chamomile Pills that were manufactured and sold from the 1820s to at least 1930s (Fike 1987:201–202; Wilson 1971:33,113). The chamomile pills were produced as a laxative and for clearing up skin ailments (Fike 1987:201).

Another bottle is straight-sided, rectangular with flat chamfered corners, panels on the narrower sides, and had a patent finish (BRVB 446; Table 8). The Owens scar on its base and the mold seam over the top of the finish indicates that it was machine manufactured. It is labeled with "Penslar" on one of the sides, which means the bottle was probably used to contain Penslar Hair Tonic, a product of the Penslar Co. in Kansas City, Missouri, from 1907 to 1965 (Fike 1987:176).

Another straight-sided bottle is rectangular, has flat chamfered corners, and is labeled / SLOAN's LINIMENT / (BRVB 447; Table 8). The maker's mark on this particular bottle of Sloan's Liniment suggests that it was manufactured by the Owens Illinois Glass Co. between 1929 and 1954 (Fike 1987:137; Toulouse 1971:403–406)

Three graduated medicine bottles (299, 300, 365) were collected during the Sturdevant and Hunt 2002 monitoring project (Table 7). Two of the medicine bottles (BRVB 299 and 365) closely resemble the Buffalo Oval type Prescription Ware illustrated by Putnam (1965:24). This bottle type has an ovoid shape with one flat side and a relatively pronounced shoulder and a prescription finish (Table 8). The larger bottle (BRVB 365) is graduated in 10-cc increments with the opposite side in ounce increments, while the smaller bottle is graduated in 5-cc increments. The second type of graduated bottle (BRVB 300) was similar to the Monarch Oval Type in Putnam (1965:26) with a rectangular shape, rounded sides, a pronounced shoulder area, and a prescription finish. All three of these bottles would have been used to contain medicinal liquids dispensed in small measured quantities. All three were also manufactured with a maker's mark of an 'I' within a diamond. This mark was used by the Illinois Glass Co. from 1916 to 1929 (Toulouse 1971:264–268).

Medicine Jars (n = 4) were all straight sided, circular, with threaded finishes, and made with white glass (Table 8). These jars were primarily used to package ointments or pastes such as Mentholatum. One jar was labeled / MENTHOLATUM / REG / TRADE / MARK /. This jar is BRVB 298 (Figure 30) and dates to 1889 or later (Fike 1987:83).

Personal Items

Personal items are classified as objects that would have been of a personal nature such as for grooming, makeup applications, or jewelry boxes. Items used for personal grooming activities included a plastic hair brush (BRVB 356), a porcelain doll fragment (BRVB 250), a cosmetic container lid (BRVB 287), an

ivory toothbrush fragment (BRVB 407; Table 7). The plastic hairbrush would date from the commercial introduction of plastics during the 1950s or later.

One ceramic lid from a French cosmetic container was collected during the monitoring of Trench 4 (BRVB 287; Figure 35; Table 7). The lid label was incomplete but does include the following: / MAISON / 27 R. Grenier St Lazare PA… / Fard de Toilette /. The French phrase "Fard de Toilette" means lavatory or powder room paint (i.e., makeup).

The non-ferrous metal decorative jewelry box was recovered from Trench 5 (BRVB 306; Table 7). This jewelry box is rectangular in shape with convex sides and decorated with floral designs. A similar jewelry box is illustrated in the 1905–1910 Sears & Roebuck Catalog and is described as a silver jewelry box with a satin lining and was priced at 17 cents with other drug and novelty items (Parr et al. 1976).

The ivory toothbrush consisted of most of the head and a small portion of the brush shaft. It has six rows of small holes drilled in it for the placement of bristles, as well as four grooves carved into the long axis of the brush head. The entire toothbrush fragment measures 3.9 cm (1.5 in) long, with the head measuring 1.1 cm (0.4 in) wide and 0.4 cm (0.1 in) thick. The portion of the handle shaft that was still intact measured 0.5 cm (0.2 in) in diameter.

Glass Toiletry Bottles. Toiletry bottles (n = 6) account for 4.9 percent of the total glassware collected from the Playground Field lots (Figure 32; Table 7). This bottle type was defined by Jones and Sullivan (1985:71) as "bottles and jars sold containing cosmetics and perfumes, as well as fancy containers sold to have commercial products transferred to them." Toiletry bottles collected during the geothermal trenching are all straight-sided, but because many of the bottles were decorative in nature they include a diverse set of colors, horizontal shape attributes, and finish types (Table 8).

One Toiletry bottle was used as a perfume container with a tapered body and rectangular horizontal shape with flat chamfered corners and slightly flared base (BRVB 372; Table 8). The bottle is also blue-green in color and has a packer finish. The molded label on the sides of the bottle reads / ED PINAUD / PARIS / NAJOUTER FOIQUALA SIGNATURE /. On its base is another label stating / BOTTLE PROPERTY OF H & C KLOTZ & CO. /. Ed Pinaud products sold by H & C Klotz & Co. were available throughout most of the 19th and 20th centuries (Fike 1987:67).

Another Toiletry bottle with a rectangular shape and flat chamfered corners was labeled "The Crosby Bros. Co." (BRVB 301; Table 8). The maker's mark on this small perfume bottle indicates that it was manufactured by the Whitehall-Tatum & Co. sometime between circa 1880s and 1935 (Toulouse 1971: 544). There are no signs of machine manufacture on this particular bottle; therefore, it could date prior to the 1904 invention of the automatic bottle machine.

One small decorative perfume bottle was collected from Geothermal Field Area A (BRVB 384; Table 8). This bottle is ovoid in cross section with a continuously threaded finish and a mold seam that extends only to mid-finish (Table 8). The C & Co. maker's mark on the front of the bottle was unidentified. This bottle probably dates to circa 1880s through the early 1900s.

One bottle resembles the Flat Toilet Water type illustrated in Putnam (1964:80). The bottle is rectangular in shape with straight sides, square shoulders, and a ring around the base of the bottle neck (BRVB 296; Table 8). It was manufactured using a two-piece mold with separate base part and finished with a lipping tool. There were no maker's marks or brand names on this toilet water bottle. The bottle generally dates to circa 1880s to 1920s.

Two bottles were identified as containers for mouth wash products (BRVB 274 and 385; Table 8). One bottle (BRVB 385) with straight sides and a circular shape is labeled / LAVORIS / on one side and / LAVORIS CHEMICAL CO / MINNEAPOLIS / on the other. Lavoris is a brand name mouthwash manufactured by the Lavoris Chemical Company from 1902 to present (Fike 1987:67). The second mouthwash bottle was collected from Trench 3, Feature 3 and is labeled with / LISTERINE / LAMBERT PHARMACAL COMPANY /. Listerine is an antiseptic mouthwash, introduced by Jordan Lambert in 1879 and named after Sir Joseph Lister who championed the use of antiseptics during the 1860s (Fike 1987:67).

After 1914, Listerine could be purchased without a prescription and has been sold commercially up to the present time (Fike 1987:67). This particular bottle (BRVB 274) has a maker's mark of the Diamond Glass Company of Royersford, Pennsylvania, that was used from 1924 or later (Toulouse 1971:550–552).

Household Materials

The Household Materials category groups together items that would have had utility around the home. Household items include glass bottles, two tin graniteware bowls, and a glass furniture coaster (Table 7).

Household Bottles. The category of Household bottles covers a wide range and includes waxes, polishes, oils, chemicals, and other items of household utility (Jones and Sullivan 1985:71). Household bottles (n = 9) represent 7.3 percent of the total glassware collection from the Playground Field lots (Figure 32; Table 7). Several of these bottles were straight sided with circular shapes and mold seams over the top of the bottle finish, indicating that these were machine made (Table 8). Unlike several of the other bottle categories, a clear majority (80 percent) of Household bottles were manufactured using machines, most of which had an Owens scar and date between 1904 and the 1920s (Table 7). Specific contents that were identified by bottle form or label include polish, 3-in-1 oil, battery oil, and Lysol.

Three bottles were identified as polish containers (BRVB 313, 377, 386). Two of these are similar to the Round Polish type with circular bodies, straight sides, and vial finishes (Putnam 1965:64; BRVB 313 and 377; Table 8). The other bottle (BRVB 386) is ovoid in shape with a bead finish and is labeled / BLACK CAT POLISH CO / BUFFALO N. Y. /. None of the polish bottles had signs of machine manufacture and generally date from circa 1880s to the 1920s.

Two Household bottles are nearly identical in shape and resemble the Round Square type illustrated by Putnam (1965:106), including square cross sections with rounded corners, a distinct shoulder, and a short neck (BRVB 319 and 348; Table 8). One of these bottles (BRVB 348) identified as having contained Lysol was extremely noxious with an unmistakable Lysol odor. Both bottles were made with an automatic Owens bottle machine and date to 1904 or later. Each bottle also had an unidentified maker's mark. Bottle (BRVB 348) had a maker's mark of "W.S.M.G. Co."; however, the manufacturer of this mark is unknown and probably dates after 1910 (Toulouse 1971:543). The other bottle (BRVB 319) had a maker's mark of "S.M.C. Co." which might be related to the other but remains unidentified.

Two Household bottles (BRVB 320, 409) had been used as containers for utilitarian non-food oils (Table 7). One of the bottles (BRVB 409) is labeled / THREE IN ONE / 3-IN-ONE OIL CO / on its side. This bottle had an unidentified maker's mark "W. H." on its base and also has some of its contents sealed within the bottle. The other oil bottle (BRVB 320) is labeled on one side with / SPECIAL BATTERY OIL, THOMAS A. EDISON INCORPORATED / PRIMARY BATTERY DIVISION / BLOOMFIELD, N. J., U.S.A. / and / TRADE, THOMAS A EDISON, REG. U.S. MARK PAT. OFF / MADE IN U.S.A. / on the opposite side. Bottle BRVB 320 exhibits the classic scar of an Owens bottle machine on its base and dates to 1904 or later.

One bottle (BRVB 329), collected from the South End, Trench 7, resembles the Extra Tall Tapered Extract type shown in Putnam (1965:49), with the exception that none of its sides have recessed panels and the bottle lacks a well defined shoulder area (Table 8). Bottle (BRVB 329) lists its content capacity as / AVG. 3½ OZS. NET. /. The telltale Owens scar on the base of this bottle suggests a date of manufacture of 1904 or later.

Ink Bottles. Two complete ink bottles were recovered during the geothermal trenching (BRVB 257 and 448; Table 8). Both are circular with squat bodies and had fairly distinct shoulders and narrow necks. Each bottle is blue-green in color and had mold seams to mid-finish with lip features created using a lipping tool device. One bottle (BRVB 448) has an embossed label / HIGGINS N.Y. / on its body. Because of the mold seams to mid-finish these bottles probably date from the 1880s to the 1920s when two-piece molds with separate base parts and lipping tool finishes were common.

Other Household Items. Two tin Graniteware bowls were recovered during the Sturdevant and Hunt 2002 monitoring (BRVB 264 and 326; Table 7). The first bowl measures 24.77 cm (9.75 in) in diameter

and 8.89 cm (3.5 in) deep. This bowl has a round horizontal shape with relatively straight sides, a flat bottom, and a flared rim with a rolled lip. The inside is painted solid white and the outer surface is a blue and white painted graniteware pattern. The other bowl measures approximately 21.59 cm (8.5 in) in diameter (the bowl was deformed somewhat by the backhoe so it was difficult to determine precisely) and approximately 11.43 cm (4.5 in) deep. This bowl was also round in shape but had more curved walls and no flared rim, just a rolled lip. The entire bowl is painted solid white except for the very upper surface of the lip which is painted a dark blue.

One glass furniture coaster is represented in the Sturdevant and Hunt 2002 collection (BRVB 352; Table 7). The coaster measures 5.08 cm (2 in) in diameter and has a depth of 1.27 cm (0.5 in). The inside base of the coaster is decorated with a radiating starburst pattern. The outside surface has been made smooth to allow the coaster to move over a surface such as a hard wood floor and not cause any damage to the surface or the piece of furniture being moved.

Construction and Electrical Materials

Numerous examples of construction materials were collected during the geothermal well monitoring project. However, what was collected represents only a small sample of the total number of items observed during the project. For instance, hundreds of whole or partial bricks were observed over the entire Playground Field. However, bricks are relatively uniform in materials and construction, as well as being heavy and cumbersome. Therefore, a few examples of different bricks were collected but are in no way a representative sample of the entire brick assemblage from the Playground Field.

Construction Materials. Three brick fragments were collected from the Playground Field lots. There were two types of bricks distinguished by either reddish orange (BRVB 249) or reddish brown (BRVB 457) color collected from the geothermal well trench monitoring (Table 7). Brick color is related to factors that can be manipulated by the manufacturer including composition of raw material, inclusion materials, and firing temperature (Gurcke 1987:125–127). Bricks with glazing on their outer surfaces were noted during the geothermal well monitoring but were not collected. Glazed bricks, also called sanitary bricks, are used in places that require impermeable floor and wall surfaces such as restrooms, showers, kitchens, and medical facilities (Gurcke 1987:100).

Three wire nails were collected from the excavation of the South End, Trench 5 (BRVB 309; Table 7). Wire nails were introduced at American construction sites during the mid-1880s and continued to become more common into the 1890s until they became the dominant nail type, completely replacing the use of cut nails by the early 1900s (Adams 2002).

Two round door knobs (BRVB 310, 395) were collected during the Sturdevant and Hunt 2002 monitoring (Table 7). Both were made from ceramics with one colored black (BRVB 395) and the other colored white (BRVB 310). Similar ceramic door knobs are listed in the 1897 Sears & Roebuck catalog for 8 cents apiece or 87 cents a dozen (Sears, Roebuck & Co.1897:90).

Electric Materials. Several utility and electric line insulators were recovered from Trenches 2 and 5 (Table 7). Made of ceramic or glass, these insulators represent the late-19th and early-20th-century urban utility line technologies that were used to bring electricity to homes and businesses through above-ground cables and lines.

One blue-green colored glass insulator was collected from the south end of Trench 5 (BRVB 307; Table 7). The insulator is cone shaped with a basal diameter of 6.07 cm (2.3 in) and is labeled / HEMINGRAY No 12 / PATENT MAY 2 1893 /, dating it to 1893 or later. This type of insulator is commonly used to hold electric and telephone lines at the top of wooden poles.

Five industrial ceramic insulators (BRVB 263) were recovered from the construction debris found in Trench 2, Feature 2 (Table 7). Four of these insulators are cylindrical in shape, with three measuring 3.9 cm (1.5 in) in diameter and 4.1 cm (1.6 in) in length. The one larger insulator measures 5.2 cm (2 in) in diameter and 4.5 cm (1.7 in) in length. All cylindrical insulators have a hole through the center used for a screw to attach the insulator to a pole, as well as a groove near the top to accommodate the electric line or

cable. The rectangular ceramic insulator is 7.7 cm (3 in) long, 2.8 cm (1 in) wide, and 1.6 cm (0.6 in) thick. This insulator has a 2-cm (0.7-in) groove oriented perpendicularly down its center with bolt holes on each side. The rectangular insulator would have been used as a clamp to hold down an electric line or cable.

A single complete light bulb was collected from the south end of Trench 5 (BRVB 316; Figure 37; Table 7). This bulb has a classic bulb shape with a small tip at the top, a continuously threaded non-ferrous metal base, and a looped filament line within the bulb used to produce illumination. Significant changes occurred in electric lamp technologies during the late 19th and early 20th centuries that made electric lights more affordable and reliable (Bright 1972). This particular bulb retained the small tip on the top of the bulb, a remnant of the manufacturing process. Tipless lamps were preferred because they were less prone to breakage and cast no undesirable shadows (Bright 1972:135). This tip was finally removed from commercial bulb production after 1919, suggesting that this bulb probably dates prior to circa 1919 and the advent of the tipless light bulb (Bright 1972:498).

Animal Husbandry

One horseshoe fragment recovered from Trench A was the only artifact collected relating to animal husbandry (Table 7). However, prior to the early-20th-century automobile, horses would have been a common sight within the Topeka city limits. It is conceivable that one or several of the outbuildings on Lots 505–513 depicted on the 1889–1913 Sanborn maps could have been stables, barns, or structures related to animal husbandry; for example, refer to Structure 6 on Figure 5 and in Table 2.

Faunal Remains

Faunal remains represent a unique category of perishable food remains that have been preserved archeologically. Although collected in very small quantity, bone fragments (n = 5) indicate the inclusion of both *Bos taurus* (domestic cattle) and *Gallus gallus* (domestic chicken) in neighborhood diet (Table 7). The fragments of *Bos taurus* both have straight, flat cut marks with fine parallel striations that demonstrate bone cutting was conducted using a saw (Reitz and Wing 1999:130).

Artifacts from Bauermeister 2003 Monitoring

Medicine and Health

During the monitoring of the sewer line excavations, a white milk glass jar was found in a portion of the trench south of the brick deposit. The jar resembles the Ointment Pot type from Putnam (1965:93) with a round horizontal shape, straight sides, and a continuously threaded finish. The jar was manufactured using an automatic bottle machine and shows a mold seam to the top of its lip. Its base is embossed with the Hazel Atlas trademark and the word / KRANKS /. The Hazel Atlas glass company (1902–1964) was located in Wheeling, West Virginia. The use of this particular Hazel Atlas maker's mark dates from 1920–1964 (Toulouse 1971:239). No reference to the Kranks brand has been found.

Construction Materials

The majority of the items recovered by Bauermeister in 2003 were construction-related materials. Bauermeister collected a small sample of the items located in the buried debris deposits from the sewer line trench including portions of two soft orange bricks, one piece of plaster, and a piece of concrete. These materials are probably related to the demolition of the pre-1926 structures located in the Monroe School neighborhood.

Archeological Interpretations

The Archeology of Urban Areas and an Exoduster Neighborhood

Archeology has been shown to contribute significant information concerning undocumented or less well known late-19th and early-20th-century urban developments and African-American communities throughout the United States (Beaudry and Mrozowski 2001; Gradwhol and Osborn 1984; Leone 1999; McCarthy 2001; Mullins 1999a, 1999b; Solari 2001). During the late 19th century industrialization and growth of the American free market economy, multitudes of non-landowning people began flocking to urban areas in order to make a living through wage labor or factory work. However, in the case of the Exodusters and the thousands of people moving westward, it was not the promise of industrial jobs in Kansas that ignited the mass migration, but was in fact the promise of land made available through the Homestead Act of 1862. Conversely, many people who arrived in Kansas in general, and in Topeka in particular, were not ready or able to make the transition to homesteading and farming on the Great Plains; instead they chose to begin a new life in established cities. Towns such as Topeka, Kansas; Nicodemus, Kansas; and Buxton, Iowa are excellent examples of African-American settlements related to the 1879–1881 Exoduster migration that occurred following the Reconstruction Period. These westward migrations brought new generations to the Great Plains and Midwest, contributing significant ethnic and racial diversity to the settlement of these areas.

It is probable that these Exodusters are some of the individuals who settled in the area of South Topeka (Mud Town) and later Ward V (Cox 1982:215–216). Within the South Topeka area, the settlement of the Monroe School neighborhood began slowly sometime between 1865 and 1868 and reached its peak at the turn of the 20th century following the 1880s Exoduster migration. The late-19th-century Monroe School neighborhood has been described as somewhat undeveloped and rural in nature with only a few homes but many outbuildings and sheds and probably a few gardens as well (Quinn Evans 2000:2–3). Significant development of the neighborhood occurred between the late 1890s and 1910s, partly a result of the area being formally incorporated into the city of Topeka, but also related to the huge influx of people from the Exoduster migration. The archeology of this neighborhood has provided significant information concerning the less well known and undocumented occupation that preceded the construction of the 1926 Monroe Elementary School.

Archeological research has confirmed the presence of at least 5 of the 18 historically documented structures on Lots 505–529, including the structural foundation of the 19th-century Monroe School. Other features not illustrated on any of the historic maps have also been discovered such as one historic well on Lot 513 and a historic dump within the Playground Field lots (Sturdevant and Hunt 2002, Feature 3) covering a fairly large area on the east side of Monroe Street. Archeological monitoring and testing has proved a useful tool for investigating areas on the BRVB property related to the rehabilitation of the Monroe Elementary School. These projects have demonstrated that reasonably abundant archeological deposits and intact features exist over much of the BRVB property.

Intact structural foundations were uncovered on the east, west, and north sides of the Monroe Elementary School, representing approximately fifty or more years of occupation. The combined historical and archeological records have demonstrated that the Monroe School neighborhood was probably a mixed-ethnicity, working-class community made up of single family residences that typically incorporated a frame or brick main house and several associated outbuildings along the western side of Lots 505–523 near the alley way. Since the early Monroe School was also built within the neighborhood, there would have been a steady stream of children and teachers from the surrounding area at the school for a good part of each year. The area encompassed by 14SH114 (Feature 3) on the west side of the Playground Field appears to represent a historic refuse dump and contains significant concentrations of late-19th- and early-20th-century material culture.

Artifacts collected during the 2001–2003 monitoring activities have produced a wealth of knowledge concerning the domestic lifeways of neighborhood inhabitants at the turn of the 20th century. The diverse

assemblage of artifacts collected from the Monroe Street neighborhood, including several types of foodstuff wares, household items, medicines, and decorated ceramic wares, demonstrates that a significant part of life in this working class neighborhood was the purchase of commercially available consumer goods and the increasing role that mass consumerism was beginning to play in peoples lives at that time. In many ways this diverse set of artifacts is also a direct result of the expanding mechanization and automation of industrial technologies; see discussion below. During the late 19th and early 20th centuries, many minority and lower class groups throughout the country, disenfranchised by the economic and political systems of the time, were turning to mass consumerism as a way to voice their preferences, opinions, develop identities, and to exert some force on the controlling factions of society. "Consumerism, the demand for, and acquisition of, material non-essentials, is more than simple materialism; it represents the growth of modern, autonomous, imaginative indulgence" (McCarthy 2001:147–148). The purchase of material goods carried weight as an inherent right in American society and offered meaningful ways to change racist stereotypes about African-American culture (Mullins 1999b:18). Nationalized brand names helped to level the consumer playing field by instituting recognizable names and using standardized contents and measurements (Mullins 1999b:170–171). By using acquisition of commercial goods as part of their collective voice, African-Americans were able to form a national identity and influence the development of consumerism, one of the dominant forces in modern society.

Following the Reconstruction Period, large numbers of African-Americans began moving west in search of new opportunities and freedoms. However, when thousands of them settled in Topeka they were again confronted with new forms of oppression and disenfranchised in many areas of public life. Participation in expanding regional and national economic networks allowed these communities to play a larger role in American life. With the birth of consumerism and the explosion of choices in the market place this offered the opportunity to make use of a collective voice that began to break barriers and establish the African-American community as equals. In order to determine the level of participation in the growth of early-20th-century consumerism a framework is needed that can judge the level of access to both national and regional economies.

Interaction spheres beyond the level of site or community have been identified as an important avenue of inquiry for historical archeologists (Adams 1976; Orser 1996; Riordan and Adams 1985). One primary focus for historical archeology has been to examine the development of national and worldwide economic markets throughout the 19th and 20th centuries. By trying to understand the development and operation of these economic networks offers insights beyond the level of site and can be used to broaden the scope of historical study. "Archeological sites can not be viewed properly as isolates, since each reflects the interaction between people and their physical and cultural landscape" (Riordan and Adams 1985:5). The value in the sometimes overwhelming amount of commercial items and artifacts found at early-20th-century archeological sites such as BRVB, is their ability to enlarge the context of a site past the locality and to demonstrate the interaction between consumer and producer. This is seen as a necessary step in understanding the development of market systems and changes in consumption patterns, market access, and commercial consumer influence on markets through time.

An industrial economic model based on the idea of commodity flow was developed by Pred (1970). This model established a regional typology which demonstrated national and regional commodity flows and areas of high, intermediate, and low market access. The northeastern industrial corridor—from the New England states following the Great Lakes west into central Illinois—possessed the industry and infrastructure to compete on a national scale more than any other region of the country. Geographic areas with intermediate market access and a predominately regional industrial base were confined to the Mississippi drainage and the southeast. Manufactures and distributors in these areas would in most cases have been less able to compete with producers in high access markets within the industrial corridor of the United States or on a national or global scale. Regional market centers are best suited for competition in areas where there are smaller-scale markets with lower transportation costs (Riordan and Adams 1985:7). Historical archeology studies have shown this model applies equally well to both urban and rural settings (Adams 1976; Riordan and Adams 1985). The dominance of items produced in the northeastern industrial corridor during this time period was evident at several sites from three different regions of the country

(Riordan and Adams 1985; Adams 1976). For instance, although Silcott, Washington, is over 1,500 miles from the industrialized areas of the Midwest and eastern United States, the archeological assemblage from this rural community was dominated by goods manufactured along the industrial corridor (Adams 1976:100).

A minimum of fifty-four manufacturers and retailers have been identified from the artifacts collected at BRVB (Table 9). These businesses represent four countries, fifteen states, and thirty-two cities (Figure 38). Although not representing the tightly woven global economy we know today, the material culture ties of the 19th- and early-20th-century Monroe Street neighborhood show a strong connection to the eastern United States and to Europe. Europe was especially prevalent in the manufacture of non-essential luxury goods such as decorated ceramics and toiletry items. The eastern states of New York, New Jersey, and Pennsylvania, and the Midwest states of Ohio and Illinois account for the majority of American manufacturers and retailers found in the BRVB collection. At the start of the 20th century, these areas represented the dominant commercial industrial base of the country and had the market access that allowed them to compete at national and global levels (Pred 1970:274). Regional market influence is also evident at BRVB with many goods from regional market centers such as Kansas City, Topeka, St. Louis, and Minneapolis represented in the collection. These market centers were unable to compete on the national market scale and therefore operated primarily within regional areas, where costs to get products from the factory to the consumer were lower.

Like most towns at the turn of the century, Topeka and the Monroe School neighborhood show both connections to the local community and larger, more widespread economic networks throughout the United States and Europe. The materials collected from BRVB are seemingly dominated by national market brands. However, regional and local brands are also present in sufficient numbers representing a significant part of the consumer economy. Based on this information, it is evident that the inhabitants of the Monroe School neighborhood were participating in consumer activities which were part of the market developments and interactions on local, regional, national, and global scales. By participating in these economic arenas, neighborhood inhabitants were beginning to play a more prominent role in American life. This role would continue to increase and began to influence larger social issues such as school segregation and the fight for civil rights.

Late-19th- and Early-20th-Century Technological Changes

Studies of technological developments, processes, organizational systems, and change through time are some of the core avenues of modern historical and anthropological study (Basalla 1988; Dobres and Hoffman 1999; Schiffer 2001, 2002). Overall, the artifact assemblage described in Chapter 5 includes items common to domestic life and represents the many changing technologies and proliferation of artifact types that followed the 19th century industrial revolution that continued into the 20th century. Two of the most significant changes evident within the BRVB assemblage are the proliferation of industrial glassware technologies and the introduction of electricity.

Glassware Technology

Throughout the 19th and 20th centuries, glass containers such as bottles and jars played significant roles in the lives of people throughout the world (Miller and Sullivan 1984). In the United States following the Civil War, the Industrial Revolution brought many advances in glass manufacturing technology including the introduction of semi-automatic and fully automatic bottle machines. These new manufacturing techniques increased the productivity of bottle manufactures and standardized bottles for commercial purposes, thereby creating an expanding market for bottles and other glass containers.

Glass bottle technology became an important part of American life during the early 20th century, and the Monroe School neighborhood was no exception. Everything from foodstuffs to medicines and perfumes were bottled using glass containers and are represented in the BRVB collection. This collection also demonstrates that late-19th- and early-20th-century glassware containers were manufactured in a multitude of shapes and sizes, with many particular and specialized bottle styles shaped for certain types

of contents and recognizable brand names. With numerous identifiable maker's marks, manufacturing scars, and shape types, the glass bottles from BRVB have been an invaluable source of information concerning the temporal and functional contexts of use for the Monroe School neighborhood.

Although some of the bottles date to the late 19th century, most were manufactured during the early to mid 20th century, after the introduction of the Owens automatic bottle machine. This shift from the more labor intensive mold blown and manned semi-automatic bottle manufacture, where workers either made bottles by hand or fed glass into semi-automatic machines, to the fully automated system where machines could manufacture standardized sizes and finishes, was undoubtedly responsible for the increased production and proliferation of glassware items at that time (Miller and Sullivan 1984:83–84, 89). However, because the automatic bottle machines were somewhat difficult for bottle manufacturers to obtain and could only be used on large production runs of standardized types, many companies did not purchase the machines right away and continued to use the mold blown or semi-automatic techniques of manufacture.

During the 1920s and 1930s, automatic bottle production continued to increase and by World War II it had completely eclipsed any other manufacture type in America (Miller and Sullivan 1984:90). Within the BRVB glass container collection, questions still remain concerning the timing and pace of the shift from the long-standing 19th-century bottle making technologies to the use of fully automatic machines. How a significant technological shift such as this affects items and people on a small or localized scale can yield beneficial clues concerning the adoption and use of new technologies. Further archeological and historical study might shed light on how this change in bottle manufacturing affected the consumption and use of glass containers within the Monroe School neighborhood.

Electrical Technology

From the 1880s and into the early 20th century, America witnessed the growth of the electricity and electric lamp industries from a fledgling technology to the dominant source of power and lighting throughout the country (Bright 1972). With roots in the 18th-century enlightenment community (Schiffer 2002), the American electricity industry would become a dependable provider of power throughout the country by the 1930s. In order to provide users with electricity whenever it was needed, a complex network of lines and cables was developed that would eventually reach every home and business. However, the development of this network took time, and it was the urban areas and cities that were the first to receive electric power. Rural areas lagged far behind urban cities until the Rural Electrification Administration was initiated by the Franklin Roosevelt administration during the Great Depression in 1935, and began the process of building rural electrical cooperatives throughout the country (Tindall and Shi 1992:1118). Cities such as Topeka would have been among the first to receive electricity in Kansas.

Several items associated with early 20th-century electricity distribution and use were recovered from BRVB. The presence of glass and ceramic insulators and an incandescent light bulb, dating to circa 1919, show that the Monroe School neighborhood would have been a part of the early introduction of electricity into Topeka. This influx of a significant technological shift also facilitated the development and utilization of related technologies that were powered with electricity such as lighting, refrigeration, cooking, and heating. Many of these new technologies, particularly electric lighting and refrigeration, would have a profound effect on the lives of 20th-century Americans, forever changing the ways they interacted with their physical and cultural worlds.

Medicine and Health at the Turn of the Century

At the dawn of the 20th century, Western medicine had made undeniable advances in medical care, sterilization techniques, and new treatments for disease and illness. Conversely, the increasing populations within urban centers, related to the growth of industrialization and large population shifts, posed real health problems throughout the Unites States and much of Europe (Porter 1997:398; Tindall and Shi 1992:791–792). Urban disease and chronic illness were exacerbated by industrialization and unsanitary conditions during this time. Local governments in larger cities such as New York recognized that sanita-

tion and urban slums were directly related to the propagation and spread of disease and therefore began to enact reforms regarding public sanitation (CANY 1866). Though, unlike many of the European countries and cities, the United States was moving west and continued to migrate and settle new areas into the early 20th century. This constant migration and movement of people out of large cities helped to reduce some of the factors that made the urban conditions so squalid during the late 19th century. Unfortunately, for the westward pioneers, many brought urban diseases with them such as tuberculosis, cholera, etc. and settled in areas with very little or no health care whatsoever.

Following the Reconstruction Period, most African-American communities experienced poor health conditions because of the unequal status of minority groups, which lacked the adequate health care systems and institutions of the white majority in the south and other areas (Rice and Jones 1990:xii). After the 1920s it became increasingly difficult for African-Americans to become accepted as medical students, doctors, and nurses. This lack of trained medical personnel within the African-American community made access to accredited doctors and nurses difficult and expensive. As an alternative to professional doctors, many people turned to non-traditional practitioners using unconventional treatments and home remedies to cure illnesses (Bailey 2002:56). Like many working class Americans at the time, African-Americans used patent medicines, nostrums, and commercial cures as a way to relieve sickness. However, it wasn't until the late 19th century that alternative medicine, sometimes known as "quackery", was identified as utilizing chemicals and ingredients in over-the-counter medications that were potentially dangerous to consumers.

Poor health conditions in urban cities and almost no access to institutional health care in the West led to the formation of widespread public health and hygiene programs throughout the country, as well as legislation that regulated portions of the medical and food industries in America. In 1906, the U.S. government passed the Pure Food and Drug Act in order to stop the rampant unsanitary conditions at meat packing plants and the unregulated sale of patent medicines that contained harmful ingredients and advertised false curing properties (Tindall and Shi 1992:951). Although the sale of many patent medicines was allowed to continue, the makers were forced to change or amend their labels in order to accurately reflect contents such as alcohol or narcotics. By 1912, the elimination of fraudulent claims and changes to bottle labels sold in the United States are evident when compared to similar bottles sold in Britain (American Medical Association 1912:676–679). These differences provide clear evidence of the positive effect the Pure Food and Drug Act had for consumers of patent medicines in the United States.

Many of the medicine bottles recovered during the BRVB geothermal trenching project, such as Dr. Kilmer's Swamp Root, Hostetter's Bitters, and Bromo-Seltzer, are known to have contained large amounts of alcohol and/or potentially dangerous ingredients. Other nostrums of the time also included significant quantities of narcotics and cocaine and were advertised for their curative properties. Even at the turn of the century many of these patent medicines were identified as having no medicinal value whatsoever, the ingestion of which could cause serious harm or even death (Cramp 1921; McCormick 1906). Conversely, these medicines can be used to illustrate the perceived role that patent medicines played in people's everyday lives. Patent medicines were probably viewed as a cheap alternative to expensive medical care and were advertised as cure-alls with extraordinary medical benefits. Several other medicine bottles from BRVB were from reputable drug stores in Topeka such as the Rowley Brothers drugstore and suggest that medical science and local drugstores were also relied upon by neighborhood inhabitants. These examples from BRVB can be used to illustrate the roles that different types of medical treatments played in people's lives and the distinct contrasts and continuities between pharmaceutical sales of the late 19th and early 20th centuries.

Recommendations and Conclusions

This report is the culmination of three years of archeological monitoring and limited testing at Brown v. Board of Education National Historic Site involving eight separate visits by MWAC personnel. Archeology has confirmed the presence of several structures detailed on historic maps of the neighborhood. The composite map compiled from the 1889–1945 Sanborn maps (Figure 5) should be consulted during the planning stages for all future undertakings that will result in ground disturbance at the park. Archeological findings at BRVB should set an example for other urban parks throughout the Midwest Region because of the lack of visible aboveground signatures for archeological features recently revealed under the present-day landscape.

Investigations at BRVB have demonstrated that significant archeological resources can exist in association with later 20th-century urban developments. For instance, several intact historic structural foundations were located adjacent to the north and east sides of the Monroe Elementary School, a historic well was located in the basement of the Monroe Elementary School, and in the case of the Monroe Playground Field, archeological resources are now known to exist where there was never any visible development at all. Caution should always be used when ground-disturbing activities are being considered, particularly in urban areas where past developments have occurred. These areas should not be assumed to be void of archeological deposits or features simply because no structures are shown on historic maps. As demonstrated at BRVB, what we see on the surface today is generally only the end result of numerous phases of construction and development that occurred over time. Some of these developments might not be visible on the present surface, but they might retain archeological signatures buried beneath the surface.

The archeological work conducted at BRVB has produced a wealth of new information about the late-19th- and early-20th-century inhabitants of the Monroe School neighborhood, and like other archeological projects, has provided new avenues and questions worthy of further investigation. The study of late-19th and early-20th-century urban, industrial, and African-American neighborhoods has seen a marked increase in attention from archeologists and historians (Gradwhol and Osborn 1984; Mayne and Murray 2001; Mullins 1999a, 1999b; Shackel 1996). Unfortunately, the number of studies of Midwest and Great Plains urban and ethnic sites from this time period has lagged behind other areas of the country. Archeological and historical investigations at Buxton, Iowa, stand out as an example. That study was instrumental in telling the story of a predominantly African-American coal mining town in southern Iowa (Gradwhol and Osborn 1984). Other sites in the Midwest Region with potential to inform about working-class communities and ethnic minorities include Nicodemus NHS, Kansas, and Central High School NHS, Little Rock, Arkansas. So far, little archeological attention has been paid to these sites, which have the potential to contain significant archeological resources (Hunt 1996, 2000). The lack of information concerning turn-of-the-20th-century ethnic and urban communities throughout the Midwest Region helps to underline the importance of the current and future study of archeology at BRVB and similar sites.

Recommendations

Because BRVB was established to commemorate the significance of the court decision that was instrumental in the American Civil Rights movement, the primary mission of the park is to interpret the events surrounding that period of history. Nevertheless, the 1860s–1926 neighborhood, which preceded construction of the Monroe Elementary School, should be considered highly significant in its own right, to be preserved and interpreted for future generations. In an effort to avoid "time freezing" or interpreting one history at the expense of another, several NPS units, including Harpers Ferry National Historical Park, have recently chosen to expand their archeological and historical interpretations to include time periods not directly associated with the period of a park's historical significance (Shakel 1996:4–14). It is recommended that BRVB utilize the archeological study of the late-19th- and early-20th-century Monroe School neighborhood as way of interpreting the development of Topeka and as pretext for the fight for civil rights action at the Monroe Elementary School.

Because an extensive archeological inventory has been made of significant portions of the BRVB property, any decisions regarding future activities that may negatively impact the intact archeological resources documented in this report should be based on the results of the 2001–2003 investigations and should be preceded by controlled archeological investigations. In terms of the Section 106 process, this testing should document and determine the exact nature of the resources and evaluate their significance based on National Register of Historic Places criteria. The archeological resources at BRVB are potentially significant because they have been preserved in a relatively stable condition below and surrounding the Monroe Elementary School since 1926. These resources can provide a wealth of information concerning a whole range of topics and issues with regards to turn of the century urban society such as economic and social contexts, consumer choice, health and medical treatments, and changes in historic and early modern technologies.

During a preliminary research trip to the Kansas State Historical Society in Topeka, Sturdevant (2002) found a number of sources, including records of deed ownership and censuses that would provide needed information about specific lot ownership. Unfortunately, these records are not organized in a fashion that will aid research of this type and will take a significant investment in research time to compile lists of lot ownership from the historic deed indexes and records. However, a small number of names associated with specific properties have been presented in this report; see pp. 3–8. Once lot ownership can be traced to specific individuals, this will provide a basic understanding of the residential structure of the Monroe School neighborhood, contributing significant information to archeological research questions concerning race, economics, and specific structural histories.

The potential exists for studying numerous aspects of the archeological and historic resources at BRVB. The Midwest Archeological Center recommends six courses of action for the future: (1) conduct controlled archeological excavations in order to recover detailed information concerning the vertical and horizontal relationships of stratified archeological deposits, structural features, and artifact assemblages at BRVB; (2) identify and evaluate, either through archeological excavation or remote sensing, or a combination of the two, the precise location and condition of other structural features known to have existed on the BRVB property, including any houses not yet investigated and the numerous outbuildings on the western side of Lots 505–523; (3) determine the exact boundaries and nature of the deposits for site 14SH114 in the Playground Field; (4) conduct documentary research of land records and deed ownership of the numerous properties and structures illustrated on the historic maps discussed on pp. 6–8; (5) initiate an ethnographic study of the former Monroe School neighborhood with a focus on gathering information and photographs relating to the residential structures and the late-19th-century Monroe School; and (6) develop an interpretive program that presents the history and archeology of the late-19th- and early-20th-century Monroe School neighborhood to the general public.

Conclusions

The archeological resources that exist on the BRVB property tell the story of the Monroe School neighborhood and the growth of Topeka from the late-19th-century Reconstruction Period into the 20th century. Encompassed in the history of this neighborhood is the migration of thousands of African-Americans from a repressive system with roots deep in the past, to a place they envisioned with opportunities and freedoms never available to them before. Although most Exodusters moved on to other areas, many stayed in Topeka and made it their home. Unfortunately, the opportunities for equality and freedom they had hoped for in Kansas did not materialize, and again the African-American community was forced to struggle under a repressive system of racial inequality. This is a significant period in American history that can help us better understand the dynamics of race relations at the turn of the 20th century. The archeology of BRVB can also provide information concerning the broader technological and social changes that affected all Americans at that time. Because the working class neighborhood that preceded the Monroe Elementary School is relatively undocumented, the combination of archeology and history will continue to provide a better understanding of the people, race relations, and historical context that set the stage for a community to change a nation.

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