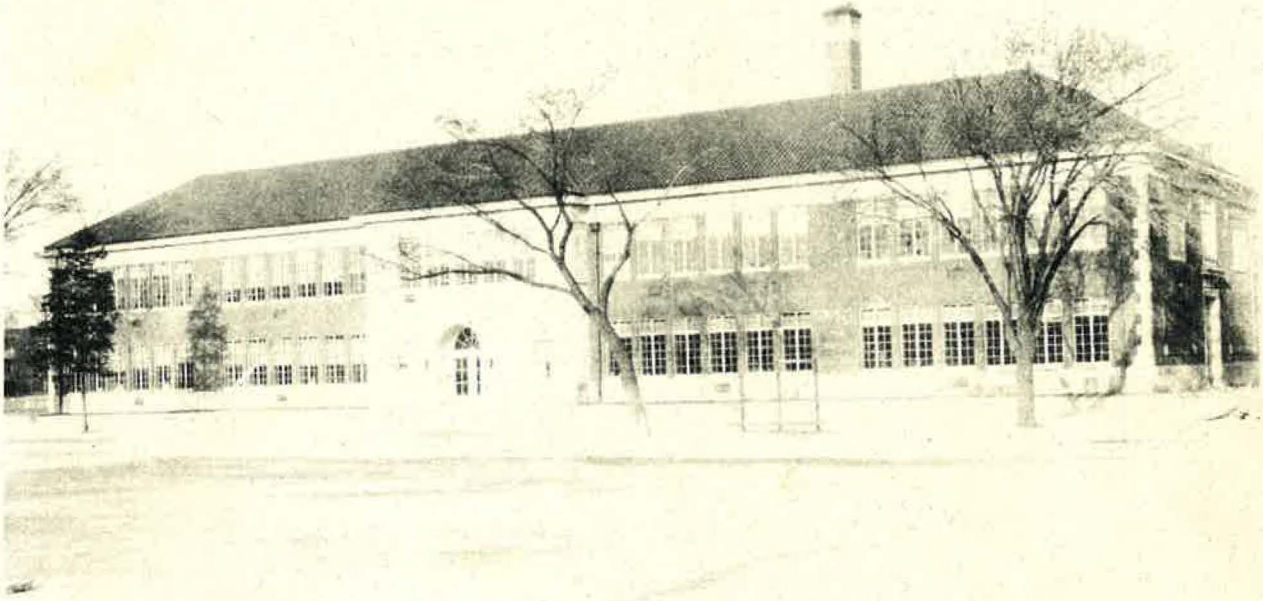
HISTORIC STRUCTURE REPORT

Monroe Elementary School (HS-01)
Brown v. Board of Education National Historic Site

Topeka, Kansas



January 2000
Final Submission

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Monroe Elementary School

(Historic Structure 01)

Brown v Board of Education National Historic Site

National Park Service

United States Department of the Interior

Recommended: _____ Date: 21 Jan 2000
Chief, Cultural Resources

Concurred: _____ Date: 3/28/2000
Superintendent, Brown v Board of Education National Historic Site

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Regional Director, Midwest Region

January 2000
Final Report

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Part A:
Introduction

Part A: Introduction

Statement of Purpose

The Monroe Elementary School, located in Topeka, Kansas, was one of at least 23 public schools associated with the 1954 landmark *Brown v. Board of Education of Topeka* Supreme Court decision which ended segregation in public schools. The 20 "infant" plaintiffs in the Topeka case, alone, attended four different black schools and were denied admission to eight white elementary schools. The site was designated a National Historic Landmark in November of 1991 as an amendment to the Sumner Elementary School nomination for NHL status, listed in May of 1987. Both schools stand as powerful reminders of the African-American struggle for educational equity. On October 26, 1992, the Brown v. Board of Education National Historic Site (BRVB) was established by Public Law 102-525 to commemorate the court case. The legislative purposes of BRVB, as stated in Public Law 102-525, are:

> to preserve, protect, and interpret for the benefit and enjoyment of present and future generations, the places that contributed materially to the landmark United States Supreme Court decision that brought an end to segregation in public education,
>
> to interpret the integral role of the Brown v. Board of Education case in the civil rights movement,
>
> to assist in the preservation and interpretation of related resources within the city of Topeka that further the understanding of the civil rights movement.

Under management of the National Park Service, the site will be open to the public and present an interpretive program that informs and educates visitors on local and national issues as they relate to the understanding of segregation and the civil rights movement. The Park Service will be assisted in the interpretation of the site by the Kansas State Historical Society, the Brown Foundation, the Topeka Board of Education, Washburn University, the Black Historical Society of Topeka, and others.

General Building Description

One of four elementary schools for African-American students in Topeka in 1950, Monroe Elementary School is a two story brick and limestone structure designed in the Italian Renaissance style by Thomas W. Williamson, a prominent Topeka architect. The school site is located on the southwest corner of the intersection of Monroe Street and 15th Street, with an associated play field across Monroe on the southeast corner. Two playgrounds flank the structure on the north and south with a courtyard area in front (east) and parking area in the rear (west). A single flagpole stands at the north east corner of the historic site and a baseball backstop remains on the north east corner of the play field.

The interior layout is based on a classic school design of a long longitudinal central corridor with rooms opening on each side and an intersecting traverse corridor originating at the main entrance flanked by the administrative offices. The gymnasium anchors the transverse corridor rising two stories and containing a raised stage and circumventing balcony. A partial basement under the south section of the building houses the mechanical and electrical systems with distribution tunnels running around the perimeter beneath the first floor structure.

Project Team Members

Following the goals of the Park, the National Park Service, Great Plains Systems Office engaged the professional services of Quinn Evans/Architects, an architectural firm specializing in historic preservation, to review documentary materials relating to the history and evolution of the building and to conduct a comprehensive survey of the existing structure. Team members included Fitzpatrick Structural Engineering, P.C., for structural analysis, SWS Engineers, Inc., for mechanical and electrical engineering analysis, and Seebolm, LTD for paint analysis. Information has been gathered to formulate strategies for repair and to recommend long-range goals for the rehabilitation of the school and its site. The results of this investigative research and documentation are contained in this Historic Structure Report. The report is organized as follows:

Part A: Introduction

Documents the project team members, the scope of the project, general building location and description, and investigation methodology.

Part B: Historic Documentation

Documents and analyzes historic background and context by developing the period of significance and the character defining features of the building and site.

Part C: Archeological Analysis

Summarizes and analyzes any archaeological report available pertaining to the historic chronology of the building and site.

Part D: Comparable Structure Analysis

Analyzes the design with respect to other Topeka facilities, historic precedents, and published plans available during that time for school buildings.

Part E: Architectural Analysis

Analyses historic building chronology based upon variations in construction technique, technology, materials, and design.

Part F: Existing Condition Analysis

Evaluates and documents the existing conditions of the building's architectural materials, structural system, MEP systems, communication and security systems, barrier free accessibility, rest room functions, paint analysis, hazardous materials observations, and existing space utilization.

Part G: Building Chronology

Presents written and graphic analysis of the building's chronology based on known historical, archeological, and physical investigatory information with emphasis on exterior physical architectural elements, history of alterations and additions, and an analysis of each building episode.

Part H: Design Recommendations

Provides written and graphic design recommendations for the preservation/rehabilitation of the building; roof and site drainage; repair or replacement of deficient structural, mechanical, electrical, security, and communication systems; interior restoration including spatial arrangements, partition placement, utility work, and interior access in accordance with the *Secretary of the Interior's Standards for Rehabilitation.*

Part I: Research Recommendations

Provides recommendations for further historical, archaeological and/or physical investigations.

The Historic Structure Report will serve as the primary planning document for the preservation of the Monroe Elementary School site, and the basis for the development of construction drawings and specifications for its rehabilitation.

The task of rehabilitating a historic building requires that a preservation architect follow a disciplined approach to documenting and analyzing information. This is accomplished by utilizing investigative procedures, specialists in materials and construction methodology, scientific technology and various resources, documents, and photographs to begin to understand and compile the history of the historic resource.

Investigation Methodology

Before determining the preservation scheme, the restoration team studied in depth the documentary materials provided that related to the building and the site, including: property nominations to the National Register of Historic Places; historical backgrounds on both the building and site; and historical photographs. A thorough survey of the building and its structure was undertaken to document architectural characteristics of moldings, construction techniques, material changes, fenestration and door types and changes, and structural framing changes all of which provide insight into the evolution of the building. To further record the building and its existing conditions, photographs were taken and drawings were prepared from information provided by the Park, GPSO, and Historic American Buildings Survey (HABS) drawings.

This report is based on documentary evidence collected to date, limited physical probing and destructive testing, and architectural inspection. Of necessity, the research process is not concluded with the completion of the report, but will be supplemented in the future by additional information gathered through the investigations of the preservation plan recommendations and as additional documents and information are discovered.

Part B:

Historic Documentation

Part B: Historic Documentation

Acknowledgments

Much of the information in this section is based on work by the National Park Service and the Historic American Buildings (HABS) survey.

Historical Background

The history of the State of Kansas and the Monroe Elementary School provided the United States Supreme Court with a unique opportunity to examine segregation in public schools, not on the basis of the quality of the building, staff, and curriculum, but in terms of the stigma implied by forced isolation.

Indigenous peoples, collectively referred to as Native Americans, occupied the North American continent long before European settlers arrived. The westward expansion of the United States led to increased pressure and displacement of the native population.

The 1850s led to a lengthy, and often violent, battle between abolitionists and pro-slavery forces. The future of slavery in Kansas would disrupt the existing balance of power between these groups, each claiming an equal number of states in the Union. The new territory's proximity to southern slave states made it a popular destination for escaped slaves.

Border wars with Missouri continued from 1855 to 1859, until Kansas adopted a state constitution outlawing slavery and designating Topeka as the state capital. In response to the election of Abraham Lincoln as president, seven states seceded from the Union in 1860. The following January, Kansas became the thirty-fourth state by an act of Congress. By April, four more states seceded and the Civil War began with a battle at Fort Sumter, South Carolina.

The postwar years featured increased immigration by both blacks and whites, as the railroads expanded westward. In 1874 the original Monroe School opened as a four-room building at the corner of Fifteenth and Monroe, becoming one of five black elementary schools in Topeka. Although segregation in public schools was permitted on a limited basis, the Kansas legislature stipulated there be "equal educational opportunities" for children of both races. Buildings, curriculum, and teacher experience were comparable between black and white schools.

The 1879 "Exoduster Movement" of former slaves emigrating from the South in response to increased racial segregation and postwar hostility further enlarged the black population in Kansas. Topeka was booming economically thanks to the railroads, and, relative to other parts of the U.S, there were many educational and occupational opportunities for African-Americans.

Historical Significance

History of the Monroe School, Segregation, and the "Separate But Equal" Doctrine

On May 18, 1896, the Supreme Court of the United States handed down a decision that was a "milestone in American legal history and a turning point in America's constitutional law."[1] Going well beyond the facts of the case known as *Plessy v. Ferguson* (which involved a Louisiana law that segregated blacks and whites in railway carriages), the Court "set the constitutional foundation for the 'separate but equal,' racially discriminatory, Jim Crow legislation which became the hallmark of southern law and northern custom for the next half century."[2] Quite simply, the Court felt that the "separation of races by law did not compromise equality before the law."[3] In fact, Justice Henry Brown said that the separation of races constituted "a 'reasonable' form of regulation, consistent with 'the established usages, customs, and traditions of the people.'" He further said that the "most common instance" of this recognized power "is...the establishment of separate schools for white and colored children."[4] Despite the Court's ruling, however, separate facilities almost never meant equal ones. And, opportunity in "all areas - schooling, housing, employment, and politics - was denied. Capability meant nothing; race everything. Evidence was everywhere - literally everywhere - of a legally enforced destiny of inferiority for the black."[5]

Over the course of the next fifty to sixty years, there were many legal challenges to the *Plessy* decision, however, none were successful until the case of *Brown v. The Board of Education of Topeka*. "Few people realize that as early as 1849 African Americans [had been fighting] the system of education in this country that mandated separate schools for their children based solely on race. Kansas [alone] attempted 11 legal challenges for school integration before *Brown*."[6] The *Brown* case addressed "issues relating to the exercise of the sovereign power of the people of the United States to protect their natural rights from the arbitrary

restriction and limits imposed by state and local governments."[7] And, until the *Brown* decision, restrictions were used to "maintain a system of segregation of the races that predated the founding of the United States as an independent nation."[8]

In handing down the *Brown* decision on May 17, 1954, the Supreme Court, in an extraordinary moment, reversed *Plessy* and declared that "separate educational facilities were inherently unequal, and as such, violated the 14th Amendment to the Constitution which guarantees all citizens equal protection of the laws."[9] The Court's decision was then, and still is today, one of its most important moral, political, social, and constitutional decisions in the history of the United States. The decision's greatness, according to J. Harvie Wilkinson, III, author of the book, *From* Brown *to* Bakke*: The Supreme Court and School Integration: 1954-1978*:

> lay in the enormity of injustice it condemned, in the entrenched sentiment it challenged, in the immensity of law it both created and overthrew. It is rich in national insight, a beginning point of American introspection. It was a crossroads, not just for an outcast race, but for an outcast region, a testing ground for liberal values and theory, a challenge for the rule of the law and the authority of the Court... So also was the triumph in *Brown* the triumph of revolution, a witness both to the end of an old order and the advent of an uncertain, perceptibly better, though unmistakably imperfect new. [10]

In essence, the *Brown* decision reaffirmed the original intent of the 14th Amendment of the Constitution of the United States which states that 'No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws'. And while the decision focused "narrowly on education, the principal was broadly applied to every aspect of life for African Americans."[11] No longer were African Americans "supplicants seeking, pleading, begging to be treated as full-fledged members of the human race; no longer were they appealing to morality, to conscience, to white America's better instincts. They were entitled [after *Brown*] to equal treatment as a right under the law..."[12] Because of *Brown*, new dimensions had been given to the constitutional concepts of equal protection and due process of law. Jack Greenberg, former NAACP Legal Defense and Educational Fund Director said that *Brown* "helped to crystallize a national commitment to eradicate racial inequality," and, thus, served as a catalyst for the modern civil rights movement.[13]

Brown v Board of Education: a closer look

Brown v. Board of Education of Topeka was the collective title used for five school segregation cases argued before the Supreme Court. The other cases included: *Briggs et al. v. Elliott et al.* (South Carolina); *Davis et al. v. County School Board of Prince Edward County, Virginia; Gebhart et al. v. Belton et al.* (Delaware), and *Bolling v. Sharpe* (District of Columbia). The given title of this opinion was *Brown v. Board of Education* because the Topeka case was the first case on the Supreme Court's docket. Because the Topeka case was very different from the other five, and because of the scope of this HSR, the ensuing discussion will predominantly focus on the Kansas case.

The *Brown* case was unique for many reasons. First, there was ambivalence and misgivings on the part of the state's officials who were reluctant, but "required to defend a position supported by history, tradition, and the known standards of the law yet contrary to personal conviction and inconsistent with a people's self-created image of itself." Further, "only in Topeka were school officials unwilling to defend a policy of racial segregation that they and their predecessors had practiced for nearly a century."[14]

Second, among the other state cases and the District of Columbia case, Kansas had "a unique history with respect to the status and rights of its black citizens. Only Kansas was admitted to the Union under a constitution that prohibited slavery."[15]

Third, the Kansas statute that was under attack in *Brown* allowed, but did not require, racial segregation in public elementary schools in cities that had 15,000 or more residents. Determinations "as to the maintenance of separate schools were made by boards of education in cities covered by the statute. Thus, the law was intended to permit the implementation of local policies most consistent with local customs and attitudes."[16]

Fourth, according to the doctrine of *Plessy v. Ferguson*, if the public facilities provided to the citizens of all races were equal, then separation in and of itself did

not violate the Fourteenth Amendment clause that forbids a state to make or enforce any law that would deny to any person within its jurisdiction the equal protection of the laws. In Kansas, the facilities provided in the racially segregated schools were found to be of equal quality. However, those facilities provided to black students in each of the other jurisdictions were found to be vastly inferior and unequal to those provided to the white students.

It was no coincidence that the five school segregation cases ended up at the Supreme Court virtually at the same time. Their journey had been brilliantly planned and charted by the National Association for the Advancement of Colored People (NAACP) as part of the organization's strategy to end racial discrimination in America. The organization "rapidly became the driving force behind the antisegregation movement."[18] Prior to 1950, the NAACP had challenged the separate but equal doctrine by arguing that separate facilities, schools in particular, were not equal. However, what resulted from this litigation was a "resolve on the part of many states to pay whatever had to be paid to equalize facilities and maintain them separately."[19] It became clear that if black Americans were ever going to achieve equality under the law, the Supreme Court would have to reverse *Plessy*. It was "the intention of the NAACP leadership to bring about precisely that, and by 1950 its legal strategists were preparing cases for litigation that would challenge racial segregation as a violation of rights guaranteed by the U. S. Constitution."[20] *Brown v. Board of Education of Topeka* was one of those cases.

Brown and the Monroe Elementary School

At the beginning of the 1950s, Topeka operated eighteen elementary schools for whites and four for blacks. Many of the black students had to travel long distances under unsafe conditions to reach one of the four schools, even though they often lived within close proximity to a white school. In the fall of 1950, members of the Topeka, Kansas, Chapter of the NAACP agreed to challenge, once again, the "separate but equal" doctrine governing public education. The plan involved enlisting the support of fellow NAACP members and personal friends as plaintiffs in a class action suit filed against the Board of Education of the Topeka Public Schools. A group of thirteen parents agreed to participate on behalf of their children (twenty children). Each plaintiff was to watch the paper for the fall enrollment dates and then take their child(ren) to the school for white children that was closest to their home and attempt to enroll them. Once they attempted enrollment and were denied, they were to report back to the NAACP. This would provide the attorneys with the documentation needed to file a law suit against the Topeka School Board.

Oliver Brown was one of the parents who had agreed to participate. Brown's eldest daughter attended the Monroe School, one of the four black schools in Topeka. The Monroe School, named for the street upon which it was built, was over two miles from their house. To get there, Brown's daughter had to walk through a railroad switching yard, cross a busy boulevard, and await a school bus to travel to Monroe. This was despite the fact that the Brown family lived only four blocks from the Sumner Elementary School, which served the neighborhood's white children. As was anticipated, when Brown attempted to enroll his daughter at Sumner Elementary, she was denied admission. The children of the other plaintiffs were also denied admission to their neighborhood schools as well. In August 1951, a three-judge federal panel found against Brown and the other plaintiffs, acknowledging that while segregation did have a detrimental effect of Topeka's African American children, it was not illegal as the school facilities and programs were equal to those of the white students'. The NAACP then appealed to the U.S. Supreme Court, where the Kansas case was joined with similar cases from Delaware, Virginia, South Carolina, and the District of Columbia. In order to overturn the lower court's decision, the Supreme Court would have to strike down the "separate but equal" doctrine. On May 17, 1954, at 12:52 PM., the Supreme Court did just that. In delivering the decision of the Court in the *Brown* case, Chief Justice Earl Warren announced that :

> We conclude that in the field of public education the doctrine of 'separate but equal' has no place. Separate educational facilities are inherently unequal. Therefore, we hold that the plaintiffs and other similarly situated for whom the actions have been brought are, by reasons of the segregation complained of, deprived of the equal protection of the laws guaranteed by the Fourteenth Amendment.[21]

This decision had, and continues to have, ramifications throughout the country, as well as throughout the world.

Declining enrollment led to closing of Monroe Elementary School in 1975. The building and site were converted to a warehouse for the school district. Playground equipment, water fountains, and mud scrapers were removed from the site. The playgrounds were converted to parking lots for buses and maintenance vehicles. Five years later the Topeka Board of Education sold the property to Richard C. Appelhans, the first in a series of private developers. Appelhans intended to convert the building into office space or a private school, but was unsuccessful. In 1982, he and his partner, Richard L. Plush, Jr. sold the property to the Fairlawn Church of the Nazarene, for use as a community outreach program and meeting place. S/S Builders, owned by Mark A. Stueve, purchased the site from the church in 1988, returning it to a warehouse, this time for construction materials and equipment.

In 1990, Stueve announced his intention to auction the building, due to high maintenance costs and the unsuitability of the building for his needs. The Brown Foundation, fearing the building would be razed, rallied community support to stop the auction. Their purpose for saving the school was to save the building in the short term and get the building designated as a national historic site in the long term. The Sumner School, the white neighborhood school in which Oliver Brown attempted to enroll his daughter in the fall of 1950, had already been designated a National Historic Landmark in 1987. This virtually ensured that the Monroe School, the complementary site to Sumner and the focus of the landmark *Brown* decision, would also achieve National Historic Landmark status.

The Trust for Public Land came to the school's rescue, purchasing the property from Stueve in 1991, and the Monroe School was added to the National Historic Landmark nomination for the Sumner School. On October 26, 1992, President George Bush signed the *Brown v. Board of Education* National Historic Site Act of 1992 (Public Law 102-525), establishing the Monroe Elementary School Building as a National Park. The legislated purposes of the historic site are as follows: (1) to preserve, protect, and interpret for the benefit and enjoyment of present and future generations, the places that contributed materially to the landmark United States Supreme Court decision that brought an end to segregation in public education; (2) to interpret the integral role of the *Brown v. Board of Education* case in the civil rights movement; and, (3) to assist in the preservation and interpretation of related resources within the city of Topeka that further the understanding of the civil rights movement.[22]

In December of 1993, the title for the site was transferred through the Trust for Public Land to the National Park Service. The significance of the Monroe School, Cheryl Brown Henderson, president of the Brown Foundation for Educational Equity, Excellence, and Research, has said, is that it "symbolizes both the harsh reality of discrimination and the promise of equality embodied in the Fourteenth Amendment, and it stands as a monument to the generations of Americans who refused to accept the denial of their civil rights."[23]

Analysis of Historic Photos

Exterior

Exterior photographs of Monroe Elementary School are available for the following periods: 1927, circa 1930, 1948, and 1953. The photographs were taken from approximately the same angle and distance, and capture the entire east facade.

Figure 1: 1927

This photo was taken shortly after the building was completed. Judging from the active chimney, the building heating plant was in operation. The school is occupied, as indicated by the window sill flower pots, different blind levels, and half-curtains in the Principal's Office and Teachers' Lounge.

At the time of construction, the chimney was a prominent feature of the roofline. The top of the chimney was decorated with limestone panels. The tile roof ridge is decorated with small finials. At the extreme right of the picture, the vent stack for the Boys' Toilet is visible on the north roof slope.

There is lumber and other debris at the north east corner. This is probably demolition waste from the previous school, which was only 12 feet from the new construction site. The Topeka School Board moved quickly to tear down the outdated structure in order to reclaim the land as a playground.

The east entry is flanked by decorative wall sconces. The planting area in front of the windows is still barren, but tree saplings, mud scrapers, and uneven bars have

been installed. There are three holes visible in the street curb, probably for site drainage.

Figure 2: Circa 1930s

The exact date of this photograph is unknown. The trees are in full leaf, and there is a creeping ground cover in the planter at the north end. The uneven bars have been removed. Although the trees block much of the front, it is clearly in the same condition as 1927. The only difference seems to be the chimney: the limestone panels at the top, so prominent in the 1927 photo, are now heavily soiled with soot.

Figure 3: 1948

One characteristic not visible in the earlier photos, the operable windows, is evident in the 1948 photograph. The east entry lights have been removed but not replaced. The south mudscraper has been removed. The north and south curb drain seem to be blocked. There are now small shrubs in the limestone planters. The downspouts seem to have been repainted. Although visible from 1927 on, they did not contrast with the brick background as strongly as they do in this photo.

Figure 4: 1953

Monroe remains essentially unchanged. The chimney, while still soiled at the top, retains its original height and limestone decoration. The entry lights have not been replaced. A chain-link fence has been installed around the north playground.

Interior

Interior photographs of Monroe Elementary School are available for the 1940s. An undated, circa-1940 picture documents the finishes in the Auditorium. The 1949 pictures are from a series of class photographs, and document the interior condition and furnishings of several classrooms.

Figure 5: Circa 1940s, Monroe Auditorium

The original wood floor and stage drapery are shown in this photograph of a dance for black high school students held at Monroe. There is an American flag to the west of the proscenium opening. The proscenium wall, which is the south wall of the auditorium, does not have the brick wainscotting found on the other three walls of the room. Instead, a darker color paint carries the line of the wainscotting along the south wall. There appears to be a curtain or bunting material on the balcony railing. It cannot be determined if this was the normal condition or had been installed especially for the dance.

Figure 6: Kindergarten Class, 1949

This photo, taken in the southeast corner of Room 101, shows the fireplace, book shelves, original door, and chalkboard. The lighting fixture above the fireplace is probably one of the original pair, but seems to be missing a decorative glass.

Figure 7: Second Grade Class, 1949

This is Room 123, on the first floor, east side, of the south wing. The radiator and unit ventilator are visible against the window wall. The desks, judging by the style and wear, are probably the originals. Bookcases are visible in the back corner. The floors are wood and the walls smooth plaster.

Figure 8: Third Grade Class, 1949

This is Room 201, in the southwest corner of the second floor. The finishes are identical to Room 123. There is a bookcase at the back of the room.

Figure 9: Fourth & Fifth Grade Class, 1949

This is Room 206, in the northwest corner, second floor. At the back of the room is the Miller Sanitary Wardrobe. The panels pivoted on a central hinge, revealing a coat room. When closed, the doors provided additional chalkboard space. The finishes are identical to the previous rooms.

Figure 10: Fifth & Sixth Grade Class, 1949

This is Room 216, in the southeast corner of the second floor. The wardrobe is on the right side of the back wall. An additional chalkboard has been installed to the left of the wardrobe, possibly because the additional work space was needed by the more advanced students.

Figure 1: 1927



Figure 2: Circa 1930s

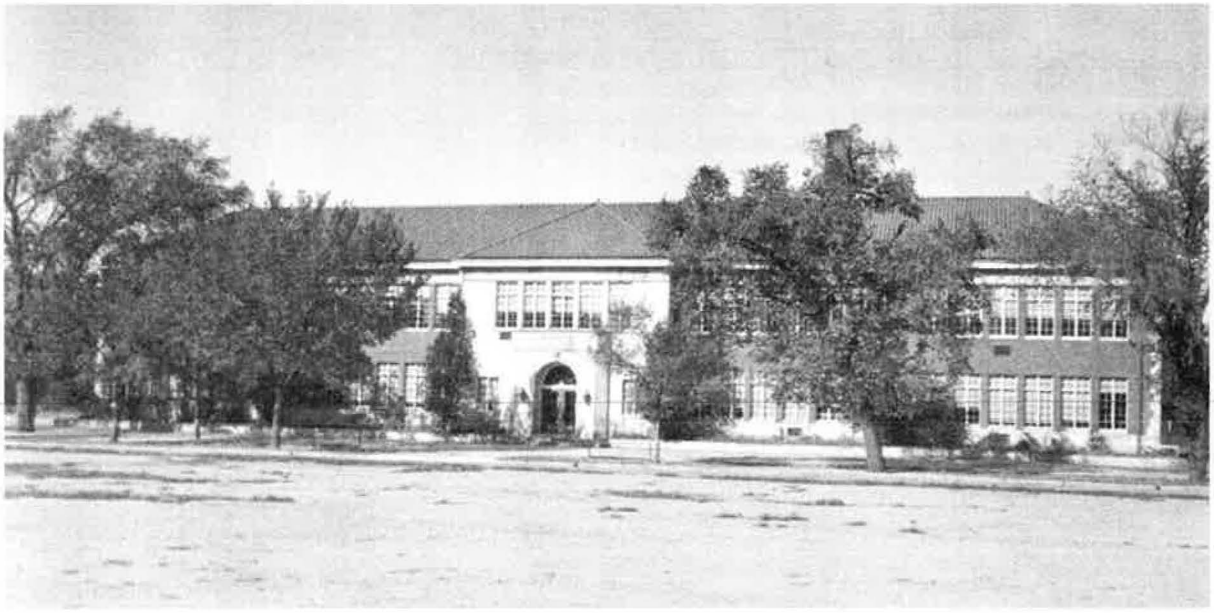


Figure 3: 1948

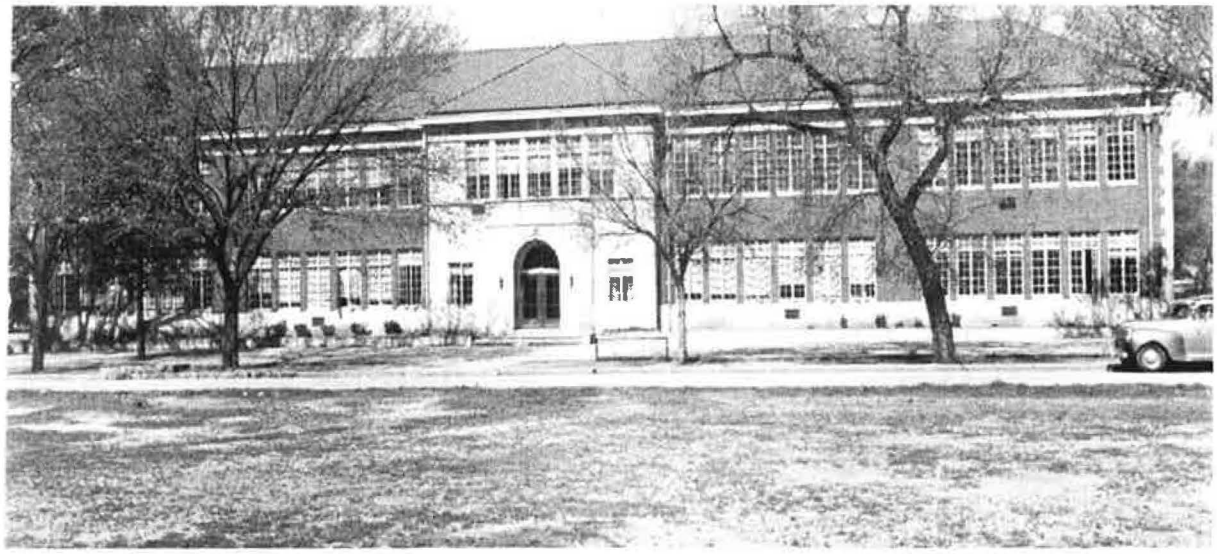


Figure 4: 1953



Figure 5: Circa 1940s, Monroe Auditorium



Figure 6: Kindergarten Class, 1949



Figure 7: Second Grade Class, 1949

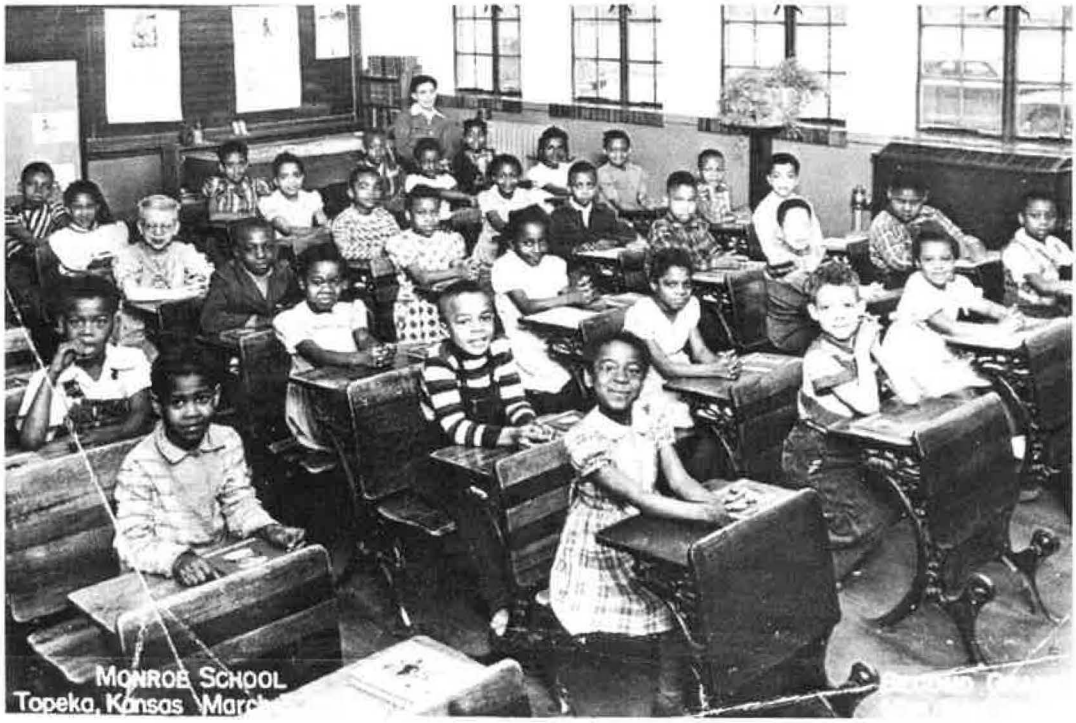


Figure 8: Third Grade Class, 1949



Figure 9: Fourth & Fifth Grade Class, 1949

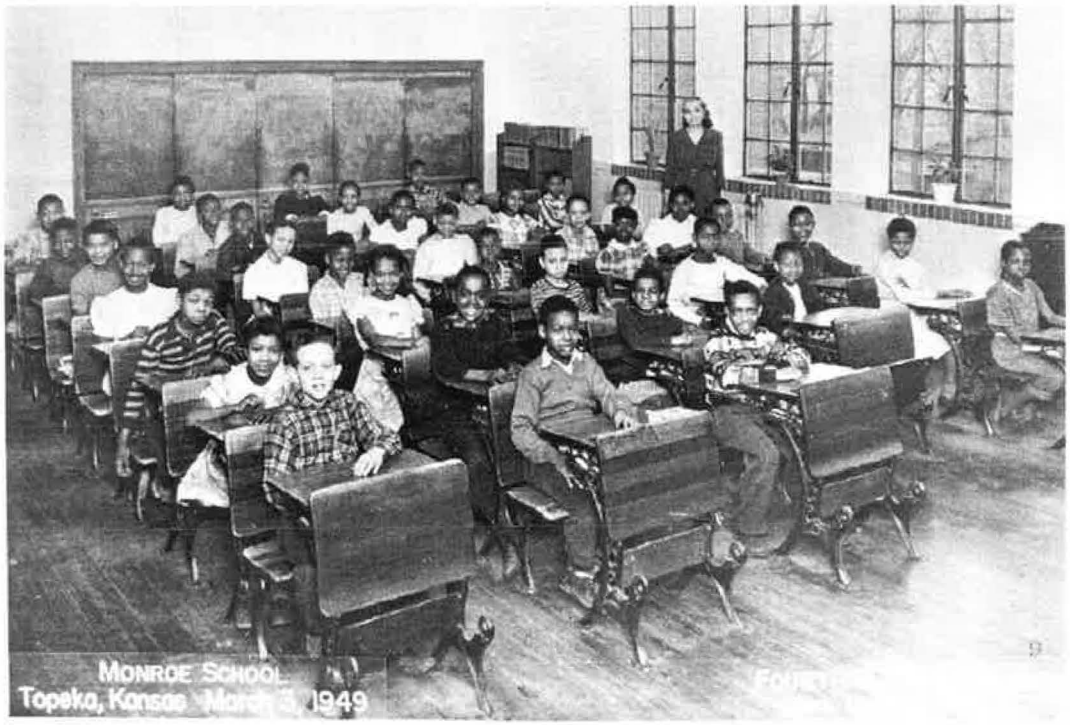
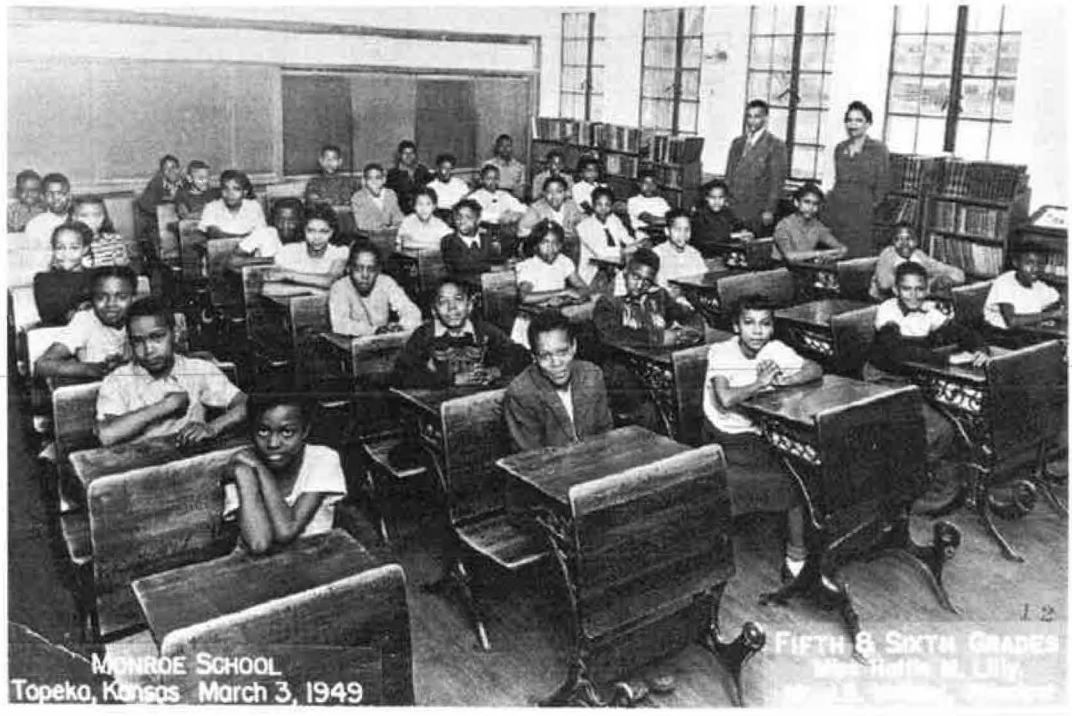


Figure 10: Fifth & Sixth Grade Class, 1949



History of Ownership

The Monroe site was originally part of a homestead claim by Jacob Chase, one of the founders of Topeka. Chase sold a 160-acre claim to John Ritchie in 1856. Ritchie's parcel was officially designated as NE 1/4, Section 6, Township 12 South, Range 16 East, 160 acres.[24] Ritchie eventually subdivided the land. When the parcel was annexed by the city of Topeka after Ritchie's death in 1887, a street grid was developed based on lots 25' x 150', with a 20' wide alley bisecting the block for utility access.

In 1855, John Richie, a European man, settled in the future state capital of Topeka. He and his wife, Mary Jan Shelledy were committed abolitionists and worked as "conductors" on the Underground Railroad. Richie purchased a 160-acre claim from Jacob Chase in 1859, building a home and farm on part of the site. Richie became a prominent figure in Topeka history, selling and sometimes giving away pieces of his land to blacks and poor whites. These sites collectively became known as "Richie's Addition" and included the site of the future Monroe School. By 1865, Richie established a "Christian College" named in honor of Lincoln, and later established a cemetery for African Americans and poor whites who were not allowed in Topeka's cemetery.

In July of 1868, lots 505, 507, and 509 on Monroe Street at the corner of 15th were purchased by the Topeka Board of Education as the site for a school for black children. These lot numbers, based on Sanborn maps of 1889 and 1896, are consistent with the current numbering system. An existing building on the site was rented as a temporary school until 1874, when construction began on the first Monroe Elementary School. This building was remodeled in 1911 and demolished in 1927 when the new school was completed.

In June of 1913, the Board purchased lots 513 and 515, and by 1916 had purchased lot 511. In 1925, the Board purchased lots 517, 519, 521, and 523. In 1926 lots 525, 527, 529, and 531 were added, the last two through condemnation. These combined lots became the site for the new Monroe Elementary School and playgrounds completed in 1927. In 1934, seeking additional playground space, the Board purchased the vacant triangular parcel on the east side of Monroe Street. This was the final acquisition to the Monroe site.

Subsequent sales of the property included the entire Monroe site package. The school was closed in 1975, but the property was held by the school board until it was sold to Richard C. Appelhans in 1980. The Fairlawn Church of the Nazarene purchased the property from Appelhans in 1982, selling it to S/S Builders (Mark A. Stueve, President) in 1988. The Trust for Public Lands relieved Stueve of the property in 1991 and donated it to the United States of America, National Park Service, in 1993.

Tabulated Chain of Title for Monroe Elementary School

Pre-1856	Jacob Chase
1856	John Ritchie
1868-1980	Topeka Board of Education, lots 505-531 on Monroe Street.
1980-1982	Richard C. Appelhans
1982-1988	Fairlawn Church of the Nazarene
1988-1991	S/S Builders Mark A. Stueve, President
1991-1993	Trust for Public Lands
1993-present	United States of America, National Park Service

Timeline for Monroe Elementary School

1889	Sanborn maps indicate a four-room school building at corner of Monroe and Fifteenth Streets.
1911	The original Monroe building is remodeled and expanded.
1913	Kansas creates a state school commission and begins to phase in compulsory education and extend the school year.
1919	Monroe Street is paved with asphalt.

1925 January: A new Monroe school is commissioned from prominent local architect Thomas Williamson, to be sited on Lots 517, 519, 521, 523, immediately south of the original school on lots 505 through 509.

February: preliminary designs for Monroe are approved.

May: bids out for the construction of Monroe.

1927 February 8: Monroe is near completion.

February 11: Topeka School Board takes bids for razing the old building.

The completed Monroe School opens in the fall of 1927. The old Monroe school is razed, and Lots 505-509 are converted to the north playground. Lots 525 through 531 are added as south playground.

1934 A triangular parcel on Monroe Street, east of the school and bounded by the railroad right-of-way, is purchased by the school board as additional playground space.

1941 *Graham v. Topeka Board of Education* decision ends segregated junior high schools.

1948 McKinley Burnet, president of local NAACP chapter, begins drive to integrate Topeka elementary schools.

1950 Fall: NAACP leads African-American parents in an attempt to integrate Topeka public schools. Oliver Brown attempts to enroll his daughter Linda at Sumner Elementary, a white school, and is rejected.

1951 The NAACP files a school integration case in Federal Court titled *Oliver Brown, et al. v. The Board of Education of Topeka.*

1952 The alley between 15th and 17th is paved.

1954 On May 17, the *Brown v. Board of Education* decision is handed down by the U. S. Supreme Court, overturning *Plessy*.

An aerial photograph of the Monroe site shows the north yard is now paved with asphalt.

1955 *"Brown II"*: The Supreme Court orders desegregation of public schools "with all deliberate speed."

1957 Monroe's electrical system is scheduled to be updated. Whether this actually occurred is in doubt, as the lighting was still considered inadequate in a 1958 survey.

1958 A Topeka-wide survey of educational facilities ranks Monroe above Sumner in building quality. The survey notes the mechanical training room is now a lunchroom and the domestic science room is empty. The survey also considers the physical plant of both schools inadequate for modern teaching.

1961 The Teachers' Lounge floor is tiled, and new plumbing and doors are installed. The tile, installed directly over the wood floor, appears to be a vinyl asbestos product, and is similar to that used in the auditorium, Manual Training Room, and Domestic Science Room. All of these tile installations may date to this period.

1963 Air conditioning is installed in selected areas of the building, primarily on the first floor, north wing.

1964 A new boiler, gas burner, and unit ventilators are installed to compensate for aging mechanical systems.

1969 The former Manual Training Room has been turned into a kitchen, and is now extensively remodeled in order to expand the federal hot lunch program.

1974 The Kansas State Historical Preservation Office surveys the Monroe site but does not proceed with a National Register of Historic Places nomination.

1975 Monroe Elementary School is closed due to falling enrollment. The school board converts the building to a warehouse/maintenance facility for the school system. Playground equipment, water fountains, and mud scrapers are removed to create parking lots for

buses and maintenance vehicles. The basketball backboard at the rear of the building and the baseball backstop on the east playground are left intact.

197? Topeka rezones the area around the Monroe School from residential to light industrial/commercial use. The composition of the neighborhood shifts as businesses, commercial warehouses, and parking lots replace single family houses.

1980 Richard C. Appelhans purchases the Monroe School property on June 27, for $100,000. His intended use for the property is not clear; an office or private school are suggested.

1982 Appelhans and partner Richard L. Plush, Jr. sell Monroe to the Church of the Nazarene for use in religious services and community outreach programs. Interior walls on the first floor are removed to accommodate new functions: congregational meetings, a dental clinic, and a clothing bank. The original lights are replaced with fluorescents, and the original first floor doors are replaced with 1-3/4" solid wood doors. To meet fire codes, the open stairs at the north and south end of the building are enclosed in drywall, and the interior vestibule doors moved in to provide direct outside access from the stairs.

1987 Sumner School is listed on the National Register of Historic Places and designated a National Historic Landmark. The Kansas City Chapter of the Church of the Nazarene is listed on a November 2 "preliminary site information questionnaire." Submitted on October 27, 1987 by Pamela Potter, architect, the property is listed as unoccupied and was not considered endangered. The church apparently was applying for investment tax credits for its work on the property, intending to convert it for low income housing with dwelling unit per classroom and second story added within the auditorium. The questionnaire notes that two stairwells have been enclosed, the roof is tiled, the classrooms have wood floors and there is a salt-glazed brick wainscoting in the corridors.

1988 Monroe Elementary School is purchased by S/S Builders, Inc. Owner Mark A. Stueve returns building to use as a warehouse for construction materials and equipment. The remaining interior partition walls are removed, along with the new material added by the church.

The Brown Foundation is formed by the Brown family and interested community members. This effort was led by Cheryl Brown Henderson, a former teacher at the Monroe School.

1980's Late in the decade, a small fire damages the rooms in the southeastern corner of the building. The damage is restricted to the interior plaster, and is not structural.

1990 S/S Builders attempts to sell the Monroe site at auction. Jerry Jones, a Brown Foundation board member, sees the sale notice posted on the property fence, and alerts the Brown Foundation. Led by Cheryl Brown Henderson, the foundation begins attempts to save the Monroe school through designation as a National Historic Landmark.

1991 The 1987 Sumner School NHL nomination is amended to include Monroe School. The Trust for Public Lands assumes the carrying costs of Monroe from S/S Building, acting as a holding company and facilitating its potential transfer to the National Park Service.

October: Monroe Elementary School is designated a National Historic Landmark, as an addendum to the Sumner nomination.

1992 Congress passes and President George Bush signs the *Brown v. Board of Education National Historic Site Act of 1992*, establishing a national park at the site of the Monroe School.

1993 The tile roof is replaced with asphalt.

December: Title for the 1.85 acre Monroe Site is transferred to the National Park Service.

1995 Monroe's Determination of Eligibility as a cultural landscape is completed, declaring the site eligible for National Historic Landmark designation.

November: The auditorium roof is temporarily repaired.

2000 Brown v. Board of Education National Historic Site is scheduled to open to the public.

1 James Oliver Horton and Michele Gates Moresi, "Roberts, Plessy and Brown: the Long, Hard Struggle Against Segregation," *CRM* No2 (1996): 10.

2 Ibid, p. 10.

3 Ibid, p.10.

4 Mark Whitman, editor. *Removing a Badge of Slavery: The Record of Brown v. Board of Education* (New York: Markus Wiener Publishing, Inc., 1993): xvii.

5 J. Harvie Wilkinson, III., *From Brown to Bakke: The Supreme Court and School Integration: 1954-1978* (New York: Oxford University Press 1979), 38.

6 Cheryl Brown Henderson, "The Brown Foundation Story: Developing Resources to Interpret Public History," *CRM* No.2 (1996): 9.

7 Harry Butowsky, "Passing the Baton: Preservation of African-American History," *CRM* No.2 (1996): 4.

8 Ibid, 4.

9 Rayford Harper, "Beyond Simply Black and White," *CRM* No.2 (1996): 5.

10 Wilkinson, 6.

11 Harper, 4.

12 Wilkinson, 28.

13 Jack Greenberg, "The Supreme Court, Civil Rights and Civil Dissonance," *The Yale Law Journal 77* (1968): 1523. Quoted in: Rachel Franklin Weekley, "Beyond Image and Icon: History's Bounty at the Brown v. Board of Education National Historic Site," *CRM* No.2 (1996), 36.

14 Paul E. Wilson, *A Time To Lose: Representing Kansas in Brown v. Board of Education* (Lawrence, KS: University Press of Kansas 1995), 3.

15 Wilson, 4.

16 Wilson, 4.

17 Wilson, 5.

18 Anne Elizabeth Powell. "Unfinished Business," *Historic Preservation* (May/June 1994), 60.

19 Powell, 61.

20 Powell, 61.

21 Powell, 100.

22 "Brown v. Board of Education National Historic Site Commemorates the End of Segregation in Public Education," *Fundamental Justice, A Newsletter from the National Park Service*, (October 1993, issue 1), 1.

23 Powell, 100-101.

Part C:

Archeological Research Summary

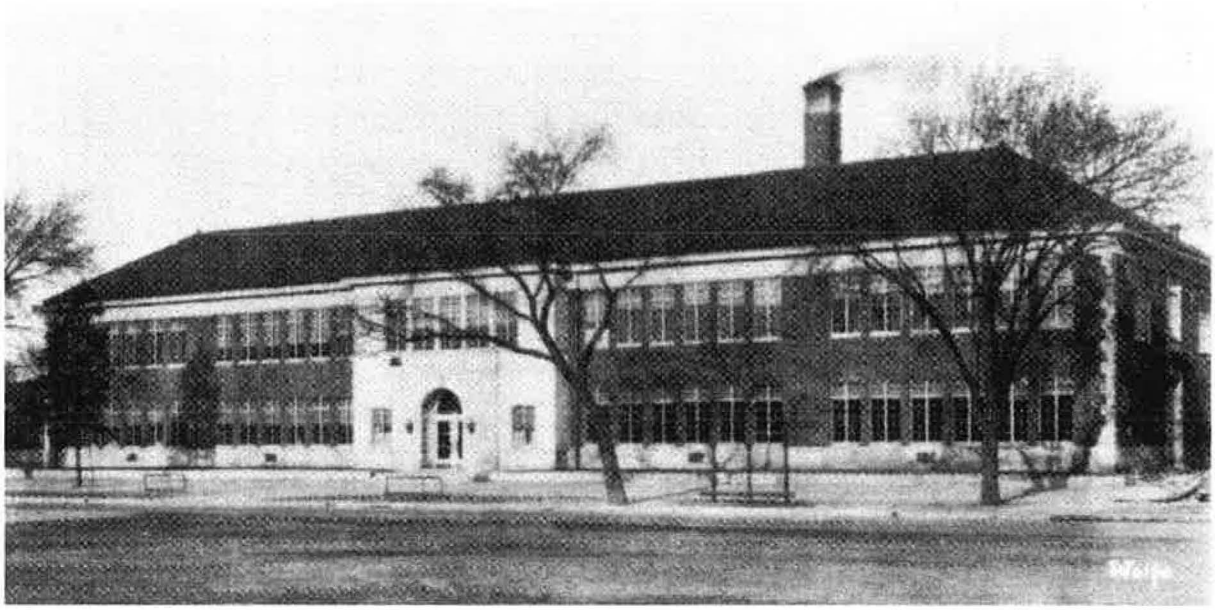
Part C: Archeological Research Summary

Archeological Investigation

There are no available archeological reports on the Monroe Elementary School. The site, at the corner of Monroe and Fifteenth Streets in Topeka, Kansas, has been occupied by a school since 1874. The current Monroe School was erected just south of its predecessor, which was quickly demolished in 1927 after the new, and now extant, building was complete. Foundations of the earlier buildings have not been excavated. Previous to the school construction, the land was part of "Ritchie's Addition," a 160-acre claim purchased by John Ritchie from Jacob Chase in 1856. Chase's ownership presumably dates back to the official opening of Kansas for settlement in 1854.

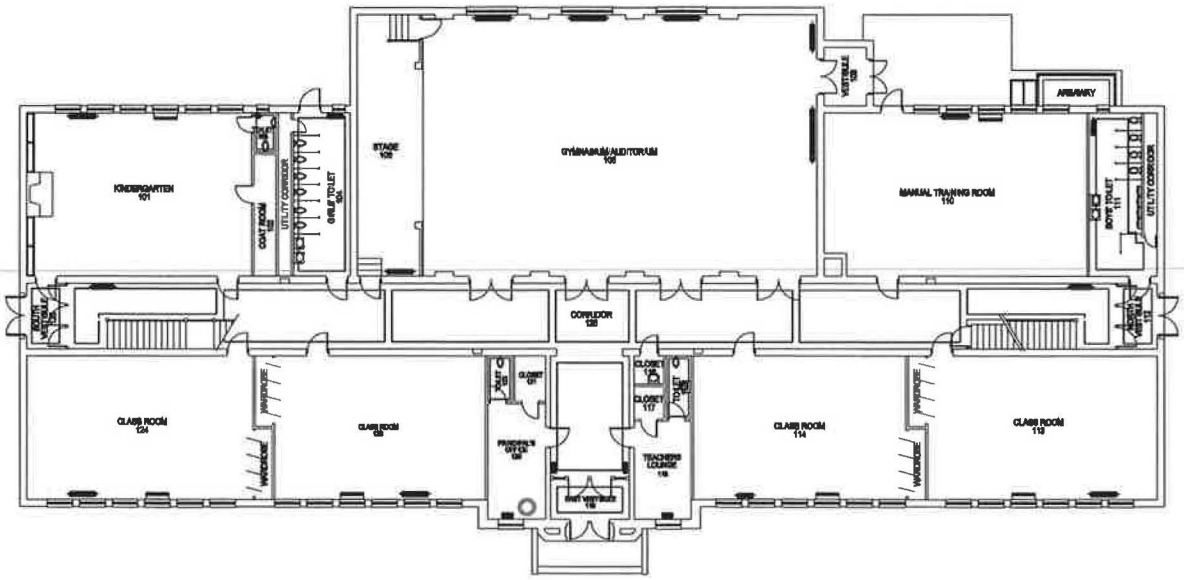
Part D:
Comparable Structure Analysis

Figure 1



Monroe Elementary School, 1927. Courtesy of the Kansas State Historical Society.

Figure 2



First Floor Plan, Monroe Elementary School, 1927. Drawing by QUINN EVANS/ARCHITECTS, 1997, based on blueprints by Thomas W. Williamson.

Part D: Comparable Structure Analysis

The Monroe Grade School is based on an archetype prevalent in the United States from the turn of the century up to World War II. The multi-storied, long rectangular form with a projecting entrance bay and articulated auditorium was as iconic a structure as the "little red school house" of pioneer days. Designed around the program of educating children in the skills required for adult life, these schools were functional, efficient, and pleasant spaces. They were decorated in a wide range of historical styles; sometimes as eclectic as the surrounding residential area. The choice of stylistic trappings variously reflected the ethnicity of a district, interpretations of local vernacular, and the symbolism of a strong, vibrant city.

The City of Topeka was justifiably proud of its school system. Topeka and Kansas in general were recognized for quality of instruction and facilities. The Topeka Board of Education engaged Thomas W. Williamson and his firm to design a series of progressive schools that would express the pride of Topeka. Williamson, a Kansas native, opened an independent practice in Topeka in 1912; his firm would design nearly all of the Topeka schools constructed from 1920 to 1935. The firm, Williamson & Co., is well-known for its design of Topeka High School, completed in 1933. In 1925-27, the firm was responsible for the design of at least five new schools and the renovation of two others. The most famous school Williamson designed during this period was the Monroe Grade School. Ironically, Monroe became famous not because it was unique or special in an architectural sense, but rather because is was so very ordinary, within the Topeka school system.

Precedents in School Design

The science of public school design was well established by the time Williamson began his practice in 1913. William G. Bruce's "School Architecture: A Handy Manual for the Use of Architects and School Authorities" was on its fourth edition by 1910. This pocket-sized tome, published by the American School Board Journal, offered guidelines on every aspect of school design and construction. From site selection to a sample contract, Bruce presented a methodology for both designers and school boards. By 1914, his work has become a family industry. The Bruce Publishing Company, based in Milwaukee, Wisconsin, issued regular compilations of school architecture and commentary, eventually developing specialized books for different school types and age levels. Fig. 3 and Fig. 4 are examples of schools the Bruce Publishing Co. gathered into collections to provide guidance to school architects.

While there is no evidence that Williamson based any of his work on commercially available plan books, he took great care that his schools met the most modern standards for materials, systems, and general functionality. In many ways, Monroe Grade School is the physical embodiment of contemporary theories on school architecture. Williamson's own work was published in a Bruce book of 1925, *Grade School Buildings Book II.* Fig. 5 and Fig. 6 show the exterior and plan of a school he designed in Paola, Kansas. This was similar in massing, organization, and style to Monroe Elementary School in Topeka.

Building Layout

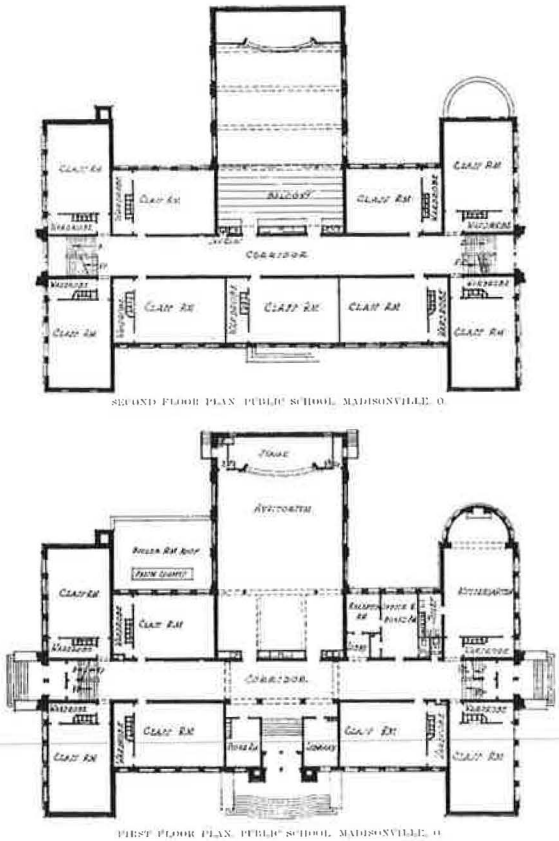
"School Architecture" recommended architects consider accessibility to daylight, ease of supervision, and proximity requirements when developing floor plans. The layout of the various classrooms drove the interior floor plan. Ground floor or first floor rooms were deemed best for kindergartens, manual training rooms, administrative offices, and auditoriums.[1] Natural science labs went on the top floor, to make for easy removal of fumes. Monroe had three specialized classrooms to deal with, the Manual Training Room, the Domestic Arts Room, and the Kindergarten. The kindergarten and training room were on the first floor. The domestic arts room was on the second floor (for removal of cooking odors) and adjacent to the Lunch Room. Bruce speculated that the product of cooking exercises could be put to good use in the Lunch Room.

To aid maintenance, Bruce instructed that the plumbing for schools should be placed in accessible utility corridors, not enclosed in the walls. This also can be found in Williamson's work: each toilet room in Monroe has an associated utility corridor, easily accessible by the janitor.

Long straight corridors were recommended by Bruce, for they made supervision of students easy. The preferred corridor extended out to the exterior walls, providing light and ventilation. Wide entrances with double doors leading directly to stairs and corridors were to be used. One entrance, outside the building and leading directly to the basement should be in-

Figure 3

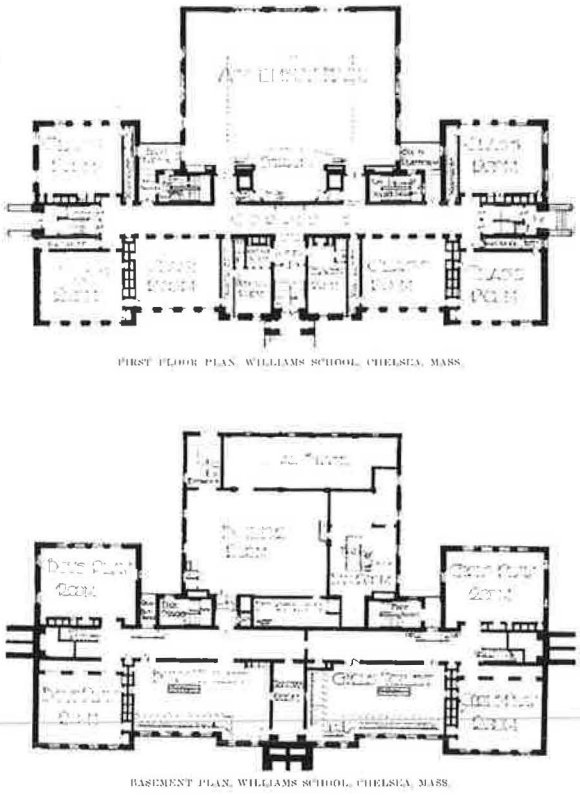




Public School, Madisonville, Ohio. From Bruce, Grade School Buildings, *1914.*

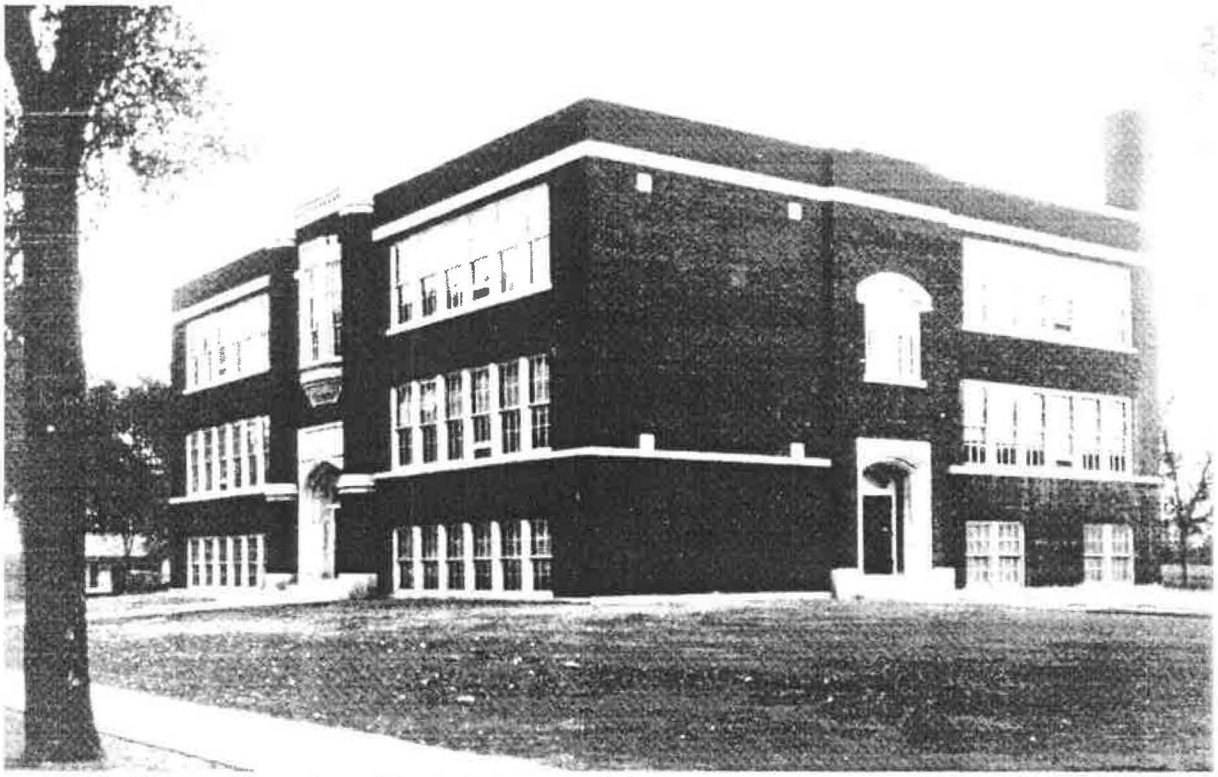
Figure 4





Williams School, Chelsea, Massachusetts. Kilbam & Hopkins, architects. From Bruce, Grade School Buildings, *1914.*

Figure 5



Exterior of a Williamson-designed school for Paola, Kansas, published in Bruce, Grade School Buildings, Book II, *1925.*

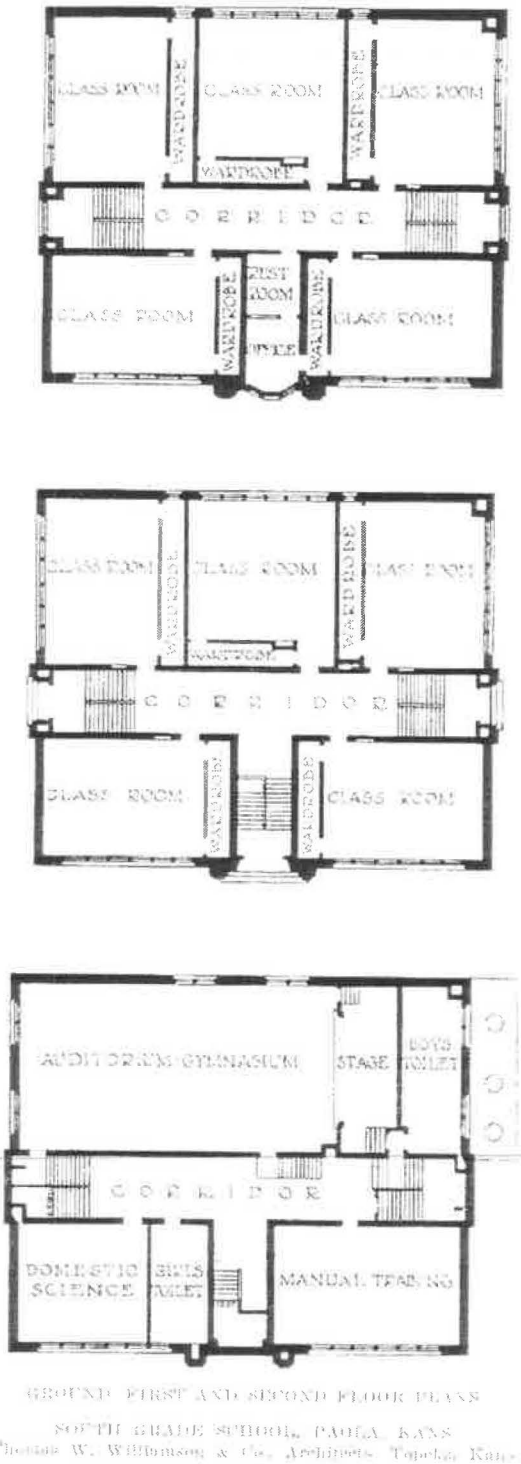
cluded for access by the janitor. Rooms that might require after hours access, for community functions, for example, should be grouped together and have isolated heating and ventilation. The location of the auditorium (by now a standard feature) depended on the degree of usage. A centrally located auditorium was convenient, but increased student travel time from one end of the building to the other.

Monroe's circulation is through a long, north-south corridor. On both floors, the corridor terminates at the exterior wall. The original vestibules with double doors and particularly the windows at the second floor were designed to admit as much light as possible. The windows are operable, providing an opportunity for ventilation. At the northwest corner of the building, there is a lightwell and entrance to the basement mechanical room. The gymnasium, which was widely used as a community gathering space, has a separate entrance vestibule on its north side. The central location of the gymnasium kept the symmetry of the building intact and created a terminus for the short east-west axis created by the main door. The small size of Monroe's footprint meant that any increase in travel time from one end of the building to another created by the presence of the gymnasium was negligible.

While double-loaded corridors were standard, Bruce acknowledged a trend toward single-loaded corridors. This allowed for better light and ventilation, but was much more expensive. Williamson routinely used double-loaded corridors in his schools, including Monroe, which probably accommodated both tight building sites and budgets. Sumner School (1935) is one example of a single-loaded corridor by Williamson.

Any design for a school needed to accommodate future expansion, in light of a growing native population, increased immigration, and the need for increasingly specialized classrooms. Monroe's simple rectangular form would have easily accepted additions, particularly side wings that would create the "H" configuration Williamson used in larger schools.

Figure 6



Floor plans for the school in Paola, Kansas, published in Bruce, Grade School Buildings, Book II, *1925.*

Lighting

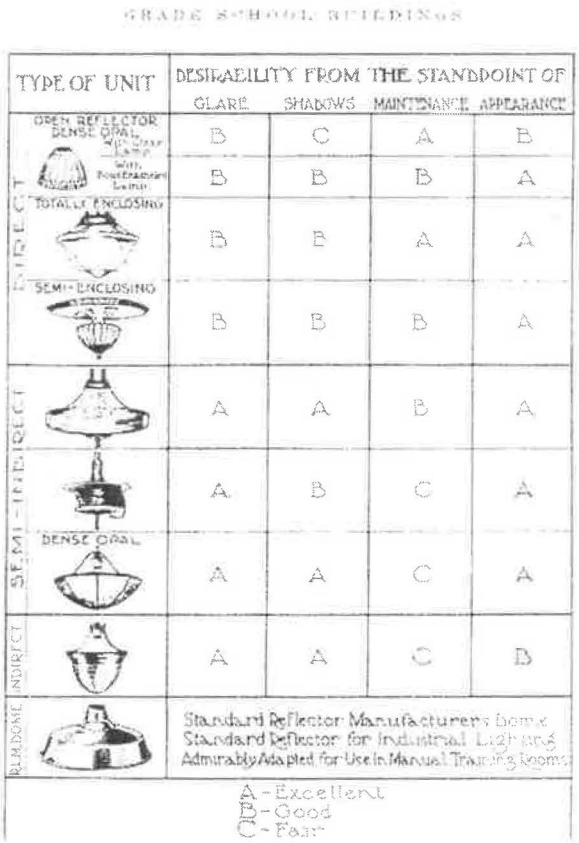
Although electric lighting was common in schools of the period, the standard was to rely primarily on natural light, with artificial light as a supplement for cloudy or winter days. Bruce and others felt this was healthier (the hygienic qualities of sunlight are frequently mentioned) and created fewer problems with glare. Kingsley considered a window to wall distance of 24 feet optimal for natural lighting.[2,3]

An east or west window wall was preferred for general classrooms. This prevented the sun from entering the room directly, except for very early or very late in the day. Glare and solar heat gain were therefore minimized. Northern oriented rooms were reserved for specialized classes in sewing, manual training, and art, where a steady light was needed. Within the classroom, desks were always placed perpendicular to the windows, to provide side lighting without glare. The light was to come from the student's left side and pass over the shoulder. This makes sense for right-handed students, as they would not be writing in shadows. Matte finishes on desks, chalkboards, walls, and even textbook pages reduced eye fatigue caused by reflected glare. The classrooms in Monroe have windows on one side only, either the east or west wall. As seen in historic photographs and indicated by the chalkboard positions, the desks were arranged in rows parallel to the window wall. Ceilings and walls were painted light colors to diffuse the light throughout the room.

Spaulding and Palmer, lighting engineers from Nela Park, Ohio, cautioned architects about artificial lights that were very bright but not properly diffused: "The brightness contrast, and hence the glare, can be considerably reduced by providing light backgrounds . . ."[4] Indirect light fixtures were preferred for their ability to bounce off the ceiling and walls, thereby providing even illumination. Location of the light sources was also addressed by Spaulding and Palmer: The "spacing of the units should not be more than 1-1/2 times the distance that the units are mounted above the working plane."[5] The lights should never be more than 8 feet above floor level, according to Bruce.

In the 1914 edition of *Grade School Buildings*, Louise Klein Miller discussed various types of light fixtures, rating them as to glare, shadows cast, maintenance, and appearance (Fig. 7). The original Monroe classroom fixtures are not available, and are not visible in historic photographs. Because the original lighting fix-

Figure 7



GRADE SCHOOL BUILDINGS

TYPE OF UNIT	DESIRABILITY FROM THE STANDPOINT OF			
	GLARE	SHADOWS	MAINTENANCE	APPEARANCE
DIRECT — OPEN REFLECTOR DENSE OPAL	B	C	A	B
DIRECT —	B	B	B	A
DIRECT — TOTALLY ENCLOSING	B	B	A	A
DIRECT — SEMI-ENCLOSING	B	B	B	A
SEMI-INDIRECT	A	A	B	A
SEMI-INDIRECT	A	B	C	A
SEMI-INDIRECT — DENSE OPAL	A	A	C	A
INDIRECT	A	A	C	B
SEMI-DENSE	Standard Reflector Manufacturer's Name. Standard Reflector for Industrial Lighting. Admirably Adapted for Use in Manual Training Rooms.			

A - Excellent
B - Good
C - Fair

This chart from Bruce's 1914 book, Grade School Buildings, *rates various types of light fixtures.*

tures have been removed, there is little information on their placement. The lighting fixtures in the gymnasium and a later study by the school board suggest that the artificial lighting was an inadequate supplement to the available natural lighting.

Materials

Bruce recommended materials known for their durability. A stone or brick exterior and masonry or steel construction ensured a long building life. The interior materials should be extremely durable, washable, and need little maintenance. Wainscoting of salt-glazed brick or glazed ceramic tile was encouraged, and both can be found in Monroe. The corridor floors are of terrazzo, well known for its ability to withstand heavy traffic. The remarkably good condition of the interior fabric after 50 years of use as an elementary school and 15 years of virtual neglect is a testament to Williamson's choice of materials.

Specialized Rooms

This was an era of increasing classroom specialization. Manual training rooms, domestic science rooms, and auditoriums were increasingly elaborate. Kindergartens were also standard, and Bruce recommended that they have a circle painted on the floor. Monroe includes all four specialized room types; the kindergarten features a fireplace and its own toilet. There is no evidence that a circle was ever painted on the floor. However, there was a Topeka precedent. *Gone But Not Forgotten,* a book on early Topeka schools published in 1990 by the Shawnee County Historical Society, includes a photograph, from 1898, of one of the earliest kindergarten classes in Topeka. A circle can be seen on the wood floor.[6]

In addition to the classrooms and principal's office, a teachers' room was to be included with any school that employed more than six teachers. Williamson included a teachers' room with closet and lavatory. Libraries were common in schools as early as 1910, yet Monroe did not have one. The classrooms did have bookcases 12" deep, with doors, as Bruce recommended. It is not known at this time why Monroe did not have a library, particularly as it originally served students through the eighth grade.

Grounds

Large playgrounds were considered vital to a child's well-being. A landscape architect, Louise Klein Miller, specified in Bruce Publishing's 1925 compilation that elementary schools should have 2-1/2 to 3 acres for the overall site.[7] Bruce called for 30-50 sf of playground per pupil in 1910: "All in all, a corner lot, regular in outline and rectangular in shape, and adjoining an alley is to be preferred."[8] He also felt boys and girls should have separate areas on the playground. While Bruce's lot description is a match for Monroe's, the playgrounds were inadequate in size, even after the 1934 addition of a triangular parcel across Monroe Street from the school. The historic photos reveal grounds that have lost most of their grass through hard use. A landscape architect was not engaged for Monroe, but was used by Williamson on other school projects that same year.

For a more detailed discussion of the Monroe Elementary School landscape, please see the Cultural Landscape Inventory, Levels I and II, completed by

Sherda Williams and David Barnes for the National Park Service.

Topeka Schools, 1910-1935

The following examination of Topeka Schools attempts to make an architectural comparison between Monroe School, its predecessors, and buildings that follow. The study is made simpler by the fact that Williamson's firm designed nearly all of the new schools constructed in Topeka between the World Wars. The comments are based strictly on exterior photographs unless stated otherwise. Monroe (1926), Washington (1910), Buchanan (1885), and McKinley (1907) were the four elementary schools serving Topeka's African-American population in 1954. Buchanan and McKinley were expanded in 1921, Washington in 1926.

Manual Training High School, 1905

The Manual Training High School was designed by James C. Holland and Frank Squires. The building was of red brick, and the two lower floors had rusticated horizontal joints. The building was square in plan and symmetrical, with central projecting bays and dormers on each of the two visible faces. The roof is hipped and penetrated by the dormer gables. Italianate brackets and dentil molding were used at the eaves. The entry is capped by a large lintel with frieze and cornice, resting on engaged square columns. The central entry in a projecting bay will became a frequent theme in Topekan school architecture.

Van Buren School, 1910

This masonry building, three stories high with five structural bays and a central entrance, was very similar in style to the later Monroe School. Based on two photographs, the front of the building may have been constructed of rusticated ashlar stone. The parapet was of brick with decorative arches, and a scrolled pediment capped the central entry bay. This was a two-story arch flanked by engaged double piers supporting a massive limestone lintel with an ornamental cornice and frieze. The end walls, like Monroe, had brick relief panels on either side of the secondary entrance. The overall presentation of the building was compact, massive, and Italianate in style. The ornamentation was modest, and except for the entry was generally confined to brick work emphasizing structural characteristics.

Figure 8: Van Buren School, 1910



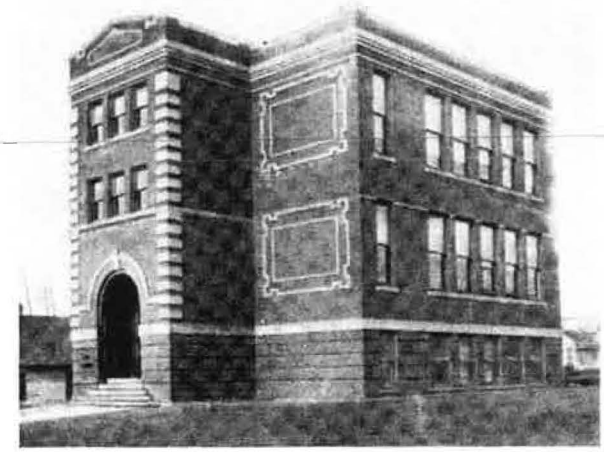
Kansas State Historical Society, Topeka, KS

Figure 9: Washington School, 1910



From Gone But Not Forgotten, *1990.*

Figure 10: Quinton Heights School, 1913



From Gone But Not Forgotten, *1990.*

Washington School, 1910

Like Monroe, Washington was designed as a school for African-American children. Similar to the Van Buren School and the later Monroe School, this two-story brick building had a central entrance bay and evenly spaced windows. The watertable was of rusticated limestone, and a band of limestone underscores the upper windows. The parapet had corbelled brick and a decorative pediment over the entry bay. A two-story Roman arch frames the double doors and a large arched window. The general configuration is very like Monroe, but much smaller.

Quinton Heights School, 1913

This small, four-room school had two-part massing. The entry and offices were contained in a small block attached to the larger block of classrooms and offset from the center. Of brick with a rusticated foundation and limestone water table, the school had little in the way of ornamentation. The arch over the entry door had an exaggerated keystone, the corners of the entrance bay were quioned with limestone block, and there were decorative limestone boarders in the blank classroom wall that faced the street. A simple brick pediment topped the entry bay.

Buchanan Street School, renovated by Williamson & Co. in 1920.

The Buchanan School was constructed in 1885. Like Monroe, this building had unified, two-story massing and a projecting entrance bay. The bay was of the same brick as the school's body, but was capped by a cupola and pediment. The hipped roof, and brackets at the eaves, are stylistically Italiananate, but the symmetry of the massing and windows is Renaissance.

The renovated and enlarged school of 1920 had a more prominent entry pavilion and large, horizontal groupings of windows. The windows at each room were not separated by the facade brick, creating a strong horizontal emphasis that is also evident at Monroe. The eaves were widened and the hipped roof lowered. The side walls were similar to Monroe, with a secondary entrance and corridor window.

Boswell Junior High School, 1922

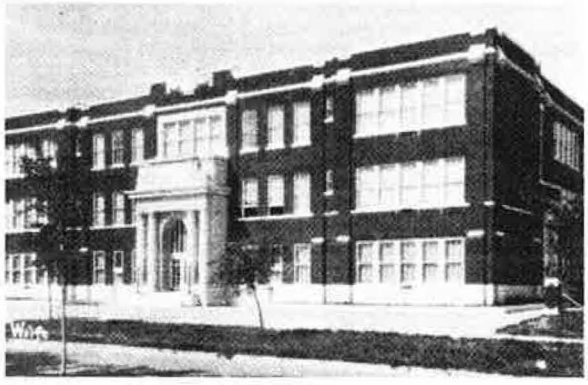
Externally, this building was the most similar to Monroe, and may be considered Monroe's direct stylistic ancestor. It was originally constructed as a grade school, but became a junior high school in 1926. The large, rectangular massing, the central main entrance in a projecting limestone bay, and the blank end walls with a secondary entrance and corridor window were very similar to Monroe. The windows however, were double hung, not casement style, with three vertical lights in each sash. There was a greater diversity in the Boswell facade than found at Monroe, with brick buttresses articulating the bay structure. The inner room windows were evenly spaced with vertical bands of brick. The end rooms' windows were ganged together, with no intervening brick. There was carved ornamentation at the cornice above the projecting entry bay, and columns on either side of the main door. There was also a cutout detail in the parapet above each buttress. The application of stylistic ornament was more pronounced than at Monroe.

Figure 11: Buchanan School, 1920



QUINN EVANS/ARCHITECTS, 1996

Figure 12: Boswell Junior High School, 1922



Kansas State Historical Society, Topeka, KS

Parkdale High School, 1924, by Williamson & Co.

Parkdale featured an entry on either side of the auditorium/gymnasium, marking a departure from the single central-entry designs of Williamson's, and national, previous school designs. The plan was an "I" in formation, with the blank ends of the side bays facing the street. The building was ornamented with Spanish Mission style details and what appears to be a stucco exterior. The tile roofs were gabled. The eaves were decorated with brackets designed to look like vigas poking through the stucco. The window bays and sills were flush with the surrounding surface. The windows and lack of ornamentation were similar to Monroe.

Figure 13: Parkdale High School, 1924



Kansas State Historical Society, Topeka, KS

Roosevelt Junior High School, 1925, by Williamson & Co.

Roosevelt was the first Topeka school constructed specifically as a junior high school. This building offers simple, one-block massing. The body of the building was brick with limestone quoins. The entry was the most prominent feature. It was a two-story high, triple-bay of limestone, set flush into the brick face with quoins providing the transition between materials. There were three identical doors, each with a double-height, recessed Roman arch supported on engaged columns. The lighting fixtures were prominently displayed in the arch above each door. The entry was approximately six steps up from grade and the stairs were flanked by limestone curbs.

Figure 14: Roosevelt Junior High School, 1925



Kansas State Historical Society, Topeka, KS

Roosevelt's windows very similar to Monroe. Double-hung rather than casement style, they had unadorned jack arches and limestone sills. The end wall, visible in an historic photograph, was similar to Monroe's, but the low-relief brickwork frames do not contain limestone panels. There is a side entrance with an arched top and articulated keystone. There are additional windows in the end wall, suggesting offices or classrooms looking out of the end wall. This is one of the few Williamson schools with this condition. At Monroe and many others, the end walls are blank, with only the corridor bay being expressed by the side door and end window of the second floor corridor.

Figure 15: Clay Grade School, 1926



QUINN EVANS/ARCHITECTS, 1996

Clay Grade School, 1926, by Williamson & Co.

The new Clay Grade School had Tudor-revival styling and a more richly ornamented exterior than Monroe.

Clay and Monroe had similar construction budgets and were erected the same year, yet the Clay School had far more architectural ornamentation: a more complex roof line, dual entries, and half-timbered gables. Each of the entries was treated with a massive limestone alcove, Tudor arches, and decorative reliefs. The parapet at the edge of the slate roof was crenellated, with limestone trim. The side wing end walls that faced the street were blank but had ornamented gable walls. The casement windows were subdivided into very small panes of glass and surrounded with bands of limestone. The ornamentation of Clay was not elaborate, but offered more variety than the flat facades of Monroe.

At this time, a comparison of the schools' programs, interiors and plans has not been made.

Curtis Junior High School, 1926, by Williamson & Co.

Curtis was another expression of Williamson's interest in Tudor-Revival. Dual limestone entries, each with a Tudor arch, a window, and a relief panel, projected from either end of the brick building and were surrounded by limestone buttresses. The parapets above the entries were crenellated. Very little carved ornament was used. Perhaps the most striking feature of Curtis was the masonry: blocks of limestone were randomly inserted into the brick facade.

The internal structure of the building was expressed in brick piers and buttresses. The gable ends of the side wings faced the street. Tiny panes of glass were mounted in mullions visually more substantial than the steel windows seen at other schools. Each window was trimmed with limestone at the head and sill, and was separated from its neighbors left and right by articulated piers. The entrance stairs were grand, with two flights of steps and tall stone curbs. Secondary entrances, like the one at the right of Fig. 16, were also ornamented with piers, curbs, and arches.

Crane Junior High School, 1928, by Williamson & Co.

Crane, like Clay, was a simplified version of Tudor Revival. The massing was long, rectangular, and two stories high. A gable roof, possibly of slate, ran parallel to the street. Either end of the simple block was decorated by a gabled entry bay, each containing three long, thin windows over a Tudor-style arch. The entry

Figure 16: Curtis Junior High School, 1928



Kansas State Historical Society, Topeka, KS

Figure 17: Crane Junior High School, 1928



QUINN EVANS/ARCHITECTS, 1996

bays were of the same material as the body of the school, and were framed by mock buttresses. The classroom windows were double-hung, eight lights over eight. Like Monroe, they were grouped together (here in sets of four) marking individual classrooms. There was no ornamentation around the windows, and no other bay articulation aside from the window grouping. The sides of the building project beyond the main facade, creating a small wing wall.

Topeka High School, 1932, by Ted Greist

In the Gothic Revival style, Topeka High School featured pointed arches and a complicated roof. The main entrance to the school was a square tower double the height of the main building. The main building and base of the tower were brick. Above the ridge line, the tower

was limestone. There was a pair of lancet windows in each face of the tower, and each corner ended in a finial. Quoins and buttresses ornamented the tower.

Classroom windows were made up of small panes set into substantial mullions. The exteriors of the windows were framed with limestone. The windows and doors at the secondary entrance, to the gymnasium, feature recessed, pointed arches. The roof appeared to be slate.

In both massing, program, and ornamentation Topeka High School was more elaborate than Monroe, and most of the other schools. The building was deliberately picturesque, a distinct departure from the tight symmetry of earlier Topeka schools.

Figure 18: Topeka High School, 1932

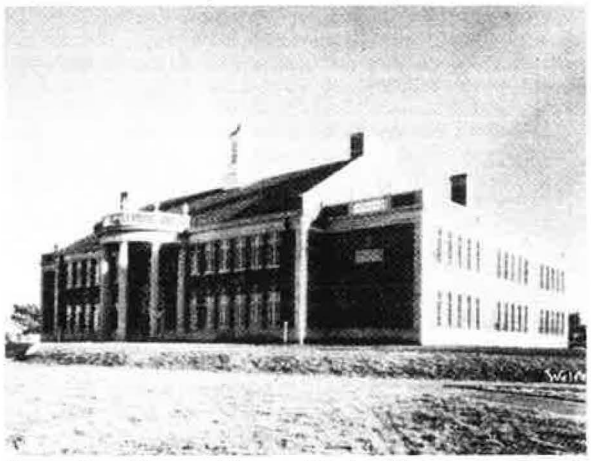


Kansas State Historical Society, Topeka, KS

Randolph Grade School, 1933, by Williamson & Co.

This building was one of Williamson's rare ventures into the Federal Revival style. The symmetrical massing of a large, gable roofed section flanked by smaller horizontal, flat-roofed wings was more familiar in colonial Virginia than Kansas. The main entry was marked by a two-story, half-round portico. The gable roof featured large brick chimneys at either end and a central cupola. Balustrades surrounded the flat roof sections. Although in a more restrained style, the ornamentation was as elaborate as that found on Williamson's Tudor Revival schools.

Figure 19: Randolph Grade School, 1933



Kansas State Historical Society, Topeka, KS

Sumner School 1935, by Williamson & Co.

The 1935 Sumner building had 10 classrooms, a kindergarten, a health clinic, and an indoor playroom beneath the auditorium. Individual rooms were provided for Home Economics, Home Economics Practice, and Sewing, illustrating the trend toward increasingly specialized instruction. The overall design of Sumner was more in keeping with the Modernist movement of the 1930s and less reliant on historicism. Its asymmetrical facade and two-sided entry pavilion were a significant departure from Williamson's usual work.

The entrance to Sumner was a tower at the junction of two perpendicular wings. The tower created a pavilion significantly higher than the building's roof, and allowed entry from the front and side. The most significant feature of the building, it was large and massive with a hipped roof, Art-Deco battens and geometric

Figure 20: Sumner Grade School, 1935



Kansas State Historical Society, Topeka, KS

ornament. Vertical lighting fixtures installed on the battens were integral to the architecture, not simply ornamental. The battens were capped by limestone carvings and an ornamental limestone panel was centered over each of the two entries. There were circular ornaments at the top of the tower between the brick battens and the hipped slate roof. The roof on the remainder of the building was flat, and not visible from the street. The windows were commercial style, and ran in recessed bands along the front facade. There was a carved ornament centered at the top of each window bay.

The L-shape of the building allowed for a centrally located auditorium at the inside corner. The quarter-round auditorium was designed for improved acoustics. A single-loaded corridor was used, presumably to allow more light into the space than would be possible with classrooms on either side of the hall.

East Topeka Junior High School, 1937

The design for East Topeka did not originate in Williamson's office and returned to a symmetrical plan with a central entry. Buff brick was used for the entire building, including a square tower above the entry. Like Sumner, East Topeka was based on an Art Deco theme. The triple doors of the entry were inset within a limestone projection of angular columns, decorative frieze, and finials.

Ornamentation was concentrated at the parapet of the school, and featured geometric tile panels between relief panels mounted at the top of streamlined buttresses. East Topeka was designed to eventually replace the high school, which has already seen several additions since 1932. The school was extremely well equipped with the latest in audiovisual equipment, a stage with footlights and dressing rooms, and a public address system.

Architectural Relevance to the *Brown* case.

Brown v. Board of Education provided a unique opportunity to test the concept of separate but equal. Kansas, while allowing cities of over 15,000 people to create segregated schools, also stipulated that schools for black children be of "equal quality" to those for white children. Unlike the other plaintiffs before the Supreme Court, those participating in the *Brown* case were confident in the quality of the education their children were receiving in Topeka's segregated public schools. The issue at hand was the psychological damage caused by forced segregation.

The strength of the *Brown* case depended on a demonstration of equality between the four black and eight white elementary schools in Topeka. Monroe, the elementary school contained in the Brown v. Board of Education National Historic Site, is now a physical symbol of this contest, representing the black schools of Topeka. The architectural differences and similarities between the two schools became one method of attacking *Plessy*. They were built nearly ten years apart and in very different architectural styles. Although designed by the same architect, each building had to be examined within the context of its time.

During the economic boom of the 1920s, Topeka rapidly expanded both in geographic territory and population. Monroe was one of four schools designed by Williamson's office in 1926. Sumner, although more richly detailed than Monroe, was constructed in the middle of the Depression, using federal funds and the Public Works Administration.[9] The Depression-era PWA was designed to create work for people, particularly skilled artisans.

The design differences between black and white schools in Topeka was accepted by the Supreme Court as due to differences in age and to a desire for the schools to fit within the neighborhood context. Thus, schools in more prosperous (generally meaning white) neighborhoods were more elaborate. North of the Kaw river was considered a middle class neighborhood. South of the Kaw, Topeka was divided into East and West sides by Kansas Avenue. The East has remained industrial, with blue-collar families, railroad workers, and new immigrants. The West side was the side of expansion, more recently occupied by European-Americans, and inhabited by professionals and the wealthy.

If an understanding is to be reached of the architectural implications of segregation in Topeka it must be through a comparison of schools designed and built around the same time. Fortunately, in 1926 the Topeka School Board commissioned three elementary schools from Williamson: Monroe, Clay, and Highland Park Central. Both Monroe and Clay replaced older structures at the same sites. Both were designed from the beginning as segregated schools, with similar programs, and

both were decommissioned in 1975 due to lack of enrollment.

Although Monroe is a fine building, Clay is far richer in architectural detailing, and Williamson is known to have engaged a landscape architect for the Clay School grounds. The differences between the two schools, although subtle, cannot entirely be attributed to stylistic differences between Neo-Renaissance and Neo-Tudor. Information about the surrounding residential architecture may be helpful, but the architecture implies the Clay area was newer and more prosperous than the Monroe neighborhood. A newpaper report at the time of Clay's opening noted that the school was in an area of homes "in the English Style".[10]

The *Plessy* case in 1896 established the **legal** precedent for separate but equal facilities. Subsequent antisegregation cases were based on a tangible difference between the facilities or treatment accorded to blacks. During the pretrial phase of the *Brown* case at the district court level, both parties agreed on the equality of black and white schools in Kansas. The state of Kansas chose to limit its arguments to the validity of the state law allowing segregated schools, and did not debate the issue of school quality. Transcripts specifically mentioned that Topeka elementary schools used the same course of study, text books, and teaching qualifications.

An expert witness for the plaintiffs, Dr. Speer, testified that "there are no significant differences in quality, training of teachers, or class size."[11] Speer, having inspected 14 of the 22 Topeka Schools, attributed disparities to the age of the building, not the race of its students. Based on *Plessy*, the state court ruled against the plaintiffs, but did note: "Fact 8: Segregation has a detrimental effect upon the colored [sic] children. ...."[12]

When the case was appealed, the similarities of the buildings, educational curriculum, and teachers' qualifications were acknowledged and accepted by the Supreme Court. This, in conjunction with "Fact 8," allowed the court to rule that separate **and** equal was unconstitutional.

1 In the European fashion, Bruce refers to the floor at grade as the ground floor, and the floor above as the first floor. Many of the schools in his book have a full story below or half a story below, the level of the main entrance doors.

2 H.T. Spaulding and R.A. Palmer, "Artificial Lighting System in the Schools," *Grade School Buildings, Book II,* 25.

3 Clarence D. Kingsley, "Dependence of School Architecture upon Educational Engineering", *Grade School Buildings, Book II,* William George Bruce, editor. Milwaukee, WI: The Bruce Publishing Company, 1925, 57.

4 H.T. Spaulding and R.A. Palmer, "Artificial Lighting System in the Schools," *Grade School Buildings, Book II,* 25.

5 *Ibid*

7 Louise Klein Miller, "Development of School Grounds," in *Grade School Buildings, Book II,* 40.

6 Daniel Fitzgerald, editor, *Gone But Not Forgotten: The Lost Schools of Topeka,* (Topeka, Kansas: Shawnee County Histrorical Society, 1990), 101. Dr. Sheldon founded the first kindergarten in Topeka, based on the Frobelian model.

8 Bruce, *School Architecture*, 17

9 "New $240,000 Sumner School Which Would Be Built With PWA Aid," The T*opeka Daily State Journal*, (September 7, 1935)

10

11 Paul E. Wilson, *A Time To Lose: Representing Kansas in Brown v. Board of Education* (Lawrence, KS: University Press of Kansas 1995)

12 From the Federal Court ruling in *Oliver L. Brown et al. v. The Board of Education of Topeka.*

Part E:
Architectural Analysis

Part E: Architectural Analysis

The Monroe Elementary School

Monroe Elementary School is of the Italian Renaissance Revival style, exemplified by its rectangular mass, symmetry, and evenly spaced windows. The mass of the building is a long, two-story block of red-orange brick, with five structural bays. The hipped roof was originally of tile; it caps a simple cornice and frieze. The widows walks (the flat surfaces at the summit of the hipped roofs) were probably originally sheet metal. The gymnasium/auditorium is articulated within the west side of the building, bumping out from the larger mass at its center and having its own flat, built-up roof.

The only other projection is the main entry bay, on the east facade. The height of the entry bay is the same as the remainder of the building, creating a small cross gable at the roof. The dressed limestone of the entry bay further sets it apart from the surrounding brick walls. The arched doorway is within a secondary projection, topped with a frieze and the name of the school. The semicircular arch of the door way is repeated in the fan transom that tops the double doors.

The school's windows are not in the Italian Renaissance style. They are set flush into the brick walls, with no ornamentation at the limestone sills or jack arch heads. The windows are grouped tightly in sets of six, with each group marking a classroom. Wide vertical bands of brick separate the groups and narrower bands separate the individual windows. The upper windows are identical in style and configuration to the lower windows. The windows are steel framed casements with divided lights and matching transoms. Each casement panel has a two-by-five light configuration. The transom above each panel has a two-by-two light configuration. This results in a total of 28 lights in each window bay. The first floor windows are set directly above the limestone water table. The windows allow a great deal of natural light into the rooms, but the repetition and plainness give the building an industrial quality.

Ornamentation is modest and typical of the early Renaissance Style. The four corners of the building are quioned with dressed limestone. Low concrete curbs flank the two steps up to the door. A limestone watertable, higher than the interior floor level, is also composed of dressed ashlar limestone. The brick faces are generally uniform and flat; they do not express the structural bays of the building except through wider vertical bands between groups of classroom windows. The chimney, visible in old photos, had a cap of limestone recessed panels. Even the east entry bay, the most prominent architectural feature, is fairly plain. The name of the school and its date of construction are carved in decorative panels around the doorway, which has an exaggerated keystone. The original light fixtures on either side of the Roman arch were large but simple, as visible in historic photos. The windows in the entry bay are entirely devoid of ornament, and are identical to those used on the rest of the facade.

The north and south facades contain recessed brick panels with ornamental limestone insets and limestone corner blocks. The brick is corbelled in three lines to create the panels. The secondary entry doors with transoms and the corridor windows above them are set within a limestone panel the height of the building. These are the only openings in otherwise blank facades.

The most distinctive feature of the west facade is the gymnasium wall. Three Roman arches with exaggerated limestone keys frame the upper and lower gymnasium windows. This tripartite motif was common in Roman baths, linking ancient athletic games to 20th century school children at play. Each arch is composed of three lines of brick, corbelled to create a slight recess in the wall. The lower windows, steel casements with divided lights, have paired side lights and a wide transom. The upper windows, separated from the lower by a wide horizontal band of brick that marks the balcony level within, are semicircular fan lights atop operable casements.

Recent History

Declining enrollment led to the closing of Monroe Elementary School in 1975. The building and site were converted to a warehouse for the school district. Playground equipment, water fountains, and mud scrapers were removed from the site. The playgrounds were converted to parking lots for buses and maintenance vehicles. Five years later the Topeka Board of Education sold the property to Richard C. Appelhans, the first in a series of private developers. Appelhans intended to convert the building into office space or a private school, but was unsuccessful. In 1982, he and his partner, Richard L. Plush, Jr. sold the property to

the Fairlawn Church of the Nazarene, for use as a community outreach program and meeting place. S/S Builders, owned by Mark A. Stueve, purchase the site from the church in 1988, returning it to a warehouse, this time for construction materials and equipment.

In 1990, Stueve announced his intention to auction the building, due to high maintenance costs and the unsuitability of the building his needs. The Brown Foundation, fearing the building would be razed, rallied community support to stop the auction. Their purpose for saving the school was to save the building in the short term and get the building designated as a national historic site in the long term. The Sumner School, the white neighborhood school in which Oliver Brown attempted to enroll his daughter in the fall of 1950, had already been designated a National Historic Landmark in 1987. This virtually ensured that the Monroe School, the complementary site to Sumner and the focus of the landmark *Brown* decision, would also achieve National Historic Landmark status.

The Trust for Public Land came to the school's rescue, purchasing the property from Stueve in 1991, and the Monroe School was added to the National Historic Landmark nomination for the Sumner School. On October 26, 1992, President George Bush signed the *Brown v. Board of Education* National Historic Site Act of 1992 (Public Law 102-525), establishing the Monroe Elementary School Building as a National Park. The legislated purposes of the historic site are as follows: (1) to preserve, protect, and interpret for the benefit and enjoyment of present and future generations, the places that contributed materially to the landmark United States Supreme Court decision that brought an end to segregation in public education; (2) to interpret the integral role of the *Brown v. Board of Education* case in the civil rights movement; and, (3) to assist in the preservation and interpretation of related resources within the city of Topeka that further the understanding of the civil rights movement.[22]

In December of 1993, the title for the site was transferred through the Trust for Public Land to the National Park Service. The significance of the Monroe School, Cheryl Brown Henderson, president of the Brown Foundation for Educational Equity, Excellence, and Research, has said, is that it "symbolizes both the harsh reality of discrimination and the promise of equality embodied in the Fourteenth Amendment, and it stands as a monument to the generations of Americans who refused to accept the denial of their civil rights."[23]

Changes

Physical investigation of the Monroe Elementary School has revealed that most of the extant building materials date to the construction of the building in 1926-27. The exterior has changed very little; with the exception of the roof, the materials are original. The building has not been subjected to later additions. The major changes to the historic fabric have occurred at the interior, primarily involving the removal, not replacement, of original materials.

Exterior

The first changes to the exterior occurred in the early 1960s. In 1963, limited air conditioning was installed on the first floor, and 32" x 42" concrete pads were installed at grade in two locations along the east facade of the north wing to hold the compressors. The original brick chimney, visible in historic photographs, was replaced with a metal stack. This probably occurred in 1964 as part of an extensive mechanical systems updating.

Steel casement windows and transoms on all four elevations are original, although much of the glass is not. Several openings were covered with plywood after 1975, either to avoid replacing glass or to allow the use of window air conditioners.

When falling enrollment closed Monroe Elementary School in 1975, it became a warehouse for the school district. The Topeka school board installed exterior security lights, replacing the original lights at the exterior doors. Anchor holes and cut stone around the doors indicate the original lighting positions. Security lights were also installed within the decorative brick panels on the end walls of the school.

To make room for busses and maintenance vehicles on the school grounds, playground equipment, drinking fountains, and mud scrapers were removed. The basketball backboard at the rear of the building and the baseball backstop on the east playground were left intact. By this time, Topeka had rezoned the area surrounding Monroe from residential to light industrial/ commercial use. The single family houses that in many

cases predated Monroe began to be replaced by warehouses and parking lots.

The existing doors at the north and south entrances are not original. These were probably installed in the early 1980s, based on other changes made to the interior at this time. A low concrete ramp installed at the north entrance during the early 1980s provided easier access for hand trucks and other warehouse equipment.

When completed in 1927, Monroe's main roof was of red clay tile, as confirmed by historic photographs and tile fragments discovered in the attic. Red asphalt shingles replaced this material sometime between 1988 and 1990, when the building was in use as a warehouse. Although tile roofs are long lived, water was apparently leaking into the attic by this time, as evidenced by water damage to rafters and plaster on the second floor. The original material on the widow's walks was probably sheet metal; this has been replaced by a rubber membrane within the last 10 years.

The auditorium and adjoining vestibule have flat parapeted roofs with scuppers. Given the inherently short life of flat roofs, the extant material is not original. After the school was decommissioned, the flat roofs were apparently not maintained, resulting in leakage. The failing plaster at the northwest corner of the auditorium is the most severe example of water damage that developed in this period.

The exterior walls of the school are the original red brick on a dressed ashlar limestone base course. Sections of brick on the east facade were repointed at unknown times. Conduit and service wires penetrate the building at several spots. The northwest corner in particular is a jumble of wires. This corner was the original point of hook up for electric, water and gas utilities; it was closest to the alley service pole and provided immediate access to the basement mechanical room. The service was probably expanded when the training room was converted to a kitchen in the 1960s. Very little of the original electrical service and distribution system remains. The majority of the other utility hook ups date from 1975-1990, as a series of owners retrofitted the building for new uses.

The foundation of the Monroe School is rubble stone, of uncertain geology, with a parge coat. The exterior foundation walls were not examined, but the bulk of the material is assumed to be original. The interior walls of the basement show two areas of repair. The west wall, heavily water damaged, has one section of concrete block replacing the original material. The north wall of the side room has been repointed. There is no mention in the school board minutes of a request for such repairs and maintenance records for the building are unavailable. The repairs were ineffective, as indicated by continuing water damage.

Interior

The interior of Monroe School was designed to be a pleasant place for learning and easy to maintain. The durability of the chosen materials is evident by their survival. In general, floors, walls, and ceilings remain the original material. The HABS survey and on-site inspection by QUINN EVANS/ARCHITECTS discerned three original floor types: the corridor and toilet room floors are of gray terrazzo with a 3/4" square white tile inlaid border; the Domestic Science Room had linoleum on a concrete base; the balcony, classrooms, and offices have yellow pine wood floors of 2-1/2" wide strips. At some point, vinyl asbestos tile was installed over the wood floor in the Auditorium, the offices, and the Manual Training Room. The corridors and the auditorium have salt-glazed brick wainscotting, while wainscotting in the toilets is white sanitary tile. The walls and ceilings were of hard plaster. The wall plaster was applied directly to the masonry walls, while the ceiling plaster was applied to metal lath attached to the poured concrete deck.

From 1927 until 1941, Monroe Elementary School was used as constructed, serving African-American children through the eighth grade. After the *Graham* case forced Topeka to integrate its junior high schools, the three upper grades moved out, leaving the Domestic Science Room and Manual Training Rooms without the older students. A survey of Topeka's educational facilities conducted in 1958 indicated the Domestic Science room was empty and the Manual Training Room was being used as a lunchroom. The term "lunchroom" suggests there was not yet a cafeteria kitchen. Two classrooms had been converted for music and visual education. The survey also noted that the lighting system had been scheduled for improvement the previous year, but apparently had not been updated, as the lighting was considered inadequate by the surveyor. As of 1958 there was still no library at Monroe, and the en-

rollment was a meager 148 students out of a 420 student capacity.

By the early 1960s, 35 years of hard use were beginning to take their toll on Monroe. In 1961, the floor of the Teachers' Lounge was retiled; new plumbing and doors were also installed. The HABS survey dates this remodeling to 1969. Installation of air conditioning in 1963 was followed a year later by the replacement of the heating and ventilation system. The hand-fired coal-burning boiler was replaced by a model that could use both city gas and fuel oil. Fan coil units replaced the original unit ventilators.

The implementation of the federal hot lunch program led to the last changes during Monroe's school period. The Manual Training Room was subdivided into a kitchen and a shipping/receiving room in the mid-1960s. In 1969 it was extensively remodeled with federal funds to expand the program, allowing Monroe's kitchen to serve four schools. The shipping room was incorporated into the kitchen; the opening in the south wall providing access to the auditorium was probably installed at this time.

The most dramatic changes to the interior occurred after the school was closed in 1975. If the exterior of Monroe seems perfectly preserved, the interior testifies to a series of half-realized attempts at adaptive reuse. One of the first changes made to the interior after 1975 was the removal of the original incandescent fixtures and the installation of fluorescent lighting throughout the building. The date of this conversion is unclear. Richard C. Appelhans purchased the Monroe site in 1980, but apparently determined that it could not be economically reused for his intended purpose, as he sold the site to the Fairlawn Church of the Nazarene two years later. Most sources date the installation of the fluorescent lights to the early 1980s, but it is unclear if Appelhans was involved. It seems quite likely that the school board may have installed the lights earlier, to facilitate using the building as a warehouse. Appelhans would have little to gain by such a wholesale conversion before his own plans for the building were finalized. The Fairlawn Church only utilized a few rooms, and probably would not expend its limited resources on lighting unused rooms.

The church that purchased the building in 1982 had hoped to convert the building to a halfway house in addition to the dental clinic, clothing bank, and hall for weekly church services that they eventually constructed. The clothing bank was set up in the former Domestic Science Room on the second floor.

In preparation for the renovations, the church removed the interior partition walls on the first floor containing the original Miller Sanitary School Wardrobes provided for each classroom. The wardrobes, found in each classroom except the kindergarten, consisted of a series of hinged doors that pivoted on floor hardware. The closed doors formed an additional chalkboard surface at the back of the room. The removal of the wardrobes combined two classrooms into one. The resulting notches in the walls, floors, and ceilings were left exposed, revealing the structure of the bearing walls.

The two first floor classrooms in the northeast corner were combined, and new partition walls were installed to house the dental clinic. A new door was created in the north wall of the Teacher's Lounge, which was probably used as a reception area. The south east classrooms were combined into a church hall, and a small stage was constructed at the south end of the double room. This room is the only one where the gaps caused by the removal of partition walls has been repaired. Gypsum board was used on the walls and ceilings. The floors of the dental clinic and hall were infilled with a mortar-like substance and covered with carpeting.

Because of the new occupancy type, building codes required that the open stairways at either end of the building be enclosed with gypsum board. As part of the modifications, the original vestibule doors were removed. At each stair, a new vestibule wall with new doors was created several feet from the original location, expanding the vestibules to their current size. The corridor doors on the first floor were also replaced, probably about the same time. The original doors were wooden panel style, with a large pane of patterned glass forming the upper pane. These were not fire safe, because of the glass, and so were replaced with 1-3/4" solid wood doors.

The Fairlawn Church eventually sold the Monroe property to Mark A. Steuve, President of S/S Builders on November 4, 1988. After the church sold the building, the remaining interior partition walls, including the ones installed by the church, and the stage platform were removed. A small fire in the late 1980s severely damaged the plaster in the church hall, but the floor was untouched. The fire did not spread, but there is a mod-

est amount of smoke damage to the corridor plaster outside the hall.

Steuve removed the remaining partition walls on the second floor and the new material added by the church. He installed a chain-link fence around the property for security. Due to water damage, the tile roof was replaced with asphalt shingles. Steuve made no other changes, using the building as a warehouse for his construction firm until 1990, when Monroe was slated for auction. The building is essentially unchanged from this date.

The National Park Service obtained title to the Monroe site in 1993. In 1995, the auditorium's flat roof was repaired to halt the significant water damage that had been occurring at the interior of the west wall.

Part F:
Existing Conditions

Part F: Existing Conditions

Structural and Loading Analysis

Introduction and Description

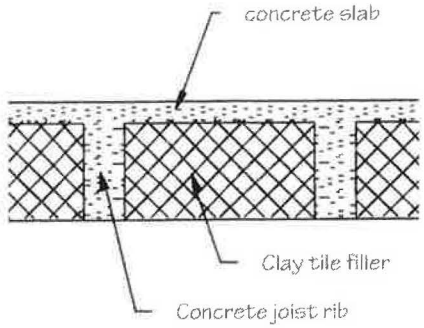
A structural investigation was performed in order to evaluate the integrity of the Monroe School building. Physical investigation was conducted on October 25 and 26, 1995, in order to determine the condition of the structure, and to gather pertinent data for structural analysis. A structural engineering analysis was completed, within the limitations of access and documentation, for the purpose of determining reasonable existing floor load capacities related to the intended use of the building.

The building plan has a main spine north to south corridor. Classrooms or similar spaces flank the corridor to the east and west at the north and south building wings. An auditorium is located west of the corridor in the middle section of the structure. The main building entrance occurs at the east side of the corridor at the middle section.

The Monroe School building was constructed in 1926. The building is a two story structure over a partial basement. A boiler room was housed in the partial basement. The attic and second floor structures were constructed of reinforced concrete slabs, beams and joists. A similar concrete joist and beam system spans the auditorium roof, and the first floor over the basement. A utility tunnel below the first floor, extends from the basement around the perimeter of the building. The floor above the tunnel is a concrete slab structure. Concrete joist floor systems constructed during the era of the Monroe School were usually formed with clay tile infill between the floor joists ribs, as shown in Figure 1. The clay tile were left in place in that type of construction.

Joists observed in the Monroe School were board formed construction, as shown in Figure 2, which is a sophisticated and relatively modern method of construction. Typical clear distance between joist ribs was found to be 20 and 30 inches, which is consistent with current metal and fiberglass pan formed joist systems. A board formed joist system results in a lighter weight structural system. The clay tile weight must be supported by the concrete joists, and contributes little to the structure.

Figure 1



Section through concrete joist structure typical of 1926 construction.

Figure 2



Section through concrete joist system found at Monroe School.

Floors and roof are supported by masonry load bearing walls. Interior load bearing walls each side of the corridor are constructed of structural clay tile. Exterior walls are composed of brick with some stone masonry. Foundation and basement walls are stone masonry. Classrooms were separated with relatively thin non-load bearing clay tile partitions.

The auditorium has a narrow wood-framed balcony with a second floor access. The balcony is located on the east, north, and south walls of the space. Steel hanger rods anchored into the concrete roof support the balcony edge.

Hipped roofs with flat tops are located above the north and south building wings. A gable shaped roof occurs over the main corridor and east side of the middle building section. Cut wood framing forms the sloped mansard and gable roofs. The wood framing is supported by masonry walls and by attic joists and slabs. The auditorium roof is flat and occurs below the eave line for the wood roofs.

Methods and Analytic Standards

A two-day physical investigation was performed to determine the nature and condition of the structure. Field notes were recorded during that inspection. Photographs were taken and were recorded on a field log. The structural inspection was limited to areas that could be visually observed at the time of the investigation. Terracon Consultants, Inc. was retained to perform limited testing of the concrete. Concrete cores were taken in five locations throughout the building. These cores were broken by Terracon in order to determine the quality and strength of the concrete used in the construction. Destructive testing and investigation was limited to the concrete cores. Cores were located in areas of the structure that would be least intrusive on the historical fabric, while yielding reasonable information for structural analysis. The cores were prepared and tested in accordance with American Society of Testing and Materials (ASTM) standards ASTM C42. Test results are included in the appendix of this report.

Existing documents were reviewed and used during the investigation and analysis. An incomplete set of construction documents was made available by the National Park Service (NPS), and proved to be most helpful to the analysis. These undated construction drawings are titled *Plans for Monroe Grade School, Topeka, Kansas*, executed by Thos. W. Williamson & Co. Architects. Originally, the set of drawings included 15 sheets. Sheet 13 was missing from the review set. The information from the original drawings used for this report was tempered by the observations made during the physical investigation.

Access to the top of the auditorium roof was limited at the time of inspection, since asbestos remediation work was being performed. Laura Johnson, a historical architect with the NPS, observed the concrete roof in November, 1995 after all roofing had been removed. Johnson reported the condition of the concrete for that roof, and discussion of her observations are included in this report.

Stress levels for the various materials used in the construction of Monroe School were determined from published historical manuals and the core testing. The five concrete cores showed a concrete compressive strength range from a low value of 3,080 psi to a high value of 7,810 psi. All test specimens fractured through the aggregate, which indicates that the concrete is reasonably durable and sound. An average value of 4000 psi was selected for the analysis part of the report.

Reinforcing bar strengths were determined from state and federal Department of Transportation standards for evaluating the strength of old concrete bridges. ASTM A15 steel was the prevailing steel used for concrete reinforcing between the years of 1917 and 1936. The minimum tensile yield strength of A15 steel is reported to be 33,000 psi, and this value was adopted for the analysis performed in this report.

Wood structural elements were assumed to have a basic bending strength of 1400 psi, and a horizontal shear strength of 120 psi. The modulus of elasticity of wood elements was selected as 1,800,000 psi. These values exceed most currently used levels of permitted stress, but are considered reasonable for the 'old growth' lumber used in the Monroe School. All values are consistent with older wood codes published by the National Forest Products Association (currently named American Forest and Paper Association).

The following codes and standards were used throughout the structural report.

- *The BOCA National Building Code/ 1993*, (BOCA) published by the Building Officials & Code Administrators International, Inc., 4051 W. Flossmoor Rd., Country Club Hills, IL.
- *National Design Specification for Wood Construction*, (NDS91) 1991, published by the American Forest and Paper Association, 1250 Connecticut Ave. NW, Suite 200, Washington D.C.
- *Building Code Requirements for Reinforced Concrete (ACI 318-95),* 1995, published by the American Concrete Institute, Detroit, MI.
- *Building Code Requirements for Reinforced Concrete (ACI 318-65),* 1965, published by the American Concrete Institute, Detroit, MI.
- *CRSI Design Handbook*, 1959, Concrete Reinforcing Institute (CRSI), 38 Dearborn St., Chicago, IL., Third printing by Kingsport Press, Inc., Kingsport TN.

- Tables of steel stresses for rating bridges, dated 1971 and revised 1973, derived from Michigan Department of Transportation and American Association of State Highway Officials (AASHO) publications, notes on file at Fitzpatrick Structural Engineering, P.C.

Existing Conditions

Generally, the structural systems observed in the Monroe School are in good condition. However there are some areas of concern as discussed later in this report. The compressive strengths of the concrete, determined by Terracon, are in an acceptable range. Surface 'honeycombing' of the concrete was observed in various locations, indicating that the floor concrete was poorly consolidated during placement. Terracon reported that the bottom of cores 1 and 2 were not consolidated, which confirms the visual observations. The 'honeycombing' surfaces do not appear to have affected the performance of the structural concrete.

Structural plans were created for each level and are included in Appendix B of this report. Plans EXS-100 through ESX-103 were developed from information included in the original drawings by Thos. W. Williamson & Co., with some modification based on the structural survey conducted in October of 1995. The measured widths of concrete joists were slightly larger than the width shown on the drawings. The clear space between joists was determined to be slightly less, in some cases, than the space shown on the drawings. Additionally, the Terracon test report indicates that depth of recovered core is greater than the slab thickness shown on the drawings. The range of increase in thickness is between 3/8" and 1". Increase in overall depth of joist member will add some additional weight to the system, but the corresponding increase in member capacity will more than offset increased weight. Therefore, the dimensions shown on the original drawings were adopted for the existing conditions drawings, and for the purpose of structural analysis. Existing condition drawing EXS-104 (Auditorium Roof) was generated based on information furnished by Laura Johnson's November, 1995 survey. Appendix drawings are listed as follows.

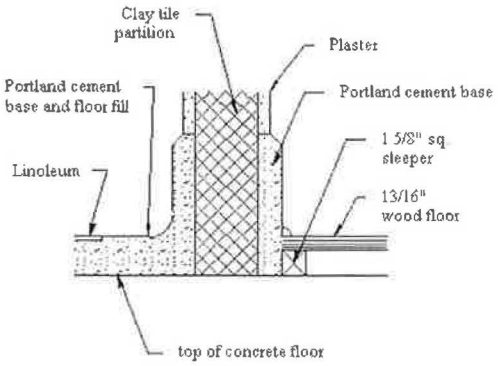
EXS-100	Basement Plan
EXS-101	First Floor Framing Plan
EXS-102	Second Floor Framing Plan
EXS-103	Attic Framing Plan
EXS-104	Partial Auditorium Roof Plan
EXS-105	Roof Plan

Floor Finishes

Floor finishes were determined from the original drawings and from the physical investigation. The weights of finished floors and plaster ceilings are significant since these superimposed dead loads must be carried by the structural elements. Heavy superimposed dead load will reduce the amount of live load that the structure can support. The exact nature of floor finish is not clear from review of the original drawings. For example, the relatively heavy terrazzo floor finish, as specified for the corridors and lavatories, was historically constructed in two basic ways. The most common method was to place a 1-1/2" layer of terrazzo over a 1" grout bed, which resulted in a superimposed unit dead load of about 30 psf, as shown in Figure 4 below. However, the terrazzo was also placed directly on the structural concrete slab in some buildings of the era, as shown in Figure 5, resulting in a superimposed dead load of about 19 psf (a significant reduction). However, the direct application of terrazzo would imply that the top of the slab would have to be stepped where the terrazzo finish abuts the wood floor finish, as indicated in Figure 5. The wood sleeper type floor shown in Figures 3, 4, and 5 was verified during the physical investigation, and corresponds closely to the wood sleeper floor shown on the original drawings.

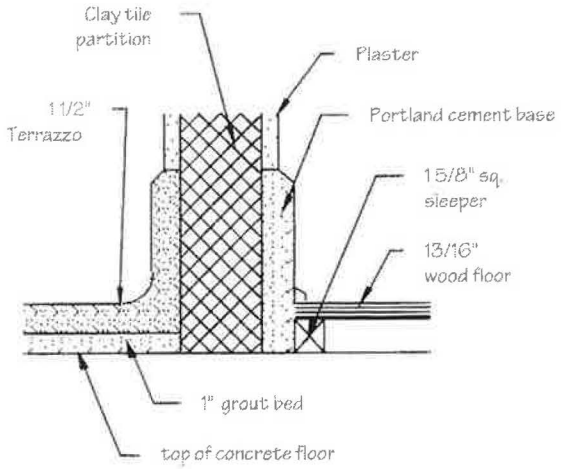
Figure 3 shows the floor finish condition at the partition wall between the Domestic Science Room 214 and Fitting Room 213 at the second floor level. The floor finish on the Domestic Science Room side is built up from 'Portland Cement' fill to accommodate the difference in elevation between the linoleum finish floor and the adjacent wood sleeper floor. Therefore, no step in the top of the structural concrete slab is needed to account for varying finished floor thickness. The floor condition shown in Figure 4 was used for all terrazzo finish areas in this report. This detail also has no step in the structural slab and seems to make rational sense from a construction standpoint. All structural slabs for a given floor are at the same elevation with no bottom or top changes in elevation. The attic floor slabs and joists were constructed with a level top finish. No applied finishes were employed at the attic level, and the top of the concrete structure is exposed. The various floor finishes are indicated on drawings EXS-101 and EXS-102.

Figure 3



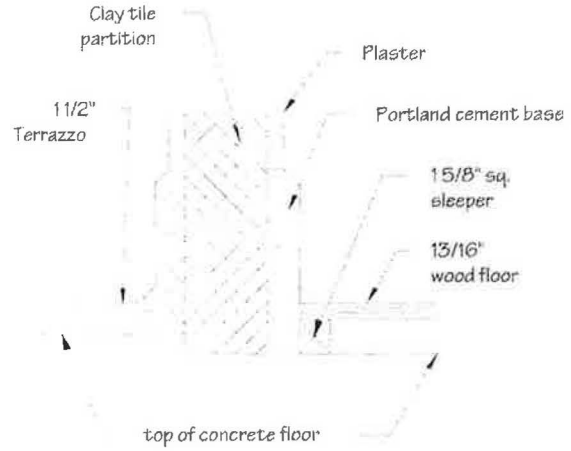
Floor finish section between Domestic Science Room 214 and Fitting Room 213 (Rooms 214 and 215 opposite); fill cement and wood flooring.

Figure 4



Assumed section for floor finish between terrazzo and wood flooring.

Figure 5

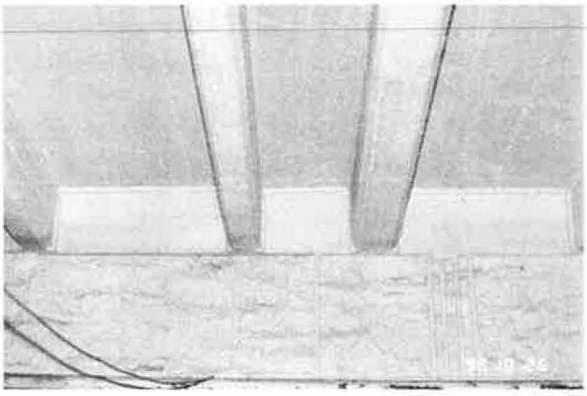


Possible section for floor finish between terrazzo and wood flooring.

Concrete Floors

Typical floor joist construction is shown in Figure 6. The longitudinal ribs shown on the slab soffit and joist sides indicate that the joist system was board formed. The vertical sides of the joists have a slight slope or 'draft' similar to modern metal and fiber glass pan joist systems. The draft was introduced in order to ease the removal of the formwork. Note that the joist rib to the right appears to be wider than the adjacent ribs to the left. The original drawings indicate that wider joist ribs were used below non-load bearing partitions. The typical joist rib is indicated as 5" wide at the bottom. Wider 8" ribs are used below partitions.

Figure 6



First floor concrete joists at east wall bearing, board formed.

The original drawings indicate that most joists were reinforced with round steel bars (re-bars), with a few joists reinforced with square steel bars. Figure 7 shows a location where the concrete has been removed from the bottom of the joist rib. Figure 7 is typical of several locations at all floor levels in regard to concrete removal. Two round reinforcing bars are exposed in the photograph. These bars also showed slight ribs or ridges projecting from the bar. The projections are called 'deformations' which are built into the bar in order to enhance the bond between the bar and the surrounding concrete, and are consistent with current practices of re-bar production. Most reinforcing bars used in early concrete construction were smooth straight square cross sections, or twisted square cross section bars. The various exposed bars were all consistent with the reinforcing that was indicated on the original drawings.

Exposed re-bars showed signs of various stages of surface rust in several of the exposed joist ribs. The steel re-bar will readily oxidize when exposed to the atmosphere. This can cause severe loss of structural cross section for the re-bar over time. Additionally, steel expands as it rusts, which produces outward pressure on the surrounding concrete. This can cause the surrounding protective concrete to spall off in chunks, which exposes additional re-bar. A progressive deterioration will result over time.

Bottom reinforcing bars and stirrups shown on the original drawings. The exposed bars appear to be consistent with the sizes, numbers, and locations shown on the drawings. The slab and joist systems used in the school exhibit a sophisticated understanding of that type structure, especially when considering the date of construction. However, there is a lack of information concerning main top reinforcing over interior supports. The drawings do not indicate the nature of this reinforcing, if any exists. No locations were exposed to determine the extent of top reinforcing over supports. This deficiency presents limitations in the load analysis of the structure, as will be discussed in the analysis part of this report. However, there is no apparent evidence of distress which would accompany a lack of sufficient and appropriately located top reinforcement. There should be severe cracking near to, or at, the corridor walls if top reinforcement was omitted. The cracks would extend parallel to the walls and should show in the top of the floors.

Figure 7



Second floor joist rib viewed from Classrooms 113/114.

Figure 8 shows the basement boiler room access to the pipe tunnel. The first floor concrete slab is supported by a ribbed expanded mesh, consistent with the material that is specified on the original drawings. The mesh material also acts compositely with the concrete slab, or is the reinforcement for the slab. This is an early use of a limited forming/reinforcing system that had a short history in concrete construction.

Figure 8



Tunnel access at southwest corner of basement boiler room, note expanded lath reinforcing/form for first floor slab.

Figure 9 shows a severe crack in the attic floor slab just north of the Auditorium (Room 108) roof above the second floor Classroom 206. The crack parallels the south wall of the wardrobe in Classroom 206 extending east and west, and appears to occur in the thin slab between joist ribs. Figure 10 shows a similar but less severe crack which occurs in the attic slab just east of Auditorium (Room 108) above the second floor corridor (Room 226). This crack also runs east and west and extends past the corridor into the joist system to the east. The crack parallels the joist ribs and most likely occurs in the thin slab between ribs. Tops of second

floor slabs are not exposed due to wood sleeper floor finishes over much of the area. These floors probably also have similar east west cracks. Figure 11 shows corner cracking at the second floor stair well. Most of the observed floor cracking parallels the structural system spans, and in that context is not a serious structural concern.

Initial shrinkage of the restrained concrete system probably caused some micro-cracking in the east and west directions since that is both the narrow dimension of the building and contains the weakest overall planes. The building is approximately 174 feet long with no provision for thermal expansion. The structure also is reported to have stood vacant and/or unheated for many years. Therefore, the structures has suffered the extremes of seasonal temperature change. Subsequent volumetric change (elongation and shortening) associated with the thermal changes have caused the initial micro-cracking to become larger.

Figure 9



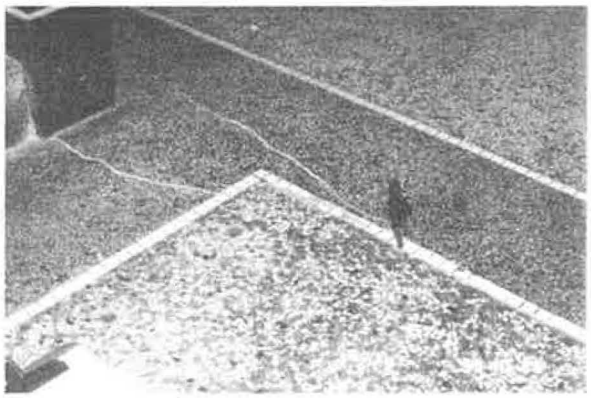
Major east-west crack in north wing of Attic above second floor Classroom 206 at south wall.

Figure 10



Attic floor crack in middle section above second floor Corridor 226.

Figure 11



Terrazzo corner crack at second floor Corridor 226 at south stair well.

Some of the observed cracking may relate to other causes which are of structural concern. The wood-framed mansard-shaped roof system at the north and south ends of the building is partly supported by columns and beams below the flat roof portions. The attic floor in these areas shows cracking distress which may be primarily caused by local overloading of the floor by the wood column system. There have been several attempts to repair the floor in these areas. Most of the wood columns are supported on joist slabs and corridor slabs as shown on drawing EXS-103. Only two columns on each side fall above the vertical load carrying elements below the attic. The rest of the mansard posts and shore posts fall on attic floor slab elements. Some posts are located on top of the thin slab between joist ribs. This slab must carry the post load between ribs and must be adequate to resist the tendency for the post to punch through the slab. This condition may also contribute to the slab cracking observed in the attic.

Auditorium Roof

Crack patterns and deterioration on the auditorium roof, as reported by Laura Johnson, are of some structural concern. The surface spalling and deterioration is generally caused by chemical reactions and/or freeze/thaw. Both types of deterioration require the presence of water. The deterioration is likely a combination of both causes. The roof probably leaked for some time. Water staining on the northwest corner of the ceiling below is consistent with the most severe spalling reported on the upper surface. This area had been exposed to a saturated condition over a long period of time.

Diagonal corner cracks #1 through #4, as shown on drawing EX-104, are typical of early monolithic concrete structures and do not present immediate structural concern. These cracks are related to the normal deformation of the roof. The roof deflects downward under load in both perpendicular plan directions simultaneously, despite the fact that it was designed to act separately in each perpendicular direction. This causes the roof to take on a concave-up configuration, which is sometimes referred to as 'dishing' or 'cupping' like a bowl. However the corners are restrained at the wall supports and cannot uniformly 'dish' down. The corners tend to take on a reverse curvature (convex-up). This creates local tension in the top of the roof plate at the corners, which result in the reported diagonal cracking. This cracking is primarily caused by the self weight of the structure acting along with superimposed dead weight of finishes and roofing. The tensions have been relieved by the cracking due to these loads. An additional compounding factor could be the ponding of water on the roof surface due to the 'dishing' of the roof. Standing water can cause additional deformation and further aggravate the distress. Flat roofs of this type should have adequate slope to drain water off the roof. Further, any moisture penetration into the cracks can result in additional severe distress from freeze/thaw and/or chemical deterioration of the concrete.

The east to west cracking noted on drawing EX-104 is of serious concern. These cracks extend perpendicular to the concrete joist spans. They can be related to shrinkage and thermal problems taken along with moisture penetration as discussed previously for other parts of the structure. However, they could also indicate a deficiency in the structural design. The 'moving cracks' numbered #1 and #2 could indicate that there is insufficient reinforcing over the main beam supports. The 'structural center crack' is probably related to thermal movements in the structure, but its' location will impair the strength of the joists in this bay over the long term. Cores, as indicated on the drawing, should be taken to verify the character of the cracking and the quality of the remaining concrete.

A qualified materials testing company should be retained to map the joist top reinforcing in the vicinity of the beams. Some localized chipping of the concrete in the area of the 'moving cracks' should be done in order to locate the reinforcing. The rest of the area can be mapped using electronic equipment that is calibrated to the exposed conditions. We understand that this roof is presently covered with tapered insulation and EPDM adhered roofing which should prevent further moisture related damage.

Walls

Figure 12 shows the west wall of the basement foundation. Original stone construction is shown on each side of an abandoned arched opening to the coal bins. The opening has been blocked up with concrete masonry units (cmu). Water staining can be seen starting about three block courses up from the floor. This indicates that water is migrating through the wall from the abandoned coal bin area. Some of the discoloration of the wall above the stained courses also indicates moisture migration from the opposite side of the wall. This type of water penetration can cause long term degradation of both the stone and cmu wall.

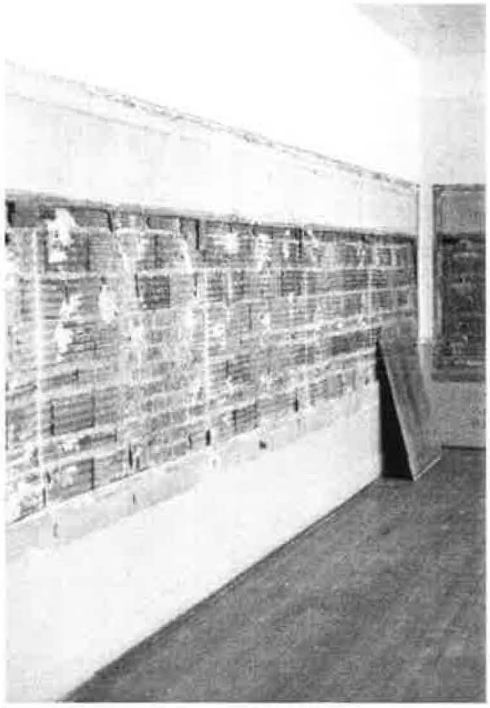
Figure 12



Blocked up wall opening to old coal bin at west wall of basement, note water staining at bottom.

Figure 13 shows a typical corridor load-bearing wall from the classroom side. The wall is constructed with structural clay tile, and is shown to be 13" thick on the original drawings. Structural clay tile load-bearing walls are typical of many institutional buildings of the era of Monroe School, and have historically performed their load carrying function well. The walls showed no signs of severe structural distress and appear to be in good condition.

Figure 13

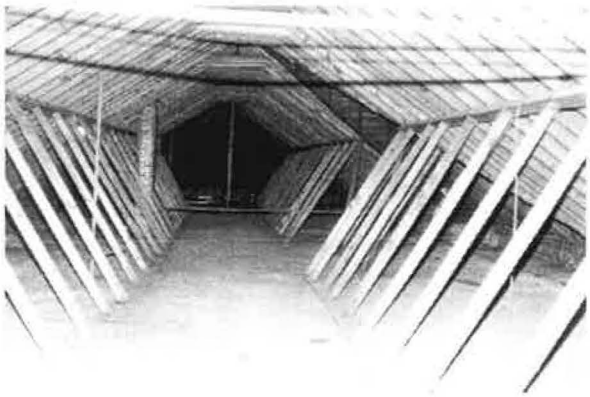


Typical structural clay tile bearing wall between corridor and classroom, viewed from classroom.

Wood Roof Framing

Figure 14 views the gable roof wood framing from the south wing looking north. The sloped roof rafters are approximately spaced at 24 inch centers, and measured a little over 1 1/2" thick x 7" deep. A double wood plate and diagonal struts support the rafters between the ridge and eave lines. The wood plate was measured as (2) 1 1/2" x 5 5/16". Diagonal struts measured 1 5/8" x 3 5/8" and are spaced at 48" centers below alternate rafters. Rafter slope was determined to be approximately 8:12 or about 34 degrees. Sections through this roof are shown on sheet EXS-103 and EXS-105.

Figure 14



Middle pitched roof framing viewed from attic looking north.

It should be noted that the original drawings show a slightly different geometric configuration for the roof framing than exists at the school. The wood struts shown on the original drawings come together at the same central location at the attic floor, rather than being spaced apart as shown in Figure 14. Also, a dormer type gable over the main entrance is shown on the original drawings. The roof framing over the main entrance is a different variation as shown on drawing EXS-105.

Relatively tall and slender wood columns (3 1/2" square) are used to support the flat roof area at the north and south wings. A shoring system of columns and beams is placed below the flat roof at both the north and south wing. The shoring is a later addition to the structure and may have been added to provide reinforcing for the flat roof joists. Some of the original and shoring columns appear to be bowed. Additionally, many of the wood struts shown in Figure 14 and on sheets EXS-103 and EXS-104 appear to be bowed. Bowing indicates that the columns and struts are too slender to support the imposed roof loads.

A series of seven rafters located near the chimney show signs of severe previous failure. The representative location of these rafters is shown on sheet EXS-105. All rafters have been repaired by the addition of newer members alongside of the failed rafters. This method of repair is normally referred to as 'sistering' new members to the older members. Figure 15 shows the typical conditions at one of the failed joists.

Figure 15



Typical repaired rafters west of chimney at north wing attic, seven consecutive rafters thus.

The rafter shown appears to have failed at a knot imperfection in the structural member. However, adjacent members do not have similar imperfections, and all original members appear to have failed at nearly the same location. There is no evidence of wood rot, moisture saturation, or of insect infestation at the failed rafters. Similar rafters in all other observed locations in the attic appear to be sound and un-failed. The failure appears to be caused by abnormal loading or severe impact load. The chimney may have toppled onto the roof at some time in the past causing the failure.

Mechanical Systems Analysis

Original Heating System

Heating Source: The original heating source for the Monroe School was a low pressure steam system. This was the medium commonly employed for most metropolitan school buildings constructed during the period form 1915 to 1950. The original 15 psig steam boiler has been replaced, however, evidence remains of it's location and fuel source. The boiler was almost certainly coal fired. The outline of the arched opening from the boiler room to the original coal bin is clearly visible in the northwest corner of the basement. This opening was sealed, probably when the present boiler was installed in the early 1950s.

There is a rectangular outline on the boiler room floor, located between the present boiler and the stack. It is highly likely that this marking, with its darkened interior, indicates the location of the original boiler. From the shape and size of this outline, it can be speculated that the original boiler was a cast iron sectional type. This type of boiler was commonly employed during the early 1900s.

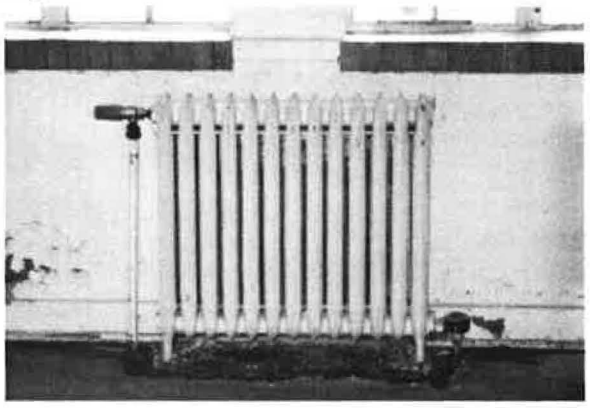
Steam Distribution System: Steam and condensate return piping for the boiler room is located in two below-grade tunnels which run in a north/south direction adjacent to the east and west walls of the school building. The west tunnel enters the boiler room at the southwest corner. A crossover tunnel along the north wall connects the east tunnel to the boiler room. Access hatches to these tunnels are found in the floor of the Principal's Office and the west Stage stairs.

First floor heating elements are served directly from these tunnels. Elements on the second floor are served by pipe risers which are exposed along the first floor walls. With the exception of the Auditorium Balcony, all second floor heating runouts are exposed above the floors. The balcony runout piping is concealed in the balcony floor.

This system represents the classic distribution method employed during the period when the school was constructed.

Heating Elements: Cast iron radiators, generally located along exterior walls, provided heat to most exterior rooms. Many of these radiators are still in place (Fig. 16). The original vestibules at the principle entrances were not heated, but radiators were placed at the north, east, and south ends of the corridor.

Fig. 16



One of the original cast iron radiators found throughout Monroe Elementary School.

Figure 17



One of the unit ventilators used in the classrooms.

Unit Ventilators: The most unique feature of the original heating and ventilation system is the use of unit ventilators in all the classrooms excepting the Domestic Science Room. The unit ventilators have name plates indicating that they were manufactured by the Herman Nelson Co. and a model named "Uni Vent."

Most schools constructed in this era were ventilated (if at all) by uncontrolled gravity systems utilizing architectural shafts extending to the roof with inlet grilles located in each classroom. The use of unit ventilators at Monroe School represented, in 1926, an entirely new approach to creating a comfortable classroom environment.

The unit ventilators (Fig. 17) consist of a 38" high by 40" wide by 12" deep cabinet housing a horizontal steam coil. An approximately 30" x 14" exterior louver located directly behind the unit provides outdoor air. A "face and bypass" damper is located between the unit steam coil and the top discharge grille. This damper has two blades. One blade is located immediately above the steam coil and controls the amount of air passing over the heating coil. The other blade controls the volume of air that will bypass the heating coil. By properly positioning the damper blades, the room thermostat was able to control the temperature of the resulting air mixture leaving the unit.

Current versions of the original unit ventilator are equipped with outdoor air dampers with a fixed minimum position. A fan within the unit allows the recirculation of room air which mixes with the supply air prior to entering the coils. Control valves at the coils maintain the discharge air temperature at a setpoint determined by the room thermostat. These units are capable of both heating and air conditioning.

When compared to today's fan-powered units, the Monroe units are quite primitive. As there is no fan, the air flow through the unit was created by the difference in temperature between the outdoor air and the temperature at the heating coil. Air flow quantities through the unit were totally dependent on the position of the coil face damper, which basically varied with outdoor temperature. When the outdoor temperature was at or above the room temperature, the coil damper was closed. On these warmer days there was essentially no ventilation provided through the units, and so opened windows were relied upon for fresh air. Still, these early unit ventilators represented a significant advance in the technology for their era as they were the first to provide individual room control for classroom heating and ventilation during the winter months.

Automatic Temperature Controls: Temperature controls for the school were pneumatic. The original control air compressor and receiver tanks remain today at their original locations adjacent to the boiler room (Fig. 18). All the original thermostat locations are marked by existing thermostat bases. In many cases, the thermostat covers still exist (Fig. 19). From this evidence it can be stated with a considerable degree of confidence that thermostats were originally installed in almost all exterior rooms.

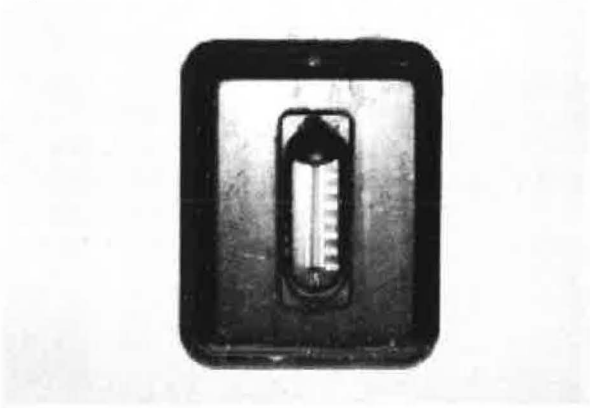
Thermostats in rooms equipped with unit ventilators are served by dual air lines. In modern buildings this would indicate that different room temperature set points could be utilized for daytime and nighttime operation. This feature could also apply to the Monroe School system; however, as these thermostats are located only in rooms with unit ventilators, it appears that they were also utilized to defeat the ventilating function during night operation.

Figure 18



The pneumatic temperature controls are located on the south wall of the basement side room.

Figure 19



One of the remaining original thermostat covers.

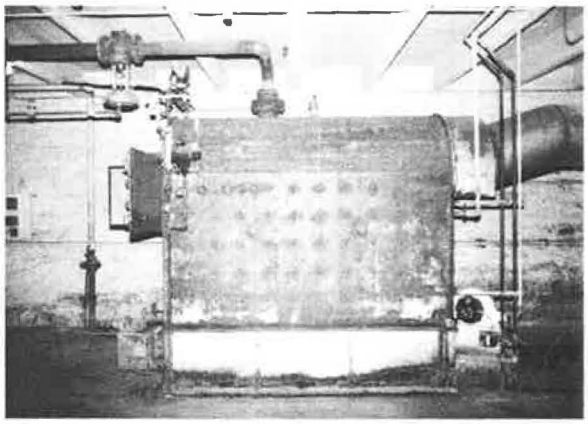
The thermostat in what was originally the manual training room appears to have been relocated. This is evidenced by an extension of the dual air tubing along the wall, from the original location south of the original corridor door to a new location north of the second door added to the room during the first kitchen conversion. During this remodeling, the Manual Training Room was partitioned into a kitchen and a shipping/ receiving room. Moving the thermostat left the temperature control accessible from the kitchen. A single air main thermostat was installed at the location of the original dual main thermostat.

Current Heating Systems

Heating Source: The boiler that replaced the original equipment is shown in Fig. 20. From the type and manufacturer of the boiler equipment it can be speculated that the boiler replacement occurred sometime in the 1930s to 1950s. This speculation is supported by the presence of a weighted pressure reducing valve at the boiler and vacuum condensate return pump. This combination was utilized during that period to modulate the steam temperature by varying the pressure in the steam main.

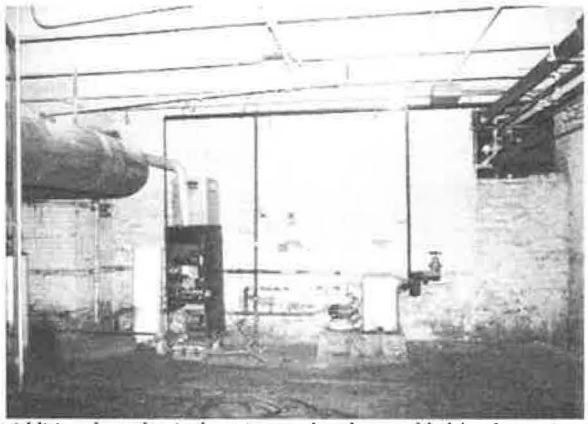
The replacement boiler is equipped with a natural gas burner located below the front fire door and a #2 fuel oil burner located at the rear of the boiler. This arrangement is not unusual for the time the boiler was installed. Natural gas was the preferred fuel; however, continuous gas service was considered unreliable (or by contract interruptible) and a fuel oil backup was deemed essential.

Figure 20



North face of the replacement boiler.

Figure 21



Additional mechanical equipment has been added by the various owners.

The fuel lines from the oil burner leave the boiler room through the sealed coal bin archway. There are deposits on the floor at the archway that appear to be fuel oil. It is possible that the fuel oil storage tank was located in the sealed coal bin. The present boiler is a Kewanee Type C, model #7L281, rated at 2,520,000 BTU gross output. The boiler has 500 sf of heating surface. Its serial number is "6755" and the order number was "8334." The boiler is not operational and has no real value.

Heating System: With the exception of the installation of the replacement boiler, no significant changes were made in the heating system during the entire period that the building was occupied as a school. Subsequent occupants have removed portions of the original system equipment to create space for newer equipment as their need required (Fig. 21). Since the NPS acquired the building, a considerable amount of this new equipment has been removed.

Original Ventilating Systems

General: Other than the unit ventilators discussed above, there were no other outdoor air supply systems in the original building. By today's standards, the fact that the Auditorium and Domestic Science room were not ventilated, other than through windows, is somewhat puzzling. As these rooms were not continuously occupied, perhaps it was felt that ventilation was not required.

Relief Air System: A large relief air grille is located in the second floor corridor ceiling above each stairwell. It is logical to assume that these grilles were intended to relieve the air brought into the building by the unit ventilators. Air could pass from the classrooms into the corridors through louvers which were provided in every interior corridor door.

Exhaust Air Systems: Toilet rooms were exhausted by two gravity exhaust systems. One system served the toilet rooms at the north end of the building and the other served the south toilet rooms. Louvers located in the corridor doors provided make up air for that removed from the toilet rooms. As the doorway to the first floor Boy's Toilet was located in the unheated north vestibule, no door louver was provided. Instead, a transfer grill was located in the wall just beyond the vestibule.

The configuration of the exhaust systems was the same for all rooms. Exhaust grilles were located near the floor between the water closet stalls. These grilles opened into the pipe chases behind the plumbing fixtures. Ductwork with openings into these pipe chases extended upward through the chases to a gravity ventilator on the roof at each end of the building.

Plumbing Systems

Original Utilities

General: The natural gas service, water service, and sanitary sewer, at the north end of the building, all exit the boiler room along the west wall.

Original Storm Drainage System

General: The entire roof of the building was surrounded by a large horizontal gutter. At regular intervals around the building, rectangular metal downspouts with collector boxes extended from this gutter down the side of the building into basin-like structures whose tops were located at grade. The downspouts drained into these basins (Fig. 22, 23).

Branch sewer lines extend from the basins to the city sewer. The inverts of the branch lines are located above the bottom of the structures. This configuration allows the basin to trap any sand or debris that flows into it from the downspout. It is not clear whether this unusual design resulted from a code requirement or not.

Original Sanitary Drainage System

General: The sanitary drainage piping was hub and spigot cast iron sewer pipe. The design was conventional and essentially the same as is employed today.

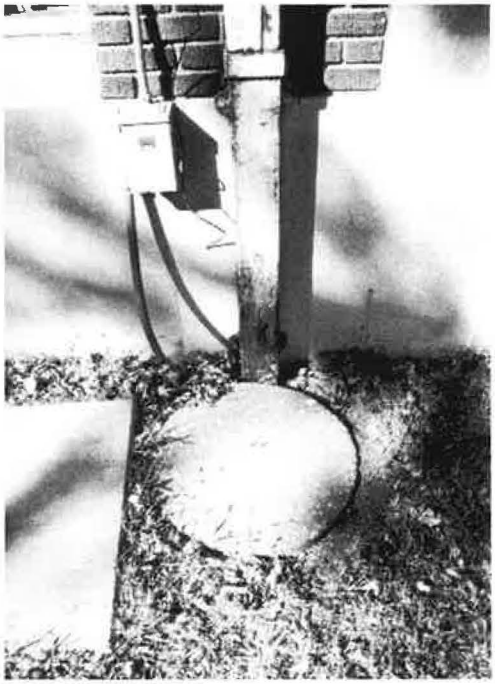
Toilet Room Plumbing: The plumbing system for the toilet room was conventional and very similar to today's installations. Large pipe chases were created behind the wall-hung water closets to access and service the above-floor sanitary lines. The venting system, constructed of galvanized pipe, would meet most current codes.

Figure 22



Grille at the northwest downspout.

Figure 23



Concrete cover on the downspout south of the east entrance.

Plumbing Fixtures: With the possible exception of the Kindergarten toilet room, it is not possible to determine if the present fixtures stored in the building are original. Judging from the size and configuration of the water closets and lavatories it is possible that these fixtures at least match the originals. Given the age of the building, it is unlikely that any of the faucets are original. It is obvious, however, that the original water closets in the major toilet rooms were the wall-hung type. The children's water closet off the kindergarten could very well be original.

Both floor mounted and wall-hung urinals are stored ate the site. The floor urinals are still connected to the sanitary drainage system. Judging from the condition of all urinals, it is unlikely that they are original. In the 1920s through the 1940s, school building urinals were generally floor mounted. It is possible that wall hung fixtures were added at a later date.

One service sink is stored at the site. It is possible that service sinks were installed in the enlarged spaces at the corridor side of the each toilet room pipe space. The sanitary piping in the Pantry, adjacent to the Domestic Science room, clearly indicates that a service sink was installed in this room.

Domestic Water System: Little evidence of this system remains. The original water service entered the Boiler Room along the west wall and water piping extended through the tunnels. There is no evidence of the original water heater. Some piping remains in the toilet rooms.

Other Features

General: Two exterior loose-key wall hydrants are located along the east wall. They are centered on the wall between the Main Entrance and each end of the building.

A square pit, which has water in it, is located in the northwest corner of the Boiler Room. At present a submersible pump is located in the pit. It is not possible to determine if the pit was part of the original building; certainly the pump was not.

Grooves have been cut in the Boiler Room floor to facilitate drainage to this pit. A groove also extends from the replacement boiler main drain to a floor drain in the center of the floor. These grooves are probably not

original. It is evident that there has been water damage in the Boiler Room.

Electrical Service

The original electric service was updated in 1957, with additional lighting installed on the exterior in 1975. Most of the original ceiling fixtures were replaced by fluorescent lights in early 1980s. Many original fixtures are stored in the gymnasium and other locations throughout the building.

Primary Service: There is a single-phase overhead primary line in the alley west of the property. There is a three-phase overhead primary line in the street north of the property, perpendicular to the alley. There is a 75 KVA, 120/240 volt, single-phase, 60 Hertz, pole-mounted transformer on the north side of the alley. This transformer feeds the school and a private residence west of the alley. The electrical service is provided by Western Resources, Inc., 818 Kansas Avenue, Topeka, Kansas; the telephone number is (913) 575-6300.

Secondary Service: The feeders from the transformer to the building appear to be 2# 350 MCM and 1/0 neutral/ground. There are multiple service entrances, which reflect the multiple tenants in the building after the school was decommissioned. Very little remains of the original electrical service and distribution system. Whatever remains is of the open bus type (boiler room and first floor panels) and the cable is braided and brittle. There are newer panels throughout the building which were installed by the various owners after 1975.

Existing Telephone Service

Incoming Service: From the same pole where the electrical service originates, there is an overhead line which is cut off at the building line. There is evidence on the outside (two weatherheads built-in to the building) that there was incoming service, but this line can not be followed inside the building. There is another overhead line coming from the alley to a hook on the south side of the building and then into a temporary telephone outlet in the Kindergarten Room. There is no evidence of any telephone outlets throughout the building. Telephone service to the building would be provided by Southwestern Bell, (800) 440-9050.

Existing Lighting

Classrooms: In all cases there are two outlets in every classroom, suggesting that the original lighting was provided by two incandescent globes. Suspended, baffle, fluorescent lighting fixtures were later installed, and the original fixtures removed. Some fluorescent fixtures on the first floor were damaged by the fire in the southeast corner, and many fixtures on the second floor are broken or have missing parts. Many of the lights were disconnected from the original circuits and cannot be tested as to their workability.

Auditorium: The custom surface-mounted, incandescent fixtures are of the original vintage. These lighting fixtures are still fed from the original panels located behind the proscenium wall.

Corridors: The original light fixtures in the corridors were probably similar to the classroom units. The present fixtures are surface mounted, baffled, fluorescents

Fire Alarm

Presently there is a pull station and a fire alarm bell in the middle of each corridor. These devices are stand alone; there is no system and the wiring is not supervised. There are two fire extinguisher cabinets on each floor, on either side of the auditorium.

ADA Compliance

There is a small ramp at the north entrance. The main entry is two steps above grade, and has no ramp. The remaining entrances are at grade. Inside, there is no elevator and consequently no handicapped access to the second floor.

Exterior Fabric Analysis

Walls

The exterior walls are composed of red brick laid in common bond, on a dressed ashlar limestone base. There is a pair of large brick relief panels on both the north and south facades; each one contains a carved limestone ornament. The exterior corners of the building are highlighted with limestone quoins. The walls are generally in good condition, although the limestone base is stained at several locations. There are numerous holes in the walls, the result of various mechanical/electrical systems being installed and removed. In sev-

eral areas, the masonry has been repointed with an inappropriate color mortar.

Roof

Two hipped roofs connected by a long north-south gable form the main roof system. The hipped roofs at either end run perpendicular to the gable, and are flat on top. There is a hatch in each of the widow's walks (the two flat areas), providing access from the attic. The main roof was originally of clay tile; red asphalt shingles were installed in 1993. Consequently, with the exception of the south slope of the south wing, the roof is in excellent condition. Fig. 24 is a typical roof condition. Flashing surrounding pipes, chimneys, and other projections is intact. The roof drains to galvanized steel gutters and cast iron downspouts; the majority of the downspouts are original.

The south roof is in poor condition, as shown in Fig. 25 and 26. It is missing many shingles, especially at the top where the substrate is exposed. The flat roof membrane at the top of the hip seems intact, but the edge of the membrane where it meets the shingles has been patched more than once. EDPM laps the shingles and is nailed in place. Some nails are pulling out, and the EDPM is pulling through some nails. This is not a standard roofing detail.

The auditorium and attached vestibule have flat, built-up roofs, with scuppers opening to exposed metal downspouts (Fig. 27). The roofs are in very poor condition. There has been severe water damage to the interior plaster along the west wall and northwest cor-

Figure 24



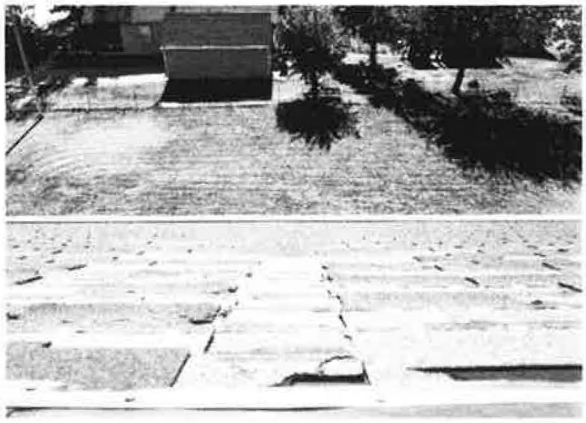
2.12. Typical condition of the hipped roof.

Figure 25



South slope of the south roof, showing missing shingles and patched membrane.

Figure 26



The south roof.

Figure 27



The flat roof of the auditorium. The metal stack that replaced the original chimney is visible in the background, right.

ner. In November of 1995, the National Park Service exposed the roof deck. This revealed deterioration and cracking, which was temporarily covered with EPDM and tapered, rigid insulation until the final use for the building is determined.

Chimney

The original brick chimney for the mechanical room is on the south slope of north wing's roof. Of roughly square dimensions, has been partially replaced with a 10' metal stack. The remainder of the brick chimney, integrated into the building fabric, now forms the base for the stack. The structural analysis suggests the original chimney may have collapsed onto the roof, requiring the repair. There is a greenish growth on the remaining exposed brick. A smaller chimney, on the west slope of the center roof, has loose top bricks and needs repointing. There is also a greenish growth on this chimney. The original chimney for the kindergarten fireplace, located in the south wall of the room, is intact. The internal condition of the flue linings for the various chimneys is unknown.

Cornice, Gutters, and Eaves

The cornice is of cast concrete, indicated by fragments found on site. It needs paint and possibly other repair. The paint is peeling on the overhanging metal eaves with integral gutters. Many sections of the cornice and frieze are heavily stained. The condition shown in Fig. 28 is typical.

Doors

There are six exterior doorways. The east doorway is the primary entrance, Fig. 29, and has the original exterior doors. Doorways in the north and south facades allowed student access to the playgrounds. The north and south doors are not original. Auditorium doors, opening from a vestibule, are in the north face of the auditorium; these are not original. There are additional doors on west facade from the two restrooms, one in each wing. With the exception of the doors from the toilets, all of the doors are double doors. Doors are wood with six lights each. There is a fan transom at the north, east, and south entrances. The typical door hardware consists of a closer, panic bar, kickplates, metal center style, and ball bearing hinges.

Windows

Figure 28



Cornice, eaves, and gutters at the southwest corner.

Figure 29



Main entry doors.

The typical window is a paired steel casement style, with ten lights per side (2x5, vertical) and five knuckle hinges. The divided transom consists of two four-by-four light panels (see Fig. 29, top). At the brick walls, the external sill is limestone, and there is a brick soldier course at the head. Typical window glass is 1/8" thick, non-insulated, and clear. Many of the panes have been replaced. Patterned glass was used in the restroom windows; much of this remains. The auditorium has three window bays, with semicircular windows at the balcony level. There are also large windows at either end of the second floor corridor, to admit daylight to the interior. Typically, the windows need stripping and rust removal before being re-glazed, re-caulked, and re-painted.

Facade Analysis

NORTH WING

North Facade: Overall, the north facade is in good condition (Fig. 30). A central entry bay separates two ornamental panels of brick and carved limestone. The limestone ornaments at the centers and corners of the paired brick relief panels show heavy staining. In the center of the east relief panel, there is a junction box surrounded by a rectangular ghost outline (Fig. 31).

Fig. 32 is a detail view of the north entry. The pair of exterior doors is not original. The west door has a modern handle and lockset, while the east door has no handle or lock.

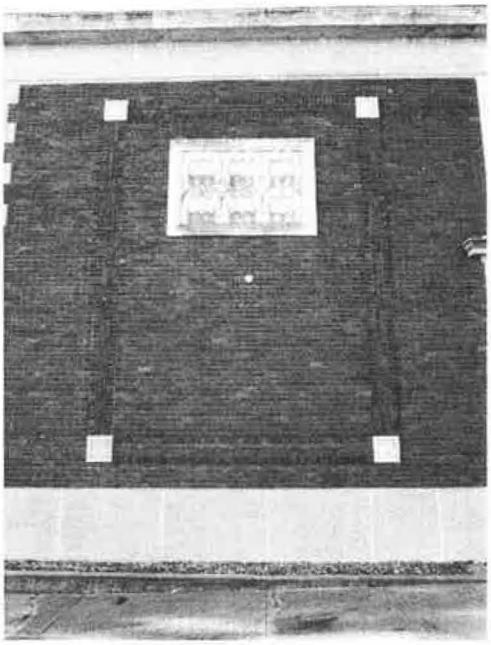
Above the door, a large window bay marks the end of the second floor corridor. The window above the doors

Figure 30



North facade

Figure 31



East side of the north facade, showing the decorative limestone panel and brick border.

Figure 32



Side doors and transom, north facade.

is missing two panes of glass. This window is separated from the door by a modest projecting cornice, which is stained and has a broken edge. Directly above the doors and below the existing light fixture the stone band has been cut on the diagonal. There are two anchor holes below the cut, shown in Fig. 33.

The concrete ramp was installed at the north entrance in the early 1980s. Once source [nomination form] says the installation was motivated by a need to move hand trucks into the building, not for handicapped access. This would be consistent with the building being used as a warehouse, and would also explain the chipped steps on the north stairwell.

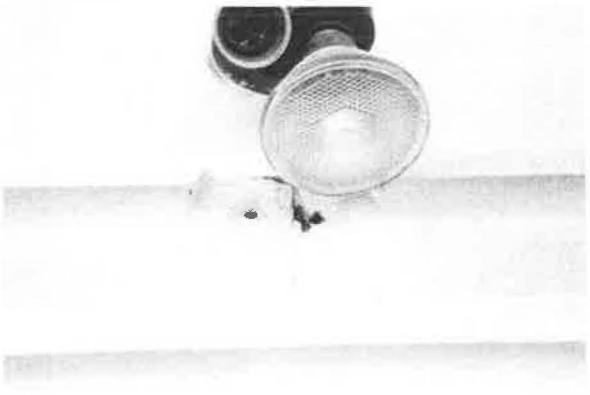
East Facade: The east facade is generally in good condition, although multiple penetrations with conduit and tuckpointing with an incompatible mortar have marred the facade. There are cracks in several of the window sills and a hose bibb is missing from the center of the wing. The frieze band on the east facade shows typical carbon staining, with two areas of heavier staining.

Two ventilation grills in the limestone base and concrete pads on the ground mark the locations of compressors for an earlier mechanical system. The north grille has been infilled with stone. The south grille needs caulk, and the top of the associated concrete pad is delaminating. A base stone near the south grille is spalled on its top left corner. Above the south grille, the window is out, replaced with plywood surrounding a portable window air conditioner (Fig. 34).

There is an exposed metal downspout at each end of the wing. The north spout (Fig. 35) is original and heavily rusted at the bottom. Carbon stains are visible on the limestone base at the foot of the spout, which empties into a drain with a concrete cover. A cut conduit feeder emerges from the ground near the drain. Conduit mounted on the wall between the spout and the nearest first floor window enters the building just above the window header. There is a broken return brick at the upper right corner of this window.

Two examples of tuckpointing can be discerned at the point of penetration: in one area, the mortar is too light; in the other, the pointing has been poorly executed. Tuckpointing has also occurred directly behind the downspout where the limestone base meets the brick. There is a switchbox at this location, and an open joint in the limestone behind it. Typically, the limestone joints

Figure 33



Cut stone and anchor bolts above the north entrance.

Figure 34



Ventilation grille and boarded-up window in the north wing, east facade.

have been repointed with a lighter color than the original mortar, but the joint under the switch box appears original.

Next to the east entry, at the inside corner shown in Fig. 36, there is a section between the upper and lower windows that has been tuckpointed with an inappropriate mortar. The downspout at this corner is a replacement, and drains onto the surface. Wiring runs from the ground up to a junction box at the top of the

Figure 35



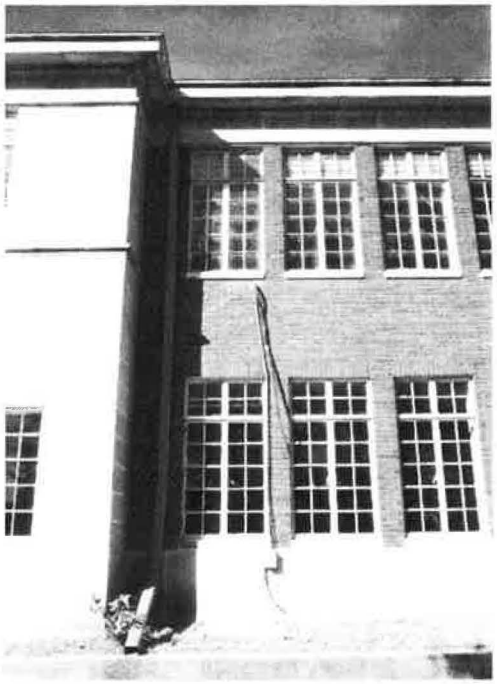
The north corner of the east facade.

limestone base; this appears to be an exposed electrical hookup. There is conduit on the brick face, with penetration just below the second story window. The points of penetration were badly patched. There is a bolt sticking out of the wall, midway up, next to the interior corner.

West Facade: The north end of the wall, shown in Fig. 37, is a jumble of utility conduits surrounding the original downspout. There are also nails midway up the wall. This area contains a light well for exterior access to the basement and a closed coal bin accessible by a wall-mounted ladder. The tubular railings marking the lightwall and bin are visible above ground. The limestone base in the vicinity of the light well is stained at the bottom. There are multiple holes in the limestone at the south end of the lightwell. The windows at the north end have patterned glass, and mark the location of the Boys' Toilet on each floor. There are several missing panes of glass on the west wall.

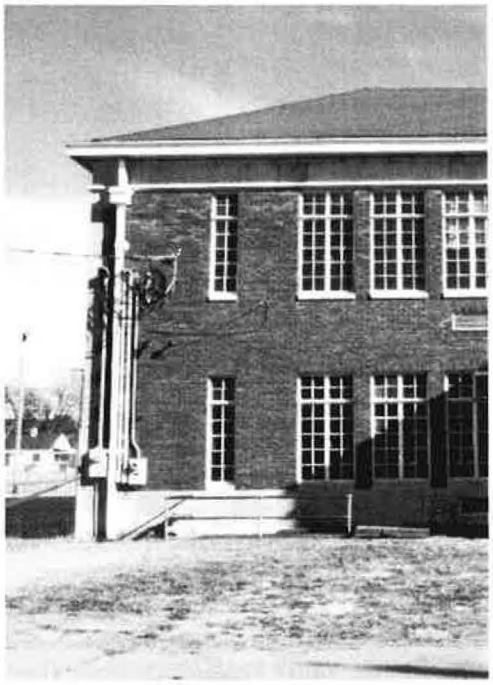
The door at the south interior corner next to the auditorium, Fig. 38, has been altered. The transom has been removed and infilled with Masonite. A slatted vent protrudes from the Masonite. The first floor window next to this door has also been altered. The right side of the

Figure 36



The corner north of the east entry.

Figure 37



The northwest corner.

Figure 38



Door to the former Manual Training Room.

Figure 39



The main entrance.

transom has been replaced with a slatted vent the full size of the opening. The same alteration has been performed on the third window to the north, but the vent includes a curved hood.

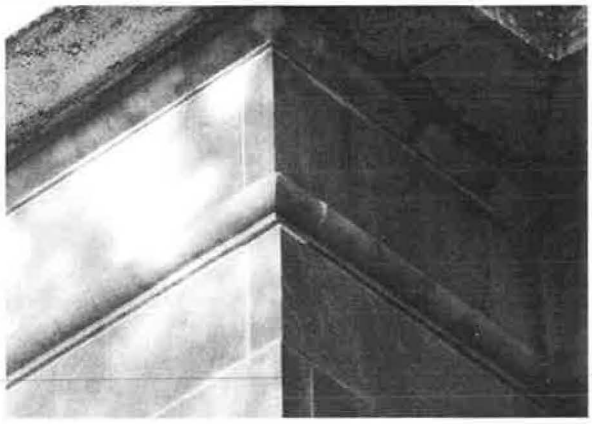
The downspouts on this wall are original with collector boxes and cast iron boots. The north spout drains into a pit with a steel mesh cover. There is a water stain on the limestone where the south spout drains.

MAIN ENTRANCE BAY (East Entrance)

The projecting limestone bay on the east facade is the primary entrance to the building, and is shown in Fig. 39. The limestone frieze and ornamentation of the entry bay are soiled. There is heavy carbon buildup over the doors. A detail photograph of the stone at north cornice of the east entrance (Fig. 40) shows that the limestone in that area is stained with water and has an organic growth. The remainder of the limestone face is in good condition, with only one block appearing to be ready to spall.

There is a concrete stoop with two steps at the main entrance. The steps appear to be in good condition, but the curbing at the sides is cracked and worn. The stoop is settling downward at the building.

Figure 40



North cornice of the entrance bay.

Paired lighting fixtures are missing from either side of the main doors (Fig. 41). The lighting fixture within the doorway arch is intact. Glass panes in the doors and fan transom are intact. The doors have the original handles, locks, plates, and hinges.

The left side of the north casement window on the first floor is covered with plywood. There is a lead sleeve at this sill. Below the north window, the parging below the base stone is eroding.

Figure 41



Ghost of the light on the north side of the east entrance.

SOUTH WING

East Facade: The condition of this wall is similar to its north wing counterpart. A hose bibb is centered at the base of the wall. The paired ventilation grills have been infilled with plywood. The perimeter of the south grille has a large spall at the bottom right corner. There are multiple holes in the wall surrounding the condenser units. There are broken panes of glass in the upper windows.

The northern downspout drains below grade, and there is a cast iron cover on the surrounding drain. This is a replacement downspout, and ghosts of the original mounting brackets are on the wall. There are also bolt and anchor holes at the base of the spout. The south spout has a concrete boot at grade.

South facade: The south elevation is shown in Fig. 42. The wall fabric is in good condition and the limestone ornamentation is intact. At the center of the east relief panel, there is a junction box and two anchor sleeves, similar to that found on the north wing. At the southeast corner, the third quoin up is cracked and the second limestone block west of the entry is exfoliating.

Figure 42



The south facade.

The doors are not original at the south entry. The left side door has been fitted with the original hardware; a modern lock set and handle have been substituted on the right (Fig. 43). Both doors show damage to the front veneer, the right door more so than the left. The door glass is intact, and covered with wire mesh. There are "hold-open" brackets on the walls left and right of the entry. The left bracket has a hook.

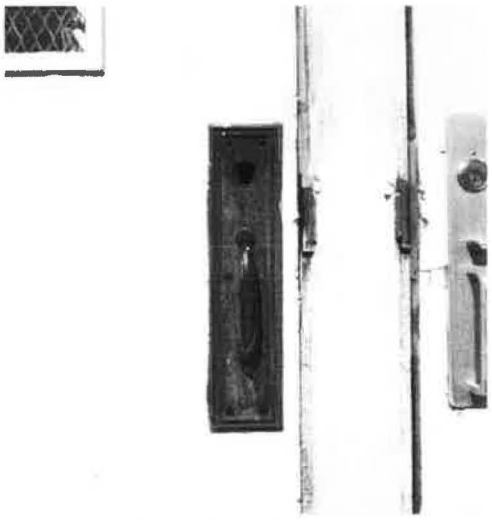
Above the doors, the stone band has been cut on the diagonal (Fig. 44). There are two anchor holes below the cut. The transom is missing an outer glazing stop, above the west door. The window above the doors is missing four panes of glass; a fifth pane is cracked.

West Facade: This facade has original downspouts at each corner, ventilation grills, and a hose bibb. At the south end, there is an open joint in the coping. The limestone base block at the corner is cracked, and at the top of the base, near the window, there is an old partial face spall on a brick.

The down spout at the southwest corner is disconnected from the gutter at the connector box. The spout is also bent one-third of the way from the top and has extensive rust on the bottom (Fig. 45). The north downspout, in good condition, drains into a cast-iron boot with no drain cover.

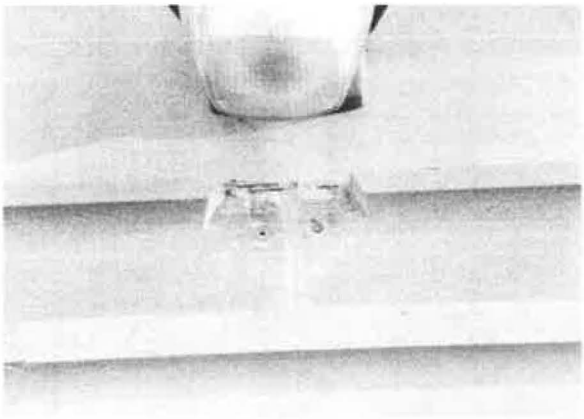
A first floor window, in the third bay north of the corner, has been replaced by plywood. Telephone service enters the building at this point. The ventilation grill below the fourth window north has been covered with plywood. Immediately north of the grille opening there

Figure 43



The door handles at the south entry.

Figure 44



Anchor bolts and cut stone mark the position of the original light fixture.

are five closely spaced holes, but no associated service box in the wall.

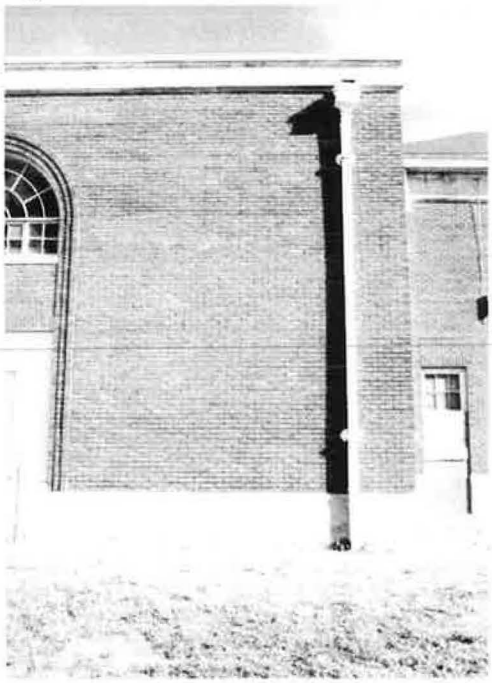
The door at corner where the auditorium projects from the mass of the building is boarded over from the outside with plywood (Fig. 46). This is was the door to the first floor girls' toilet. There is a large gap between the head and lintel of the door. The door's transom, with patterned glass, is visible, but is boarded over from the inside. One pane is broken. The windows to the north of this door also have patterned glass remaining, marking the location of the girls' toilet on each floor.

Figure 45



The southwest corner of the building. The downspout is disconnected from the gutter, and a first floor window has been boarded up.

Figure 46



At the extreme right is the southern interior corner where the auditorium projects from the west wall. The door leads to the first floor Girls' Toilet.

In the northernmost window bay, there is a bracket and a box midway up the wall. A cable leads south from the box to another box, and then up through the fascia, which has spalled at the point of penetration. There is also a loose brick at the upper north corner of the wall.

AUDITORIUM & VESTIBULE

The auditorium protrudes west from the main building, and has its own roof. The west wall has three bays of windows. The upper level windows are semicircular and mounted above operable transoms. The first floor window at the south end of the auditorium has been altered, and is currently boarded up with plywood from the outside (Fig. 47). Many window panes on the west wall are cloudy, obscuring the view. Several other panes are broken.

There is gray carbon staining on the entire coping and fascia around the auditorium. There is an open joint between two coping units in the south exterior corner and an open joint between two base stones on the west vestibule wall. Whitish discoloration at the limestone base is visible on the south face.

Downspouts at the north and south corners are original and in good condition. The north spout spills into a yard drain. The lower bracket on this spout is loose, and there is carbon/water staining on the limestone backing this spout.

The vestibule doors on the north face of the auditorium are not original and the transom has been altered (Fig. 48). There is a "hold-open" bracket to the west of the doors. Carbon staining is visible on the cornice. The glass is missing from the light fixture over the doors.

Figure 47



The southernmost window bay on the west wall of the auditorium.

Figure 48



The vestibule on the north side of the auditorium.

Interior Fabric Analysis

General Conditions

Walls: The original interior wall finishes were hard plaster and paint. According to the original classroom plans, chair and picture rails were plaster, with portland cement baseboards finished with quarter-round wood toes. A two-color paint scheme and chair rails were used to create a wainscoting effect. Much of this trim has been removed or replaced with wood. The corridors, vestibules, and the auditorium have brick wainscoting with an integral base. The toilets have a white tile wainscoting with an integral base.

The interior non-load bearing walls were of hollow terra cotta tile finished with plaster. Most of these partitions have been removed, although their original locations are evident from notches in the outer walls, floor, and ceiling.

Floors: There are four basic types of floor surfaces. Wood plank flooring was used in the offices, and all of the class rooms except the Domestic Science Room, which was lineoleum. Black terrazzo with white tile inlay was used in the corridors, stairs, toilets, and other areas where heavy foot traffic and water was a concern. The floor in the auditorium consists of vinyl tiling over concrete. Currently, the gymnasium, and offices for the teachers and principal (Room 118 and Room 120) have what appears to be vinyl asbestos tile installed over the original wood.

Ceilings: The ceilings are metal lath and plaster applied directly to the concrete deck above. A white, pebble finish paint was found in several rooms; this is not believed to be original. While most of the ceilings are intact, there have been extensive modifications to the lighting/electrical system. The removal of the original fixtures and the installation of fluorescent light banks have left numerous holes, junction boxes, and conduit on the ceilings.

Windows: The interior window sills are brick. Windows in the toilets have patterned glass. However, at least two different patterns are discernible, indicating replacements over the years. The windows in the classrooms have roll shades in poor condition. Many of the window panes are cloudy and obscure the view out. Many other panes are missing or have replacement glass, due to vandalism. The interior hardware for operating the windows is generally in poor condition or missing.

Stairways: There are two stairwells for student use, one at either end of the north/south corridor. Originally open, these were enclosed by gypsum board in the 1980s to meet fire codes. The newel posts are exposed at the first floor, and are in good condition. The original balustrades are in place on the second floor, and the open railing may still be in place under the gypsum board. The original wooden hand rails are intact at each stair well. Below the north stairs is a utility stair that leads to the boiler room in the basement.

Basement

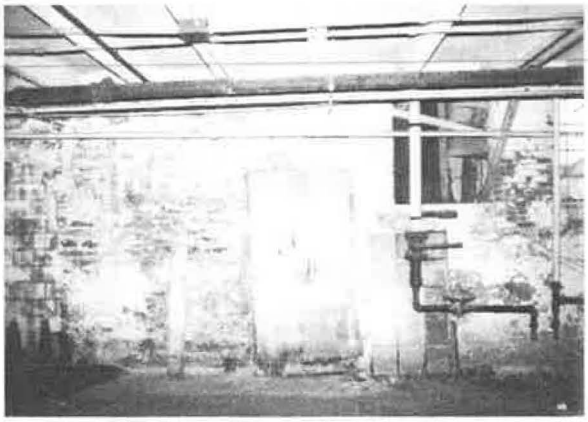
The perimeter walls are rubble with a parge coat. Only the northwest corner of the foundation was excavated; this basement consists of three parts: the main mechanical room, a small access room to the east, and an external light well to the west. Each of the smaller rooms is joined to the main room by a masonry arch. The ceiling and floor are of poured-in-place concrete. The floor is in rough condition and water damaged but the exposed ceiling is in good condition.

Large square openings at the interior corners of the main room allow conduit, ducts, and pipes to pass into a utility tunnel that runs parallel to the building perimeter and provides service to the remainder of the building. Access hatches to the tunnel are found on the first floor, in the Principal's Office and at the foot of the west stage stairs.

Internal inspection of the basement reveals staining at the base of the foundation walls and areas where the parge coat has fallen away. The west wall shows extensive water damage. The coal bin on the west wall has been infilled with modern concrete blocks which show distinct signs of weeping at the mortar joints. (Fig. 49). The arch in the west wall leads to the exterior light well, but is now boarded up with plywood.

The east arch into the side room is shown in Fig. 50 and Fig. 51. The dressed stones forming the side of the arch were apparently recycled from another building. Although the previous Monroe school at this site was demolished after the new building was completed, this

Figure 49



Left: Water damage and concrete block infill on west wall. Center: The arch leading to the exterior lightwell has been boarded up. Right: Part of the access tunnel system.

Figure 50



The east wall of the main room and the arch into the access room.

Figure 51

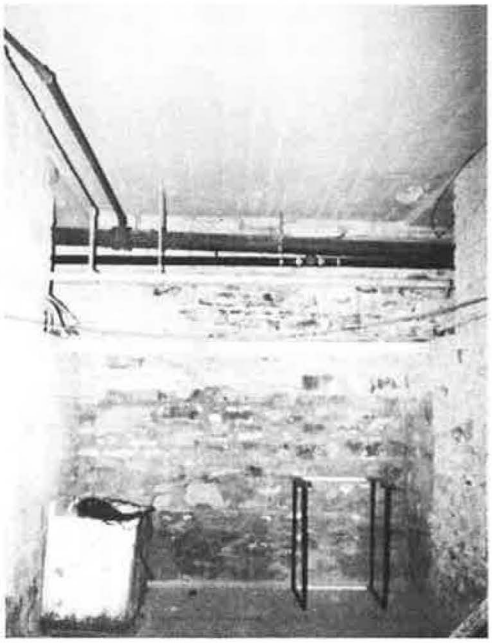


Detail: the east wall arch and utility tunnel, looking through to the access room.

material may have come from an earlier structure or a demolished school at another site.

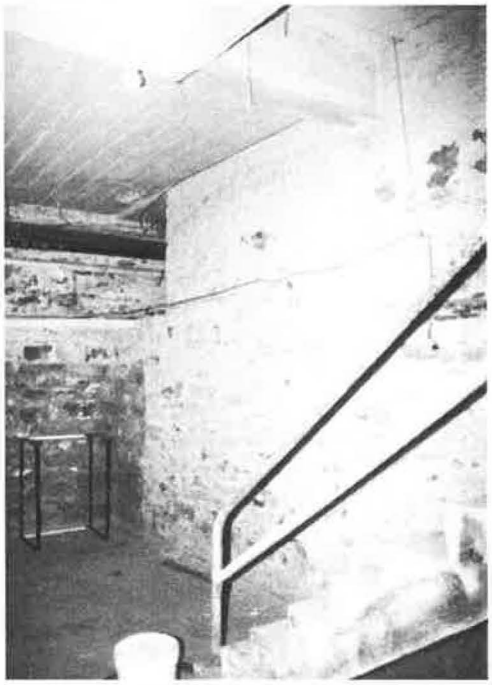
The north wall of the side room has been repointed and there are signs of water damage at the base of the wall (Fig. 52). In the past, a maintenance worker has observed streams of water shooting out of the walls after a period of rain. Additionally, during one inspection

Figure 52



North wall of the side room. The exterior wall has been repointed.

Figure 53



The northeast corner of the side room and the stair to the first floor corridor.

by the Regional Safety manager, there were about twelve inches of standing water on the floor. The stairway on the east wall leads to the interior first floor corridor, coming up beneath the north stairwell (Fig. 53). The concrete steps are stained on the back and side and the railing on the stair is severely rusted where it meets the bottommost concrete step. Behind the stairs are the air compressor and temperature controls for the heating/ventilation system. There are moisture stains on the floor and walls at southwest corner. The south wall of the side room is brick, not rubble, and contains the automatic temperature control system.

First Floor

Room 101, Kindergarten Room

This is the best preserved room in the building. Generally, the plaster on the walls and ceiling is in good condition. There is minor paint peeling just above the baseboard. The south west corner shows water damage, where the plaster is stained and spalled.

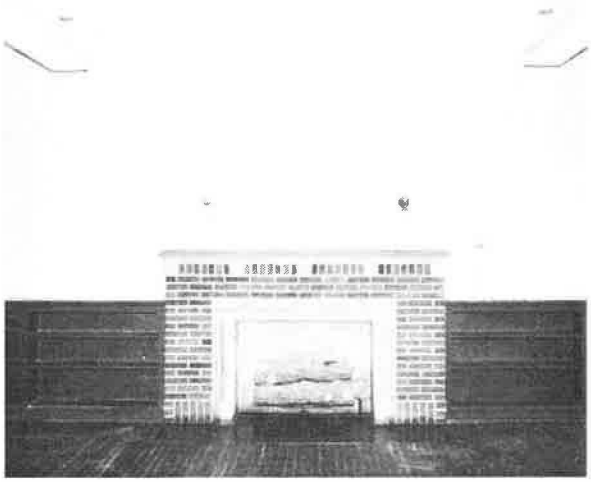
The fireplace in the south wall is in excellent condition, as shown in Fig. 54. Low wooden bookshelves flank the fireplace. The original light fixtures above the fireplace and in the ceiling are missing. Two banks of fluorescent light fixtures are currently in place. The paint on the ceiling is a pebbled finish and peeling.

The floor is wood plank, and in good condition. The ventilator unit and radiator are missing, and there are holes in the floor against the west wall. There are also holes on either side of the existing radiator, in the southwest corner.

On the east wall, white paper covers the original chalk board (Fig. 55). The doors at either end of the room both lead out into the corridor. The door at the south end of the wall opens directly into the south vestibule, presumably to give preschoolers better playground access.

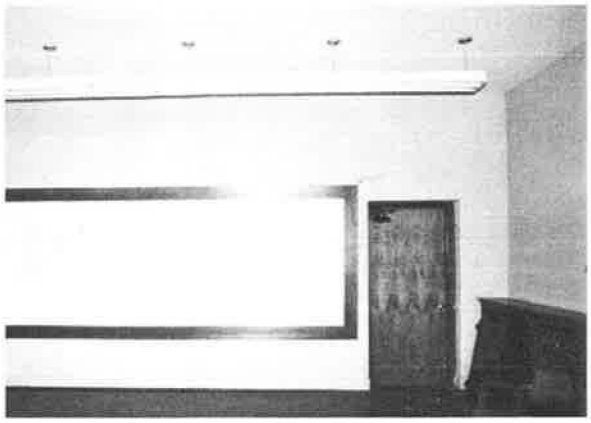
The north wall partitioned off the closet, utility corridor, and the two toilets (Rooms 104, 103). The two doors in this wall, shown in Fig. 56, lead to Rooms 102 and 103. The wall is in good condition, with only minor peeling paint at the base.

Figure 54



The gas fireplace in the kindergarten. The original light fixtures above the mantle are missing.

Figure 55



The kindergarten bulletin board has been temporarily covered with white paper. The door to the right leads to the south vestibule.

Figure 56



The north wall of the kindergarten. The doors lead to Room 102, right, and Room 103, left.

Figure 57



The interior of the kindergarten wardrobe, Room 102.

Figure 58



The upper west wall of the Kindergarten Toilet, Room 103.

Room 102, Coat Room

This room is in good condition with peeling paint. A pair of shelves line the walls, as shown in Fig. 57. There has been damage to the south wall, on the east side of the door jamb. The room is currently being used as a storage closet.

Room 103, Kindergarten Toilet

There is extensive water damage to the plaster in the upper northwest corner and along bottom of west wall. Fig. 58 shows the damage to the north of the window. Fig. 59 the bottom of the wall, shows the lavatory and radiator. A right-angled section of conduit penetrates the outer wall and protrudes into the space.

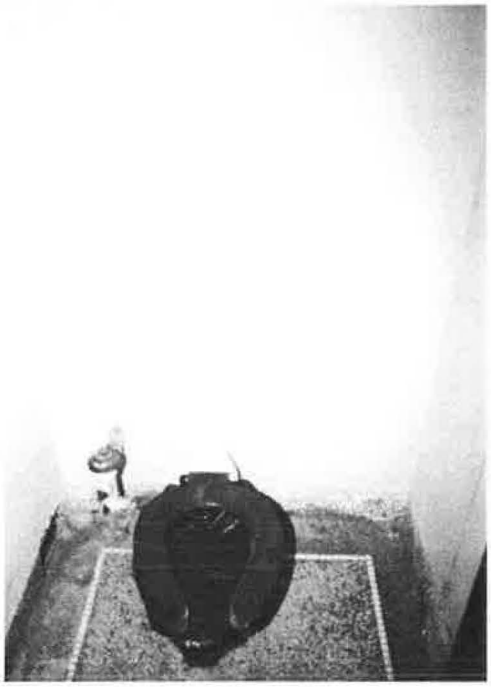
The plaster on the east wall is in good condition. Fig. 60 shows the toilet and terrazzo floor, both in good condition. The plaster is also in good condition on the north wall, with the exception of the west corner. There is a brick-size hole in the base trim at the northeast corner.

Figure 59



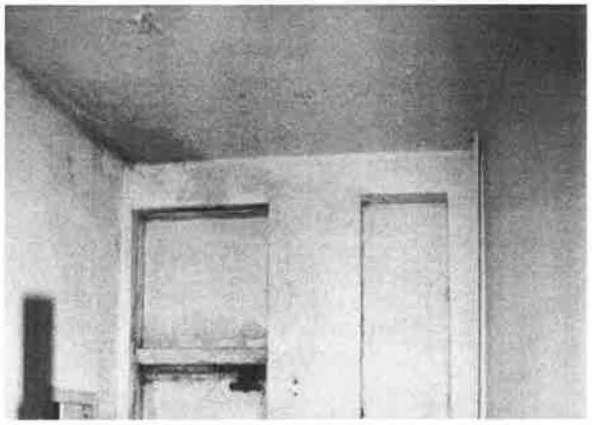
The lower west wall of the Kindergarten Toilet, Room 103.

Figure 60



The east wall and toilet in the Kindergarten Toilet, Room 103.

Figure 61



The upper west wall of the Girls' Toilet, Room 104.

Figure 62



The north wall, east end, of Room 104. The plaster, tile, and terrazzo floor are typical of the room, except for the west wall.

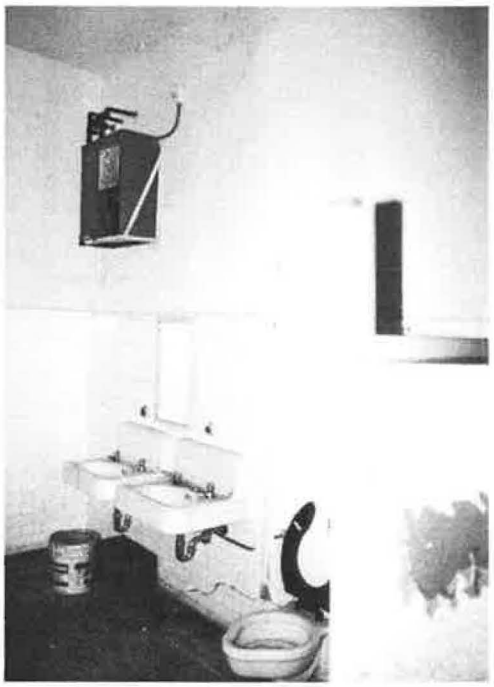
Room 104, Girls' Toilet

The Girls' Toilet Room has been altered at the west wall. The window and the transom above the door are boarded up with plywood. The plaster is heavily stained; the water damage, shown in Fig. 61, has probably spread beneath the tile wainscoting. The remaining walls and tile are in fair-to-good condition, with peeling paint and spalling plaster due to moisture; the east end of north wall, shown in Fig. 62, is typical. There is discoloration of the tile at the baseboards, and the floor has worn spots and adhesive residue. The ceiling shows water damage and peeling paint.

On the south wall, there is paint spalling and plaster efflorescence at the ceiling. There is a mechanical unit mounted near the ceiling in the southeast corner (Fig. 63). The fixtures, including the mirror, are original. There are mounting fixtures above each sink for soap dispensers. The bathroom stalls have been partially disassembled and stored against the south wall. A crack has developed in the tile wainscoting running from the toilet partition's bottom mounting hole to beneath the west sink. Paint on the partitions is peeling badly.

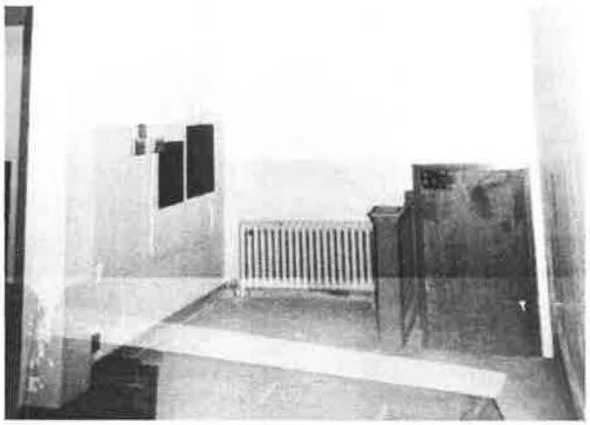
In the west corner of the south wall, there is a door into the utility corridor directly south of the restroom. This door is atypical of other doors in the building. The door is lower and narrower than others. The current door appears to be made of plywood, and the door trim is flush to the wall surface. Both the trim and the door are painted white. The paint is peeling and the door generally appears to be in poor condition.

Figure 63



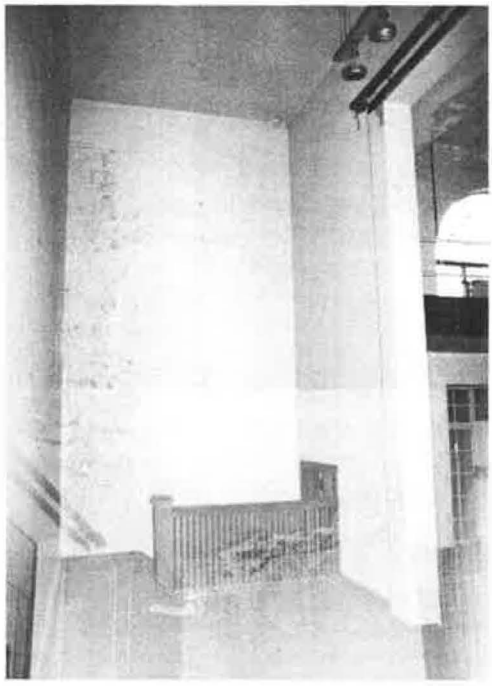
The southeast corner of Room 104.

Figure 64



The east alcove of the stage. The door leads to the main corridor.

Figure 65



The west alcove. The steps and door lead out to the auditorium. The original stage lights are visible at the top right corner of the picture.

Room 106, Stage

The area behind the proscenium arch has a set of steps at each end. The east steps provide access to the stage from the corridor and the west steps provide access from the auditorium. Fig. 64 is a view into the east alcove. The radiator, balustrade, and steps are original and in good condition. The base trim is not the original wood, but appears to be a vinyl product. The lighting panels are also visible. Plaster is spalling at the east edge of the proscenium arch and on the back wall.

Fig. 65 shows the alcove at the west end of the stage. There is wood trim at the baseboard. The balustrade is original and in good condition, but the newel post is not secured to the floor or the railing. There is moderate water damage to the plaster at the southeast corner, at both the wall and ceiling. There is also a crack in the ceiling at this corner. There is minor plaster damage in the upper northwest corner. A fine crack runs along the top of the west wall. At the top of this photo are the original stage lights and curtain hangers.

The stage floor is of wooden strips, is probably original, and shows staining and wear. A small section at the front of the stage has been replaced. No evidence could be found that the stage floor had been raised from its original level; this would have also required replacement of the stairs and balustrade, which are clearly original.

Room 108, Gymnasium/Auditorium

The entire west wall is in very poor condition. The south bay shows the least severe damage (Fig. 66). Spalling plaster and peeling paint are most serious below the balcony level. The underside of the balcony has also been affected. The window in the south bay, boarded up from the outside, has been altered. The two center casements have been removed, and replaced by operable plywood doors. The remainder of the window, not visible on the outside, is intact. The radiator has been removed from below the window. There is the paint ghost of a tall, thin object that originally hung on the southern most pier, probably a peg board for climbing similar to others in the room.

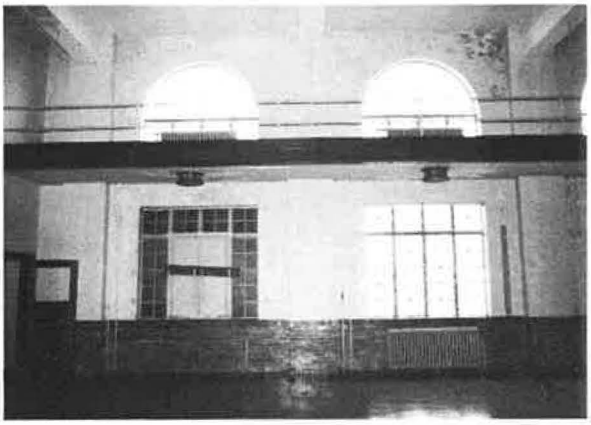
The central bay shows extensive water damage at the ceiling and upper northwest corner. This damage has spread to the ceiling beam. There is the possibility of structural damage to the concrete beam and deck at this location. Lessor damage is evident on the lower wall. The radiator and windows in this bay are intact.

As shown in Fig. 67, complete failure of the plaster bond has occurred in the north bay, extending around the corner to the north wall. Fig. 68 shows the entire north wall and the extent of the damage at the northwest corner. Extensive plaster damage is visible above the vestibule doors, where the wall meets the underside of the balcony. The water damage has spread to the underside of the balcony. White residue from the plaster efflorescence has drained onto the brick wainscoting. Near the center of the north wall, there is more plaster damage at the ceiling.

The north wall contains two openings. The door in the northwest corner leads to the Vestibule, Room 109. There are radiators on either side of this door. In the center of the north wall, there is a pass-through opening into the former Manual Training Room, Room 110. The opening is the general size and proportion of the built-in bookcases found in the classrooms, but was probably installed when the manual training room was converted to a kitchen.

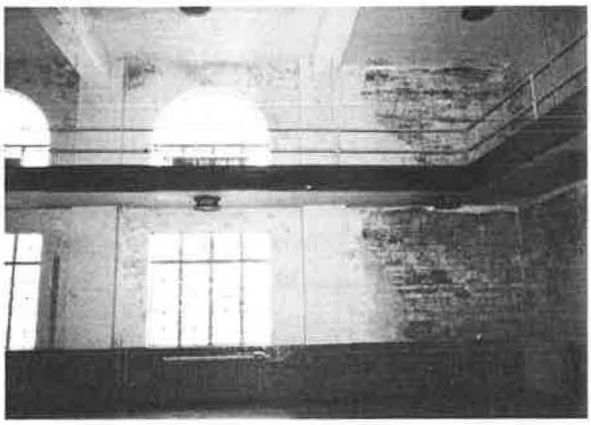
The east and south walls are in good condition. The southern half of the east wall is shown in Fig. 69. This is a view along the transverse axis of the building; light from the east vestibule is visible. Exit signs above the three doorways on the lower level have been damaged

Figure 66



The south (left) and center bays of the auditorium.

Figure 67



The north bay of the auditorium. The plaster in the northwest corner has completely failed due to water damage.

Figure 68



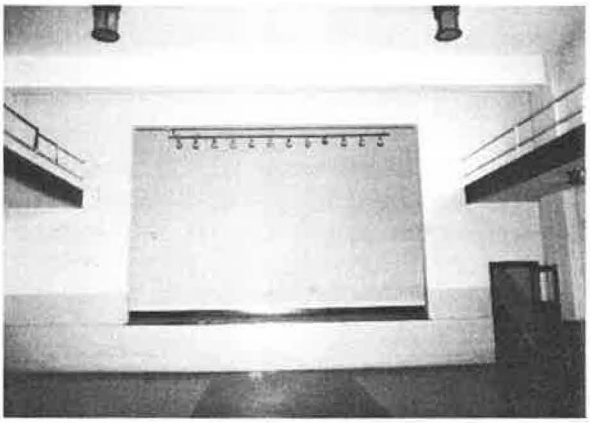
The auditorium, viewed from the stage, looking north.

Figure 69



The east auditorium wall, at the south end. The bright light is coming from the Main Entry, Room 119.

Figure 70



The proscenium arch is in the south wall of the auditorium.

Figure 71



The north west corner of the balcony (right) has the same extensive water damage as the lower level walls.

or vandalized. The lower level doors are replacements; the balcony level doors are original and have patterned glass. Areas of peeling paint and spalled plaster are concentrated at the piers. There is minor plaster damage at top of the wall (above the balcony level), in the south corner of the central bay.

The brick wainscoting found on three walls is in good condition. The south wall is the only one in the room without brick wainscoting. Instead, a wooden chair rail matches the level of the stage floor. Wooden base trim meets the floor. The proscenium opening in the south wall (Fig. 70) is in good condition.

The face of the balcony is in good condition. One section of railing is missing in the southeast corner, and has been replaced with a non-compatible substitute. As on the lower level, the west wall and northwest corner have extensive water damage (Fig. 71).

The auditorium floor is what appears to be vinyl asbestos tile in a beige and dark brown geometric pattern, possibly designating game courts. The floor tile is in poor condition. There are areas of pitted tile, broken corners, and spots worn down to the adhesive. There are holes in the floor on either side of the radiator locations.

With the exception of the damage in the northwest corner, the ceiling is in good condition, with minimal cracking and peeling paint. Under the balcony, there are typical plaster cracks at the light fixtures and pilasters. Original light fixtures remain in place , supplemented by modern emergency lights on the east wall. The decorative glass in some of the fixtures is damaged and some fixtures may need rewiring. The house lights that illuminated the stage from the front are installed on the side of the south ceiling beam.

Room 109, West Vestibule

Like the auditorium with which it shares a wall, the vestibule has experienced extensive water damage. Efflorescence and spalling plaster have covered almost the entire portion of the west wall above the wainscoting (Fig. 72). The northwest corner is also water damaged, with dark mold evident at the edge of the damaged area. The east wall, by contrast, is in fairly good condition. There is damage at the top of the wall

Figure 72



The west wall of the auditorium vestibule has been damaged by water leaking through the roof.

Figure 73



The interior doors of the west vestibule are original; they open directly into the auditorium.

and in the south corner but the lower wall is in very good condition.

Ceiling damage is related to the surrounding walls. The west edge, which is an outside wall, and the south edge, shared with the Auditorium, show extensive water damage (Fig. 73).

Figure 74



The exterior vestibule doors and the transom have been replaced.. The light colored area on the rail is water damage to the wood frame.

The brick wainscoting and terrazzo floor are intact and in good condition. The interior doors, leading to the auditorium, are original with patterned glass. The doorway to the outside has been altered. Some of the door hardware is original, but the doors are not, having extra hardware and patched panels. There is water damage to the door surround, particularly at the rail between the doors and the transom (Fig. 74). The transom has been replaced by plywood with a slatted vent in the center.

Room 110, Manual Training Room

This room was subdivided after the period of significance. The southern third of the space was partitioned off to create a shipping/receiving room; the partitions were later removed. Figures 75-77 show the south portion of the room. The division of the space is clearly indicated by differing paint colors, tracks in the floor, and ghosts of partition walls. There is bright blue paint at this end of the room, while the rest of the room is white over brown.

All four walls are in good condition, with peeling paint. In the center of the south wall, there is a pass-through opening into the auditorium. The opening is the general size and proportion of the built-in bookcases found in the classrooms, but was probably added when the kitchen was expanded. There is a small flat sill to the opening, providing a ledge slightly wider than the thickness of the wall itself. The west wall has an exit door with a panic bar. Ductwork exhausts through the wall above this door, where the transom has been replaced

Figure 75



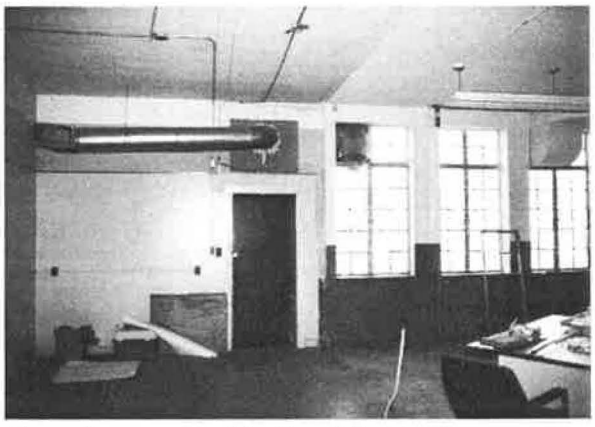
The southeast corner of the Manual Training Room.

Figure 76



The south wall of the Manual Training Room.

Figure 77



The southwest corner of the Manual Training Room.

Figure 78



The floor of the Manual Training Room is what appears to be beige vinyl asbestos tile, with a large opening in the center that exposes the concrete subfloor.

Figure 79



The ventilation hood in the center of the former Manual Training Room.

by Masonite. Two more exhaust vents have replaced the upper left halves of window transoms.

The floor is what appears to be beige vinyl asbestos tile (Fig. 78) over plywood, over 3/4" x 2-1/2" tongue and groove floor boards. This, in turn, is over 1-3/4" wood sleepers. It is 3-1/4" from the concrete deck to the top of the wood flooring. The sleepers appear to be on a concrete leveling bed. There are several holes in the floor, particularly at the west wall at the radiator locations. In the center of the room, the tile was never installed or has been removed. This area corresponds to where the kitchen equipment once stood, but it may also correspond to equipment placement in the original Manual Training Room. There is a floor drain and an electrical riser near the center of this area. These were

either installed in the original building (they are embedded in concrete) or were installed at the time of the kitchen renovation. Another possibility is that the floor had to be modified for the kitchen equipment, due to electrical/plumbing or weight considerations.

The ceiling finish is in good condition. There is a large (approximately 4' x 4') area of spalling paint on the ceiling, near the northwest corner. In the southern half of the room, there are a series of evenly spaced 1" round holes in the ceiling. These holes form two parallel lines, running east-west, and spaced approximately. 4' apart. The ceiling at the southeast corner has several other holes through it and also a fine crack running north from the center of the wall, approximately 8'. There is paint spall where this crack meets the south wall. Fluorescent lights replaced the original fixtures. A hood was installed in the center of the ceiling to ventilate the kitchen equipment (Fig. 79).

Room 111, Boys Toilet

Both the plaster and the white tile wainscoting on the walls of Room 111 are in good condition. As in the Girls' Toilet, there is a utility corridor servicing the plumbing fixtures. Many of the fixtures are in place, but it is unlikely that they are original. Two urinals are missing, one at either end of bank. The mirror matches the one in the girl's toilet. There are mounting fixtures above each sink for soap dispensers, which are currently missing. The toilet stalls have not been removed. There is rust at the foot of the stalls, but little peeling paint.

The terrazzo floor with white tile inlay has been patched in several spots. A long, narrow patch runs along the south wall. Another large, rectangular patch is under the urinals. The pattern on the floor reflects the fixture layout (Fig. 80).

Figure 80



The east end of the boys' bathroom.

The ceiling exhibits several areas of spalling paint. At the northwest corner there is a hole in the wall at the ceiling, above the middle toilet stall. Ghosting is visible on the ceiling that suggests there was a pipe running across the ceiling and through the wall at this point.

Room 112, North Vestibule

The finishes in Room 112 are in good condition. This area was altered in the 1980s to enclose the open stair with drywall. The interior doors to the corridor were replaced and moved to a new position. There is an original radiator and a ventilation grille on the west wall.

The doors and transom in the north wall (Fig. 81) are in good condition. Modern panic bars have been installed on the doors. The door to the Boys' Toilet, Room 111, is visible in the northwest corner. The interior doors in the south wall (Fig. 82) are replacements. The originals would have more closely resembled the interior doors at the East Entry, in style and configuration.

To the left of the interior doors, the alterations enclosing the stair are visible. Drywall has been added, but the brick at the side of the stairs is intact. The stairs to the second floor have the original handrail. Staining is visible on the plaster above the stair wainscoting. Beneath the stairs, on the corridor side, is a door labeled "Boiler Room" that leads to the basement.

The terrazzo floor is in good condition. There is chipped and missing material at the edges of individual steps in the staircase. There are two holes in the floor on the north side of the radiator.

The vestibule ceiling carries a ghost from a partition wall, probably the original south wall. Exposed beams at the ceiling are the structural members spanning the corridor and supporting the stair. The ceiling fixture seems original, but lacks glass. Emergency lights have been installed in the upper northwest corner. No exit sign is visible.

Figure 81



The exterior doors in the north vestibule.

Figure 82



These interior doors and the wall were added when the stairway was enclosed in the early 1980s. The original vestibule wall was removed, but there is a ghost of its location on the ceiling.

Room 113, Class Room

Fig. 83 is an overall view of Room 113, looking north. The interior finishes are generally in good condition. The south wall has been removed in order to merge Room 113 and 114; its original position is marked by the gaps in the ceiling and floor. The west wall (Fig. 84) contains the door to the corridor, low bookcases, a built-in bookcase wall nook, and a chalk rail. The built-in bookcase is in excellent condition, with the original shelves and wire racks. Removal of the chalkboards has exposed the underlying wall tile, as seen in the northwest corner. A switch box and conduits have been installed on the west wall of the corner. A mechanical system, unattached to ductwork, also sits in this corner.

The northwest corner was once partitioned off from the remainder of the room. The walls of the room were last painted during the room's use as a dental clinic and when the various partitions were in place; the outline of other walls is visible on the east wall (Fig. 85). There are also traces of what appears to be construction glue at the partition locations. The ventilator unit is missing from the east wall. The windows and brick sills are intact.

The floor of the room is wood plank covered with an adhesive residue. There are pipes and holes in the floor along the east wall.

There are clips for lights and multiple small holes in the ceiling. There is one recessed junction box and one surface junction box in the ceiling, centered along a north-south axis. Several holes in the ceiling exist, including a large (3'x 4') hole at the east wall, near the south corner. Otherwise, the plaster is in good condition, with peeling paint and a few normal plaster cracks. Both original and replacement light fixtures have been removed.

Room 114, Class Room

This space has been combined with Room 113. Doors, lighting, and plumbing fixtures are currently being stored in the area. The north wall of this room was the partition wall between Room 113 and Room 114. This wall has been removed. Fig. 86 shows the junction of the north and east walls. The window above the ventilator unit has been replaced by plywood and a window-style air-conditioner. The brick window sills

Figure 83



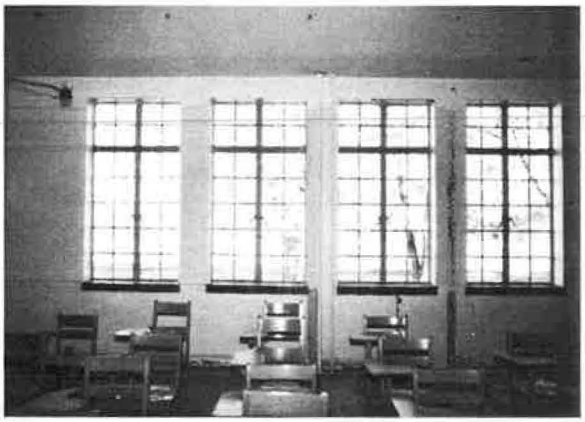
An overall view of Room 113, looking north. The desks would have originally been facing the north wall.

Figure 84



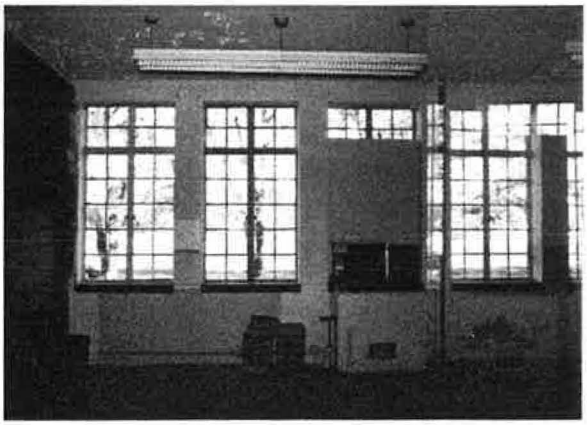
The west wall of Room 113. Removal of the partition wall exposed brick on the left.

Figure 85



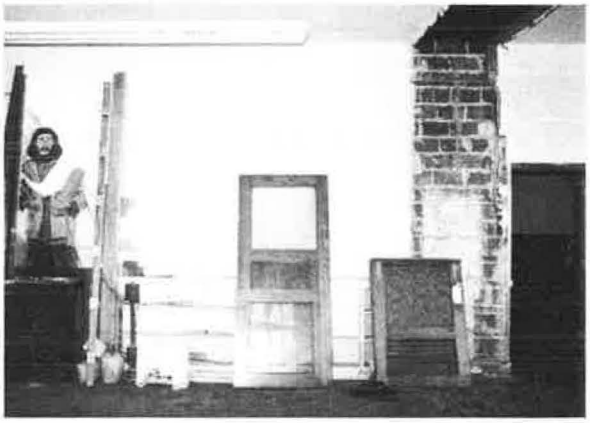
The outline of partitions installed in the early 1980s. This room, Room 113, was combined with Room 114 to create a dental clinic.

Figure 86



The east wall of Room 114. The window has been boarded up with plywood to accommodate an air conditioner.

Figure 87



The west wall of Room 114, where the partition wall has been removed.

Figure 88



The bookcase in the west wall of Room 114.

are intact. There is a large area of peeling paint below the fourth window from the north.

On the west wall (Fig. 87) there is another built-in bookcase with doors (Fig. 88). The floor is hardboard tile over the original wood floor, and is in fair condition. There are normal plaster cracks and peeling paint on the ceiling. At a south-central location, there is large hole (3' x 3') in the plaster, with a junction box. Pipes are on the ceiling and a pipe goes up to the second floor from the southeast and south west corners. Fluorescent lights replaced the original fixtures.

Room 115, Toilet

Fig. 89 is a view into Room 115, the toilet off the Teachers' Office, Room 118. The walls and ceiling are in good condition. The fixtures are original and intact. The door is original, with patterned glass. The floor is terrazzo with white tile inlay, in good condition but in need of cleaning.

Room 116, Closet

The interior fabric of this room is in good condition.

Room 117, Teachers' Closet.

The interior finishes are in good condition. The door is original, with patterned glass.

Room 118, Teachers' Lounge

Fig. 90 is a view of the west wall, showing the doors to the Closet, Room 117, and the Toilet, Room 115. Fig. 91 is a view from within the closet, looking out to the Teachers' Lounge. The closet floor is wood. The east half of the Lounge floor is what appears to be vinyl asbestos tile, while in the west half of the room the original wood floor is covered by felt paper and adhesive.

Several modifications have been made to the Teachers' Lounge. A door was added to the north wall of the office after the period of significance, and the door to the corridor has been replaced. There is peeling paint at the bottom of the wall. Like the classrooms, there is a wooden chair rail and baseboard. One side of the paired casement window in the east wall (Fig. 92) has been replaced with plywood. A dropped ceiling has

Figure 89



A view into Room 115, the Teachers' Toilet.

Figure 90



Room 118, west wall: Doors to the Toilet (right) and the Closet (left).

Figure 91



The original wood floor of the teacher's office was covered with what appears to be vinyl asbestos tile in 1961.

Figure 92



The east wall of Room 118.

Figure 93



The East Vestibule, Room 119.

Figure 94



The east wall of the Principal's Office, Room 120.

been installed; the condition of the original plaster, based on visual inspection, is good.

The remaining original finishes are in good condition. The wall plaster has no signs of water damage and nominal peeling paint.

Room 119, East Vestibule

The East Vestibule, the main entry to the school, is shown in Fig. 93. The fan light, double doors, and glass partition wall are in good condition. The original set of interior doors, shown on the construction plans, have been removed. The plaster, brick wainscoting and terrazzo floor are in good condition.

Room 120, Principal's Office

The Principal's Office has seen little modification. The north wall is missing the original door and door trim, and has a small patch of peeling paint at the east end. The window in the east wall (Fig. 94) is intact, and the radiator has not been removed. There is a pipe in the southeast corner, passing up through the floor and entering the south wall at a right angle. The walls are in good condition, with one large area of peeling paint in the southeast corner. The baseboards are heavily soiled.

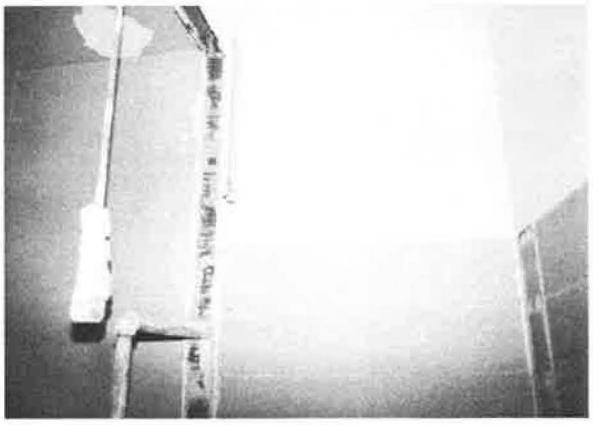
The floor is what appears to be vinyl asbestos tile in fair condition. The floor at the east wall has conduit and holes in it. The ceiling is in good condition, with little peeling paint. Any original light fixtures have been replaced by twin fluorescents.

Figure 95



The east wall of Room 121/122, north end.

Figure 96



The upper west wall of Room 121/122.

Room 121, Closet, and Room 122, Toilet

The original doors to Room 121 and Room 122 have been removed, but not replaced. The partition between Room 121 and Room 122 has been removed. Fig. 95 shows the east wall, north end, and the exposed tile where the wall was removed. A dangling electrical box and exposed pipe were originally contained within the partition wall. Fig. 93 shows the location of the partition wall and paint ghosts of built-in shelves.

Large sections of plaster are missing at the upper west corner and from the ceiling. There are also holes in the plaster adjacent to the south side of the door frame, near the floor. The remaining plaster is in good condition.

The toilet and lavatory are in the room but not connected. The floor beneath the toilet area is terrazzo, also in good condition. The floor beneath the storage area is either very mottled concrete or plain terrazzo.

Room 123, Class Room, Room 124, Class Room

Room 123 and Room 124 were combined as an assembly space for the Nazarene Church. This merged room was later damaged by fire. Fig. 97 and Fig. 98 show overall views of the room, looking at the north and south walls, respectively. There is smoke damage to all the plaster surfaces, particularly the east wall above the windows. The ventilators and radiators have been removed from the east wall. On the west wall, the exit signs above the doors have melted. The doors are not the originals, and show little fire damage. There is only one built-in bookcase, with doors, on the west wall and it was not damaged by the fire. This was originally in the southwest corner of Room 123 (Fig. 99)

Unlike the other rooms, the exposed structure from the partition wall removal was covered with gypsum board and paint. The channel in the floor was also filled in. The church also installed a platform at the south end of the room; Stueve removed it after the church vacated the property. The floor is wood plank throughout the space, and was unmarked by the fire. It is in good condition but needs refinishing.

Figure 97



The north end of Room 123/124.

Figure 98



The south end of Room 123/124.

Figure 99



The west wall of Room 123/124, at the original partition wall.

The fire damage to the ceiling seems heaviest at the center of the room and at the east wall. There is a hole in the center of the ceiling where it has been infilled. The pebble-finish paint is heavily smoke damaged. The ceiling exhibits peeling paint and extensive plaster cracks, probably due to the fire; it should be sounded for structural integrity. Twin banks of fluorescent lights have replaced the original fixtures.

Room 125, South Vestibule

The finishes in the South Vestibule are in better condition than those in the North Vestibule, Room 112. The plaster shows no sign of water damage. The stairs have no missing pieces of terrazzo. The original wooden handrail is intact. The exterior doors are replacements and have modern panic bars, but are in good condition. The transom at the exterior wall is intact. The replacement door in the southwest corner leads to the Kindergarten, Room 101.

The interior doors are also replacements (Fig. 100). Their position is not original, and was changed at the time the stairs were enclosed. A light fixture in the ceiling has been bumped aside to accommodate the stair enclosure. On the ceiling, there is the ghost of a wall at what was the original location of the north wall. A second light fixture, without glass, remains in the ceiling just north of the exterior doors. Emergency lighting has been installed on the east wall.

The terrazzo floor with white tile inlay is in good condition, but there are three cracks running east-west. One of the cracks is at the threshold of the interior doors. There are holes in the floor in either side of the original radiator.

The ceiling is in good condition, with peeling paint and cracking. One crack runs from the midpoint of the stairwell (east) to the opposite (west) wall. There is also a crack at the wall/ceiling corner, running around the perimeter of the stairwell.

Figure 100



The interior doors at the South Vestibule, Room 125.

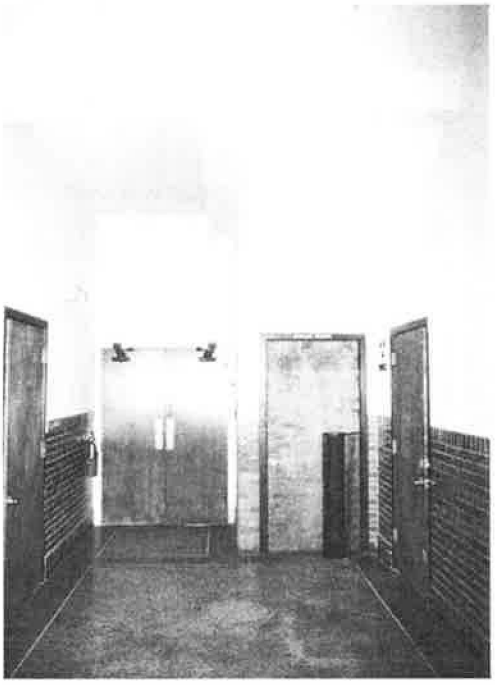
Room 126, Corridor

In general, the interior finishes are in good condition. The plaster on the walls and ceiling has normal cracking and peeling paint. The corridor has brick wainscoting throughout. The brick is stained at the floor level, probably from maintenance. The terrazzo floor is in good condition but has numerous cracks cross the floor in an east-west direction. There is no evidence of the original lighting positions. Modern fluorescent fixtures have been installed throughout the corridor. Emergency lighting has been installed near some of the exit doors.

Fig. 101 shows the north end of the corridor. None of the doors in this photo are original, but the trim is. The doors on the left and right open into Rooms 110 and 113, respectively. There is a crack across the floor (running north to south) at the approximate location of the fire alarm.

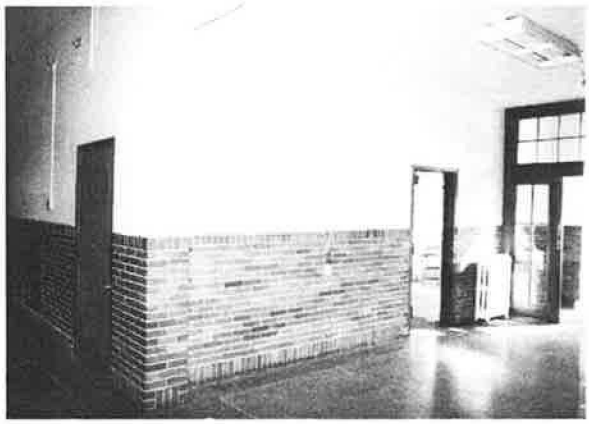
Fig. 102 is the north wall of the east wing. The condition of the finishes is typical throughout the corridor. Fig. 103 shows the east wall of the south wing, looking south. Smoke from the fire in Room 123/124 spread out into the corridor, damaging the plaster on the wall and ceiling.

Figure 101



The north end of Corridor 126.

Figure 102



The north wall of the east wing. The finish conditions are typical.

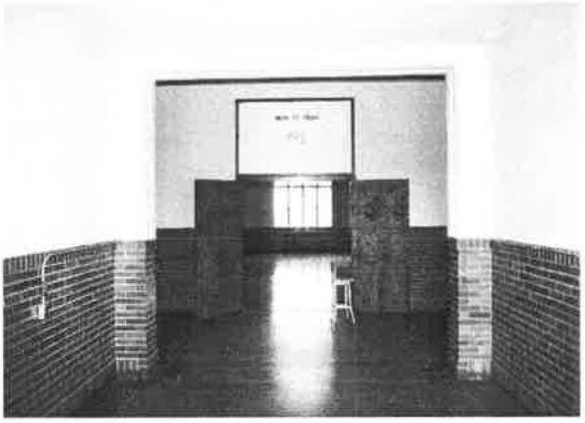
Figure 103



Smoke damage in the south end of the first floor corridor.

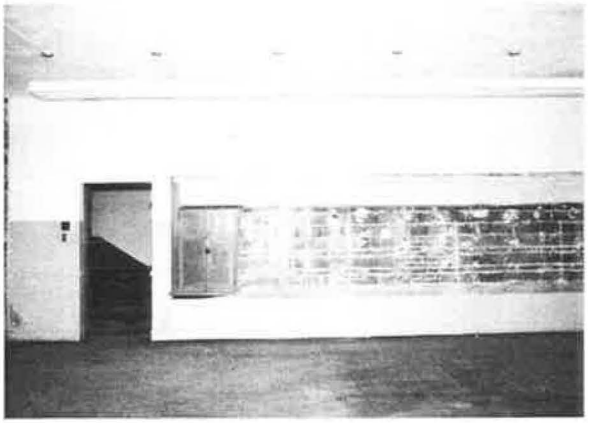
The west wall has three sets of double doors for access to the auditorium. The original doors have all been replaced. The central entry into the auditorium is on axis with the main entry. There is a display over the central door with a clock stopped at 1:54 PM., honoring the date and time the Supreme Court announced the Brown decision (Fig. 104). There are drinking fountains and fire extinguisher boxes at either end of the corridor. The edge of the north fountain's basin is badly chipped.

Figure 104



The center doors to the auditorium, on axis with the main entry.

Figure 105



The east wall of Room 201.

SECOND FLOOR

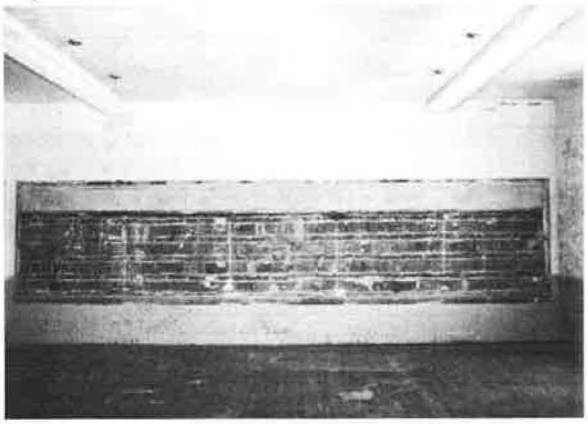
Room 201, Class Room

The north wall of this room, originally shared with a utility space and the upstairs Girls' Toilet, has been removed. There is staining and peeling paint on the east wall, near the ceiling above the door. The remainder of the wall is in good condition. The east and south walls once held chalkboards; large bands of exposed brick now mark the locations (Fig. 105). The wood trim of the chalkboards still frames the panels of exposed brick. The east wall also has a built-in bookcase with doors.

The south wall (Fig. 106) has several spots of spalling plaster near the ceiling and large areas of peeling paint beneath the chalk board. The upper west corner has a large crack and distressed plaster. The west wall, visible at the right of Fig. 106, has extensive damage. The plaster is severely spalled. The windows in the west wall are intact. There are roll shades in some windows, but the shades are in very poor condition. The radiator on the west wall does not match those in the other classrooms. This radiator is similar to the one on the north wall of the gym. North of this radiator are two pipes going down through the floor.

The floor is wood plank, and in good condition. There are two damaged areas at the north end of the room. Where the wardrobe originally stood, at the north end of the room, there are outlines in the floor from the closet door pivots and hardware. These marks are a 1-1/4" diameter circle centered on a 4" diameter circle, with three equidistant holes within the space between the two circles.

Figure 106



The south wall of Room 201.

The ceiling is in poor condition, with efflorescence and plaster spall over the entire surface. Fluorescent lighting has replaced the original fixtures. There is a typical amount of plaster cracking. Conduit and junction boxes are mounted on the ceiling. A substantial portion of the paint is gone, the rest is peeling. The ceiling plaster at the north end, over the wardrobe location, is unfinished, exposing the rib lath.

Room 202, Closet

This room, a closet for Room 201, has been assimilated into the larger space. There are channels in the floor marking the original walls. The floor of this closet is wood and is a continuation of the class room floor. The ceiling is unfinished, exposed lath.

Room 203, Janitor's Closet

This closet, accessed from the main corridor, has been assimilated into the larger space of Room 210. The original door still hangs in the east wall (Fig. 105). The ladder is also original, and provides access to the attic and roof. Channels in the floor define where the original partition walls once stood. The ceiling is in rough condition, and contains an opening to the attic above.

Figure 107



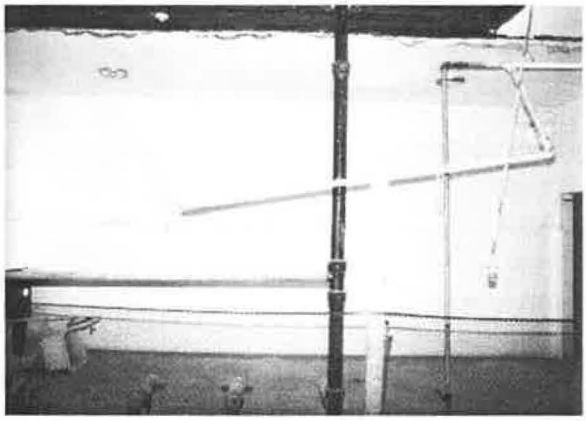
The east wall of the Janitor's Closet, Room 203, and the Girls' Toilet, Room 204.

Room 204, Girls' Toilet

The north wall, shown in Fig. 108, is in good condition except for an area of damaged plaster at the upper northeast corner. The tile wainscoting is in good condition, but the base boards are distressed. There is a large expanse of peeling paint on the east wall. The door is original, and has patterned glass (Fig. 107)

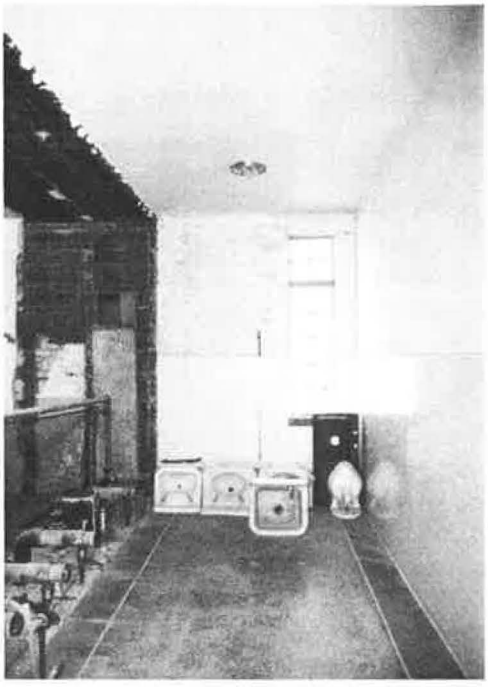
The south wall of this room has been removed and it is now open to the Classroom, Room 201. A utility corridor once separated this room from the classroom. Its location and function are marked by a profusion of pipes. Plumbing fixtures would have been installed on the south wall, accessing the utility corridor for plumbing.

Figure 108



North wall of the Girls' Toilet, Room 204.

Figure 109



The west wall of the Girls' Toilet, Room 204.

A variety of fixtures are currently being stored against the west wall, Fig. 109, which has severe plaster damage above the wainscoting. Almost all of the finish plaster has fallen away, leaving a rough, spalling surface. There also appears to be a dark stain on this wall, as if a pipe had been resting against it for some time. The window is intact.

The floor material is terrazzo. There are two cracks in the floor. One cuts across the northwest corner. The other runs from the north to south walls, at the east

end of the room. Channels in the floor at the south wall position expose the concrete subfloor.

The ceiling has peeling paint and a normal level of cracking. The ceiling fixture is missing the glass. The fixture matches that found in the other toilets, and is probably original.

Room 205, Closet

This area has been merged into the larger classroom, Room 206. The original location of the closet is shown in Fig. 110, on the left side. There is ghosting of a built-in shelf within the closet. The floor is wood plank and a continuation of the floor in Room 206. The ceiling plaster and lath, in a band running from the east to the west wall, is missing. The concrete deck above is exposed.

Room 206, Class Room

The original north wall to this room has been removed (Fig. 111). This wall once separated the classroom from the boys' toilet. The remaining wall plaster is in good condition. The chalk board and trim has been removed. The built-in bookcase remains. To the north, the channel for the partition wall and the tile wainscoting of the bathroom is visible. The exposed brick at the southeast corner is stained with white residue.

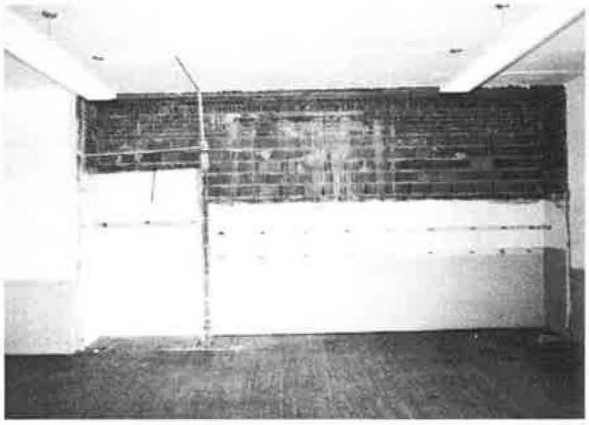
The south wall has been removed (Fig. 110). This wall once contained the wardrobe and a closet (Room 205). Ghosting from the closet door hardware is visible on the floor at the south wall. The west wall is in good condition. The radiator, ventilator, and windows are intact. At the west wall, two pipes penetrate down through the floor.

The wood floor is in good condition, with minor buckling from past water leaks. The ceiling exhibits severe efflorescence. There is water damage, peeling paint, and several cracks in the plaster.

Room 207, Boys' Toilet

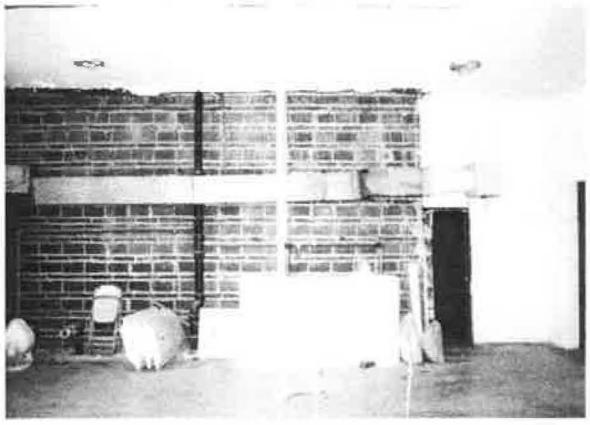
Only the east and west walls of this room are still standing. The remaining plaster and white tile wainscoting is in good condition. There is a small portion of the north wall in the north east corner of the room (see Fig. 111). There is an area of peeling paint in this corner. The

Figure 110



The south wall of Room 206 once held a wardrobe and a closet, Room 205 (on the left).

Figure 111



The north wall of Room 206 has been removed, revealing the Boys' Toilet, Room 207, and the associated utility hall.

Figure 112



The east wall of the Boys' Toilet, Room 207.

exposed brick and mechanical systems were originally hidden behind a partition wall, forming a utility corridor.

The interior of the utility corridor was unfinished. The fixtures would have been installed on the north wall, accessing the utility corridor for plumbing. Four floor urinals remain in their original position. There is ductwork along the wall, and an exposed mixing box at the upper northeast corner.

The east wall (Fig. 112) is in good condition. There is a pair of anchor holes for a partition wall directly above the light switch. The toilet partitions have been removed from the room. The door is original, with patterned glass. The west wall is also in good condition. The window and transom are intact. There is a second pair of anchor holes in the west wall.

The terrazzo floor is in good condition, with minor pitting and cracks. One crack is in the southwest corner; a second begins in the southeast corner and runs to the center of the north wall. There is another crack in the doorway. The geometry of the white tile inlay border marks the original position of the utility corridor configuration.

Ceiling light fixtures are missing glass. The ceiling shows heavy alligatoring of the plaster and peeling paint. There is a vent through the ceiling in the northeast corner.

Room 208, Closet

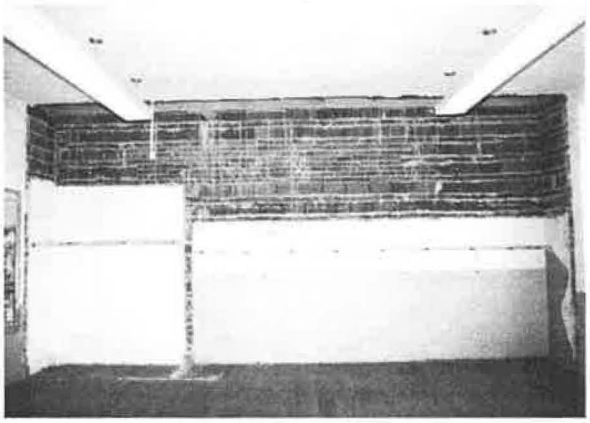
This room has been assimilated. Its original location is visible at the left of Fig. 113, where there is the ghost of a built-in shelf. The floor is wood and a continuation of Room 209.

Room 209, Class Room

The north wall containing the wardrobe and closet has been removed (Fig. 114). The east wall is in good condition, with peeling paint. The windows and transoms in the east wall are intact. Some still have roller shades, but the shades are in poor condition. The ceiling along the east wall contains a ceiling-mounted three-prong plug, and conduit passing through the ceiling.

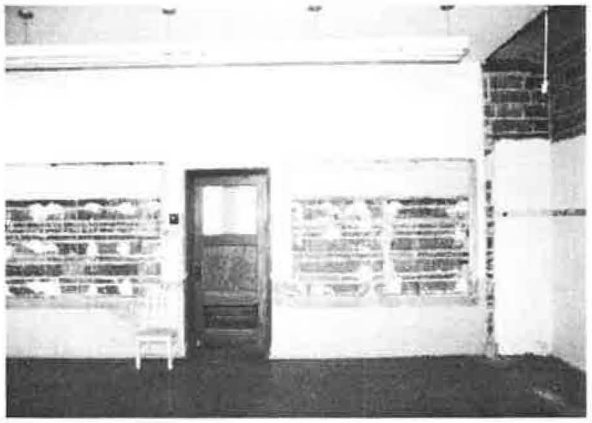
The south wall has been removed. The west wall (Fig. 115, south, Fig. 114, north) is in good condition, with

Figure 113



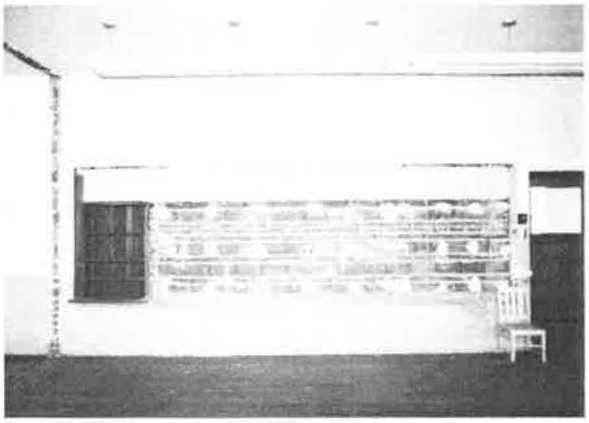
The north wall of Room 209, showing the former location of the closet, Room 208.

Figure 114



The north portion of the west wall, Room 209. The former location of the wardrobe is at the extreme right.

Figure 115



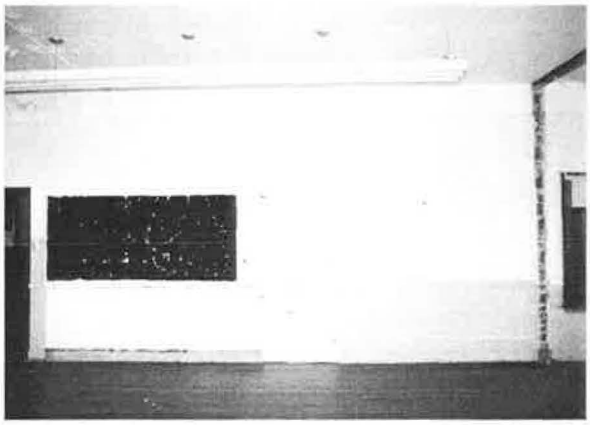
The south portion of the west wall, Room 209.

peeling paint. The door is original. The location of chalkboards on either side of the door is indicated by the exposed brick. A built-in bookcase, with shelves but no doors, is in the southwest corner. The vertical notch to the south of the bookcase is from the removed partition wall.

The wood floor is in good condition. In the northwest corner, there are two pipes going down through the floor. The east wall also has two pipes going down, between the second and third window from the north. Ghosts of the closet hardware were found on the floor along the north wall.

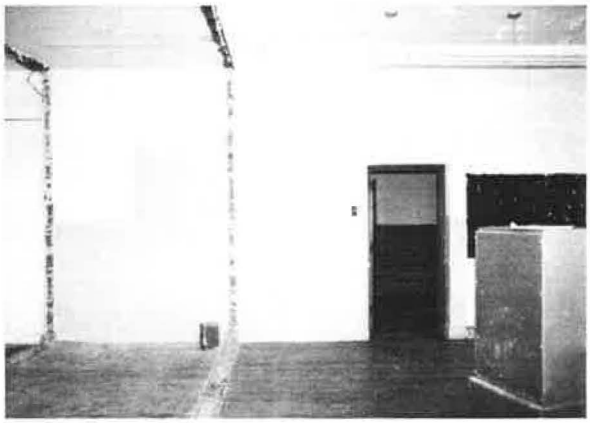
The ceiling is in typical condition, with peeling paint. At the north end, in a band from east to west the width of original wardrobe and closet, there is no plaster or lath.

Figure 116



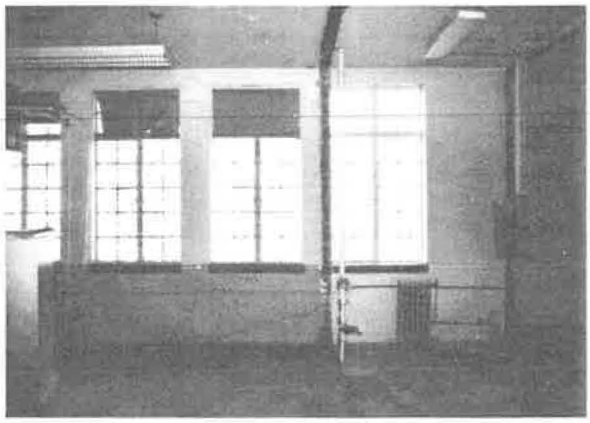
The northwest corner of Room 210.

Figure 117



The southwest corner of the Lunch Room, Room 210, showing where the partition walls for Rooms 211-214 once stood.

Figure 118



The east wall of Room 210, left, and Room 213, right.

Room 210, Lunch Room

The north wall of this room, separating it from Room 209, has been removed. The north part of the west wall, Fig. 116, has several colors of large painted rectangles and multiple holes. The door in the west wall is original, with patterned glass. A portion of the chair rail is missing. The ghosting and screw holes indicate that something was mounted against this wall.

The south wall has also been removed. Fig. 117 is a view of the southwest corner, showing the channels for the partition walls delineating Rooms 211, 212, and 213.

The plaster on the east wall (Fig. 118) is in good condition, with peeling paint. Two radiators and a ventilation unit are missing. There are pipes against the wall which lead up to unit heater suspended from the ceiling.

There were no chalkboards in this room, but there may have been mechanical equipment to service the lunch room. There was no wardrobe or closet in this room.

The floor is wood plank and in good condition. There is a hole in the floor near the north wall and northwest corner. The ceiling is in good condition, with normal cracking and peeling paint. There is a heating unit suspended from the ceiling at the center east wall. There are fluorescent light fixtures and junction boxes in the ceiling, and no original fixtures.

Room 211, Pantry; Room 212, Passageway; Room 213, Fitting Room

All of the interior partition walls that defined these three rooms have been removed. Fig. 117 shows the Pantry's west wall and evidence of built-in shelves. Fig. 118 shows the east wall of the Fitting Room. The plaster on both walls is in good condition and the window and radiator are intact. A trap pipe is exposed where the wall between the lunchroom and the fitting room once stood.

The floor in this area is wood in fair condition. In the southeast corner, there is a pipe down and holes in the floor. A section of the floor in the southwest corner has been replaced with concrete. A pipe down is centered in the patch.

A section of ceiling at the location of Room 212 is missing both plaster and lath. The remainder of the ceiling is in good condition. There is a porcelain light socket in the ceiling.

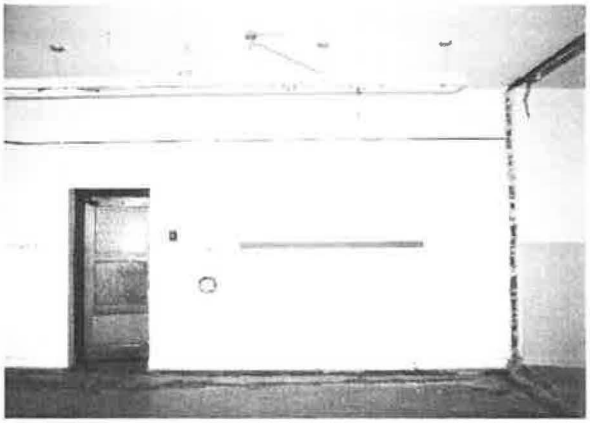
A contemporary fluorescent light has been installed in the ceiling of the fitting room area. The orientation of this light fixture, perpendicular to the north-south orientation of the other fixtures on the floor, suggests it was installed while the partition walls were in place. This may indicate that the lighting was upgraded much earlier than assumed: this position, and the light itself, would only be required if the room were still in use, while Monroe was still operating as a school.

Room 214, Domestic Science and Art Room

The north wall and south walls have been removed. There is spalling paint and plaster at upper northeast corner and also below the windows. The northeast corner has exposed pipes and conduit. The ventilator at the south portion of the east wall is missing. There are also two down pipes at this location. A built-in bookcase is at the south corner. The case is tall and narrow, unlike the book cases found in the other classrooms.

Fig. 119 shows the north portion of the west wall. A pipe south of the classroom door goes up to the attic. There is what appears to be a squiggle of construction adhesive running the length of the wall, from the door to the exposed brick that marks the partition wall location. This probably marks the location of a peg rack similar to the one at the right of the door.

Figure 119



The north half of the west wall, Room 214.

The floor is what appears to be linoleum tile over concrete. The tile is installed typically 10" in from the integral wall base. The ceiling shows alligatoring of plaster and peeling paint. There is normal cracking of the plaster. Numerous holes are visible and wire hangers have been installed for a suspended ceiling. There is a mix of old and new fluorescent fixtures.

Room 215, Class Room

Figs. 120 and 121 show the west wall from south to north. The wall is in good condition. There is a built-in bookcase with doors at the south end. The north and south walls of this room have been removed. The wall plaster is in good condition. The windows are intact, some with roll blinds. The ventilator unit and the radiator are missing. At the ventilator location, there are two pipes down.

The wood plank floor is in good condition. At the radiator location, there are holes in the floor. Ghosting is visible on the floor at the south end of the room from the wardrobe hardware.

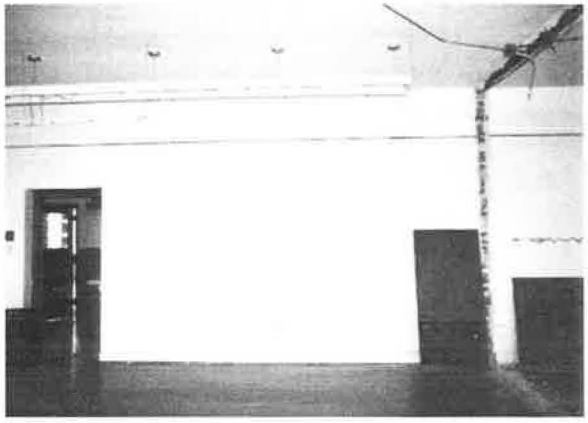
The ceiling has typical cracks, peeling paint, and water staining. A 6' x 6' grid of wire hangers for a suspended ceiling has been installed. Along the east wall, two new surface junction boxes have been installed. At the wardrobe location, the plaster and lath is gone from the ceiling. Fluorescent light fixtures have replaced the originals.

Figure 120



The southwest corner of Room 215.

Figure 121



The northwest corner of Room 215.

Room 216, Class Room

The original north wall of this room was shared with Room 215. This common wall contained the wardrobes for each room. The east wall has a large amount of peeling paint, particularly below the windows. The ventilator unit is in place but the radiator is missing. A large assortment of doors, trim, and other items is currently being stored against the south wall and west walls (Fig. 122). The visible areas of plaster are in good condition. The south and west walls originally held chalkboards. The trim is still visible, but the exposed brick, typically visible in the other rooms, has been covered up. On the west wall, gypsum board may have been used to infill the chalkboard area. The door in the north wall is original, but missing slats at the bottom.

Figure 122



The west wall of Room 216.

The wood plank floor is in good condition. Between the ventilator and the radiator location, there are two pipes going down through the floor. At the radiator location, there are holes in the floor. Ghosting is visible on the floor from the closet hardware at the north end.

There is an area of extensive water staining on the ceiling. This area is about one-third of the ceiling length, the full width, and is located near the original north wall. The remainder of the ceiling is alligatored and shows heavy paint peeling.

Room 226, Second Floor Corridor

The wall plaster in the second floor corridor is generally in good condition. In the north wing, there are two repaired cracks near the ceiling. There are other repairs in the south wing: Fig. 123 shows spalling plaster on the west wall, just north of the girls' toilet. Fig. 124 shows a repaired crack in the wall and ceiling near the south stair.

There is brick wainscoting with an integral soldier course base throughout the length of the corridor. The brick is in good condition. There is a white residue on the bricks in several areas. This is either efflorescence from the bricks or (more likely) a result of the deteriorated plaster on the ceiling.

The floor is terrazzo with white tile inlay. There are numerous cracks running across the floor (east/west). These are irregularly spaced throughout the length of the corridor. Otherwise, the floor is in good condition.

Figure 123



Spalling plaster in the second floor corridor, near Room 204.

Figure 124



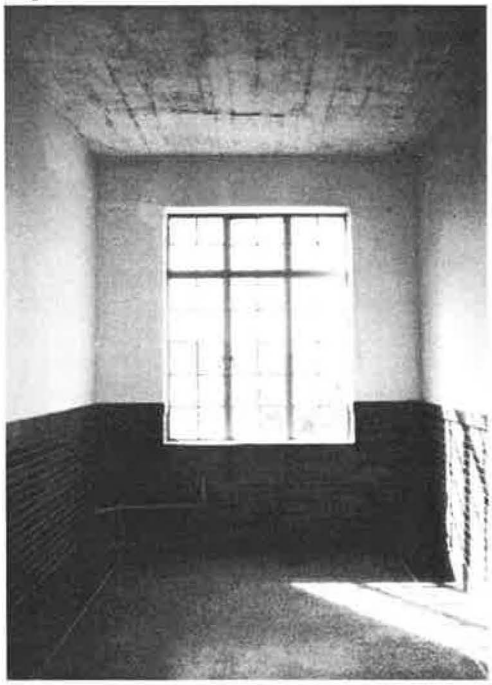
Plaster condition near the south stair.

Figure 125



The south balustrade, on the second floor.

Figure 126



The south window at the second floor corridor, Room 226. The window handles are missing from the right casement.

The ceiling plaster is badly deteriorated. Almost all of the plaster is damaged. In some areas, this has spread to the upper wall. The majority of the ceiling plaster is missing; only isolated patches remain. Cracks occur where there are cracks in the concrete deck. There are two grills in the ceiling, one at each end of the corridor. There is a 36" x 36" air intake grille in the ceiling, at the approximate location of the girls toilet.

The original ceiling lights have been replaced by fluorescents. Other lights are missing, their locations marked by paint ghosts and dangling wires. In the north wing, the east wall is missing an emergency light at the top of the stairs.

The second floor corridor is symmetrical about the east/west axis of the building. Matching stairwells and oversized windows are found at each end of the hall. The original balustrades and newel post are in place. The south stair is shown in Fig. 125. The windows at the ends of the corridor are also identical. Fig. 126 shows the window at south end. The one casement in the south window is missing a handle.

Drinking fountains are located on the west wall, on either side of the auditorium . Fig. 127 is a close up view of the drinking fountain in the south wing.

There are four fire extinguisher boxes located throughout the corridor. Fig. 128 shows a typical fire extinguisher box and fire extinguisher. The cabinet is wood and glass. On the east wall, there are two boxes, one at each stair. On the west wall, there is a box on either side of the auditorium. Not all of the boxes contain a fire extinguisher.

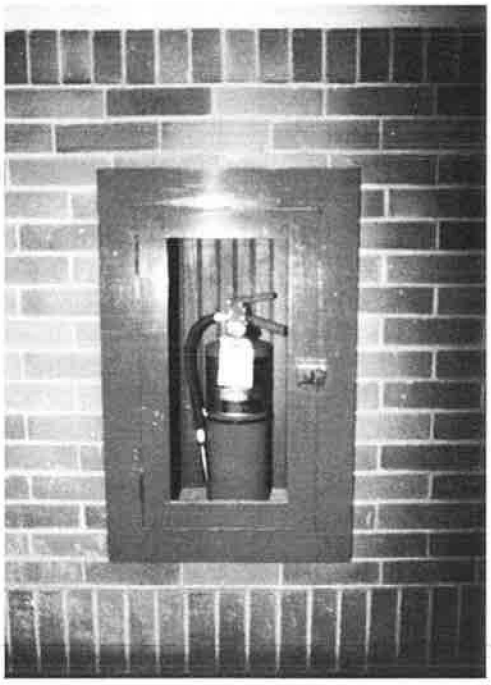
The doors on the second floor are all original with patterned glass. The balcony to the auditorium is accessed by two sets of double doors in the west wall.

Figure 127



The north drinking fountain on the second floor.

Figure 128



A typical fire extinquisher cabinet.

Asbestos Testing

According to the National Park Service, asbestos in the building and on the flat roof areas has been removed. There are several rooms that still have vinyl asbestos tile on the floor. A visual inspection of the property did not reveal any exposed asbestos in classroom areas.

Historic Paint Study

Historic paint analysis was executed by Steven C. Seebohm/SEEBOHM, Ltd. The complete report is contained in Appendix D. The existing conditions were noted during the on-site physical investigation carried out in conjunction with QUINN EVANS/ ARCHITECTS. Sampling was executed with a flat-bladed X-acto knife, with samples being stored in individually marked envelopes. All samples were inspected under a 60X and 120X Meiji binocular microscope with a Stocker and Yale 7,000 degree Kelvin illuminator; this illumination ensures a color match under conditions simulating natural light. Finish colors were then matched to The Munsell Color Notation System.

The paint study identified the first paint campaign used in the Monroe Elementary School interiors.

Lead Paint Analysis

Lead paint is to be expected in a building the age of Monroe Elementary School. Samples were collected by Chas Sessom of the National Park Service, and transported to SPL of Traverse City, Michigan, for analysis. Testing revealed the presence of lead throughout the building. Complete testing data is provided in Appendix E.

Mortar Analysis

Mortar analysis was conducted by Soil and Materials Engineers, Inc., of Plymouth, Michigan. Ten samples were collected on site by QUINN EVANS / ARCHITECTS during survey work in 1996. The object of the evaluation was to assist in the selection of a restoration mortar. The complete report is presented in Appendix F.

Aggregate Analysis

The actual aggregate gradation for the historic mortar samples is finer than current ASTM C-144 materials. The majority of the original aggregates were natural sand, possibly from the same source. The original sand is similar to an ASTM C-778 Standard Sand, Graded. To simulate this aggregate, SME recommends a mixture of 50% ASTM C-778 Standard Grade Sand and 50% 2NS concrete aggregate which has been sieved to remove all particles greater than a No. 16 sieve.

Two of the samples, No. 7 and No. 10, were observed to consist of quartz silica and a reddish cinder product, which could be a ground, partially fired, red brick material. To match this material, SME recommends the use of the aggregate mixture recommended above, with the color achieved using a red mortar pigment which meets ASTM C-979 standards.

Cementitious Analysis

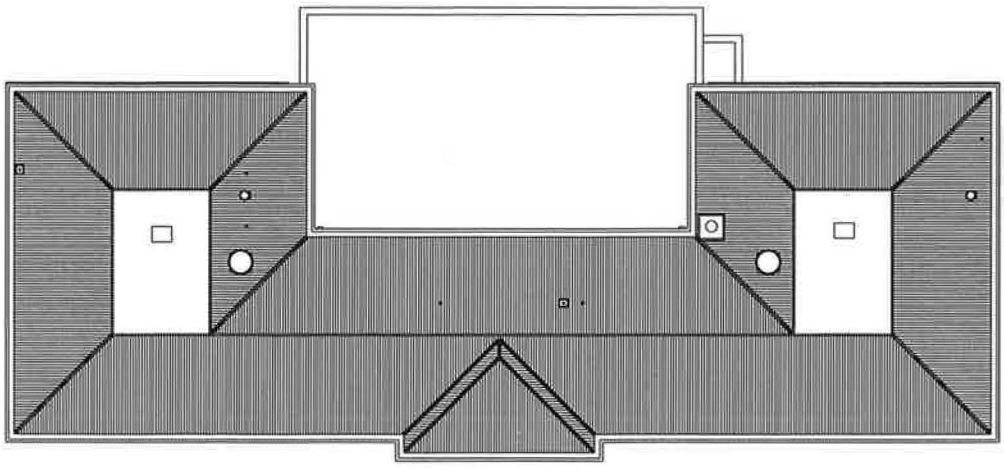
Analysis of the mortar composition was performed using both the ASTM C 85, Maleic Acid Method, and microscopic evaluation. The mixtures appear to have five specific ratios of cementitious material (Portland cement and hydraulic lime. The proportions are presented in Appendix F.

The mortar samples were noted to be carbonized, that is the majority of lime had absorbed carbon dioxide and converted into a dolomitic limestone. The samples also indicated accumulations of dirt and debris which resulted in color darkening. To meet the requirements of blending repairs, the initial step would be to clean the existing mortars to the point where they are acceptable. Once cleaned, the mortar color can be matched using various mortar pigments or addition of limestone dust to darken new materials. Limestone dust should be treated as an aggregate and not combined with the cementitious materials volume.

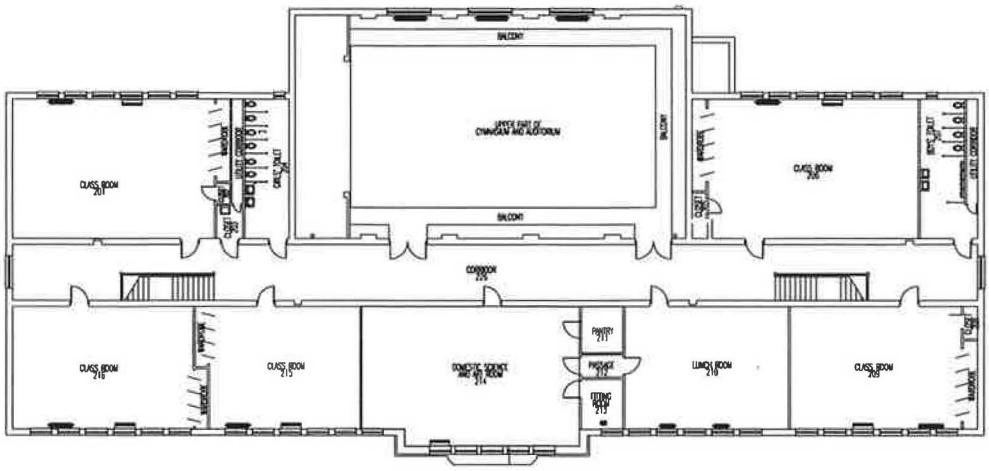
Part G:
Building Chronology

Episode 1 : 1926-1959

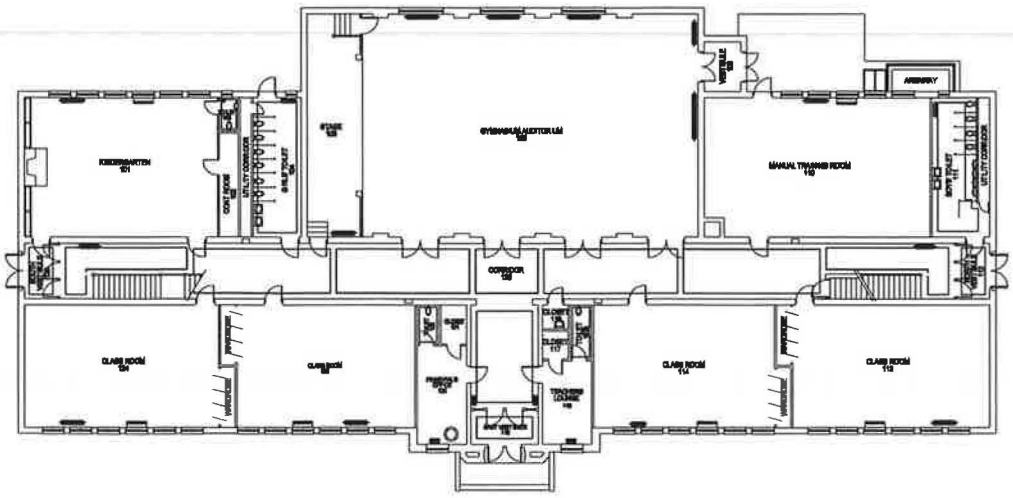
ROOF



SECOND FLOOR



FIRST FLOOR



Part G: Building Chronology

History of Alterations and Additions

Physical investigation of the Monroe Elementary School revealed that most of the extant building materials date to the construction of the building in 1926-27. The building never experienced additions or major exterior alterations. The school building was essentially unchanged until the 1960s, when it was updated with air-conditioning, supplemental mechanical systems, and a cafeteria kitchen. The most significant changes to the building fabric have occurred after it ceased to be a school. The near-complete removal of the interior partition walls dates to the post-1975 period, as a series of owners attempted to adapt the building. Documentation for the analysis of building episodes includes historic photographs, oral histories, Topeka Board of Education minutes, and National Park Service reports.

Analysis of Building Episodes

Episode 1: 1926-1959

Thomas W. Williamson, the favored architect of the Topeka Board of Education, designed the Monroe Elementary School. Completed in 1927, the current building was actually the third school of that name at the corner of Fifteenth and Monroe Streets. The first, dating to 1868, was a small rental property replaced in 1874 by a permanent structure to the immediate north of the existing site. This older building was in turn demolished to create the north playground.

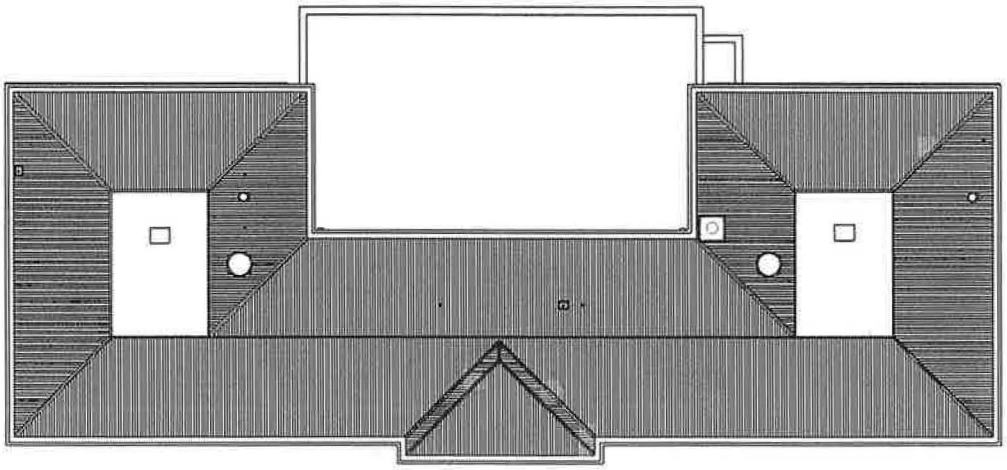
The exterior of the Monroe School closely resembles the original structure. The east facade is shown in a photo from 1927. Photographs from 1948 and 1953 show the facade as unchanged. There are no known photographs of the interior prior to 1940. These later photos show wood floors, brick window sills, radiators, and ventilators that can still be found in the building today and are assumed to be the original materials.

According to Topeka school board minutes, updated electrical service to improve lighting conditions in the school was scheduled in 1957, but it is unclear whether this took place. In 1958, a city-wide survey of educational facilities ranked Monroe above Sumner, its white counterpart, in building quality. Lighting at Monroe was still considered poor and the physical plant of both schools to be inadequate for contemporary teaching methods.

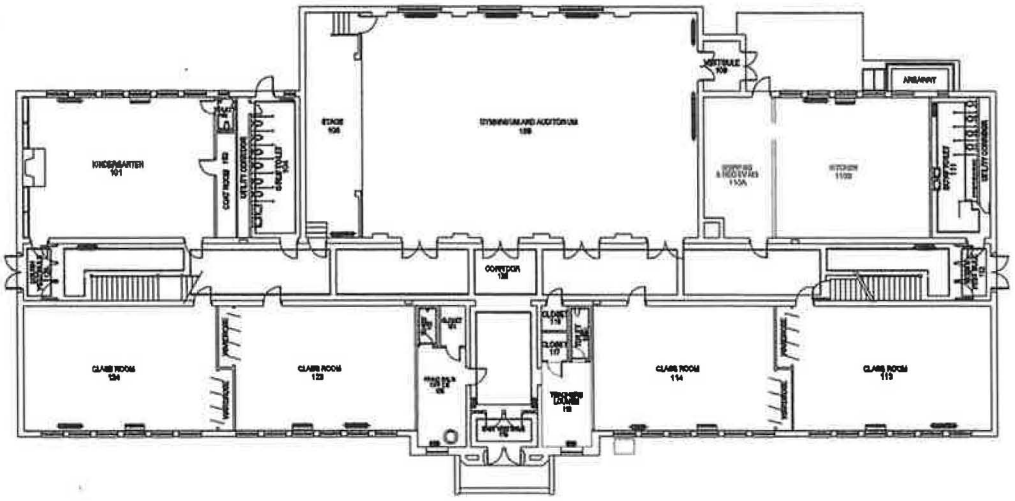
There is no documentation of physical changes to the building during this period. However, the survey does note that the Mechanical Training Room, Room 110, was now being used as a lunchroom and the Domestic Science Room, Room 214, was vacant. In Room 214 numerous holes and paint ghosting provide evidence of removed equipment. The report also noted that two classrooms were being used for music and visual education. This marked a transition in the curriculum at Monroe. The school originally taught students through the eighth grade, as was standard for Topeka's black schools. However, white students, after the sixth grade, attended a segregated intermediate school before moving on to Topeka High School. The *Graham* ruling in 1941 desegregated intermediate schools, and so the seventh and eighth grade students from Monroe moved to an integrated junior high. The curriculum at Monroe was shifted to younger children, as the older

Episode 2 : 1960-1974

ROOF



FIRST FLOOR



students that would have been engaged in the shop and home economics classes were no longer there.

Episode 2 : 1960-1974

1960 began a period of decline for the school. Despite the Brown II decision, Monroe remained 100% black. Enrollment had been steadily declining since 1955, as many black students chose to enroll in white schools closer to their homes or offering more opportunities.

Several mechanical renovations were undertaken during this period. In 1961, the Teacher's Lounge, Room 118, was updated with new floor tile, plumbing, and doors. In 1963, air conditioning was installed in selected rooms on the first floor. This also required the installation of 32"x42" concrete pads at grade in front of the northeast facade to hold compressors. 1964 saw a new boiler, oil burner, and unit ventilators to compensate for the inadequate original equipment.

The alteration of the original brick chimney may have occurred at this time, or the chimney may have collapsed. As noted in the Structural Analysis section of Part F, the attic rafters near the chimney show heavy damage consistent with the impact of a fallen chimney. From historic photographs, the chimney was intact as late as 1953. A 10' metal stack replaced the much taller upper portion of the chimney, which previously was a significant feature of the roofline.

In 1969, the federal government provided the Topeka public school system with funding for the expansion of its hot lunch program. The Manual Training Room in Monroe was subdivided into two rooms: the southern part became a shipping/receiving room, and the larger north section was converted to a kitchen that provided food service to four elementary schools, including Monroe. The gymnasium doubled as a lunchroom.

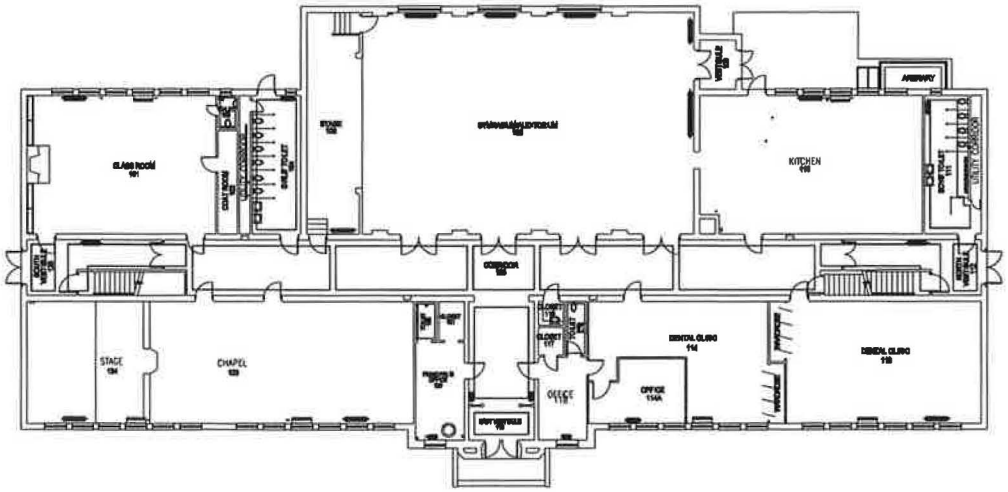
This renovation resulted in the installation of the extant ventilation hood in the center of the ceiling and other equipment now missing. Two windows and the door transom were also replaced with vents. Although there is no longer any kitchen equipment in the room, there is a large section of exposed concrete, pipe, and conduit directly under the existing hood. The vents are still in the west wall, and there is miscellaneous ductwork in the room.

According to the National Park Service, during this episode Room 114 was subdivided to serve as a school office and larger teachers lounge, Room 120 was the nurse's office, and Room 118 was the secretaries office.

The updates of the 1960s may partially account for the multiple utility entrances to the building at the northwest corner. The original electric, water, and sewer lines entered the building at this point. If additional electri-

Episode 3: 1975- 1987

FIRST FLOOR



cal service was required for the new kitchen equipment, this corner would have been the logical point of access.

Episode 3: 1975- 1987

Monroe Elementary School was closed in 1975 due to falling enrollment. The Topeka Board of Education converted the building and grounds to a warehouse/ maintenance facility. The playground equipment, drinking fountains, and mud scrappers were removed to accommodate busses and maintenance vehicles parked on the site. Exterior security lighting was installed, in some cases replacing original fixtures. Anchor holes and cut stone around doorways indicate previous positions. The relief panels in the north and south end walls also became home to security lights.

In 1980, the school board sold the property to Richard C. Appelhans, who in turn sold it to the Fairlawn Church of the Nazarene in 1982. The church proposed to convert the building for assorted community works projects ranging from a dental clinic to a halfway house dormitory. The church continued to use Room 100 as a classroom and meeting room. Room 214, the Domestic Science & Art Room, was used as a clothing bank.

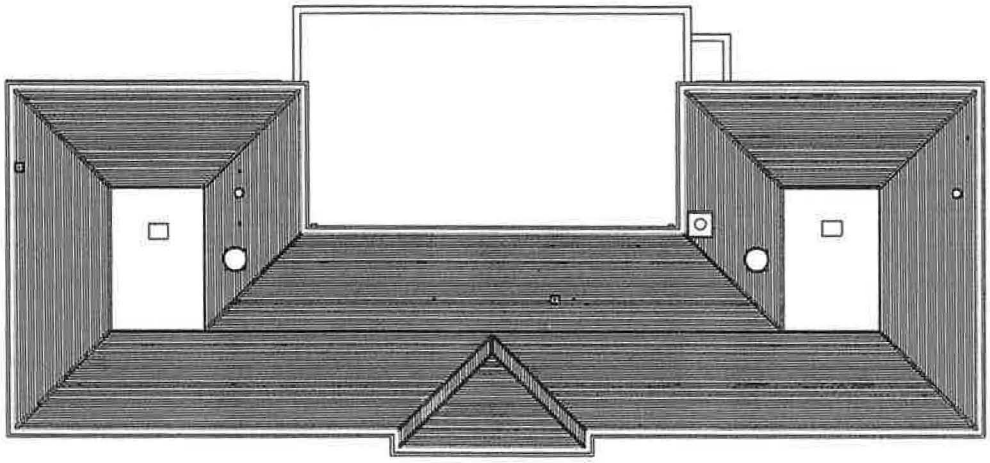
The church converted Rooms 113 and 114 into a dental clinic with new partition walls and a new mechanical system in the northwest corner of Room 113. Several casement windows on the first floor were boarded up with plywood to accommodate window-style air conditioners. A new door was added to the former Teachers' Lounge, connecting it with the former classrooms. The lounge was probably used as a reception area for the dental clinic, as it was close to the main entrance.

Rooms 123 and 124 were merged to create a chapel. The gaps in the walls, ceiling, and floor from the removal of the partition wall were infilled. Gypsum board was used on the walls and ceilings, and a mortar-like substance was used on the floor. The church constructed a small stage at the south end of the room. This room was later damaged in a fire, during the late 1980s. The fire did not spread to the remainder of the building, but the plaster in the room and in the corridor directly outside the room have been damaged by smoke.

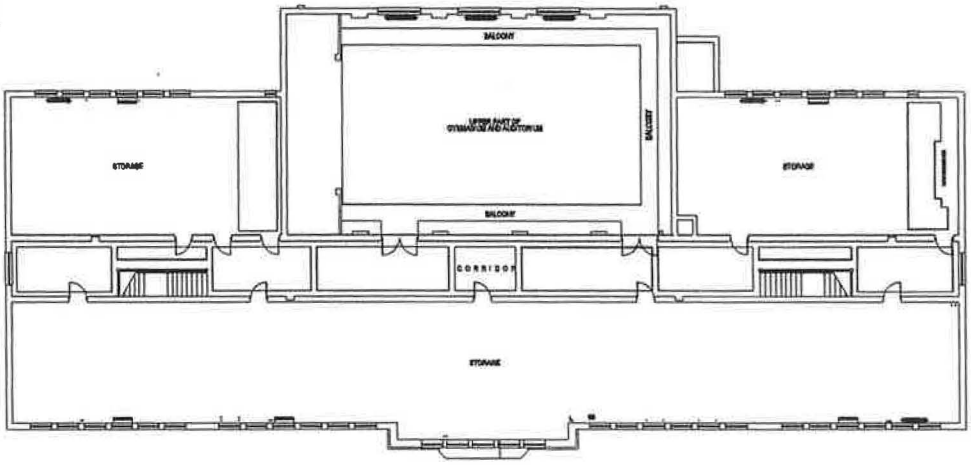
To comply with fire safety regulations, the Church enclosed the stairwells with drywall. This also involved removing the interior vestibule doors and wall; new walls and doors were installed further in toward the center of the building. Solid wood doors replaced the original glass-paneled doors on the first floor. The church also may be responsible for replacing most of the original lights with banks of fluorescent fixtures. Sources attribute the lighting change to the early 1980s, so it is unclear whether Appelhans was involved.

Episode 4: 1987-Present

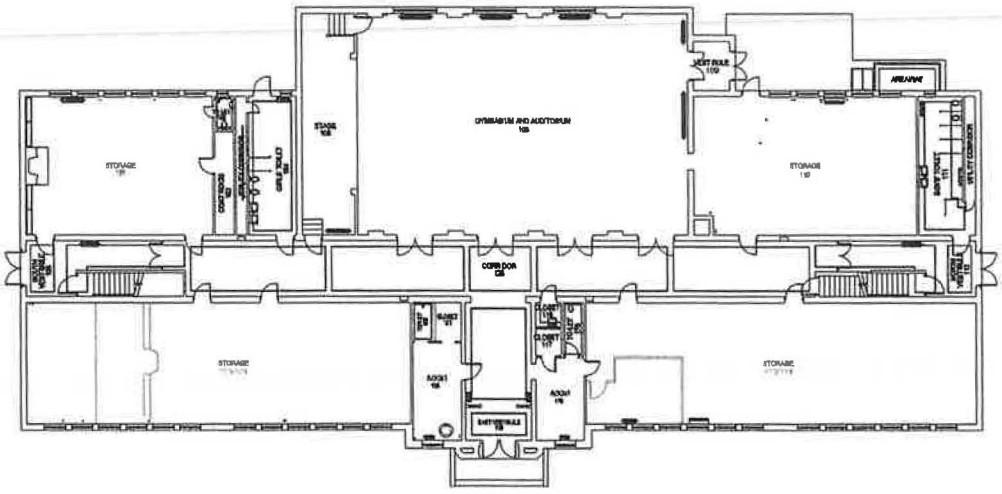
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SECOND FLOOR



FIRST FLOOR



Episode 4: 1988-Present

The church sold the property to S/S Builders, Inc., owned by Mark A. Steuve in 1988. He returned it to use as a warehouse, removing the remaining partition walls on both floors. Steuve was responsible for repairing and replacing Monroe's tile roofs with asphalt shingles, preventing further deterioration of the interior fabric. He also erected a chainlink fence around the property for security.

The title for Monroe Elementary School was transferred to the National Park Service in 1993. After 1993, no significant changes were made at Monroe. Frequent vandalism required the replacement of many window panes, and some windows were eventually boarded over with plywood. In 1995 the auditorium's flat roof was temporarily repaired to halt the significant water damage that had been occurring at the interior of the west wall.

Part H:
Design Recommendations

Part H: Design Recommendations

Secretary of the Interior's Standards for Rehabilitation

Rehabilitation, as defined by the Secretary of the Interior's Standards for Rehabilitation, is the process of returning a property to a state of utility, through repair or alteration, which makes possible and efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values. The distinguishing original qualities and character of the Monroe Elementary School will be preserved through repair and reconstruction of missing elements, matching the originals in composition, design, color, texture, and historic characteristics. Alterations to the building to accommodate the new program proposed by the National Park Service will respect the architectural character of the building as designed by Thomas W. Williamson in 1926.

General Approach

The period of significance for Monroe Elementary School is 1950-55. The architecture itself, while excellent and well preserved, is not unique. Abundant examples of this building type can be found throughout the United States. The relevance of the building to the *Brown* case comes from this very ordinary character of the building: at a time when many, if not most, black schools were little more than tar-paper shacks, Topeka's black schools were physically indistinquishable from its white schools. Monroe, Washington, Buchanan, and McKinley were in every significant way the equals of the eight white elementary schools in Topeka.

However, the handsome proportions and restrained ornamentation of the Monroe Elementary School should be respected in any adaptive reuse proposal. The formal symmetry and richness of design create a set of spaces that will serve an unusual variety of programs. The integrity of the structure and building fabric is high, a testament to Thomas Williamson's skill at design and material selection. Re-occupation of the building will be simpler due the relatively few major changes that must occur and the abundance of original materials stored on-site.

The external symmetry reflects an internal functional organization based on the class room module. The classrooms were oriented north-south along the double-loaded corridor, the spine of the building.

The shorter east-west axis contained rooms with special functions. On the east facade, this was expressed in the projecting, two-story limestone entry. Behind the facade, the first floor held the offices, the second floor the domestic science room. The domestic science room was larger than the other classrooms. It had linoleum rather than wood flooring, and two auxiliary rooms: a pantry with utility sink, and a dressing room for fitting sewing projects.

On the west facade, the two-story auditorium terminates the shorter east-west axis. The mass of the auditorium projects from the main body of the building and is further highlighted by the tripartite Roman arches and windows. The flat roof, separated from that of the main structure, reinforces its special function.

The architectural hierarchy of function, public and private spaces, organization, and symmetry will be maintained in the recommended design. The overall goal is to retain the character of the classrooms and the building as a whole, allowing it to serve as a stage for the interpretive program and administrative offices.

The exterior of the school will be restored and maintained to the period of significance. The surrounding neighborhood at that time was primarily residential. The corner of 15th and Monroe had small commercial operations: cafe, barber shop, soda fountain, servicing the neighborhood residents. The current zoning is commercial/industrial and therefore many houses have been lost. Attempts should be made to restore the previous zoning and residential character of the neighborhood. This will revitalize the neighborhood and provide additional security by virtue of "24-hour occupancy." An urban planning term, "24-hour occupancy" refers to a multiuse zone where people can live, work, and play, as opposed to single-use suburbs and office districts that are abandoned for half of the day.

Preliminary Design Proposal

The following preliminary design layout was prepared based on the National Park Service's decision to use the Monroe school building as a public interpretation center for the Brown v. Board of Education National Historic Site.

Throughout the design, the classroom module employed by Williamson has been respected and recreated. The first floor will be devoted to interpretive spaces, a gift shop, and a greeting station. The second floor is to house the site archives, a research room, and offices for NPS staff. The basement will be used for storage. The design proposal includes complete accessibility for the physically challenged, and assumes primary access to the building from the east doors. Parking would be located north of the building, on the other side of 15th Street.

A visitor would enter the building through the projecting limestone bay at the center of the school's east facade. The interior vestibule doors will be restored. The visitor would pass through the East Vestibule flanked by the Ranger's Office on the left and the First Aid Room on the right. Each of these rooms would have an accessible restroom. These suites would correspond, in space and function, to the Principal's Office and Teachers' Lounge, respectively. The Ranger's Office will both control the entrance and welcome visitors, providing orientation to the site.

At the T-intersection of the major and minor corridors, the visitor could chose three paths. When proceeding straight ahead into the Auditorium, the visitor would find a flexible exhibit and reception space. The room retains its two-story height, stage, and other visual and spatial evidence of its past use as a gymnasium and auditorium.

The visitor choosing to go down the south hallway would come to Exhibit Space A and Exhibit Space B. These would be two recreated classrooms in the southeast corner of the building, corresponding to Classroom 124 and Classroom 126, respectively. These rooms would contain authentic classroom furniture, chalkboards, and other equipment. This type of space and its furnishings is familiar to millions of Americans, black and white, who attended (or attend) similar schools. The classroom restoration is intended to not only symbolize the similarities between Topeka's segregated schools, but to create empathy based on shared experiences.

The Miller Sanitary Wardrobes used in the school will be recreated in the original locations, serving as a partition wall between the two rooms. Across the hall from these rooms, in the former Kindergarten space, would be a multipurpose room that can serve as a small theater. The former Girls' Toilet would be converted into a handicapped-accessible Women's Restroom. The Stage was originally accessible from the corridor by a set of stairs next to the Girls' Toilet; these steps would be replaced with a lift to provide handicapped access to the Stage.

The visitor turning right (north) from the T-intersection would encounter another pair of galleries. Exhibit Space C and Exhibit Space D would correspond to Classrooms 114 and 113 respectively, in the northeast corner of the school. These rooms would be separated by an open arch at the position of the original wardrobes. The arch would contain a folding partition wall that could be used to isolate the exhibits at the discretion of the NPS staff.

Across the hall from these two galleries would be the elevator to the second floor and the Sales Area, which corresponds to the Manual Training Room. Locating the Sales Area in the northwest corner of the school would allow delivery access from the alley, creation of a Receiving/Storage Room, and provide basement space for storage.

The handicapped-accessible Men's Restroom would be at the north end of the hall, in the location of the former Boys' Toilet.

The north and south stairwells and vestibules would be returned to their original conditions. The stairwell would be open again, with a restored balustrade. The interior vestibule wall would be moved back to its original position between the stairs and the exterior doors. The new wall would the original three-door configuration found on the construction plans of 1926. The auditorium balcony, due to structural and fire safety considerations, will not accessible to the public.

While the first floor would be open to the public, the second floor would have more restricted access. The Research Library would occupy the "special place" above the main entry. Copier/Microfiche and Archival Storage areas would be contained in alcoves within the south wall of the Library. A handicapped-accessible restroom for use by the public would occupy the north east corner of the library. Provisions will be made for computer access and archival storage.

The remainder of the second floor would be designated for offices and storage. The northwest corner of the second floor would contain Park Ranger offices, storage, and a common break room for all the second floor offices.

The northeast corner of the second floor would be reserved for the interpretive functions of the park. This would include workstations and two conference rooms. The conference rooms would be designed to be used as Heritage Education Classrooms, would be separated by a folding partion wall, and would include a handicapped accessible toilet.

The entire south wing of the second floor is to be occupied by NPS administrative offices. These include: a Facilities Management Office, Conference Room, Ranger Break Room, Superintendent Office, and Interpretation work areas. This area has been designed to be the most private, discouraging interruptions from park visitors. Restrooms in this area would barrier-free but reserved for use by park staff.

In the basement, which can be reached from inside or outside the building, will be a maintenance office, an accessible shower/toilet room for the rangers, and an exercise room. The basement would continue to house the mechanical systems for the building.

Building Exterior Treatment Recommendations

Based on information obtained from documentary and photographic research and on-site physical investigation, the following recommendations are submitted for the rehabilitation of the Monroe Elementary School.

Roof

Historic photos show clay tile on the main roof. The tile was replaced with asphalt shingles in 1993. The flat widow's' walks at the top of the hipped roofs were originally sheet metal. The rubber membrane currently in place is in poor condition and installed incorrectly. The auditorium and vestibule roofs are flat, built-up roofing in very poor condition. The NPS temporarily repaired the auditorium roof in 1995, delaying structural repair until the final use for the building was determined The following treatments are recommended:

1. Remove the contemporary asphalt shingles and replace with clay tile in a style and color similar to the original. This will also involve structural reinforcement of the roof, as detailed in the structural recommendations following.
2. Remove the rubber membranes from the widows' walks, repair or replace the underlayment, and finish with a metal roof. This will not only be in keeping with the original design, but will be more durable.
3. Recreate the main chimney, removing the metal stack and returning the brick to its original height. The limestone panels at the top of the chimney should be recreated as shown in historic photographs. The chimney was intact at least until 1953, and is within the period of significance.
3. Clean, repair, and repaint the eaves and downspouts.

Facades, General

1. Clean and repair all cornice trim.
2. Clean and repair all limestone.
3. Clean and repair all brickwork, repointing where necessary and replacing inappropriately colored mortar where necessary.
4. Clean, strip, repair, and paint all steel casement windows and transoms, removing boards and reinstalling or recreating missing frames. Repair or replace exterior and interior hardware.
5. Reglaze windows with clear or patterned glass as necessary and appropriate.
6. Remove utility conduit and wires, repairing the holes.
7. Reopen and repair ventilation grilles that have been boarded over or infilled.

North Facade

1. Replace the exterior doors with a style compatible to the originals.
2. Remove the modern light fixture, and install a replica of the original fixture at the original location, marked by the cut stone and anchor

holes above the doors.

3. Remove the light fixture and junction box from the east panel.

East Facade

1. Remove the concrete pads once used for compressors.
2. Repair or replace the concrete steps and planter wall.
3. Install replicated light fixtures flanking the arch.

South Facade

1. Replace the exterior doors with a style compatible to the originals.
2. Remove the modern light fixture, and install a replica at the original location, marked by the cut stone and anchor holes above the doors.
3. Remove the junction box from the east panel.

West Facade

1. Replace the door to the Girls' Toilet with a style compatible to the original. Repair and reglaze the transom.
2. Return the southernmost Auditorium window bay to its original condition.
3. Replace the Vestibule doors and transom with a style compatible to the originals.
4. Replace the Manual Training Room door and transom with a style compatible to the originals.
5. Remove the ventilation grilles from the Manual Training Room windows and restore them to the original condition.

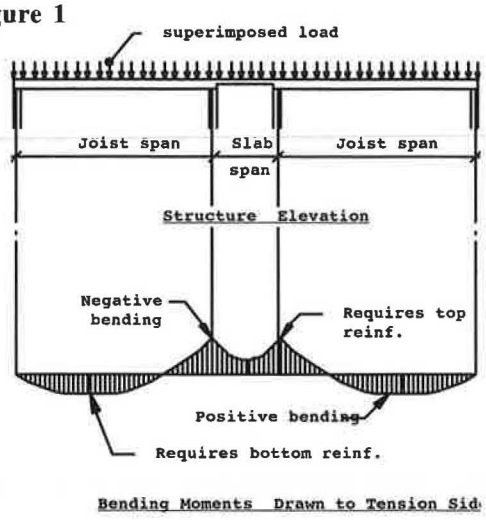
Structural System Recommendations

Structural Analysis

Structural load analysis for the Monroe School was performed within the limits of the data available. The original design for the concrete systems involved a classical historic method of mechanics or stress evaluation in order to determine the required steel reinforcing. Overall analysis to determine member bending, shear, and deflection behavior of one way joist/slab systems has changed very little since the time that the school was constructed. However, many advances in knowledge of concrete as a material, and of how steel reinforcing relates to concrete, have occurred in the time since the school was constructed. New theories and methods of analysis that better describe the behavior of concrete were fully accepted in the United States with the adoption of 'Ultimate Strength' design (sometimes referred to as 'Strength Design') by the ACI around 1965. The current methods generally yield higher load capacities for existing structures that are limited by bending. Capacities limited by shear and deflection remain unchanged from the older classic methods of analysis. Classic and modern analysis was conducted concurrently to determine the load capacity limited simple span bending for typical concrete joists. Superimposed live load capacities determined by 'strength' methods were 15% to 25% greater than the capacities determined by the older working stress design (wsd) methods for bending stress limits. The modern 'strength' methods were adopted for the remainder of the analysis.

Limitations to a complete floor load analysis were encountered when the existing drawings were reviewed. The original drawings define the bottom reinforcement for concrete joists and slabs. However, it is not clear what top reinforcement is provided as the main joist reinforcement. Figure 1 illustrates the typical bending moment situation for the Monroe School monolithic concrete structure. The structure appears to continuous over the interior supports. This condition creates negative bending moments that would require top rein-

Figure 1



Typical bending moments for monolithic structure.

forcement over the interior supports. Generally, negative bending at interior supports is larger in magnitude than the mid-span positive bending. Therefore, the negative bending will be the limiting factor in the load determination derived from bending stress. Either adequate top reinforcement is in place or the floor systems were not constructed as a monolithic system. A well defined joint would have been provided over the interior support walls if the floor was constructed as a simple span noncontinuous structure. No such jointing was observed in the top of the attic concrete. Additionally, no obvious sign of distress, that might be associated with a lack of top reinforcement over interior supports, was observed in any floor.

Floor load analysis was completed assuming that all components are simple noncontinuous structures. This assumption permits a detailed analysis with the information at hand. However, this simplified approach may yield conservative values for floor load capacities limited by bending stress, and slightly un-conservative values for capacities limited by shear stress.

Some additional future testing may be appropriate in order to map the top reinforcing for the floors. This could be expected to provide better information and may increase the capacities discussed later in this report. However, some destructive investigation will be needed in order to calibrate test equipment and to set the criteria for nondestructive testing, as previously discussed under the existing conditions for the auditorium roof.

Deflections were checked for all concrete floors. Live load limited by deflections were derived for the typical joists acting as simple span members, and assuming theoretical 'cracked sections'. The live load deflection was limited to 1/360th of the span, which represents the amount of deflection that will cause plaster cracking. The live load thus derived far exceeded the magnitude of live load corresponding to bending and shear limits. The methods and assumptions employed in the analysis are conservative. Therefore, deflection will not determine the load capacity of the floor structures. Concrete joists in the first and second floor have two typical rib widths. A 5 inch rib is used for the typical joist, while an 8 inch rib width is used for joists that occur directly below the original clay tile partition locations. The following items summarize the balance of the load analysis.

Superimposed Load

The following superimposed loads were used in the analysis. Superimposed load is the load carried by a structural element (beam, slab, joist, rafter) in addition to the members self weight.

Floors

Plaster ceiling	10 psf
Wood sleeper floor	5 psf
Terrazzo	30 psf
Portland fill	30 psf
4" clay tile partition	330 lb/ft

Table 1: First Floor Live Load Capacity

Member	Bending Limit	Shear limit
5" joist	70 to 90 psf	Greater than 100 psf
8" joist with clay tile partition	40 to 60 psf	Greater than 100 psf
8" joist without partition	Greater than 100 psf	Greater than 100 psf
Corridor slabs	Greater than 100 psf	Not applicable
Corridor beams	Greater than 100 psf	Greater than 100 psf

Roof

Flat roofing	12 psf
Spanish clay tile	14 psf

First Floor Capacity

Permitted first floor live load capacities in addition to superimposed dead load and self-weight load are shown in Table 1.

A 24'- 2" clear span was used for the typical joist. The permitted capacity of the 5" joist is primarily determined by the type of floor finish that occurs over the joist. For example, the Boys Toilet Room 111 is shown to have a terrazzo floor finish which has a weight of 30 psf, which reduces the amount of live load the 5" joists can carry in this area. The main floor area in the Manual Training Room 110 can carry 90 psf live load since the

Table 2: Second Floor Live Load Capacity

Member	Bending Limit	Shear limit
22' span 5" ribs	80 to 91 psf	88 to 103 psf
22' span 8" ribs with partition	40 to 65 psf	78 to 116 psf
22' span 8" ribs no partition	Greater than 100 psf	Greater than 100 psf
25' span 5" ribs	50 to 89 psf	Greater than 100 psf
25' span 8" ribs with partition	30 to 44 psf	Greater than 100 psf
25' span 8" ribs no partition	93 to 100 psf	Greater than 100 psf
Corridor slabs	Greater than 100 psf	Not applicable
Corridor beams	Greater than 100 psf	Greater than 100 psf

finish load is only 5 psf for a wood sleeper floor. The majority of the floor area over the basement is a simple span structure and will gain no benefit from top reinforcement, since the joists are not continuous with adjacent floor areas.

Clay tile partitions shown on the original plans do not exist, consequently the live load limits for the 8" joists can be expected to exceed 100 psf. Additionally, adjacent joists cannot deflect independently of each other. Adjacent members tend to share load as they deflect together, or a lighter loaded member will tend to share the load of an adjacent heavier loaded member providing they both have the same stiffness. The lower load limit for the 5" joist occurs directly adjacent to an 8" joist with no partition. The 8" joist will assist the 5" joist in carrying any excess load.

An overall live load limit of 90 psf for the classroom/ bathroom joist floor area is reasonable, providing the floor finish remains unchanged and the clay tile partitions are not reconstructed. Supported slabs and beams in the corridors will support a public access load of 100 psf.

Second Floor Capacity

Table 2 illustrates the live load limits for the second floor members. Generally, the shorter span joists on the east side of Corridor 226 at Rooms 209 through 213, and Rooms 215 and 216 can be expected to support a live load of 80 psf providing that floor finishes remain the same and clay tile partitions are not rebuilt. The live load limit for the Domestic Science Room 214 is a lower value of 50 psf due to the heavy Portland Cement floor finish in that area and a larger span of 25 feet. Classrooms 201 and 206 at the west side of the corridor have a live load limit of about 70 psf for the 25 foot span joists since the floor is a light wood sleeper finish. The Boys and Girls Toilet Rooms (211 and 204) have a live load limit of about 50 psf. Adaptive use of the second floor area may result in the placement of partitions. New partitions should be constructed of light weight wood or steel studs and gypsum drywall. Average partition loads should be deducted from the above live load capacities in order to determine a net live load limit.

Balcony Capacity

Auditorium (Room 108) balcony live loads are limited by the wood framing. The loads determined by analysis are as follows:

Bending	60 psf
Shear	greater than 100 psf
Deflection	70 psf

The hanger rod system presents a major concern for the balcony load analysis. Anchorage details for the rods into the concrete roof beams and joists is not shown on the original documents and is hidden within the existing construction. The condition of the roof supporting these rods is poor, and deterioration of the anchorage may have occurred. Therefore, public access to the balcony should not be permitted, unless better information regarding the hanger supports can be obtained.

Auditorium Roof Capacity

An analysis of the auditorium roof was completed assuming that the full integrity of the concrete beam and joist system was intact. Existing conditions would appear to dictate that this is not the case. However, it is felt that the integrity of the roof system can be restored with appropriate treatment. A 20 psf ground snow load,

as per BOCA 93, was used in the analysis of the roof. Uniform roof snow load was determined to be 16 psf for the appropriate exposure conditions at the level of the roof. Additional drift and sliding snow load was accounted for since adjacent sloped roofs to the north, south, and east are at a higher elevation than the flat auditorium roof. Drift and sliding effects result in an additional pressure of about 50 psf (66 psf total) at the perimeter adjacent to the higher roofs. Edge pressures were gradually reduced to 16 psf some distance away from the edge. Superimposed dead loads were used for anticipated tapered insulation and an EPDM roofing. A sloping roofing system will provide protection against continuing water damage. Plaster ceiling load was also included in the analysis.

The auditorium roof system will support all the above live load in addition to the load of the balcony, providing that the integrity of the concrete can be restored. The balcony load used for the analysis of the roof included the balcony dead load and a balcony live load of 60 psf (see balcony discussion).

Attic Floor Capacity

The sloped wood framed roofs impose loads on the attic floor. Both the struts and wood posts apply roof load to the concrete floor system. Adjusted ground snow load was applied to the wood roof framing. Additionally, Spanish clay tile roofing was applied to all sloped roof surfaces. Reactions at the struts and wood posts were then applied to the attic floor and capacities for the concrete floor were determined. The general live load capacity of joists and corridor slabs, in addition to all roof loads and floor dead load, ranged from 10 psf to 55 psf depending on location. Some posts supporting the roof occur over the thin 2 1/2" thick slab between joist ribs. This condition presents a serious shear problem for the slab. Theoretically, the slab would fail in punching shear below most post locations. A distribution beam system should be employed to better distribute the loads imposed from the wood roof to the attic floor, particularly if the roof is to be restored to clay tile.

Table 3: Wood Roof Members

Member	Acceptable	Comments
Nominal 4x4 posts	No good	Exceeds permitted axial stress by almost 2 times
Shoring posts	No good	Exceeds permitted axial stress
Shoring beams	No good	Exceeds permitted bending stress
Nominal 2x4 struts	No good	Exceeds permitted axial stress by more than two in some cases
Flat roof rafters	No good	Exceeds permitted bending stress for un-shored condition
Ridge/Valley members	No good	Exceeds permitted combined bending and axial stress
Sloped rafters	Supports load	

Wood Roof Capacity

A three-dimensional computer analysis was performed for the wood rafter roof. Previously discussed BOCA snow loads were applied according to code distributions. Self weight dead load and sheathing weight was included in the analysis. Superimposed clay tile dead load was applied to all sloped surfaces, and appropriate tapered insulation and EPDM roofing weights were used for all flat roof surfaces. Member stresses compared to permitted allowable bending, shear, and axial stress as well as deflection. Table 3 summarizes the results of that analysis.

The roof does not presently support a relatively heavy Spanish clay tile roofing, but this type of roof is anticipated in the restoration. Additional shoring and bracing will be required in order to ensure proper roof performance. For example, the nominal 2 x 4 wood struts can be braced together between their ends, which will prevent bowing and provide adequate capacity. The shoring beams and posts should be replaced with a properly designed system. Additionally, a distribution beam system should be considered at the attic floor level as previously discussed.

Structural Recommendations

The following items represent recommendations for the Monroe School.

Supported Floors

1. Repair bottoms of floor joists where concrete has spalled or has been removed. Re-

move all loose or spalling material around affected area at bottom of joist rib. Thoroughly clean all exposed concrete surfaces. Wire brush all rust and scale from exposed reinforcing. Coat exposed surfaces with an approved bonding agent such as Sika Armatec 110 applied per manufacturers recommendations. Apply an epoxy modified cement mortar to restore the joist rib to the original configuration.

2. Use lightweight stud and gypsum wall board partitions for all new work. Average weight of partitions should be deducted from floor live load capacity to determine any net live load capacity.

3. Live load should be limited to the following levels for the various floor areas in lieu of additional information.

First Floor

Room 110 Manual Training & 111 Boys Toilet	90 psf
Corridor 126 and stairs	100 psf

Second Floor

Domestic Science Room 214	50 psf
Classroom 201 and 206	70 psf
Boys Toilet 207 and Girls Toilet 204	50 psf
Corridor 226 and stairs	100 psf
Balance of rooms 209 to 213, 215, 216.	80 psf

4. Perform reinforcing mapping of second floor top reinforcing if higher load capacity is desired. Another alternative, in place of mapping and additional analysis, would be a full scale load test in the floor area requiring a higher capacity. However, load testing is expensive and can cause structural distress.

Attic Floor

1. Repair damaged and spalled joist bottoms as detailed above for the floors.

2. Repair all east-west cracks in the top of the concrete. Cut a v-groove at the crack. Thoroughly clean the crack of all contaminants. Fill the top of the v-groove with a high quality urethane sealant.

3. Design, detail, and construct appropriate distribution beams to properly distribute all concentrated post loads from the wood frame roof.

Balcony

1. Bar any public access to the balcony.

Wood Frame Pitched Roof

1. Replace shoring for flat portions of the mansard shaped roofs with properly designed and detailed posts and beams (also see attic floor recommendations).

2. Brace all posts and struts to reduce slenderness of members to safe load carrying levels. Alternatively, the posts could be replaced with columns having adequate cross sectional dimension.

3. Design, detail, and construct appropriate reinforcing or support for existing doubled ridge and valley members.

Flat Auditorium Roof

1. At least portions of the auditorium roof have undergone severe deterioration and distress due to moisture exposure and thermal movement. Additional testing is indicated in order to determine the extent and nature of the damage. Two cores should be cut through the thin slab between joists for this purpose. The core locations are shown on drawing EXS-104 included in the appendix. The material recovered and the holes that remain should be visually inspected to determine the depth of crack and the extent of delamination. Further petrographic testing of the recovered samples may be required to determine the exact nature of repairs, depending on the visual examination. The recommendations that follow assume only moderate additional dam-

age and may require modification based on the test results.

2. Remove all roofing materials to bare concrete.
3. Perform testing detailed above. Perform mapping of joist top reinforcement over the beam lines. Location, size, and spacing of this reinforcement will determine if the 'moving cracks' are caused by structural bending stress or by thermal type movements.
4. Plug all holes in the roof with epoxy modified grout or mortar.
5. Sandblast the entire roof area to expose sound concrete. Scarify the surface to promote bonding of new material. Remove all residue, dust, and contaminants that might inhibit bonding of new material to the existing concrete.
6. Do not cut or bend any reinforcing steel exposed by the sand blasting or cutting.
7. The two east-west 'moving cracks' #1 and #2, and the east-west 'structural center crack' shown on drawing EXS-104 should be filled with epoxy. All contaminants should be removed from the crack. All crack faces must be clean and dry. Apply Sikadur 55, SLV filler into each crack, as per manufacturers recommended procedures. The application of this crack filler may occur simultaneously with the application of Sikadur 55 SLV to the entire roof surface. The intent is to rebond these cracks. The bottom side of these cracks will need to be sealed with an epoxy paste. Large cracks may be filled with dry sand prior to placement of the resin.
8. Rout out a 1/4" notch at all diagonal corner cracks. Apply Sikaflex-1a into crack according to manufacturers recommendations.
9. Apply bonding bridge Armetec 110 to all spalled surfaces.
10. Fill all spalled areas with epoxy based resin filler. Application of Sikadur 55 SLV should be used over the entire roof area. Sikadur 22 Lo Mod broadcast system should be applied after and in conjunction with the SLV material. Bring surface to level with original elevation of concrete.
11. Adhere tapered closed cell foam insulation to roof. Slopes created by the tapered foam should be sufficient to readily drain water to the west side of the roof. Properly flashed roof scuppers should be placed at the west side parapet. Place a new EPDM fully adhered roof over the flat roof area.

Walls

1. Water migration through the basement walls at the abandoned coal bin must be prevented. This may involve removal of any fill material in the coal bin, and removal of the concrete masonry blocking up openings to the basement. The openings can be closed in with appropriate masonry units or concrete. The exterior surfaces should be sealed or waterproofed. The bin may then be filled and sealed at the top.

Summary and Conclusion

The Monroe School is a substantial structure possessing a high degree of structural integrity. The concrete systems employed in the floors and attic were probably on the leading edge of concrete technology at the time of the construction. The floor structures provide substantial load capacity for adaptive reuse providing the recommended limits are followed. Additional analytical capacity may be possible by employing modern testing methods to determine the extent and nature of the top reinforcing in the concrete systems. Public access to the wood framed balcony should be restricted.

Wood roof systems are deficient in several areas, especially if a Spanish clay tile roofing is applied. In any case, shoring will need to be replaced and post and struts require stiffening. The ridge and valley members require reinforcement or additional support. Redistribution of post load at the attic floor will also be required.

The auditorium roof has undergone serious deterioration which impairs the effectiveness of the structure. The exact extent of damage is undetermined at this time and additional testing and inspection is indicated. Extensive epoxy repairs are recommended for structural crack repair and delamination. Repairs are intended to restore the structural integrity of the concrete system. A new roof that drains water is proposed.

The attic roof does not presently support a relatively heavy Spanish clay tile roofing, but this type of roof is anticipated in the restoration. Additional shoring and bracing will be required in order to ensure proper roof performance.

Mechanical Systems

General

The anticipated use of the building dictates that the environmental systems provide heating, ventilating and cooling for the entire structure. The following recommendations are intended to provide a system and equipment on the first floor that reflects the appearance of the building systems in the 1950s.

The recommendations for the second floor, while not detracting from the building appearance, are concerned with meeting the environmental needs of the working occupants, sometimes at the expense of historical accuracy.

Heating Plant and Distribution System

The current boiler is not operational and has no real value. A central gas fired hot water heating plant should be installed in the present boiler room. This plant should consist of two cast iron boilers, each rated to provide 66% of the heat loss for the entire building.

Hot water supply and return mains should extend from the boiler plant to all building heating elements. Piping should be installed following the original routing of the steam pipes.

Chiller Plant and Distribution System

The recommended cooling system for the first floor requires a central cooling plant to provide chilled water for the cooling coils. This plant should be in the form of an outdoor air-cooled chiller with the distribution piping extending to the building. Pipe routing within the building should follow the same path as the heating system piping.

First Floor HVAC Systems

The visible elements of the first floor HVAC system should reflect the appearance of the original terminal elements. Wherever possible, heating, cooling & ventilating units should be installed at the locations originally occupied by unit ventilators.

The cabinets for these units should reflect the appearance of the original unit ventilators. The existing outdoor intakes should be used to provide ventilation air for the building occupants. These units will have to be custom built, however, the extra cost will be justified by creating historical accuracy.

"Heating only" elements should be hot water, cast iron radiators similar in appearance to the original steam radiators.

Room thermostats should be modern construction with covers similar to the original devices.

Second Floor HVAC Systems

The cooling and ventilating system for the second floor should consist of two rooftop units connected to systems of overhead air supply ductwork. Ductwork should be located above the new second floor suspended ceiling. Return air for this system should be taken from the second floor ceiling plenum. Rooftop units should be located as discretely as possible. This system will provide comfort conditions at a low cost and will not detract from the appearance of the space.

Cast iron radiators are not suitable for the office functions anticipated for the second floor. The most practical solution would be to locate continuous steel finned radiation elements along the outside walls. To provide individual room temperature control during the heating season, wall mounted thermostats should be located near the doorway into each room.

Auditorium/Gymnasium HVAC Systems

Ventilation was not provided for the Auditorium/Gymnasium by the original building systems. Current standards require that this area be cooled and ventilated. To avoid detracting from the original appearance of the space, it is recommended that two small rooftop units be discretely located on the building roof near each end of the space. Supply diffusers should be located at the ceiling in close proximity to the units. This simple arrangement will not significantly change the appearance of the room.

Heating should be provided from hot water cast iron radiators located at the site of the original radiators.

Relief Air System

Although the louvered corridor doors on the first floor have been removed, the remainder of the original relief air system remains in place today. No changes are required to allow this system to perform as originally designed.

Exhaust Air System

Portions of the original gravity toilet exhaust system still exist. The original boys' toilet system has been modified, at some point in time, by the addition of an exhaust fan. Other than the exhaust grille, there is no viable reason for preserving the elements of this system.

Plumbing Systems

Sanitary Mains

The existing sanitary mains appear to be in good conditions. After testing and flushing, these drains can most likely be reused.

Sanitary Branches

Subsequent to the use of the building as a school, modifications and additions were made to the sanitary branch systems. All sanitary branches (new and original) should be removed and replaced as required. The same comments apply to the vent systems.

Plumbing Fixtures

The plumbing fixtures stored at the site that match the original fixtures may be cleaned and reused. However, all brass and all toilet seats must be replaced. The remainder of the fixtures should be discarded.

Domestic Water System

The domestic water piping system and domestic water heaters are in poor condition. These items, including the water supply line from the street, should be removed and replaced, conforming to current standards.

Wall Hydrants

The present wall hydrants should be removed and replaced.

Boiler Room Drainage

The present drainage system is inadequate and should be replaced.

Storm Drainage

The present system is essentially the same as the original and with a little work can continue to be used. Most of the basins at the termination of the down spouts are covered with concrete. It is uncertain if this was the original design. However, if the downspouts are not hard connected to the sewer, the basins should be provided with removable covers to facilitate cleaning. The basin at the northwest corner of the building is equipped with a catch basin grate above which the downspout terminates. This may have been original. In any event, this is a satisfactory arrangement and no change is required.

The downspout at the southwest corner of the building is disconnected from the gutter and should be fixed. The downspout just north of the front entrance has been disconnected from its basin and currently splashes on grade. This should be corrected.

Electrical Systems

Primary Service

The electrical utility should be contacted to provide a three-phase primary line in the alley in back of the property.

A pad-mounted transformer will be required in back of the building, with underground electrical service to a switchboard in the electrical room in the basement of the building.

Secondary Service

480 volt, 3 phase, 4 wire electrical service will be brought into the building to be used as follows:

- Motors larger than ½ H P 480 volt, 3 phase, 4 wire, 60 Hertz.
- Fluorescent lighting 277 volt, single phase, 60

Hertz.

- Incandescent lighting 120 volt, single phase, 60 Hertz.
- Motors smaller than ½ H P. 120 volt, single phase, 60 Hertz.
- 480-208Y/120 volt dry-type transformers will be located in first and second floor to feed low voltage panels.

Telephone Service

A new underground conduit will be brought from the utility pole to a Main telephone backboard located in the basement with conduit connections to all telephone outlets throughout the building.

Lighting

Classrooms

Pendant incandescent lighting fixtures compatible with the period will be installed.

Auditorium

The custom surface mounted incandescent light fixtures will be repaired and rewired. Supplemental lighting will be installed to argument repaired units.

Corridors

Pendant fluorescent lighting fixtures compatible with the period and incorporating emergency built-in inverters will be used.

Second floor offices

Fluorescent receded fluorescent fixtures compatible with computer and modern office work will be used.

Fire Alarm

A non-coded, supervised fire alarm system with individual point annunciation will be used with the following devices:

- Pull stations by the stair doors in the second floor and main exit doors of the building in the first floor
- Strobes and horns throughout corridors in first and second floor and strobes in large room.
- Smoke area detectors will be located in office areas and library.
- Heat detectors will located in mechanical and electrical rooms.
- Sprinkler supervision will be provided by monitoring supervisory valves and water flow switches.

Security

- A system using passive infrared sensors for intrusion detection and enhanced by glass breakage detector.
- Keypads in strategic location(s) to activate system.
- Connection to of site 24-hour monitoring central station
- This system could incorporate burglar alarm, fire alarm, holdup alarm, supervisory and other types of points with a maximum of 255 points.

Fire Suppression Systems

General

The original building had no fire protection. For maximum building protection, a sprinkler fire suppression system should be provided for the entire building including the basement. Per NFPA requirements, the system should be hydraulically designed for light hazard protection.

The following four system types offer possible solutions to the problem:

Pre-Action System

A pre-action system consists of standard fused sprinkler heads and piping along with a pre-action valve which is actuated by rate-of rise heat detectors located in each room of the building. The piping system is initially empty. An alarm signal from a heat detector opens the central pre-action valve which fills the piping system with water. This same alarm signal can trigger a broadcast an alarm to a 24 hour monitoring

station signaling that there is a risk of fire in the building. Extinguishing water is only discharged after a fusible link on an individual sprinkler head is melted from the heat of the fire.

In the event of an electrical system failure the system will be automatically filled with water so when a sprinkler fusible link melts the system will continue to provide protection for the building.

The advantages of this system include:

- Early warning of a possible fire.
- The excellent protection from water damage due to tampering with or accidental damage to a sprinkler head as there will be no water in the system unless a heat detector has been activated.
- The portions of the system beyond the pre-action valve are not subject to freezing as there is normally no water in the piping.

Disadvantages include:

- The installed cost of this system is considerably above the cost of a normal, water filled system.
- Subsequent to an electrical system failure the system must be totally drained of water.
- Of the four systems discussed, this system offers one of the better solutions to the problem. Unfortunately it is also one of the most expensive.

Firecycle System

The Firecycle system is very similar to the Pre-Action system as it requires both a signal from an area heat detector and the opening of a fusible link on a sprinkler head before water discharge can occur.

This system posses two additional features. The water discharge from the sprinkler head is automatically turned off when the temperature at the heat detector is reduced below the detector activation temperature and turned back on if the temperature again rises above the detector activation temperature. As with the Pre-Action system, an alarm signal can be broadcast to a monitoring station notifying that there is a risk of fire in the building when a heat detector alarms.

The advantages of this system include:

- Early warning of a possible fire.
- As there will initially be no water in the system unless a heat detector has been activated, this system provides best possible protection from water damage due, not only to tampering with or accidental damage to a sprinkler head, but also to the fact that, if the discharge occurs due to an actual fire the system will be automatically deactivated when the fire is extinguished.
- The portions of the system beyond the pre-action valve are not subject to freezing as there is normally no water in the piping.

Disadvantages include:

- The installed cost of this system is considerably above the cost of a normal, water filled system and is the most expensive of the systems considered in this report.
- Subsequent to an electrical system failure the system must be totally drained of water.

Dry Pipe System

Under normal conditions, the piping in this system is empty. The system is pressurized with air from an air compressor. Sprinkler heads are fused type. If a sprinkler head is activated, the drop in pressure opens a dry pipe system valve and allows water to flow into the system. As there is no pre-action the system does not provide early warning of a potential fire.

The advantages of this system include:

- This system provides good protection from freezing as there is, initially, no water in the system.

Disadvantages include:

- The installed cost of this system is approximately 20% above the cost of a normal, water filled system.
- Damage to or tampering with a sprinkler head

will result in immediate discharge of water.

- In the event of an electrical system failure, the system fails and the dry-pipe valve will not open in the event of a fire.
- At present quick response heads (see below) are not available for dry pipe systems.

Wet Pipe System

This system represents 90% of the sprinkler systems in this country. It consists of fused sprinkler heads served by a piping system that is always filled with liquid.

This system is the least expensive of the four systems discussed. However, systems installed in areas exposed to freezing temperatures must be filled with a glycol solution to prevent freezing of the liquid.

Advantages include:

- Lowest first cost.

Disadvantages include:

- Damage due to or tampering with a sprinkler head will result in immediate discharge of water.
- In the event a sprinkler head is accidentally damage, water will discharge into the protected space.
- Lack of an early warning feature.

Sprinkler Heads

Normal, "Standard", sprinkler heads are equipped with fusible links which melt at 165° F. Recently, sprinkler heads have been developed which will open at a considerably lower temperature (135° F.). Due to their heightened sensitivity, these "Quick Response" heads cannot be employed in all applications. They are commonly restricted to residential use. However, the added protection they provide warrant serious consideration for areas of the building that contain sensitive or irreplaceable materials.

Recommendations

Fire Suppression System

The piping distribution system should be concealed to avoid detracting from the interior appearance of the building. Sprinkler heads, wherever possible, should be semi-recessed type. As the corridor stairwells will remain "unenclosed", a water curtain should be located around the opening between floors. To be effective, this feature should be installed in the same manner as recommended by the NFPA for escalator openings. Head spacing and the smoke shelf should be as detailed in the appendix to NFPA #13.

Due to the value of the contents, the selection of a fire suppression system must be given careful consideration. There is no question that the Firecycle system affords the maximum protection as this system minimizes the extent of damage, if any, from the flow of water. The Pre-action system offers slightly less protection at a slight reduction in cost. Unfortunately the initial cost of both these systems is quite high and is questionable that either of these systems can be considered cost effective for this project.

A dry pipe system offers maximum protection from a freezing environment; however, if affords almost no protection in the event of the electrical failure.

The most cost effective and reliable system is the basic hydraulically designed standard sprinkler system. This is the system that is recommended to serve the Monroe School Building.

As there is a possibility of pipes freezing in the event of a heating system failure, it is recommended that the system be glycol filled. The added cost of this feature is more than compensated by the significant increase in system integrity.

ADA Compliance

Door and restroom configurations will be modified to make the building fully accessible. The doors must be widened to 36" and the restrooms provided with accessible fixtures.

The Main Entry on the east facade will require a small ramp to overcome the two concrete steps. Although potentially this could be avoided because of the historic status of the building and the ramp at the north entry, passage through the Main Entry provides an important architectural experience to the visitor. The

controlled, compressed space of the east vestibule accentuates the open volumes of the classrooms and auditorium.

Access to the second floor will require the installation of an elevator. This will also be beneficial to NPS people working in offices on the second floor, and will allow basement storage of gift shop products. The proposed design will allow the installation of an elevator without substantial modifications to the existing structure.

Site Issues

Parking

Currently, a parking area is planned for north of the school, on the other side of 15th street. Available parking on-site will be limited. Parking/drop-off areas must be made available to busses, this requires consideration of air quality from fumes.

From the minutes of the BRVB Meeting-January 26, 1994, estimated parking needs were 25-40 spaces, based on 90 minutes per visit, with 200-250 visitors on peak days. Parking would be needed for 2-4 buses.

Parking needs to be visually connected to the site, and positioned to allow easy access to the east entry.

Interior Treatment Recommendations

It is recommended that the existing interior fabric be restored to it's 1950-1954 condition. The materials used originally are still commonly available and appropriate for any programmatic use. The following interior treatment recommendations are made based on documentation and physical inspection, focusing on general issues related to the interior fabric of the building. These changes are likely to occur during any rehabilitation of the Monroe Elementary School, however, it is understood that all recommendations are subject to change, depending on the final interior design.

General

1. There are numerous areas of spalling plaster and peeling paint throughout the interior walls and ceilings. The most severe areas are in the auditorium's northwest corner, where the plaster has failed completely, and the second floor corridor ceiling where almost no finish plaster remains. Repair or replacement of plaster elsewhere must be determined on a case-by-case basis.
2. Fine cracks in otherwise sound plaster can be repaired.
3. Limited testing has confirmed the presence of lead paint at the site. This must be considered when undertaking repairs. In areas where the plaster is in good condition, the surface may only need to be repainted, thus encapsulating the lead. If plaster is to be removed, along with the lead paint on it, a more serious disposal program must be undertaken. The development of any lead abatement procedures will await the final testing reports and design decisions.
4. Remove non-original materials covering the wood floors. Sand lightly and refinish the floors. Replacement or repairs should be avoided. New wood will present an undesirable contrast to the old. Furthermore, the floors should not look "new" but should retain the character applied by 50 years' worth of school children.
5. Some of the existing flooring in the auditorium and offices appears to be vinyl asbestos tile. This material must be tested. If asbestos is found in the tile, an appropriate, safe abatement must be conducted.
6. Some of the tile wainscoting in the bathrooms is damaged. However, any action concerning the tile should await the final design.
7. The existing trim, both installed and stored on-site, should be retained until the final design. There is the potential to reuse much of this material in the renovation.
8. As part of the window repair discussed under exterior recommendations, the interior window hardware should be repaired or replaced, as appropriate.
9. The north and south stairwells should be returned to their original condition by removing the drywall enclosure installed in the early 1980s.

SCHEME 3, NOVEMBER 1997 (CURRENT)
Monroe Elementary School - Recommended Treatments
Floor Area Analysis

SUMMARY

	Area, SF	Walls, LF Load Bearing	Walls, LF Partition
Basement	990	79	384
First Floor	9949	1275	421
Second Floor	7357	859	980
TOTAL	18296	2213	1785

Basement

Area	SF	Walls, LF Load Bearing	Walls, LF Partition
Mech/Stor	189	67	0
Parts Storage	86	0	40
Maint. Office	199	0	60
Elevator Machine Room	33	0	22
Boiler Room	183	12	29
Exercise Room	193	0	57
Electrical Closet	43	0	16
Bathroom	64	0	35
Hall	241	0	125
Total	990	79	384

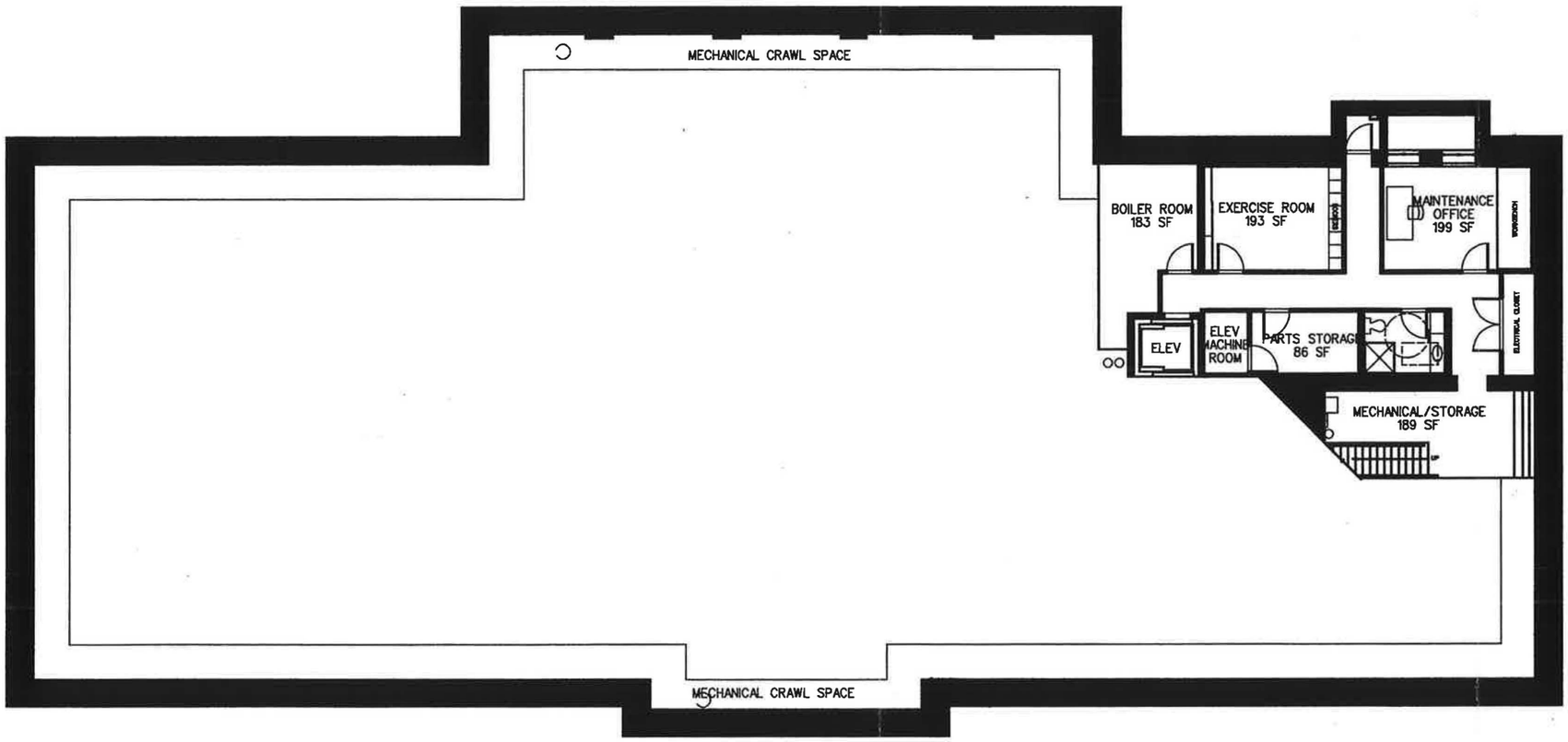
Total	990
Gross Area	1400
%	71%

First Floor

Area	SF	Walls, LF	
		Load Bearing	Partition
Public Spaces			
Gallery A	759	90	21.5
Gallery B	708	64	43
Gallery C	705	64	43
Gallery D	769	90	21.5
Exhibit Hall/Stage	2800	220	0
Reception/Video Room	816	93	25
Sales	681	61	43
Subtotal	7238	682	197
Administrative			
Ranger's Office	156	29.5	24
First Aid	133	26	21
Subtotal	289	55.5	45
Storage			
Receiving/Storage	220	42	18
Hall Closet	38	13	13
Chairs	51	4	33.5
Coats	36	4	25
Subtotal	345	63	89.5
Restrooms			
Mens	258	45.5	25
Womens	263	45.5	25
Ranger	62	16	16
First Aid	44	5.5	23.5
Subtotal	627	112.5	89.5
Corridor	1450	362	
Total	9949	1275	421
Gross Area	12000		
%	83%		

Second Floor

Area	SF	Walls, LF	
		Load Bearing	Partition
Public Spaces			
Library	778	67	60
Microfilm Room	136	12.5	34
Archives	136	12.5	34
Accessible Restrooms (3)	143	20	48
Subtotal	1193	112	176
NPS Offices			
Secretary/Reception	221	28.5	60
Conference Room	264	22	45.5
Superintendent	339	51.5	24
Restroom	44	6	20
Mail/Copy Room	192	29.5	30
Anteroom	127	16	31.75
Facility Director	230	30.5	30.25
Administrative Officer	230	17	43.5
Friends Group	483	21.6	44
Storage (2)	146	26	42.3
Subtotal	2276	248.6	371.3
Interpretive Offices			
Classroom 1	319	14.5	27
Classroom 2	165	9.75	27
Workspace	128	9.25	36.5
Resources & Education	239	14.25	49
Chief Interpretation Officer	171	26	36
Storage (2)	110	23	38
Hall	242	40	65
Subtotal	1374	136.75	278.5
Ranger Offices			
Offices	578	55.5	57
Break Room	285	39	36
Storage	135	33	17.5
Accessible Restroom	66	10	44.5
Subtotal	1064	137.5	155
Corridor	1450	362	
Total	7357	859.35	980.8
Gross Area	8300		
%	89%		



BASEMENT PLAN RECOMMENDATIONS

SCALE: 1/8"=1'-0"

ISSUED	
DATE	INITIAL
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06/25/97	BLR
10/21/97	BLR
11/11/97	BLR

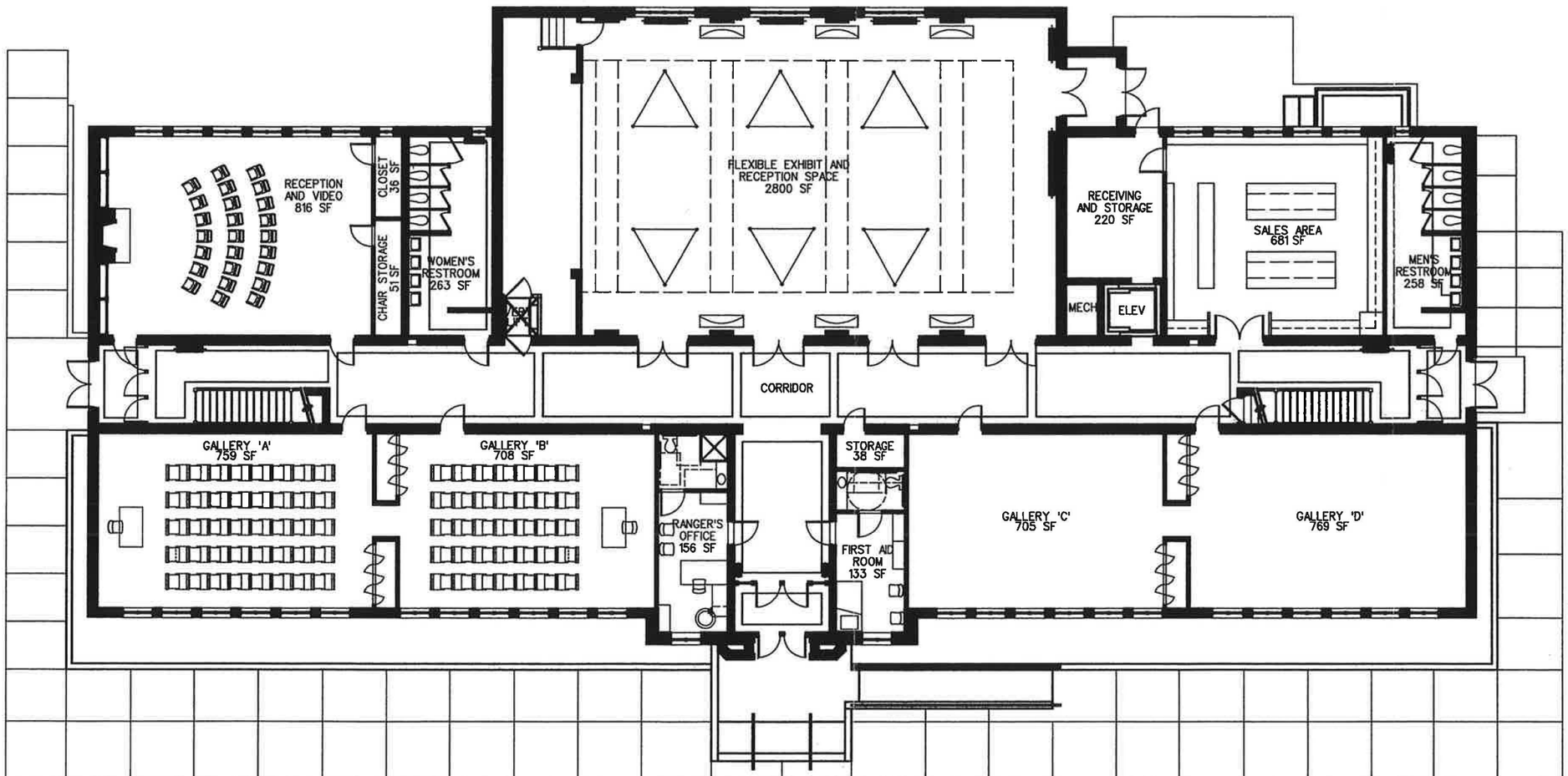
PREPARED
DESIGNED BLR/DAR
DRAWN BLR/DAR
CHECKED SCJ
FIRM QUINN EVANS ARCHITECTS

SHEET TITLE
PRELIMINARY DESIGN BASEMENT PLAN

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
PLANNING RESOURCE PRESERVATION
GREAT PLAINS SYSTEM OFFICE

MONROE ELEMENTARY SCHOOL (HS-01)
Brown vs. Board of Education National Historic Site
Topeka, Kansas

FILE NAME 531REC-B.DGN
SUB SHEET NO. A100
DRAWING NO. NPS ISSUED NO
SHEET 1 OF 4



FIRST FLOOR PLAN RECOMMENDATIONS

SCALE: 1/8" = 1'-0"

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06/25/97	BLR
10/21/97	BLR
11/11/97	BLR

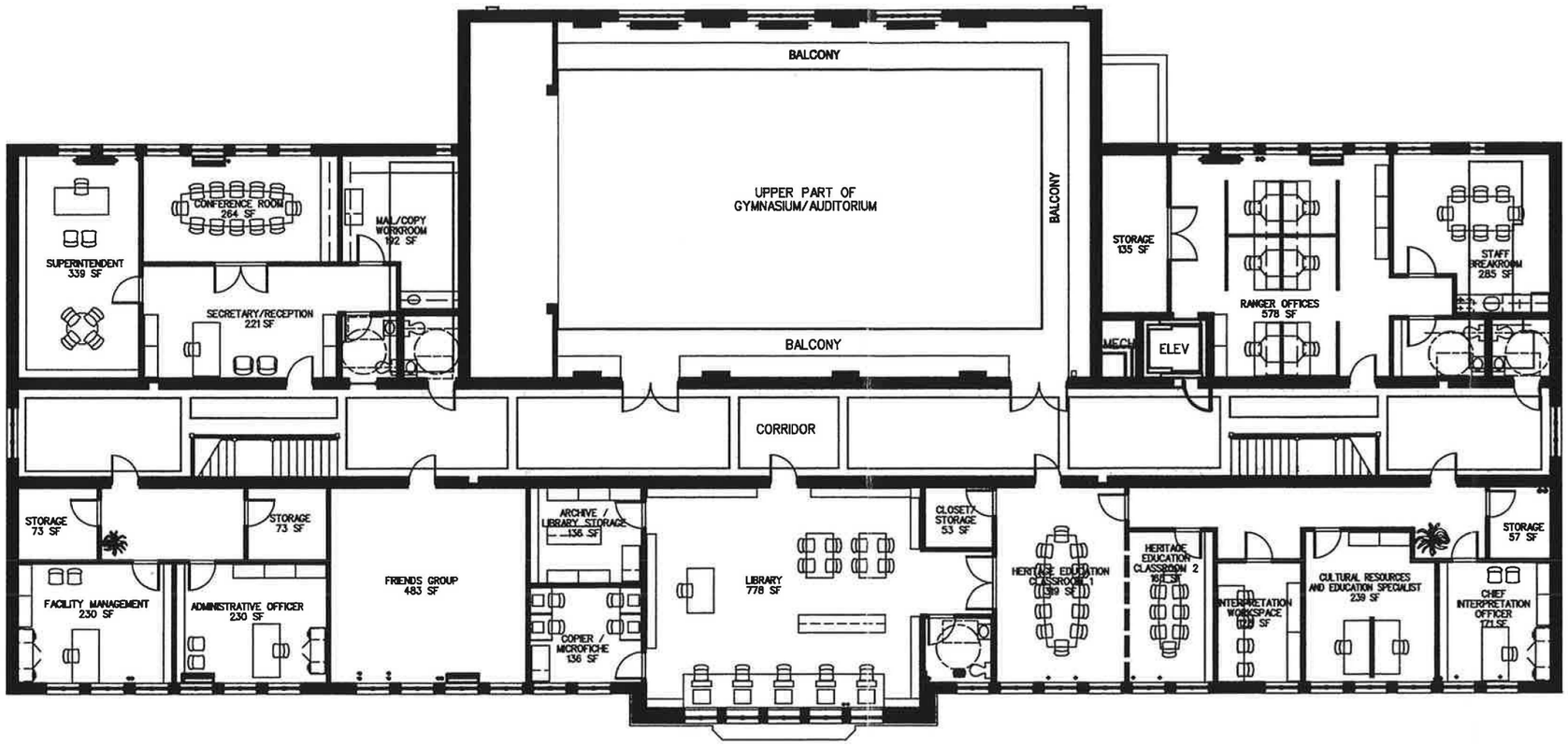
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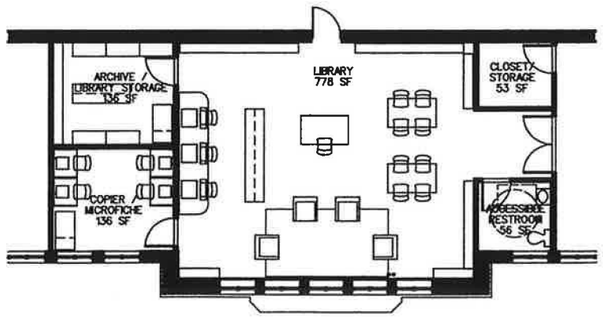
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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
PLANNING RESOURCE PRESERVATION
GREAT PLAINS SYSTEM OFFICE

MONROE ELEMENTARY SCHOOL (HS-01)
Brown vs. Board of Education National Historic Site
Topeka, Kansas

FILE NAME 531REC01.DGN
SUB SHEET NO. A101
DRAWING NO. NPS ISSUED
SHEET 2 OF 4





LIBRARY, ALTERNATIVE DESIGN

SCALE: 1/8"=1'-0"

SECOND FLOOR PLAN RECOMMENDATIONS

SCALE: 1/8"=1'-0"

ISSUED	
DATE	INITIAL
05/16/97	DAR
06/25/97	BLR
10/21/97	BLR
11/11/97	BLR

PREPARED
DESIGNED BLR/DAR
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CHECKED SCJ
FIRM QUINN EVANS ARCHITECTS

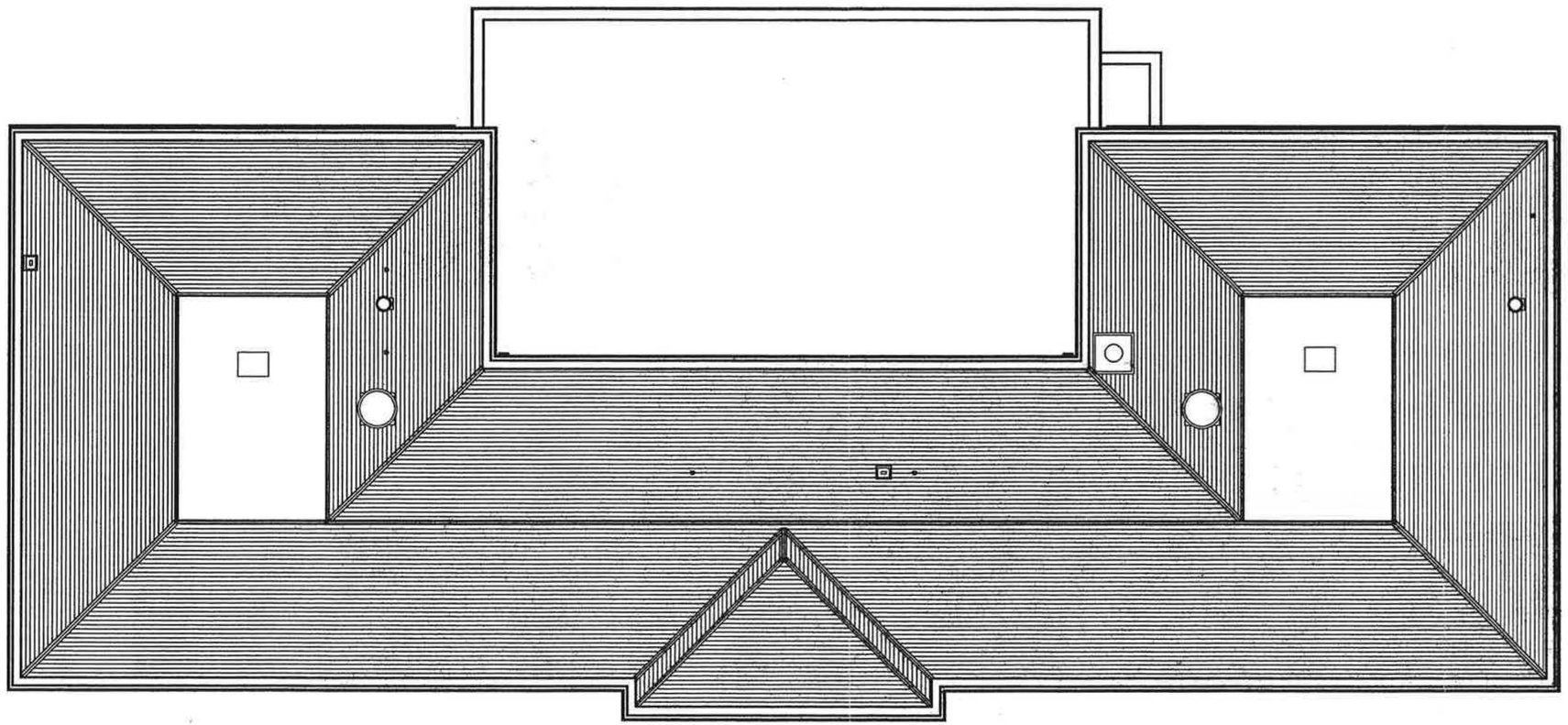
SHEET TITLE
PRELIMINARY DESIGN
2ND FLOOR PLAN

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
PLANNING RESOURCE PRESERVATION
GREAT PLAINS SYSTEM OFFICE

MONROE ELEMENTARY SCHOOL (HS-010)
Brown vs. Board of Education National Historic Site
Topeka, Kansas

FILE NAME 531REC01.DGN
SUB SHEET NO. A102

DRAWING NO. NPS_ISSUED_NO
SHEET 3 OF 4



ROOF PLAN RECOMMENDATIONS

SCALE: 1/8"=1'-0"

ISSUED	
DATE	INITIAL
05/16/97	DAR
06/25/97	BLR
11/11/97	BLR

PREPARED
DESIGNED BLR/DAR
DRAWN BLR/DAR
CHECKED SCJ
FIRM QUINN EVANS ARCHITECTS

SHEET TITLE
PRELIMINARY DESIGN ROOF PLAN

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
PLANNING RESOURCE PRESERVATION
GREAT PLAINS SYSTEM OFFICE

MONROE ELEMENTARY SCHOOL (HS-01)
Brown vs. Board of Education National Historic Site
Topeka, Kansas

FILE NAME 531REC03.DGN
SUB SHEET NO. A103
DRAWING NO. NPS_ISSUED_N
SHEET 4
OF 4

Part I

Research Recommendations

Part I: Research Recommendations

Cultural Landscape Report

The site surrounding the Monroe Elementary School was used as playground for the entire life of the building. Outdoor play was considered vital to the mental and physical development of children. A well-tended school yard was also believed to contribute to community pride and encourage good citizenship. A Cultural Landscape Report should be completed on the Monroe Elementary School grounds. The physical building, while important, must be considered in terms of its immediate context.

Archeological Research

There are records of two previous Monroe Elementary Schools located at the intersection of Monroe and 15th Streets. The second school was located about 12 feet north of the current building. There are also records of housing on the site. One house was rented by the school board while the first school was being built. Archeological investigation may reveal the foundations of these buildings, providing information on previous site development. Archeological testing may also reveal the locations of the original playground equipment, aiding in reconstruction of the playground.

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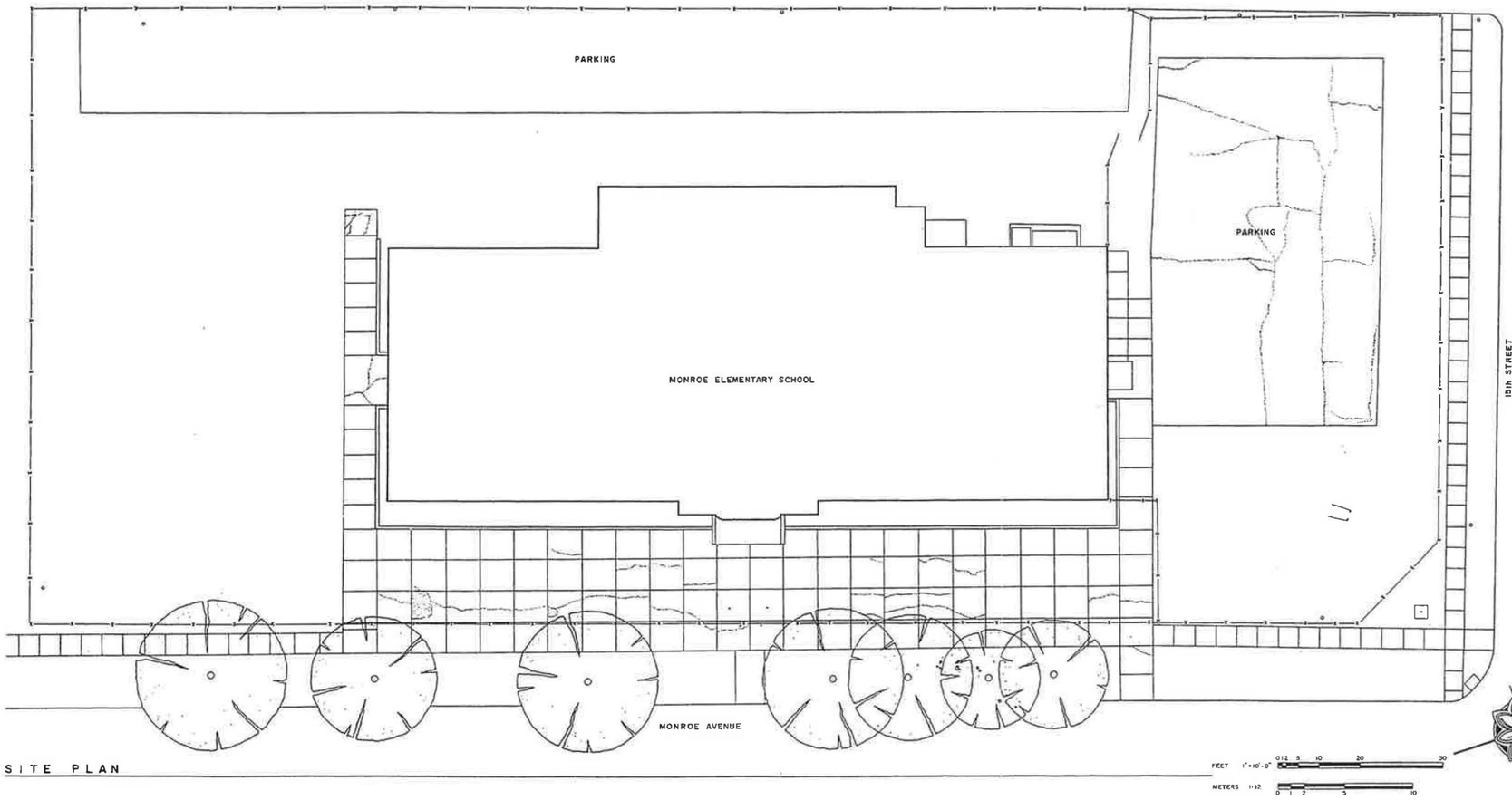
Part H: Design Recommendations

Figure 1
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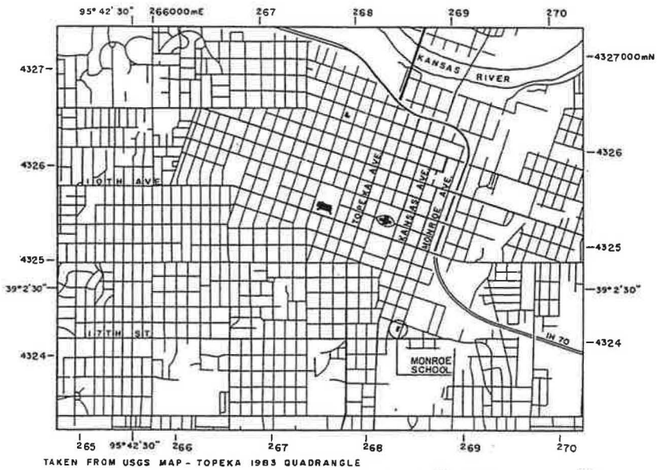
Appendix A

Existing Condition Drawings

MONROE ELEMENTARY SCHOOL



SITE PLAN



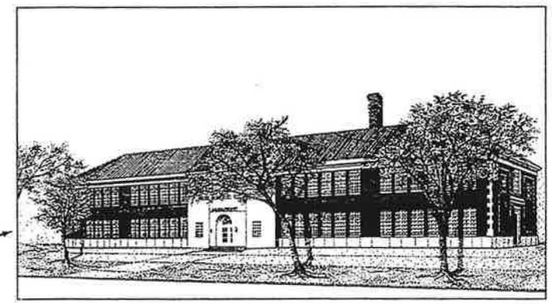
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LOCATION MAP

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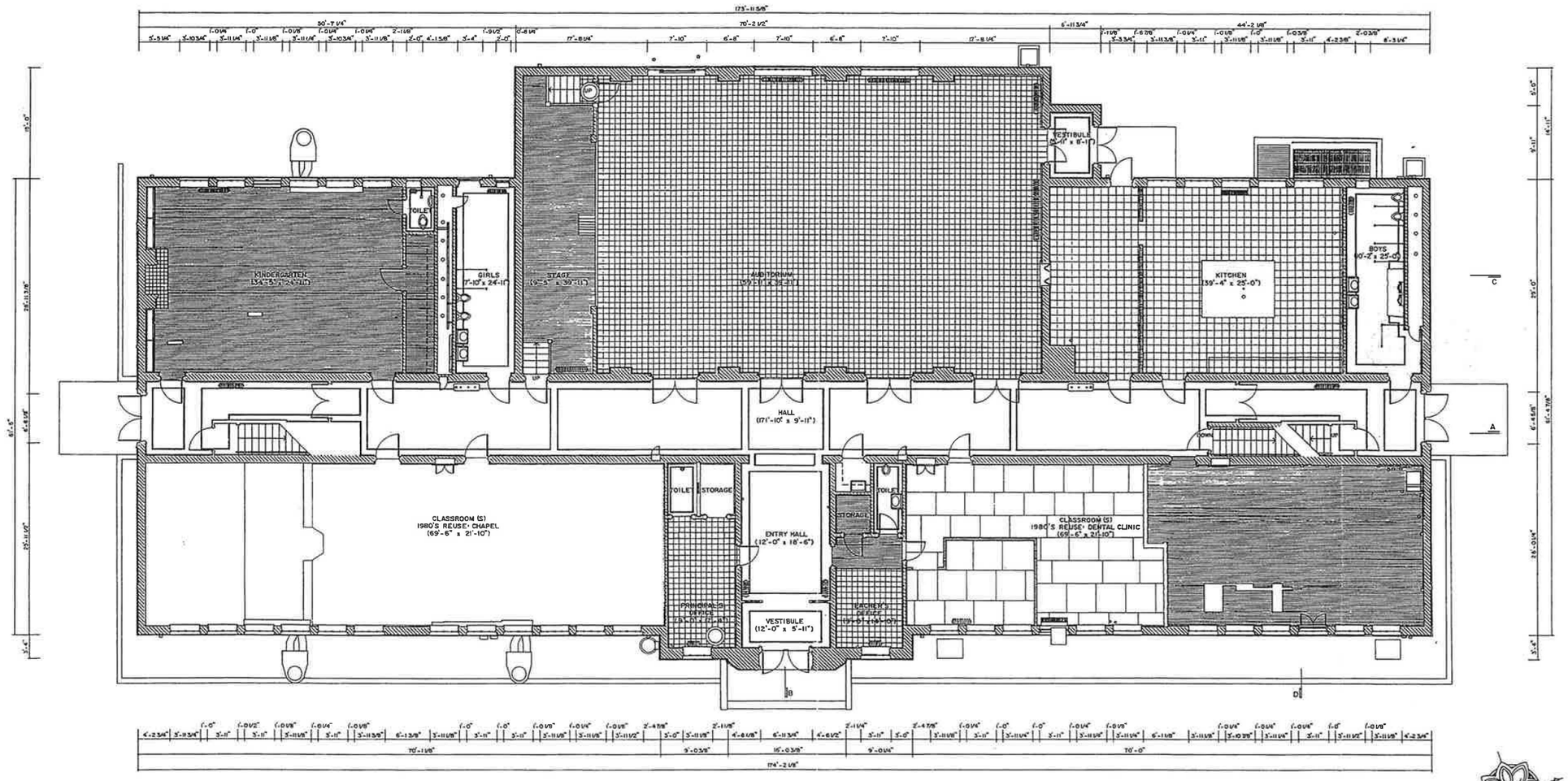
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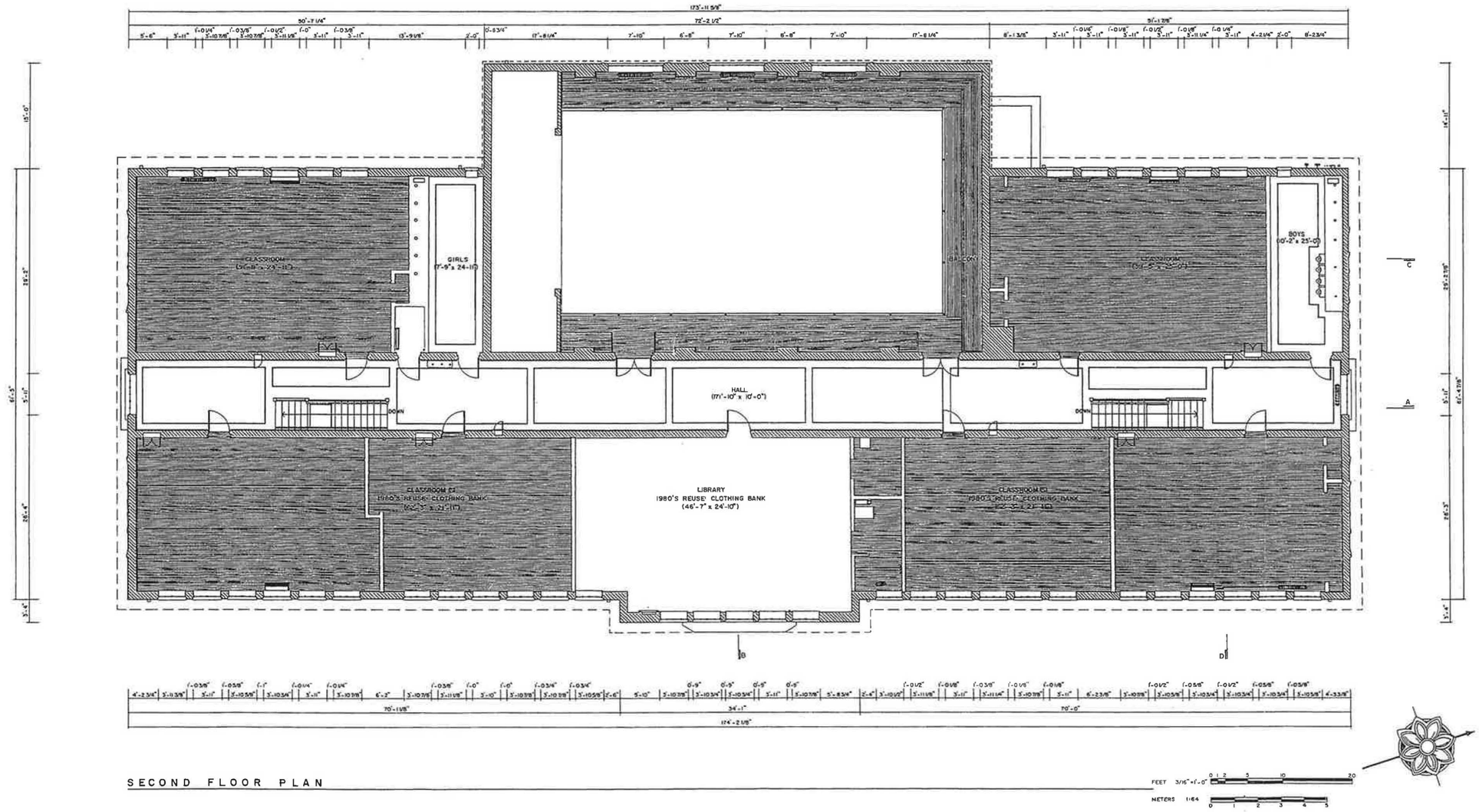
SCHOOL AS SEEN IN 1927

REVISED		PREPARED	RECOMMENDED	UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE PLANNING RESOURCE PRESERVATION GREAT PLAINS SYSTEMS OFFICE	AUTOCAD FILE NO.	DRAWING NO.
DATE	INITIAL	DAR DESIGNED	PARK SUPERINTENDENT DATE			462 / 80002
		DAR DRAWN	CONCURRED		SUB SHEET NO.	
		SCJ CHECKED	GPSO SUPERINTENDENT DATE	MONROE ELEMENTARY SCHOOL (HS-01) BROWN VS. BOARD OF EDUCATION, NATIONAL HISTORIC SITE TOPEKA, KANSAS	SITE PLAN G000	SHEET 001 OF 16
		DATE	APPROVED MFA FIELD DIRECTOR DATE			



FIRST FLOOR PLAN

DESIGNED:	SUB SHEET NO.	UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE PLANNING RESOURCE PRESERVATION GREAT PLAINS SYSTEM OFFICE	DRAWING NO. 462 80002
DRAWN:	1ST FLOOR PLAN		
TECH. REVIEW:	A 101	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	PKG. NO. / SHEET 3 OF 16
DATE: /			

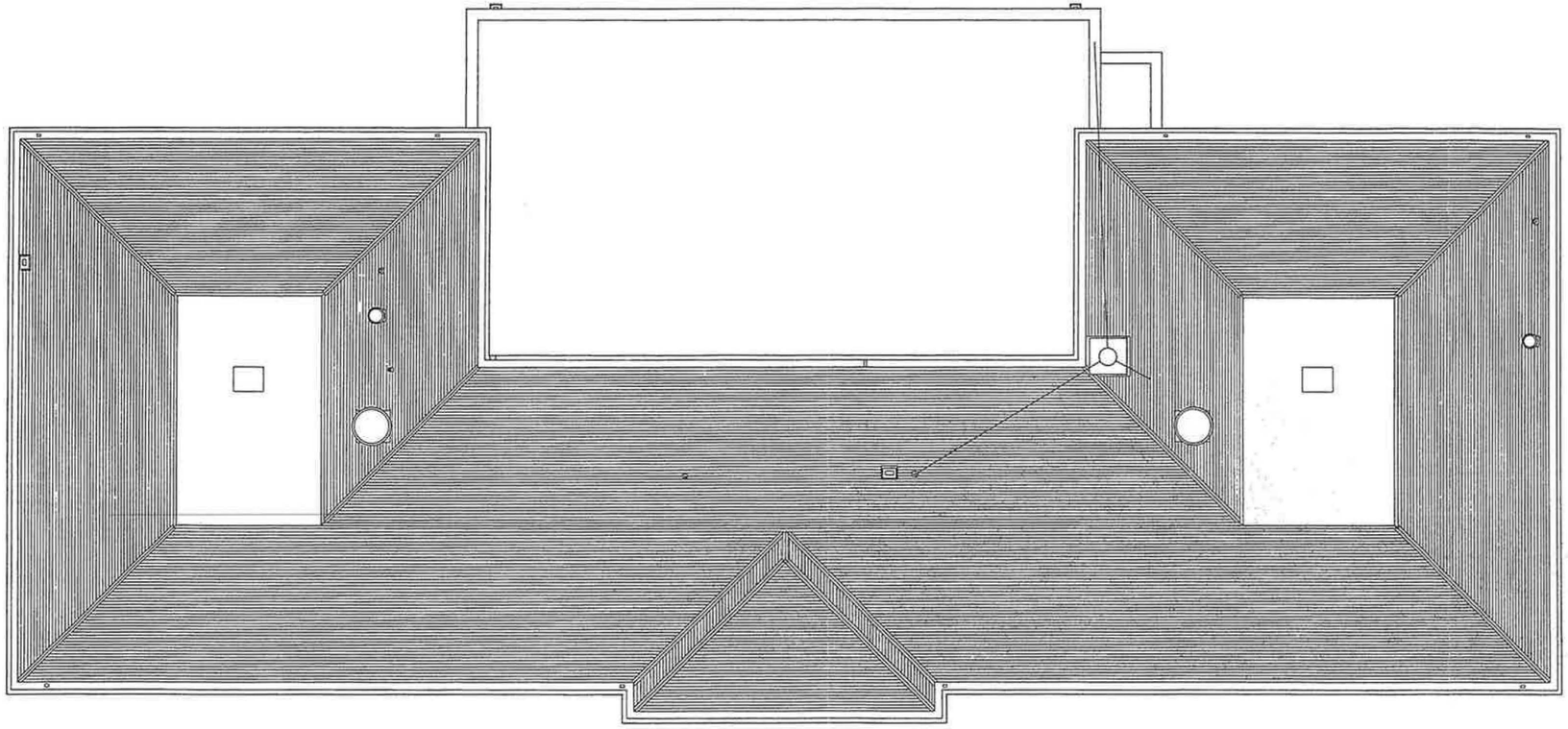


SECOND FLOOR PLAN

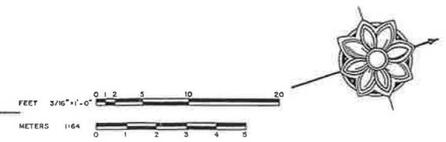
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DRAWN:	2ND FLOOR PLAN	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	PKG. NO. / SHEET 4
TECH. REVIEW:	A 102		OF 16
DATE: /			



ROOF PLAN



DESIGNED:	SUB SHEET NO.	UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE PLANNING RESOURCE PRESERVATION GREAT PLAINS SYSTEM OFFICE	DRAWING NO. 462 80002
DRAWN:	ROOF PLAN		
TECH. REVIEW:	A 103	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	PKG. NO. / SHEET 5 OF 16
DATE: /			

CO. E DRILLING AND TESTING REPORT

Client: Quinn-Evans Architects Job No.: 14951171

Date 11/01/95

Project: Monroe School, 1926 Structure

15th and Quincy Streets, Topeka, Kansas

CORE NO.	1	2	3	4	5
LOCATION	2nd Floor Wall Between Room 208 and Room 209	2nd Floor Wall Between Room 215 and Room 216	1st Floor Room 110	Attic Above Room 206	Attic Above 2nd Floor Corridor by Room 214
DATE DRILLED	10/26/95	10/26/95	10/26/95	10/26/95	10/26/95
STEEL DEPTH ENCOUNTERED (inches)	3.2	2.1	3.1	None	None
RECOVERED CORE (inches)	3.250	2.975	3.320	2.900	5.100
CONCRETE THICKNESS (inches)	3.250	2.975	3.320	2.900	5.100
PREPARED CORE (inches)	3.020	2.820	3.080	2.880	4.900
COARSE AGGREGATE	-	-	-	-	-
COMPRESSIVE STRENGTH TESTS					
CAPPED HEIGHT (inches)	3.446	3.092	3.500	3.231	5.142
DIAMETER (inches)/dimensions	3.045x3.080	2.830x2.690	3.170x3.050	2.940x2.990	2.677
AREA (sq. in.)	9.379	7.613	9.668	8.791	5.628
L/D RATIO	N/A	N/A	N/A	N/A	1.92
CORRECTION FACTOR	N/A	N/A	N/A	N/A	.99
TOTAL LOAD (lbs.)	63,000	25,000	75,500	62,000	17,500
CORRECTED LOAD (lbs.)	N/A	N/A	N/A	N/A	17,325
UNIT LOAD (psi)	6,720	3,280	7,810	7,050	3,080
TYPE FRACTURE	thru Agg.	thru Agg.	thru Agg.	thru Agg.	thru Agg.
DATE TESTED	11/01/95	11/01/95	11/01/95	11/01/95	11/01/95
DENSITY (PCF)	-	-	-	-	-

REMARKS: 1. Above cores drilled with inch diameter drill in locations established by

2. Cores were prepared and tested in a moist condition in accordance with ASTM C42 requirements.
3. Core numbers 1, 2, 3, & 4 were obtained with a 6 inch diameter core bit, samples were trimmed to cubes.
4. Core number 1; north bottom of core concrete was not consolidated, trimmed cube appeared to be consolidated concrete.
5. Core number 2; bottom portion of cube, concrete was not consolidated.
6. Core numbers 3, 4, & 5; concrete all appeared to be consolidated.
7. Steel encountered appeared to be a mesh, approximate measured diameter of .172 inches.

Terracon

orm 148

No.	Bldg	Part	Notes & Comments
102	Roof framing	South west corner	Typical intermediate rafter support; cantilevers to corner from struts.
103	Roof framing	South west corner	Intermediate support diagonal for rafters. Longitudinal intermediate support (2) 1 1/2 x 5 5/16; Roof rafter 1 1/2 to 1 9/16 x 7 to 7 1/6 @ 24" to 24 1/2" centers; diagonal strut at 48" typically but at 24" centers at photo location.
104	Roof framing	South west corner	Brick masonry knee wall from concrete attic floor; 17 3/4" ± high with 2 x plate and 1 x horz. filler between rafters.
105	Roof framing	South west corner	Typical intermediate rafter support; cantilevers to corner from struts.
106	Roof framing	South west corner	Intermediate support diagonal for rafters. Longitudinal intermediate support (2) 1 1/2 x 5 5/16; Roof rafter 1 1/2 to 1 9/16 x 7 to 7 1/6 @ 24" to 24 1/2" centers; diagonal strut at 48" typically but at 24" centers at photo location.
107	Roof framing	South west corner	Brick masonry knee wall from concrete attic floor; 17 3/4" ± high with 2 x plate and 1 x horz. filler between rafters.
108	Roof framing	South end	3 1/2 x 31/2 post upper portion at central north east corner; very tall and slender; several posts show signs of bowing (buckling Euler); several posts have additional reinforcing members.
109	Roof framing	South end	3 1/2 x 31/2 post lower portion at central north east corner; very tall and slender; several posts show signs of bowing (buckling Euler); several posts have additional reinforcing members.
110	Roof framing	Middle pitched area	From the south toward the west side.

No.	Bldg	Part	Notes & Comments
111	Roof framing	Middle pitched area	From the south toward the middle.
(112 not used) 113	Roof framing	Middle pitched area	from the south toward the east side.
114	Roof framing	middle pitched area	from the south toward the middle north).
115	Roof framing	South end from above	Toward the south west corner.
(116 not used) 117	Roof framing	South end from above	Toward the south side.
118	Roof framing	South end from above	Toward the west side.
(119 not used) 120	Attic floor	South area middle	East to west crack in concrete attic floor (ceiling of second floor).
121	Attic floor	North area middle	East to west crack in concrete attic floor (ceiling of second floor); Appears that attempt made to repair crack.
122 & 123	Roof framing	North area; west side south rafters	Repaired rafters; There are seven repaired rafters from the east corner of this wall (chimney) toward the west.

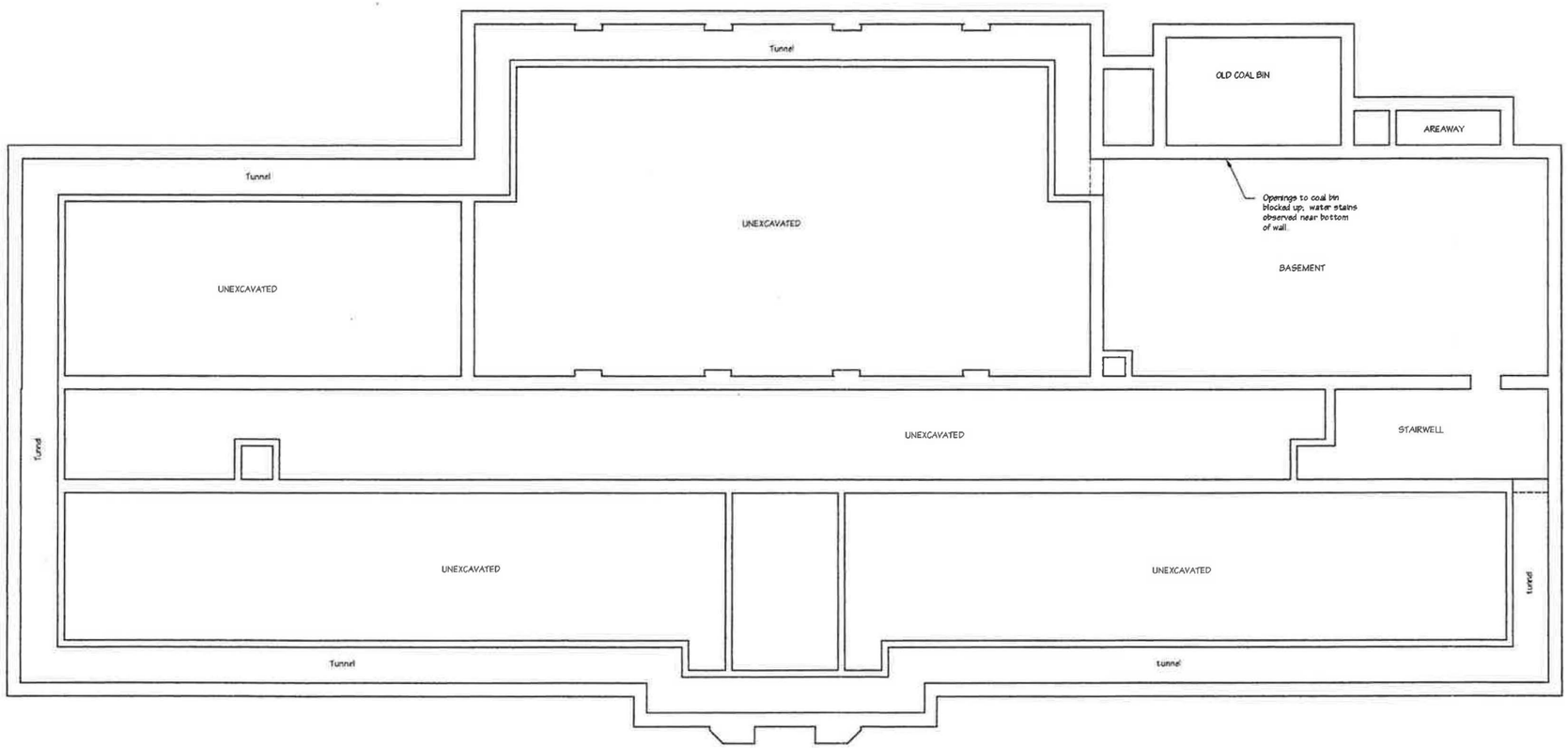
No.	Bldg	Part	Notes & Comments
124	Attic floor	North end; west side south wall.	Major east west crack running east to west along parapet wall just north of beam line below.
125	Attic floor	Middle area	East west crack in concrete; typical of several locations in this part of the attic floor.
126	Second floor	South end of corridor	East west crack in terrazzo floor; typical of several locations in the corridor.
127	Second floor	South end? classroom on west side?	Typical structural clay tile bearing wall between the corridor and the classroom area.
128	Second floor	Corridor at south stairwell	Corner cracking in terrazzo floor at south west corner of stairwell.
129 & 130	Second floor	East side (south east area)	Underside of attic floor joist framing at removed partition; note re-bar at removed concrete.
131	Second floor	East side (2nd door from the south stair)	A large area of floor appears to have concrete topping in place of the normal wood sleeper floor; I don't think the topping is original construction; When was it added? What affect does it have on the floor capacity in this area? Is it light weight or normal weight?
132	Second floor; Audit-orium	Balcony	South east balcony.
133	Second floor; Audit-orium	Balcony	South west balcony.

No.	Bldg	Part	Notes & Comments
134	Second floor; Audit-orium	Balcony	East wall at south end.
135	Second floor; Audit-orium	Balcony	East wall middle section.
136	Second floor; Audit-orium	Balcony	East wall middle section
137 (E)	Second floor; Audit-orium	Balcony	North east corner.
200	Exterior	North east corner	
201	Exterior	North east corner	
202	Exterior	Front east elevation	
203	Exterior	Front east elevation	

No.	Bldg	Part	Notes & Comments
204	Exterior	South elevation	
205	Exterior	South elevation	
206	Exterior	South east corner	
207	Exterior	South elevation	
208	Exterior	South west corner	
209	First floor	Auditorium	North east corner of balcony
210	First floor	Auditorium	North west corner of balcony; note removed plaster and exposed structural clay tile bearing walls; may have been moisture damage.
211	First floor	Auditorium	South west corner
212	First floor	Auditorium	South east corner.

No.	Bldg	Part	Notes & Comments
213 & 214	First floor	Bottom of second floor; north east classroom area	Exposed concrete joist rib reinforcing; reinforcing is deformed round steel bars; located at the midspan of the second partition line from the north wall.
215	First floor	Bottom of second floor; north east classroom area	Exposed concrete joist rib reinforcing; reinforcing is deformed round steel bars; located at the midspan of the first partition line from the north wall; note second floor joist soffits and ribs are board formed.
216	Boiler room	South west corner at pipe tunnel	
217	Boiler room	South west corner at pipe tunnel	Close up of pipe tunnel; note that the concrete tunnel slab (first floor slab) is formed over an expanded metal lath system; construction dates are too early for the system to be an integral reinforcing?
218	Boiler room	West wall	Blocked up opening to original coal bin room; Verify if the room still exists or was filled in; note water staining near bottom of cmu; note flat arch over opening.
219	Boiler room	First floor joist	Toward the north end of room; fourth rib from north wall re-bar exposed near midspan, wider rib than adjacent typical joists (8" ±); adjacent joist to the north measure 16" ± from face of rib (about 23"± c/c of ribs); Depth of rib from soffit slab is 12 to 12 1/2".
220	Boiler room	First floor joist	East wall joist bearing; note typical joist rib is 6" ± wide and about 32" clear between face of ribs (spaced at 38"± c/c of ribs); Depth similar to 219 above; Fourth rib from north wall is the middle rib shown.
221	Boiler room	First floor joist	East wall joist bearing; note typical joist rib is 6" ± wide and about 32" clear between face of ribs (spaced at 38"± c/c of ribs); Depth similar to 219 above; Fourth rib from north wall is the rib to the right.
222	Boiler room	East wall at north end	Pipe opening and part of access door from stairwell.

No.	Bldg	Part	Notes & Comments
223	Boiler room	East wall north end	Door access from the stairwell; note brick masonry arch.
224	Boiler room access	First floor beams & slab	West of stair opening
225	Boiler room access	First floor beams & slab	East side looking toward the south at stair opening.
226	Boiler room access	Stair down to boiler room.	
227	Boiler room access	First floor beam & slab	West side of stair opening; note east west crack in slab parallel to beam; This type of crack is mirrored in the terrazzo floor above.
228 & 229	First floor	North south corridor	Note that terrazzo cracking in this floor is limited to areas over supported slabs e.g. at north stair, boiler room; slabs on grade show very little (if any) cracking.
230	First floor	North stair underside	Second floor framing from the north at stairwell.
231 & 232	First floor	North stair underside	Second floor stair framing from the south.
233 & 234	First floor	North stair underside	Soffit of stair run to second floor taken from the boiler room access stair.



West
Project North
East

Scale: 1/8" = 1'-0"

8 6 4 2 0 8 16

SCALE OF FEET

Plotted 1/2 size

True North

Fitzpatrick Structural Engineering, P.C.
219-1/2 N. Main • Ann Arbor • MI • 48104
313-769-0320 Fax 313-769-3015

QUINN EVANS ARCHITECTS
219 1/2 N. Main Street
Ann Arbor, Michigan 48104
313 665 [illegible]

REVISED	
DATE	INITIAL

PREPARED
TRF
DESIGNED
TRF
DRAWN
TRF
CHECKED
03-21-97
DATE

TITLE OF SHEET
EXISTING CONDITIONS HISTORIC STRUCTURES REPORT
BASEMENT

BASEMENT PLAN

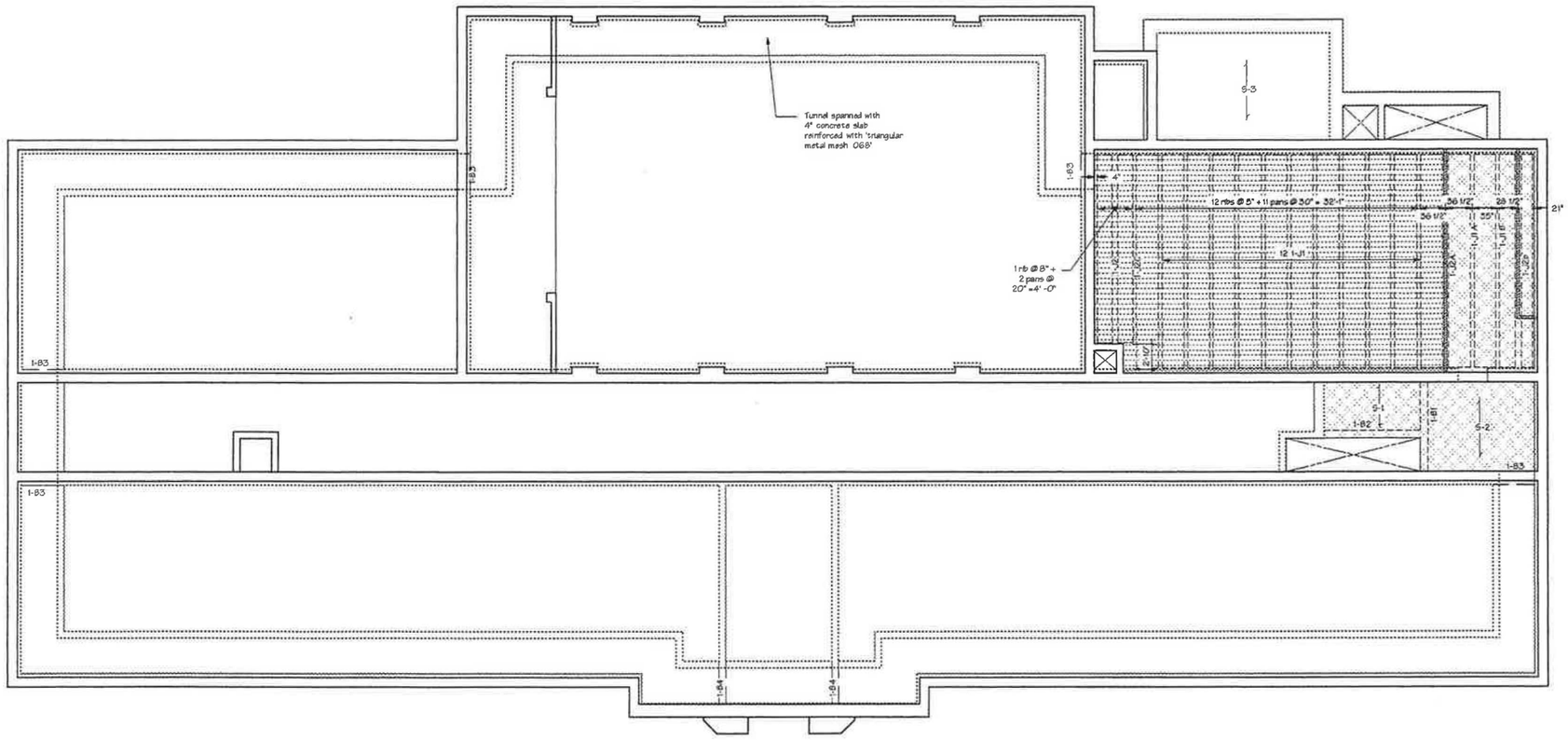
MONROE SCHOOL
BROWN V. BOARD OF EDUCATION
NATIONAL HISTORIC SITE, TOPEKA, KANSAS

AUTOCAD FILE NO.
SUB SHEET NO.
EXS -100

DRAWING NO.
462
80002
SHEET 1
OF 6

First Floor Beam Data				
Mark	b inch	h inch	reinf straight	Reinf bent
1-B1	10	15	#7	#7
1-B2	10	15	#7	#7
1-B3	18	6	4 - #4	-
1-B4	9	6	3 - #4	-

First Floor Slab Data				
Mark	h inch	reinf main	reinf tran.	Comments
S-1	5 1/2	#3 @ 7 1/2 E-W	#2 @ 12 N-S	30 psf terrazzo finish
S-2	5 1/2	#4 @ 6 E-W	#2 @ 12 N-S	30 psf terrazzo finish
S-3	7	#5 @ 7 E-W	#2 @ 12 N-S	Exterior slab over coal bin reported to be filled in.



2-1/2" +/- wood sleeper floor

1-1/2" terrazzo on est. 1" grout bed

Joist Data First Floor									
Mark	b inch	h inch	south pan rib north pan (inch)	reinf str.	reinf bent	stir-rups	Ceiling load psf	Floor load south / north psf	partition plf
1-J1	5	14.5	30 5 30	#8	#8	#2	0	5 5	no
1-J1a	5	14.5	30 5 30	#8	#8	#2	0	30 30	no
1-J1b	5	14.5	30 5 22	#8	#8	#2	0	30 30	no
1-J1C	5	14.5	20 5 30	#8	#8	#2	0	5 5	no
1-J2	8	14.5	20 8 20	2-#8	#8	#2	0	5 5	no
1-J2a	8	14.5	30 8 30	2-#8	#8	#2	0	5 30	336
1-J2b	8	14.5	22 8 15	2-#8	#8	#2	0	30 30	336

Floor, slab, joist, and beam data from Thos. W. Williamson & Co. Architects, Drawing 17, Monroe Grade School, 1927.

West
Project North
East

Scale: 1/8" = 1'-0"

8 6 4 2 0 8 16

SCALE OF FEET

True North

Plotted 1/2 size

Fitzpatrick Structural Engineering, P.C.
219-1/2 N. Main • Ann Arbor • MI • 48104
313 - 769 - 0320 Fax 313 - 769 - 3015

QUINN EVANS ARCHITECTS
219 1/2 N. Main Street
Ann Arbor, Michigan 48104
313 665 6888

REVISED	
DATE	INITIAL

PREPARED
TRF
DESIGNED
TRF
DRAWN
TRF
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03-21-97
DATE

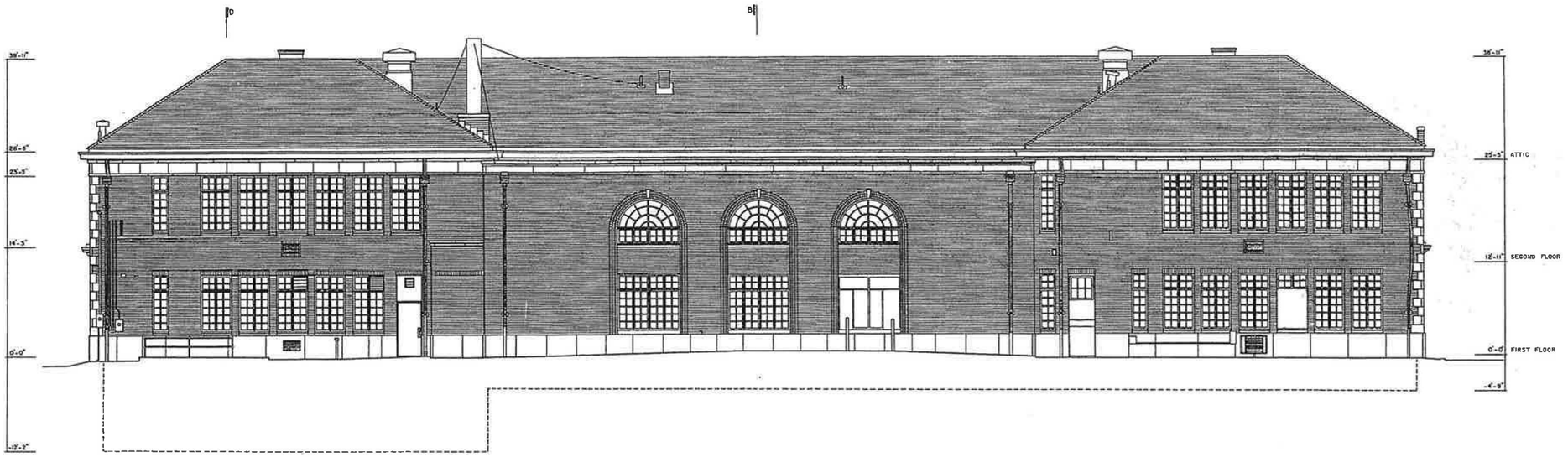
TITLE OF SHEET
EXISTING CONDITIONS HISTORIC STRUCTURES REPORT
FIRST FLOOR FRAMING

FIRST FLOOR FRAMING PLAN

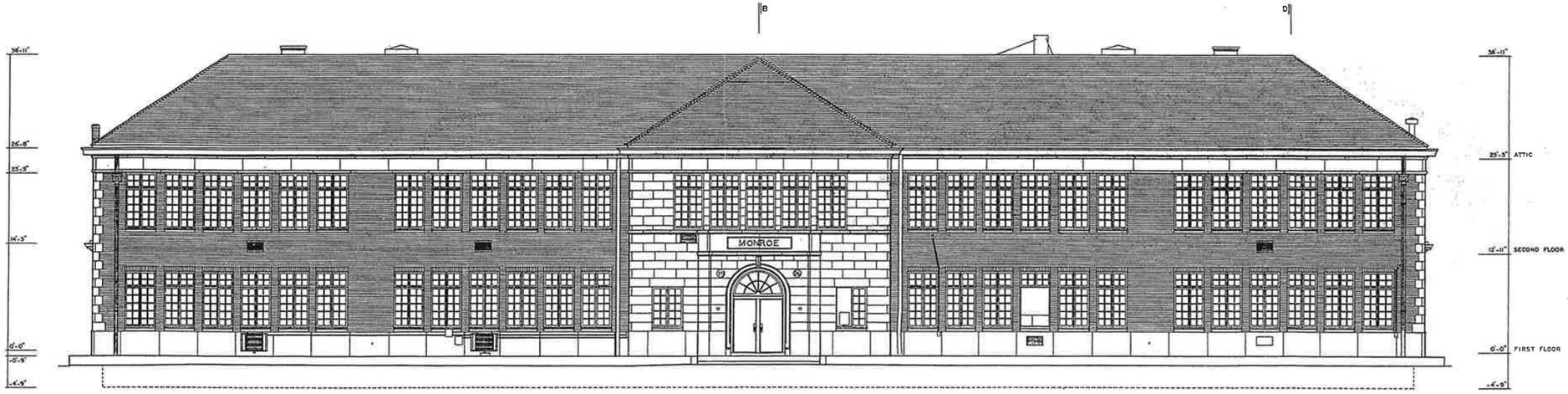
MONROE SCHOOL
BROWN V. BOARD OF EDUCATION
NATIONAL HISTORIC SITE, TOPEKA, KANSAS

AUTOCAD FILE NO.
SUB SHEET NO.
EXS -101

DRAWING NO.
462
80002
SHEET 2
OF 6



WEST ELEVATION

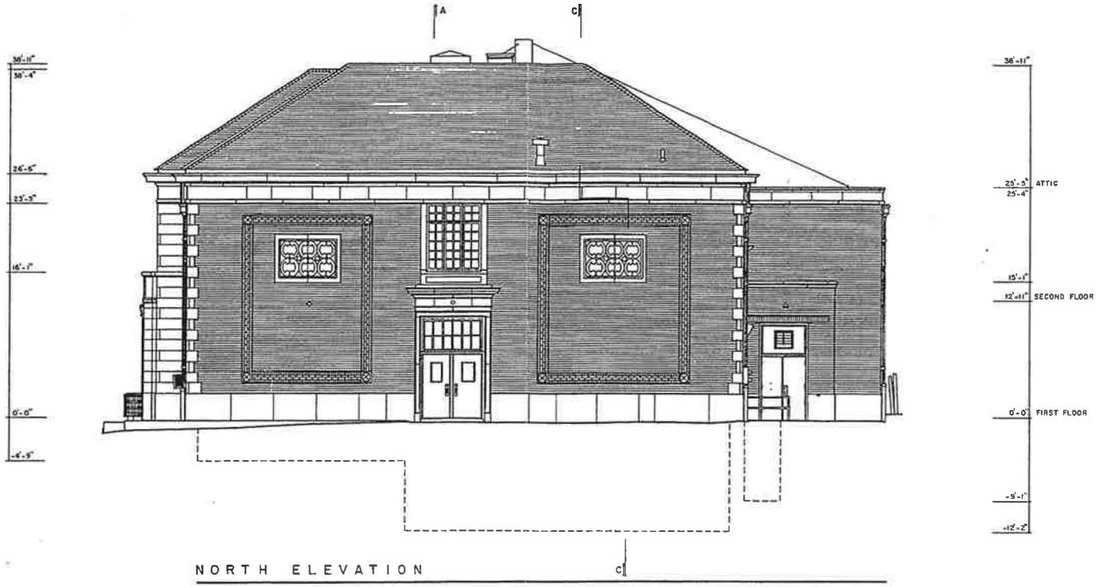


EAST ELEVATION

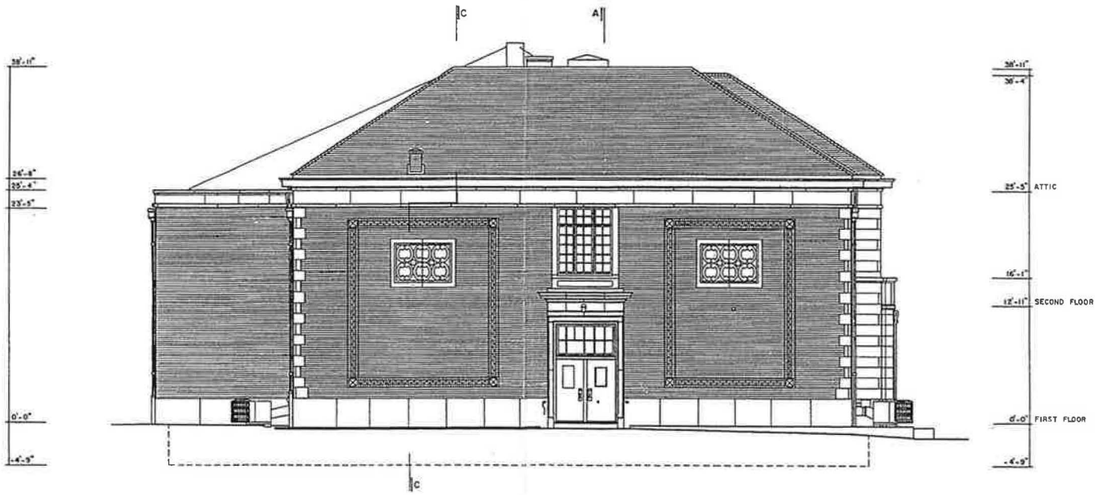
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METERS 1:64 0 1 2 3 4 5

DESIGNED:	SUB SHEET NO.	UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE PLANNING RESOURCE PRESERVATION GREAT PLAINS SYSTEM OFFICE	DRAWING NO. 462 80002
DRAWN:	EAST & WEST ELEVATIONS		
TECH. REVIEW:	A 200	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	PKG. NO. / SHEET 6 OF 16
DATE: /			



NORTH ELEVATION

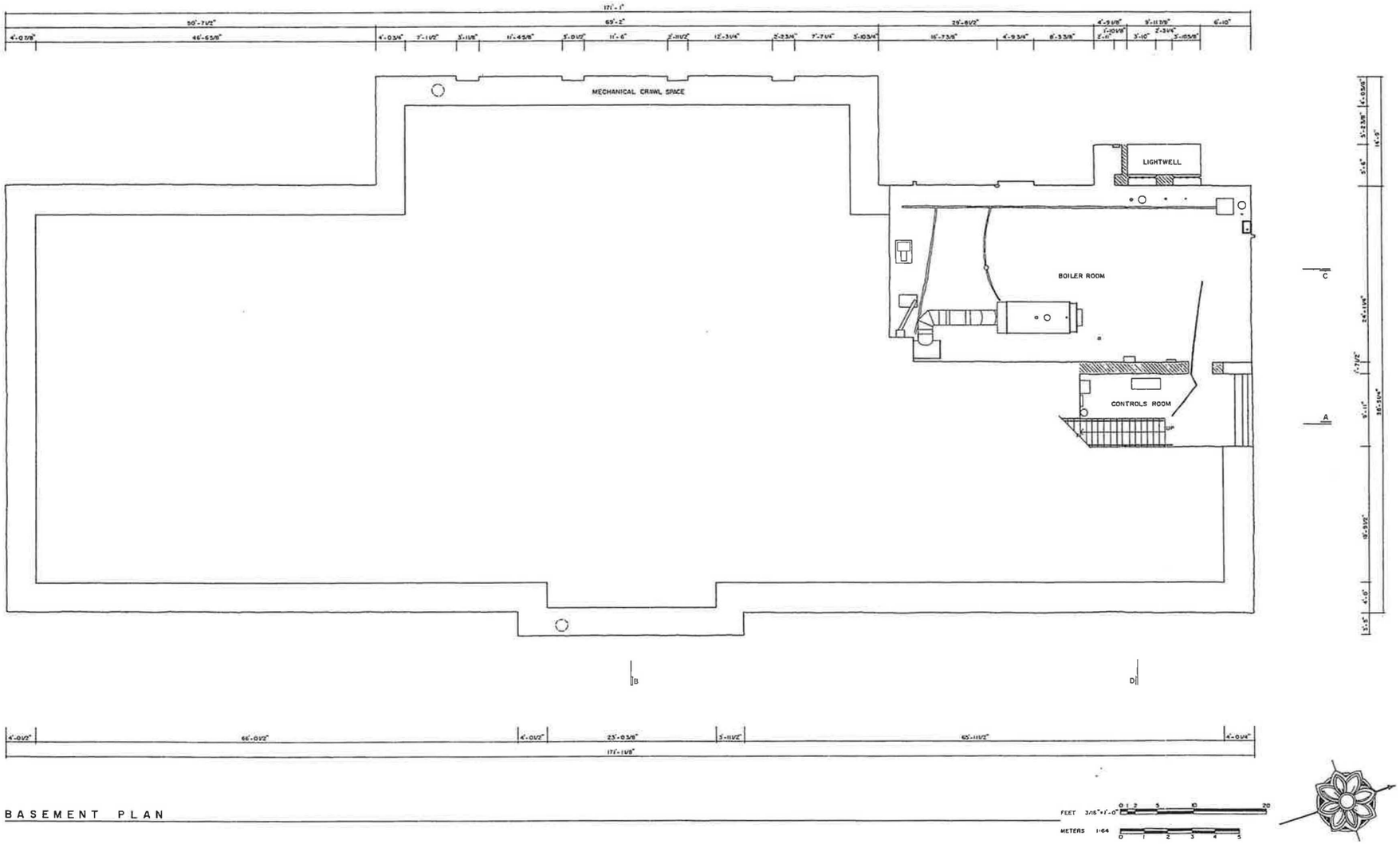


SOUTH ELEVATION

FEET 3/16"=1'-0" 0 1 2 5 10 20

METERS 1:64 0 1 2 3 4 5

DESIGNED:	SUB SHEET NO.	UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE PLANNING RESOURCE PRESERVATION GREAT PLAINS SYSTEM OFFICE	DRAWING NO. 462 80002	
DRAWN:	SOUTH & NORTH ELEVATIONS		PKG. NO.	SHEET 7
TECH. REVIEW:	A 201	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas		OF 16
DATE: /				

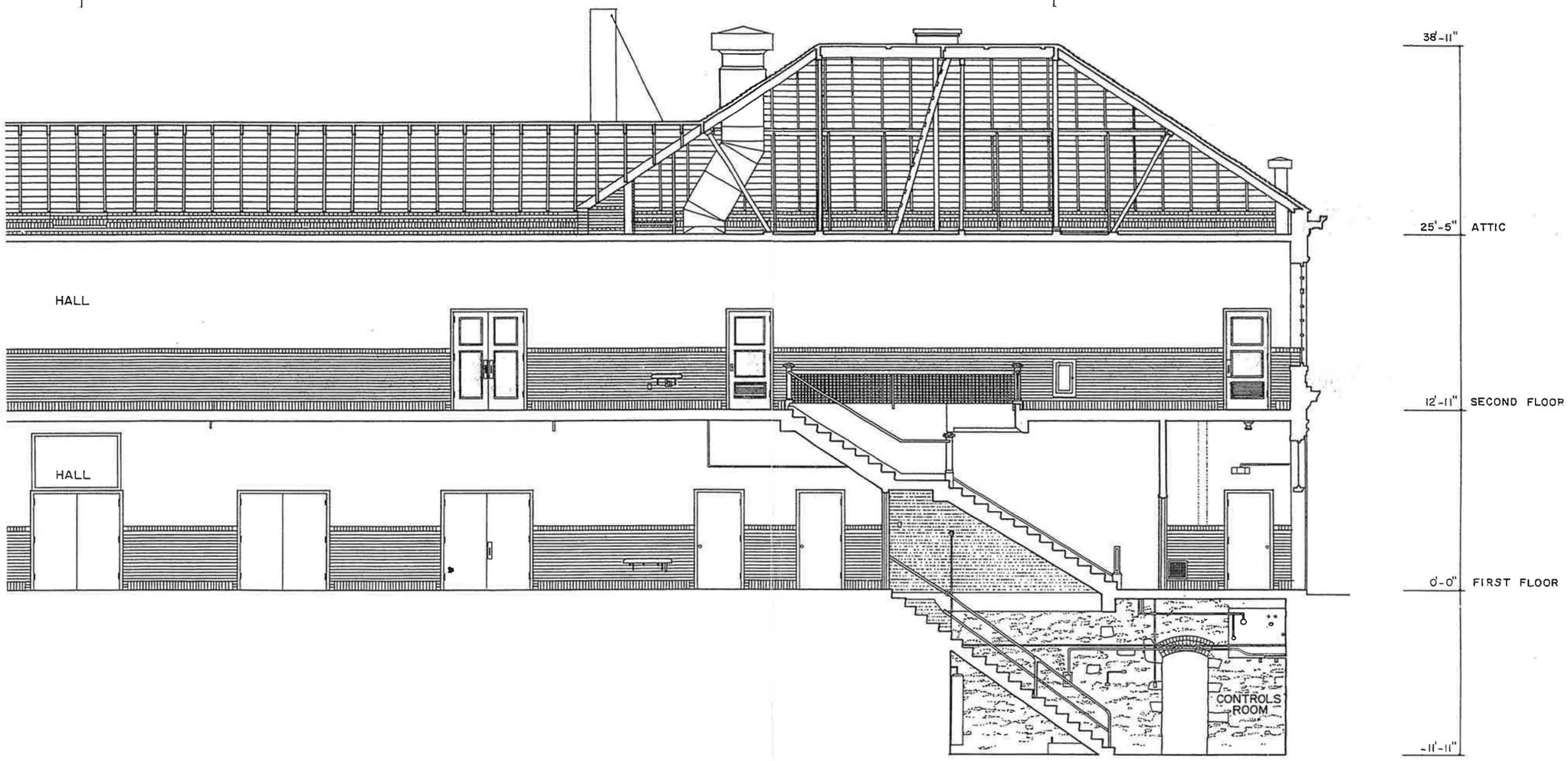


BASEMENT PLAN

DESIGNED:	SUB SHEET NO.	UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE PLANNING RESOURCE PRESERVATION GREAT PLAINS SYSTEM OFFICE	DRAWING NO. 462 80002
DRAWN:	BASEMENT PLAN		
TECH. REVIEW:	A 100	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	PKG. NO. / SHEET 2 OF 16
DATE: /			

B

D

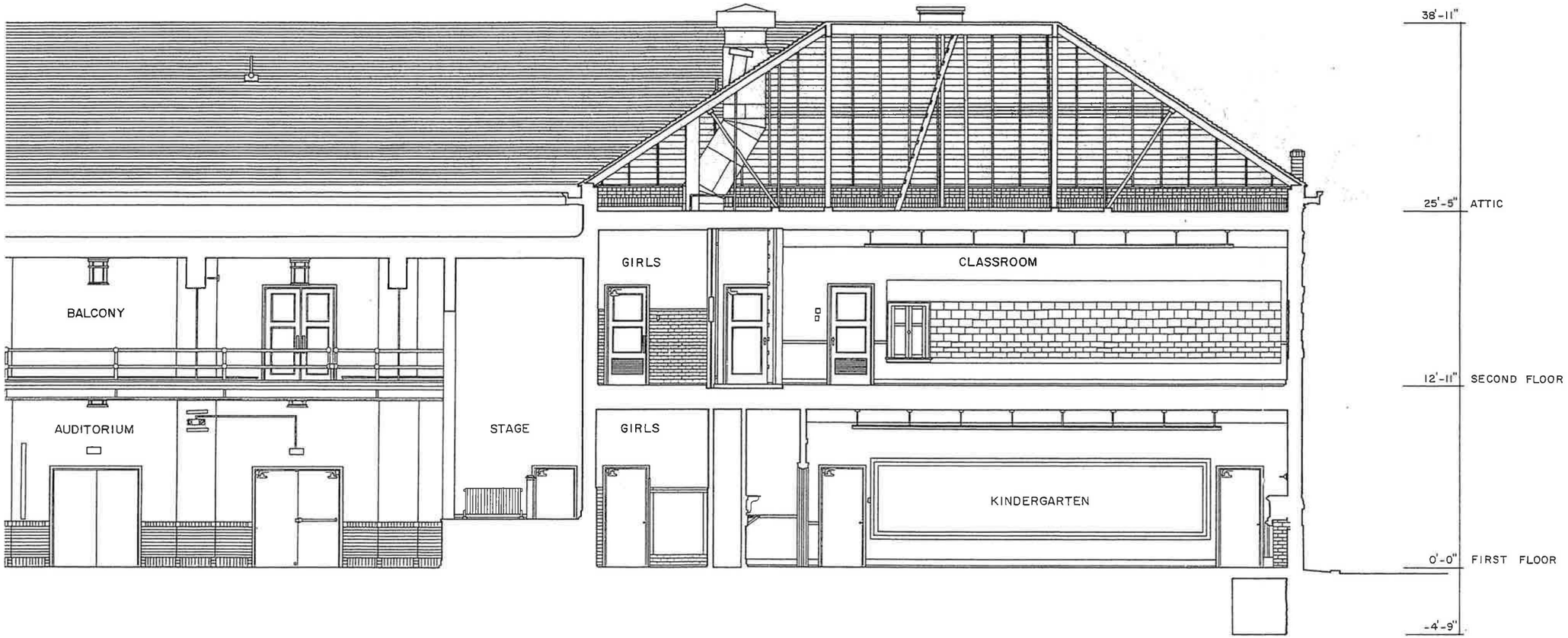


FEET 3/16"=1'-0" 0 1 2 5 10 20

METERS 1:64 0 1 2 3 4 5

DESIGNED:	SUB SHEET NO.	UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE PLANNING RESOURCE PRESERVATION GREAT PLAINS SYSTEM OFFICE	DRAWING NO. 462 80002
DRAWN:	SECTION		
TECH. REVIEW:	A 202	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	PKG. NO.
DATE: /			SHEET 8 OF 16

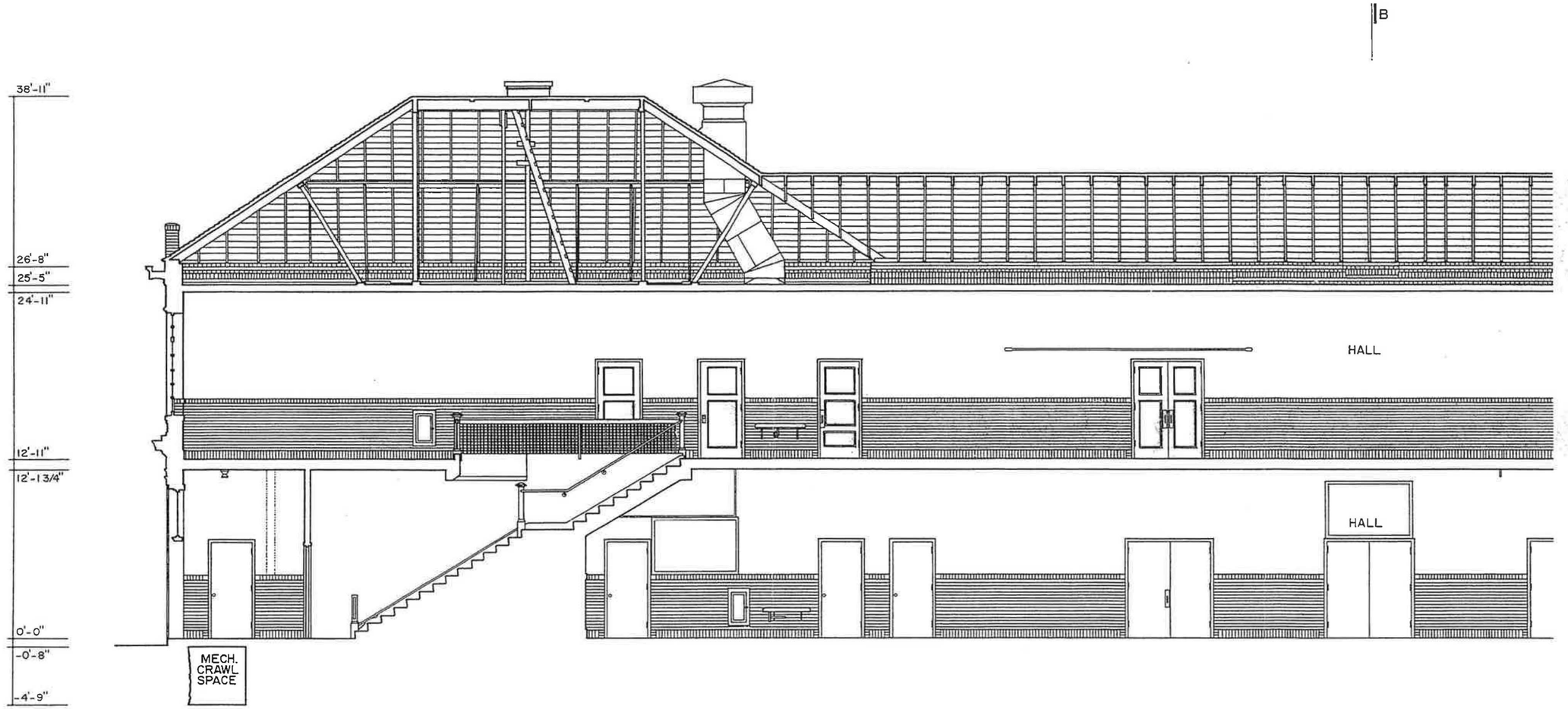
B



FEET 3/16"=1'-0" 0 1 2 5 10 20

METERS 1:64 0 1 2 3 4 5

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DRAWN:	SECTION		PKG. NO.
TECH. REVIEW:	A 203	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	SHEET 9 OF 16
DATE: /			

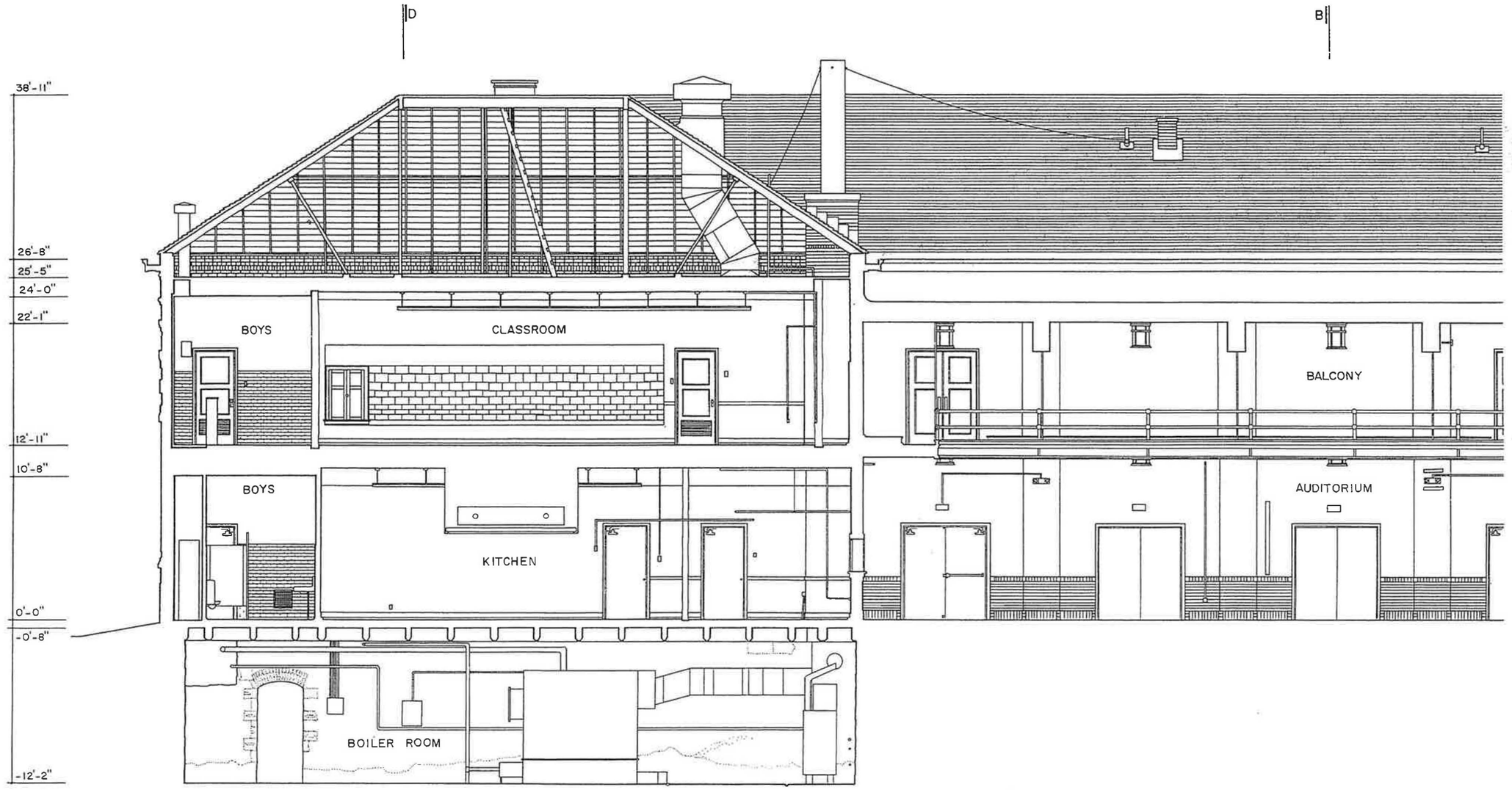


EAST SECTION A

FEET 3/16" = 1'-0" 0 1 2 5 10 20

METERS 1:64 0 1 2 3 4 5

DESIGNED:	SUB SHEET NO.	UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE PLANNING RESOURCE PRESERVATION GREAT PLAINS SYSTEM OFFICE	DRAWING NO. 462 / 80002
DRAWN:	EAST SECTION A	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	PKG. NO. — — —
TECH. REVIEW:	A 204		SHEET 10 OF 16
DATE: /			

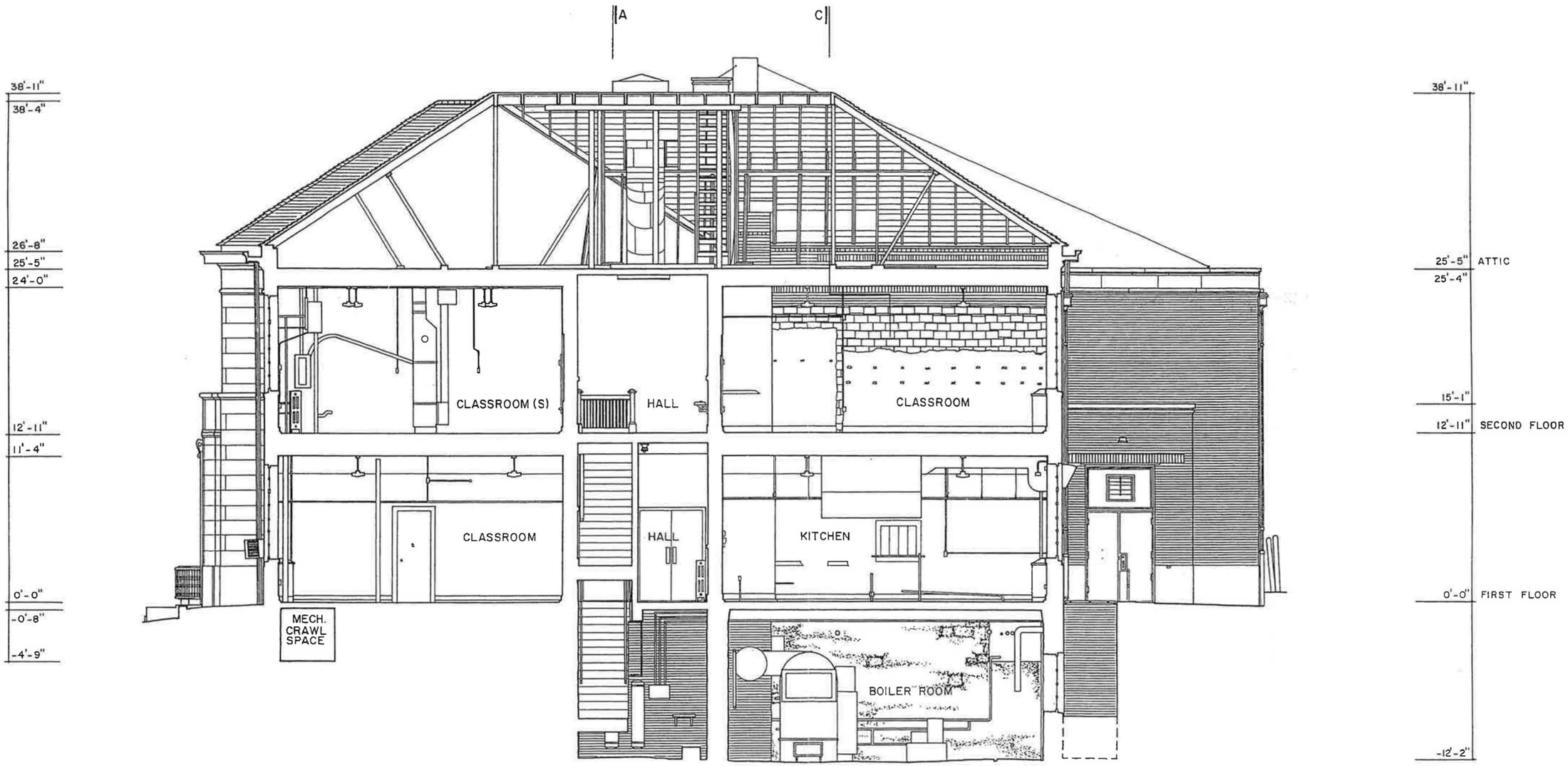


WEST SECTION C

FEET 3/16"=1'-0" 0 1 2 5 10 20

METERS 1:64 0 1 2 3 4 5

DESIGNED:	SUB SHEET NO.	UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE PLANNING RESOURCE PRESERVATION GREAT PLAINS SYSTEM OFFICE	DRAWING NO. 462 / 80002
DRAWN:	WEST SECTION C	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	PKG. NO.
TECH. REVIEW:	A 205		SHEET 11 OF 16
DATE: /			



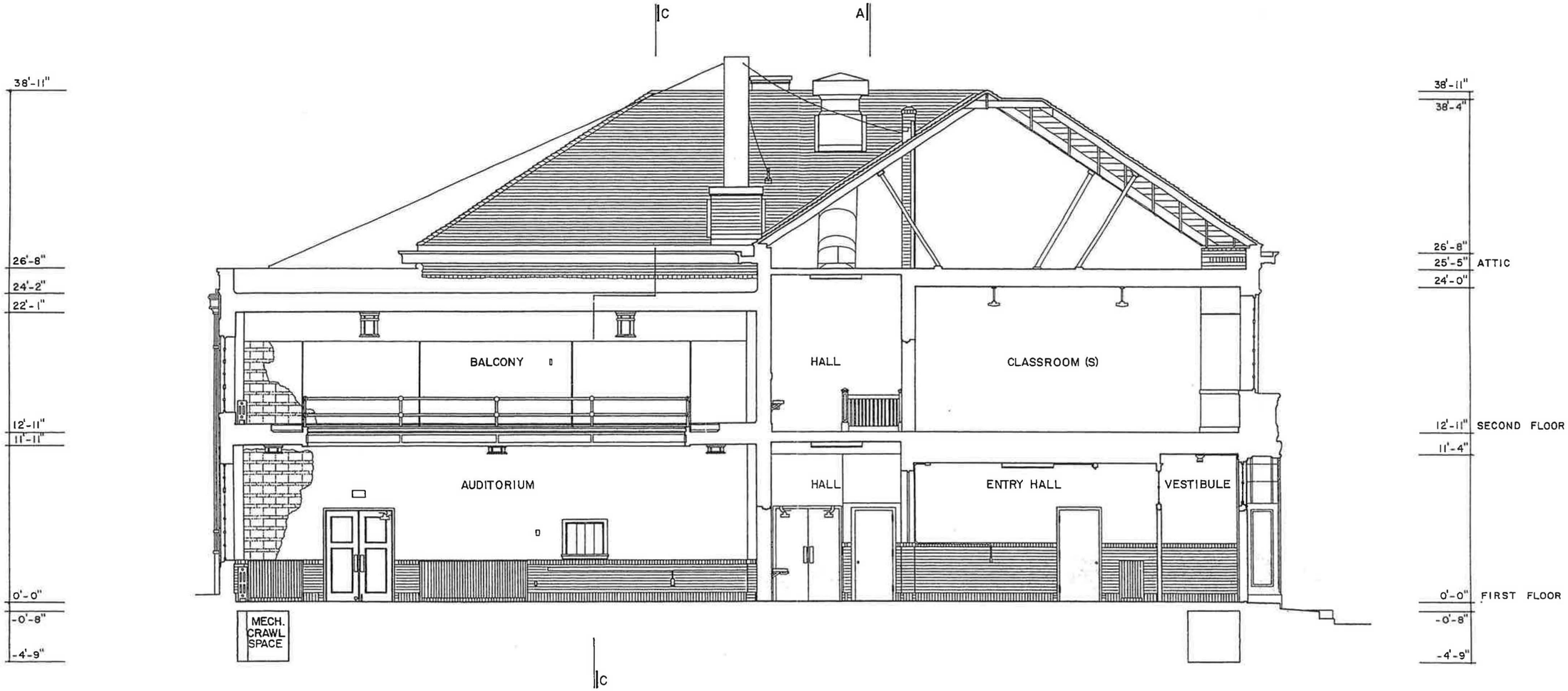
C

FEET 3/16"=1'-0" 0 1 2 5 10 20

METERS 1:64 0 1 2 3 4 5

NORTH SECTION D

DESIGNED:	SUB SHEET NO.	UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE PLANNING RESOURCE PRESERVATION GREAT PLAINS SYSTEM OFFICE	DRAWING NO. 462 / 80002
DRAWN:	NORTH SECTION D	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	PKG. NO.
TECH. REVIEW:	A 206		SHEET 12 OF 16
DATE: /			

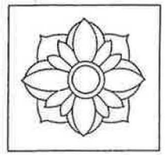


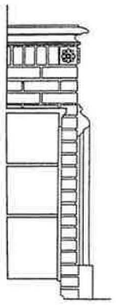
SOUTH SECTION B

FEET 3/16"=1'-0" 0 1 2 5 10 20

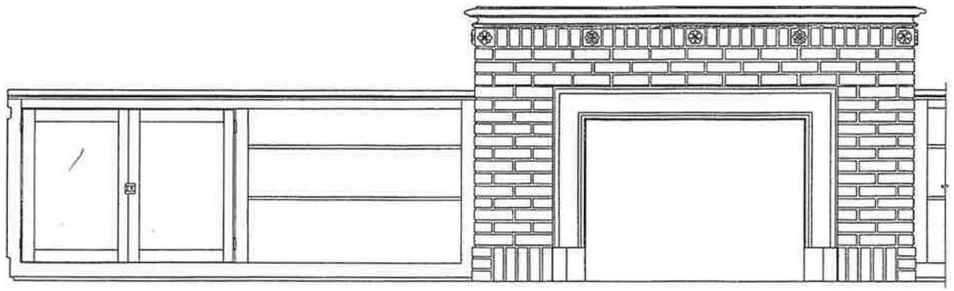
METERS 1:64 0 1 2 3 4 5

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DRAWN:	SOUTH SECTION B	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	PKG. NO.
TECH. REVIEW:	A 207		SHEET 13 OF 16
DATE: /			

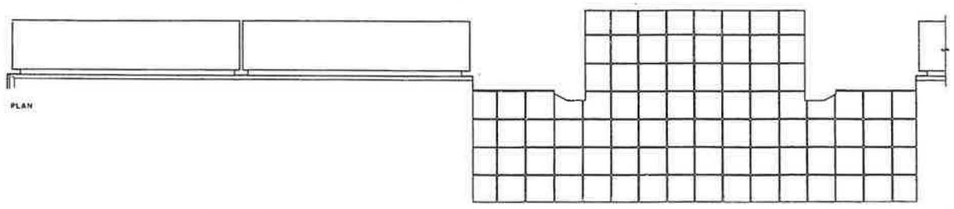




SECTION



ELEVATION

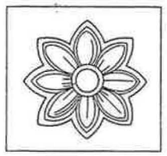


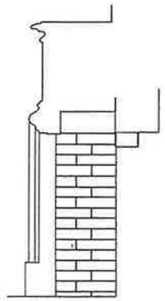
PLAN

KINDERGARTEN FIREPLACE

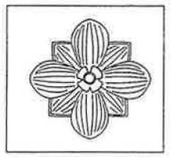
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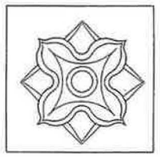
CENTIMETERS 1:8

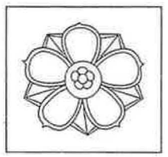




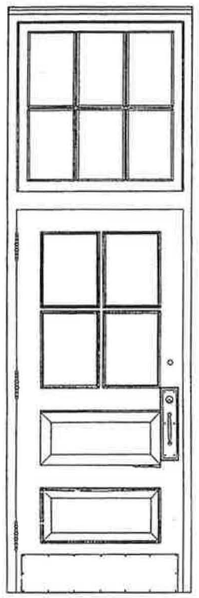
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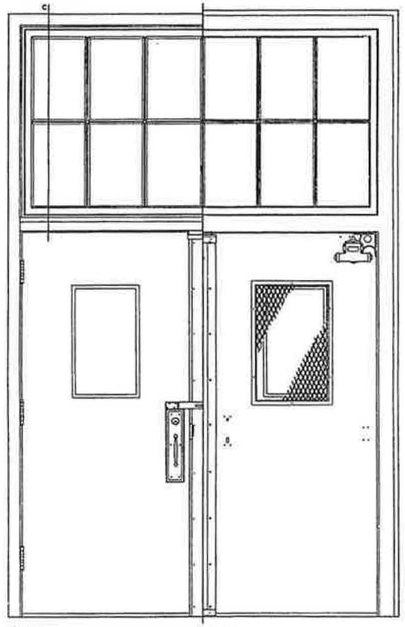




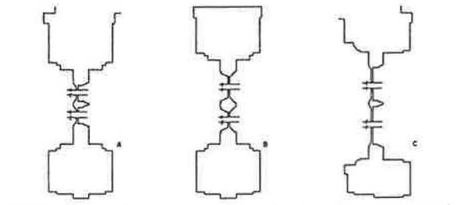
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DRAWN:	FIREPLACE DETAILS	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	PKG. NO. — / SHEET 14
TECH. REVIEW:	A 500		OF 16
DATE: /			



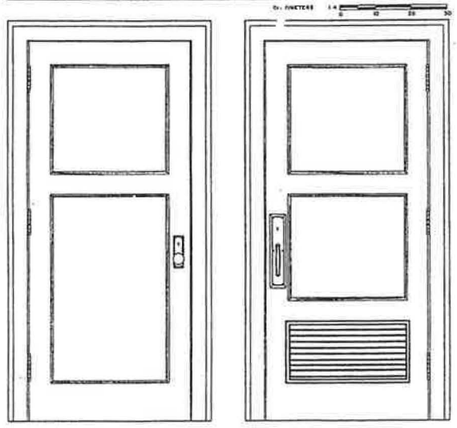
EXTERIOR
WEST ENTRANCE



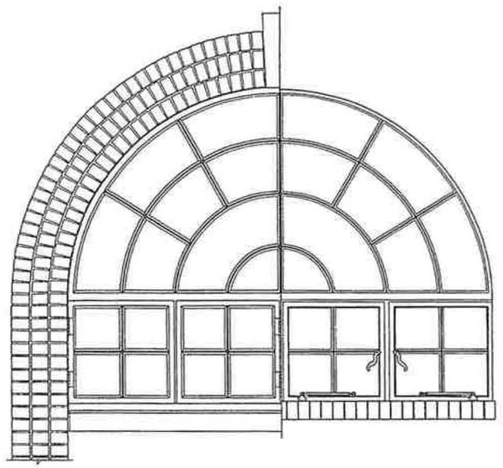
EXTERIOR INTERIOR
NORTH ENTRANCE



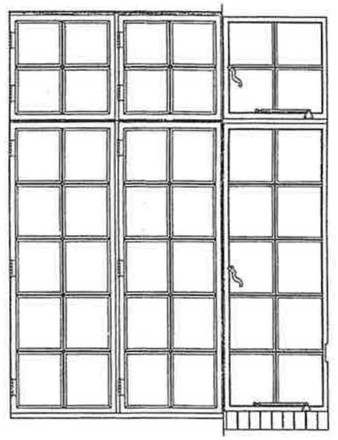
WINDOW SECTIONS



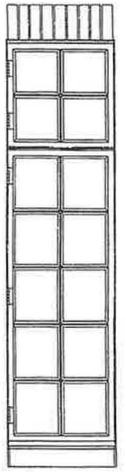
INTERIOR DOORS (TYPICAL)



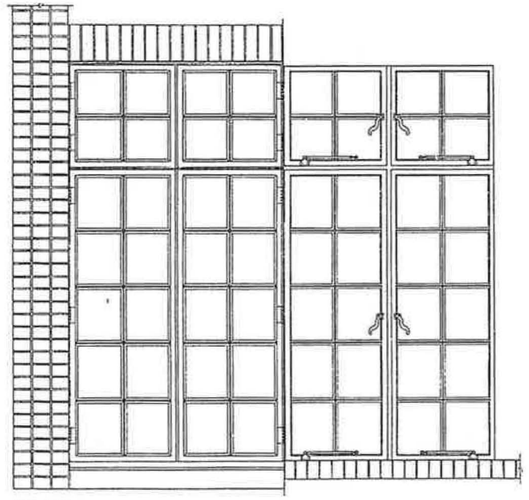
WEST ELEVATION



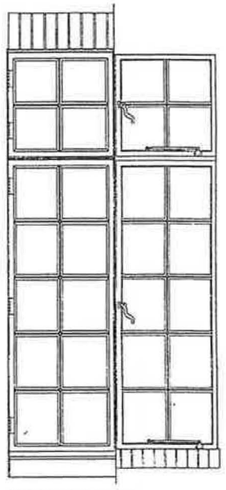
SECOND FLOOR EAST ELEVATION



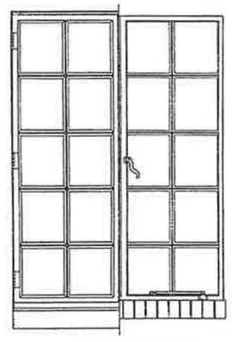
WEST ELEVATION
FIRST FLOOR BATHROOMS



WEST ELEVATION

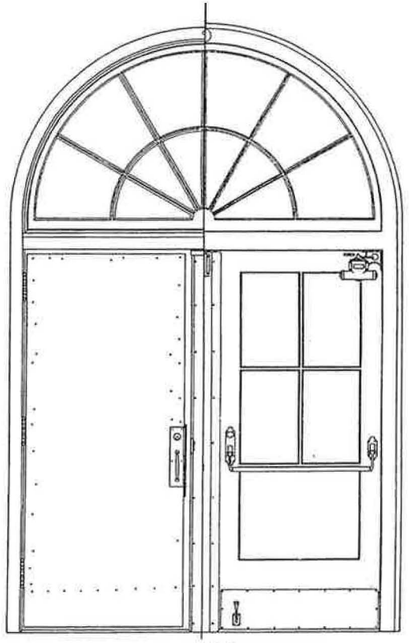


FIRST FLOOR EAST ELEVATION

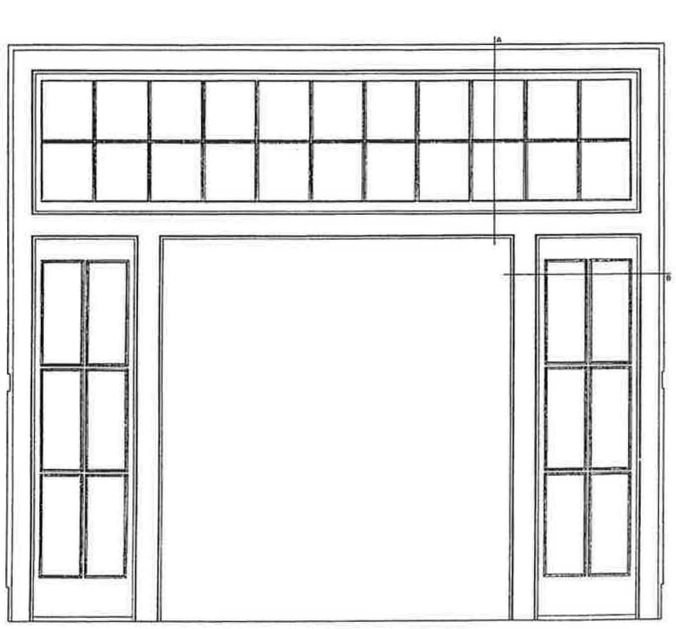


SECOND FLOOR BATHROOMS WEST ELEVATION

WINDOW TYPES



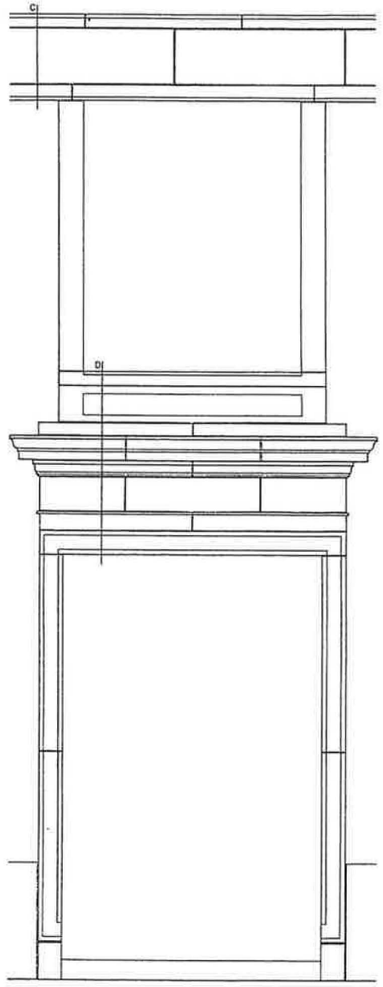
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EAST ENTRANCE

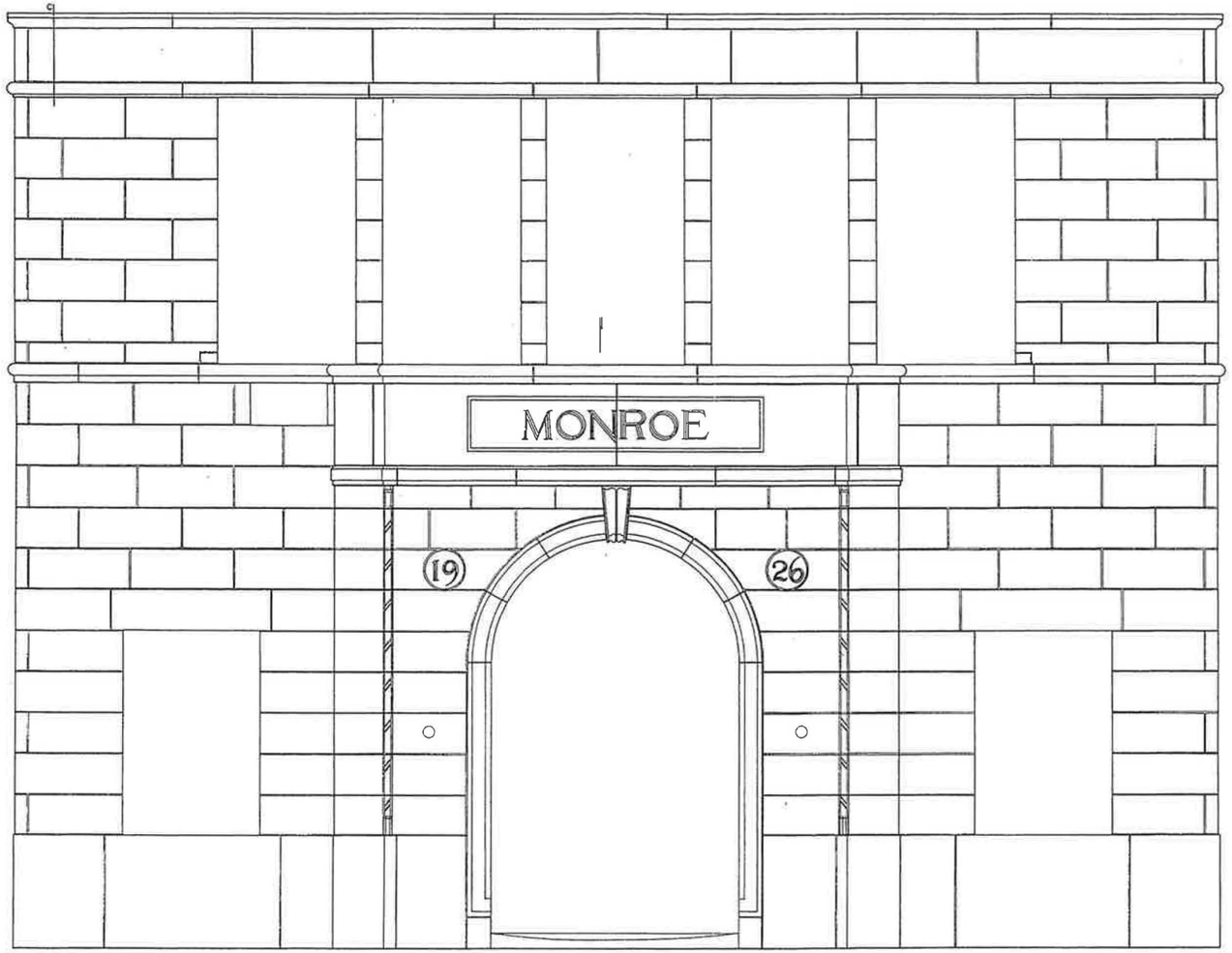


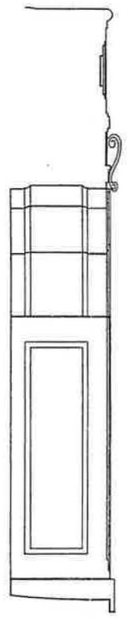
INTERIOR
EAST ENTRANCE VESTIBULE

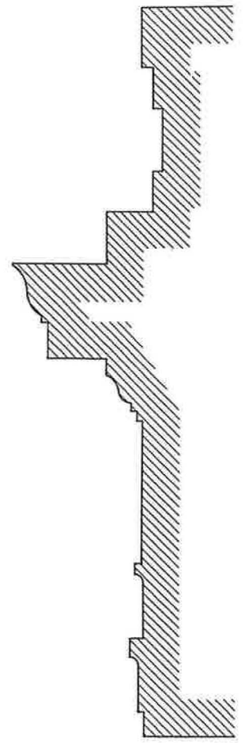
DOOR TYPES

DESIGNED:	SUB SHEET NO.	UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE PLANNING RESOURCE PRESERVATION GREAT PLAINS SYSTEM OFFICE	DRAWING NO. 462 80002
DRAWN:	EXT, & INT. DOOR TYPES	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	PKG. NO. — SHEET 15
TECH. REVIEW:	A 600		OF 16
DATE: /			





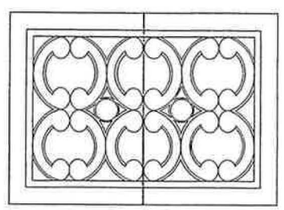


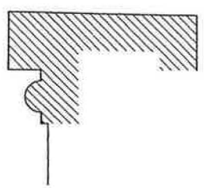


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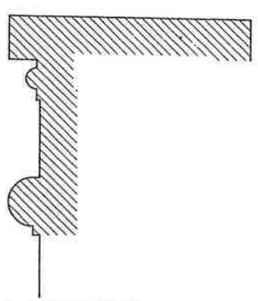
STONE ELEVATIONS

FEET 3/4"=1'-0"
CENTIMETERS 1:16





A: AUDITORIUM VESTIBULE COPING



B: AUDITORIUM PARAPET



C: FRIEZE

STONE PROFILES

FEET 3"=1'-0"
CENTIMETERS 1:4

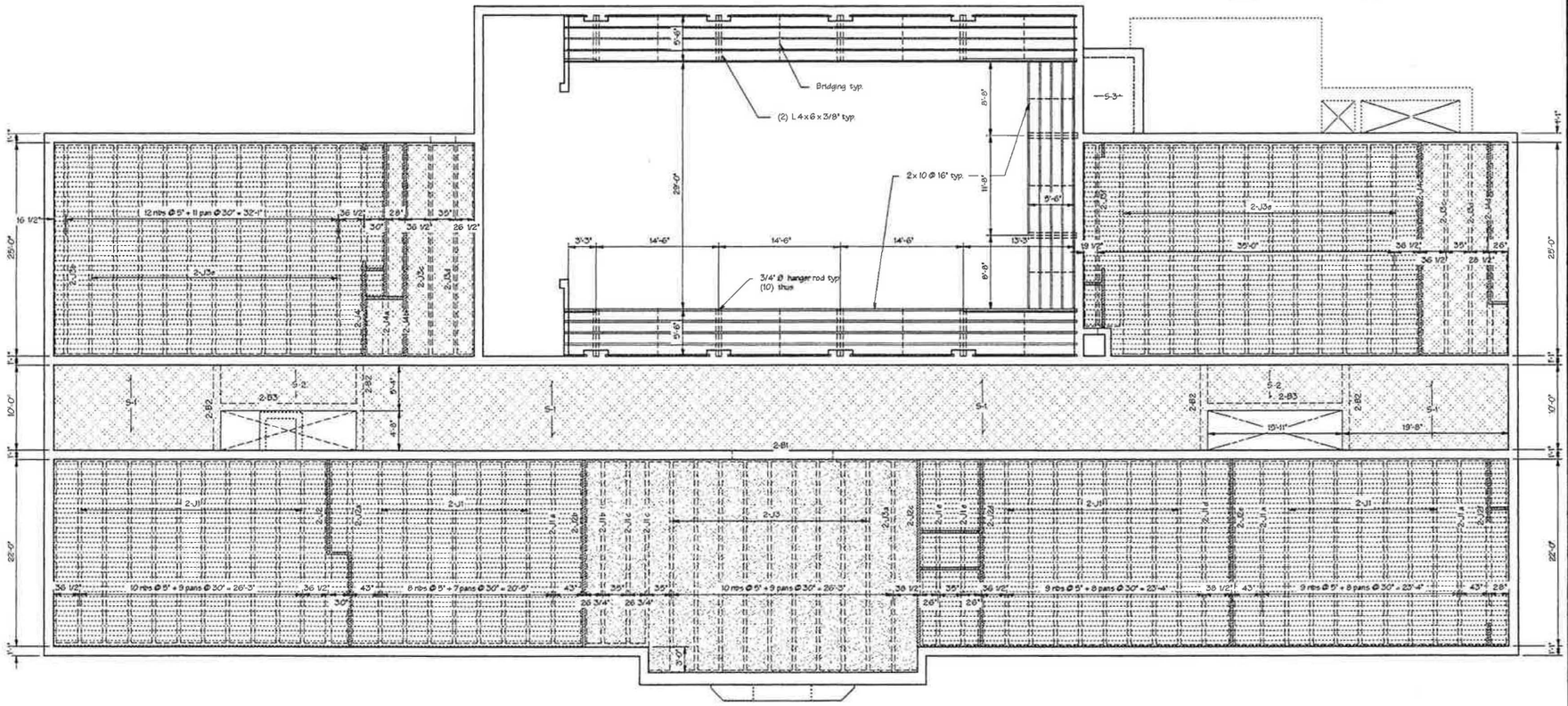
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DRAWN:	STONE PROFILES		PKG. NO.
TECH. REVIEW:	A 601	MONROE ELEMENTARY SCHOOL (HS-01) Brown vs. Board of Education National Historic Site Topeka, Kansas	SHEET 16 OF 16
DATE: /			

Appendix B

Structural Condition Drawings

Second Floor Beams					
Mark	b inch	h inch	reinf straight	Reinf bent	Stirrups
1-B1	13	32	2-#8	2-#8	#3
1-B2	10	15	#7	#7	-
1-B3	10	15	#7	#7	-

Second Floor Slab Data				
Mark	h inch	reinf main	reinf tran.	Comments
S-1	5 1/2	#4 @ 6 E-W	#2 @ 12 N-S	30 psf terrazzo finish
S-2	5 1/2	#3 @ 7-1/2 E-W	#2 @ 12 N-S	30 psf terrazzo finish
S-3	7	#2 @ 12 E-W	#3 @ 6 N-S	Roof slab

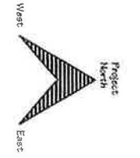


Joist Data Second Floor									
Mark	b inch	h inch	south pan rib north pan (inch)	reinf str.	reinf bent	stir-rups	Ceiling load psf	Floor load south / north psf	partition plf
2-J1	5	14.5	30 5 30	#8	#7	-	10	5 5	-
2-J1a	5	14.5	30 5 36.5	#8	#7	-	10	5 5	-
2-J1b	5	14.5	20.25 5 30	#8	#7	-	10	30 30	-
2-J1c	5	14.5	21.75 5 30	#8	#7	-	10	30 30	-
2-J1d	5	14.5	30 5 32	#8	#7	-	10	5 5	-
2-J1e	5	14.5	19.5 5 30	#8	#7	-	10	5 5	see plan
2-J2	8	14.5	30 8 22	2-#7	#8	-	10	5 5	Partial span 336
2-J2a	8	14.5	22 8 36.5	2-#7	#8	-	10	5 5	Partial span 336
2-J2b	8	14.5	36.5 8 20.25	2-#7	#8	-	10	5 30	336
2-J2c	8	14.5	32 8 19.5	2-#7	#8	-	10	30 5	336 + cross walls
2-J2d	8	14.5	19.5 8 30	2-#7	#8	-	10	5 5	336 + cross walls
2-J2e	8	14.5	32 8 36.5	2-#7	#8	-	10	5 5	336
2-J2f	8	14.5	36.5 8 20	2-#7	#8	-	10	5 5	336
2-J3	5	14.5	30 5 30	#8	#8	0.1	10	30 30	-
2-J3a	5	14.5	30 5 32	#8	#8	0.1	10	30 30	-
2-J3b	5	14.5	12 5 30	#8	#8	0.1	10	30 30	-
2-J3c	5	14.5	30 5 30	#8	#8	0.1	10	30 30	-
2-J3d	5	14.5	30 5 22	#8	#8	0.1	10	30 30	-
2-J3e	5	14.5	30 5 30	#8	#8	0.1	10	5 5	-
2-J3f	5	14.5	12 5 30	#8	#8	0.1	10	5 5	See plan 336
2-J4	8	14.5	30 8 22	2-#8	#8	0.1	10	5 5	336
2-J4a	8	14.5	22 8 20	2-#8	#8	0.1	10	5 30	336
2-J4b	8	14.5	20 8 30	2-#8	#8	0.1	10	30 30	336
2-J4c	8	14.5	30 8 30	2-#8	#8	0.1	10	30 30	336
2-J4d	8	14.5	22 8 20	2-#8	#8	0.1	10	30 30	336

Floor, slab, joist, and beam data from Thos. W. Williamson & Co. Architects, Drawing 17, Monroe Grade School, 1927.

2-1/2" +/- wood sleeper floor
1-1/2" terrazzo on est. 1" grout bed
2-1/2" cement based fill w/ linoleum

Scale: 1/8" = 1'-0"
8 6 4 2 0 8 16
SCALE OF FEET



True North

Plotted 1/2 size

Fitzpatrick Structural Engineering, P.C.
219-1/2 N. Main • Ann Arbor • MI • 48104
313-769-0320 Fax 313-769-3015

QUINN EVANS ARCHITECTS
219 1/2 N. Main Street
Ann Arbor, Michigan 48104
313 665 6565

REVISED	
DATE	INITIAL

PREPARED
TRF
DESIGNED
TRF
DRAWN
TRF
CHECKED
03-21-97
DATE

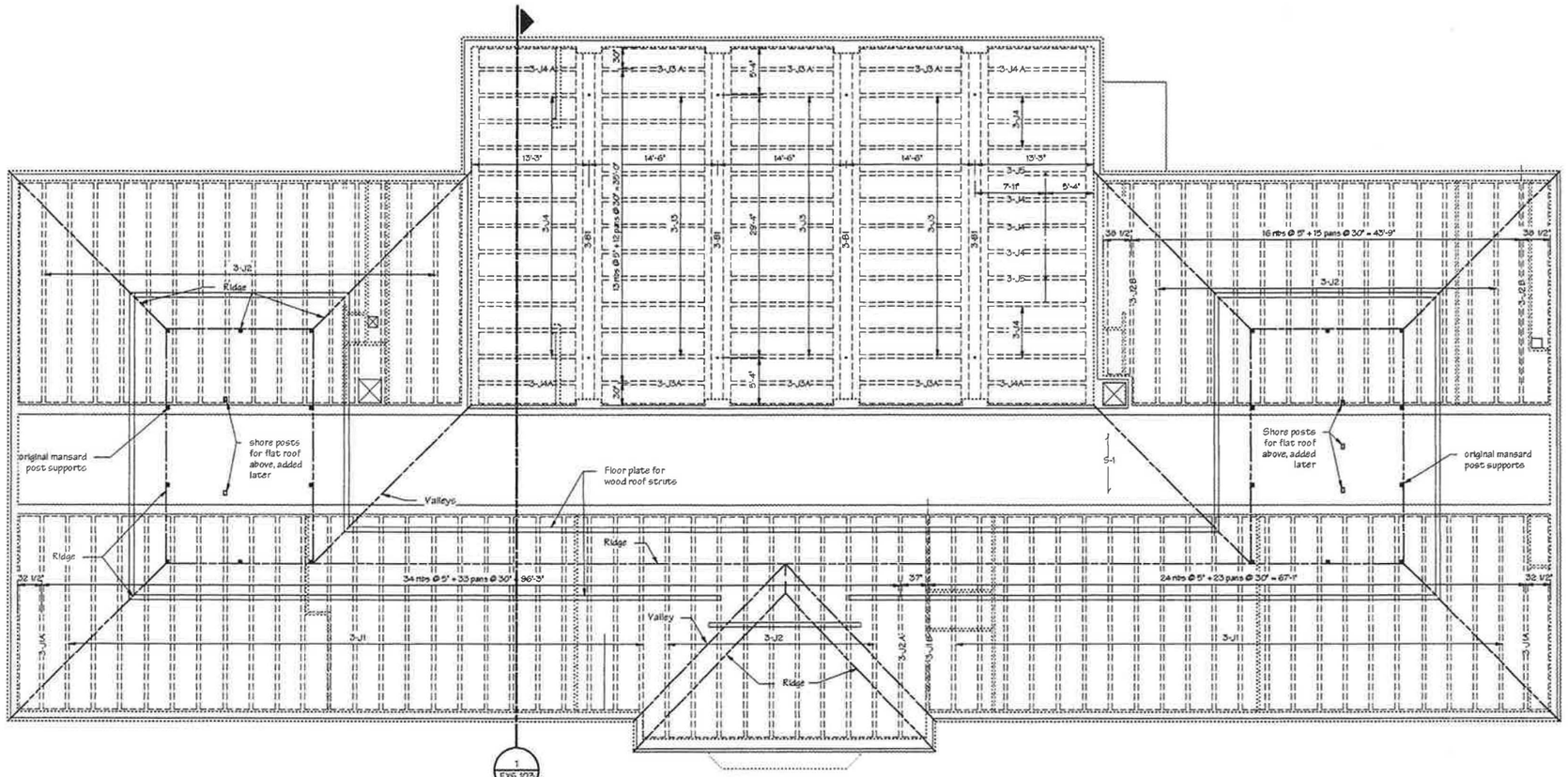
TITLE OF SHEET
EXISTING CONDITIONS HISTORIC STRUCTURES REPORT
SECOND FLOOR FRAMING

SECOND FLOOR FRAMING PLAN

MONROE SCHOOL
BROWN V. BOARD OF EDUCATION
NATIONAL HISTORIC SITE, TOPEKA, KANSAS

AUTOCAD FILE NO.
SUB SHEET NO.
EXS-102

DRAWING NO.
462
80002
SHEET 3
OF 6

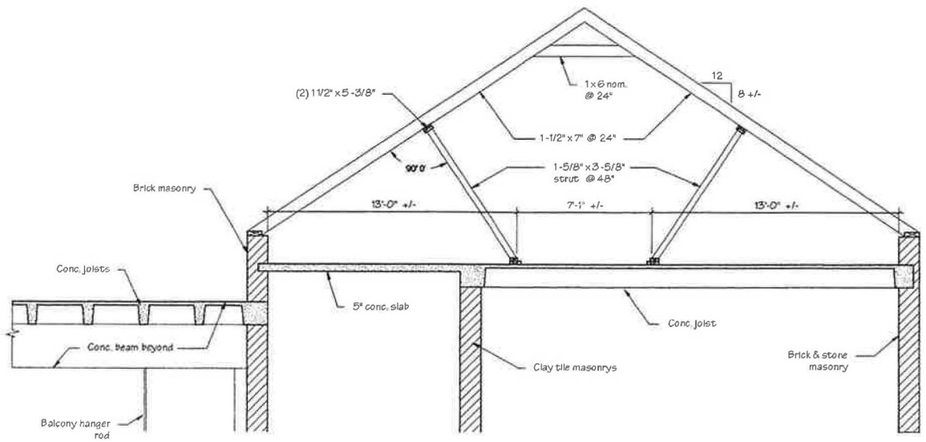


Attic Level Framing Plan

Scale; 1/8" = 1'-0"

8 6 4 2 0 8 16

SCALE OF FEET



1 EXS 103 Transverse Section at Attic

1/4" = 1'-0"

4 2 0 8

SCALE OF FEET

Joist Data Attic Floor

Mark	b inch	h inch	south pan rib north pan (inch)	reinf str.	reinf bent	stir-rups	Ceiling load psf	Floor load south / north psf	partition plf
3-J1	5	14.5	30 5 30	#8	#7	-	10	0	-
3-J1 A	5	14.5	25 5 30	#8	#7	-	10	0	-
3-J1 B	5	14.5	32 5 30	#8	#7	-	10	0	-
3-J2	5	14.5	30 5 30	#8	#8	.1	10	0	-
3-J2 A	5	14.5	30 5 32	#8	#8	.1	10	0	-
3-J2 B	5	14.5	34 5 30	#8	#8	.1	10	0	-
Roof	**b inch**	**h inch**	**west pan rib east pan (inch)**	**reinf str.**	**reinf bent**	**stir-rups**	**Ceiling load psf**	**Roof load south / north psf**	**partition plf**
3-J3	5	14.5	30 5 30	1/2" sq.	1/2" sq	-	10	10	-
3-J3 A	5	14.5	25 5 30	1/2" sq.	1/2" sq	-	10	10	-
3-J4	5	14.5	30 5 30	1/2" sq.	1/2" sq	-	10	10	-
3-J4 A	5	14.5	25 5 30	1/2" sq.	1/2" sq	-	10	10	-
3-J5	5	14.5	30 5 30	#7	#7	.1	10	10	Balcony hanger rod

Roof Beams

Mark	b inch	h inch	reinf straight	Reinf bent	Stirrups
3-B1	16	42	5 - 1" sq.	5 - 1" sq	.22

Third Floor Slab Data

Mark	h inch	reinf main	reinf tran.	Comments
S1	5"	#4 @ 7" N-S	#2 @ 12" E-W	

Floor, slab, joist, and beam data from Thos. W. Williamson & Co. Architects, Drawing 17, Monroe Grade School, 1927.

West, Project North, East

True North

Plotted 1/2 size

Fitzpatrick Structural Engineering, P.C.
219-1/2 N. Main • Ann Arbor • MI • 48104
313-769-0320 Fax 313-769-3015

QUINN EVANS ARCHITECTS
229 1/2 N. Main Street
Ann Arbor, Michigan 48104
313 665 6066

REVISED	
DATE	INITIAL

PREPARED: TRF (DESIGNED) TRF (DRAWN) TRF (CHECKED) 03-21-97 (DATE)

TITLE OF SHEET: Existing Attic Framing Plan

PLAN ATTIC FLOOR LEVEL

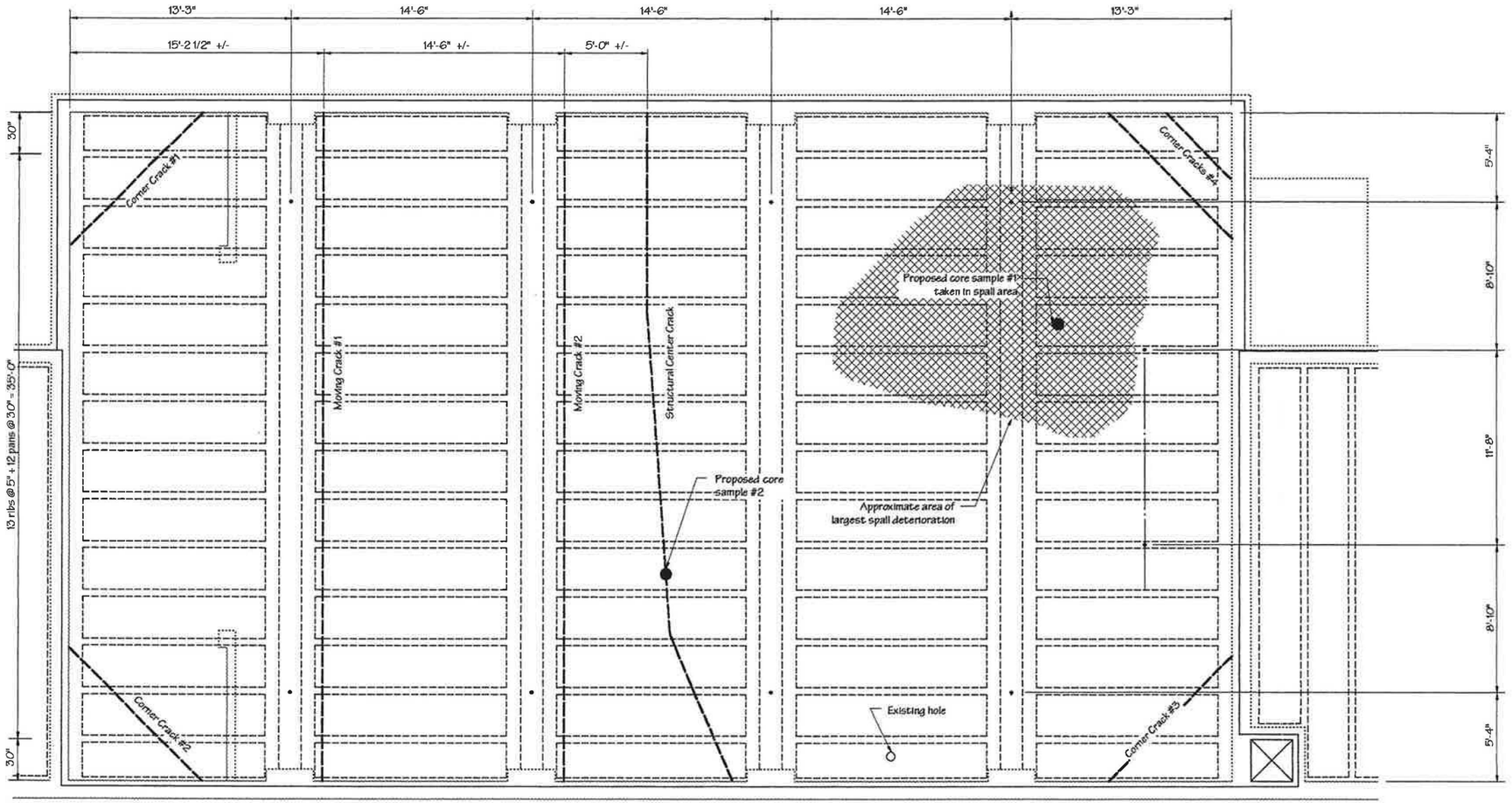
MONROE SCHOOL
BROWN V. BOARD OF EDUCATION
NATIONAL HISTORIC SITE, TOPEKA, KANSAS

AUTOCAD FILE NO.

SUB SHEET NO. EXS-103

DRAWING NO. 462 / 80002

SHEET 4 OF 6



PARTIAL PLAN AUDITORIUM ROOF EXISTING CONDITION

1/4" = 1'-0"

4 2 0 8

SCALE OF FEET

NOTE:

Roof conditions recorded on this drawing surveyed by Laura Johnson NPS Architect on 11-14-95.

West Project North East

True North

Plotted 1/2 size

Fitzpatrick Structural Engineering, P.C.
219-1/2 N. Main • Ann Arbor • MI • 48104
313-769-0320 Fax 313-769-3015

QUINN EVANS ARCHITECTS
219 1/2 N. Main Street
Ann Arbor, Michigan 48104
313 665 0999

REVISED	
DATE	INITIAL

PREPARED
TRF
DESIGNED
TRF
DRAWN
TRF
CHECKED
03-21-97
DATE

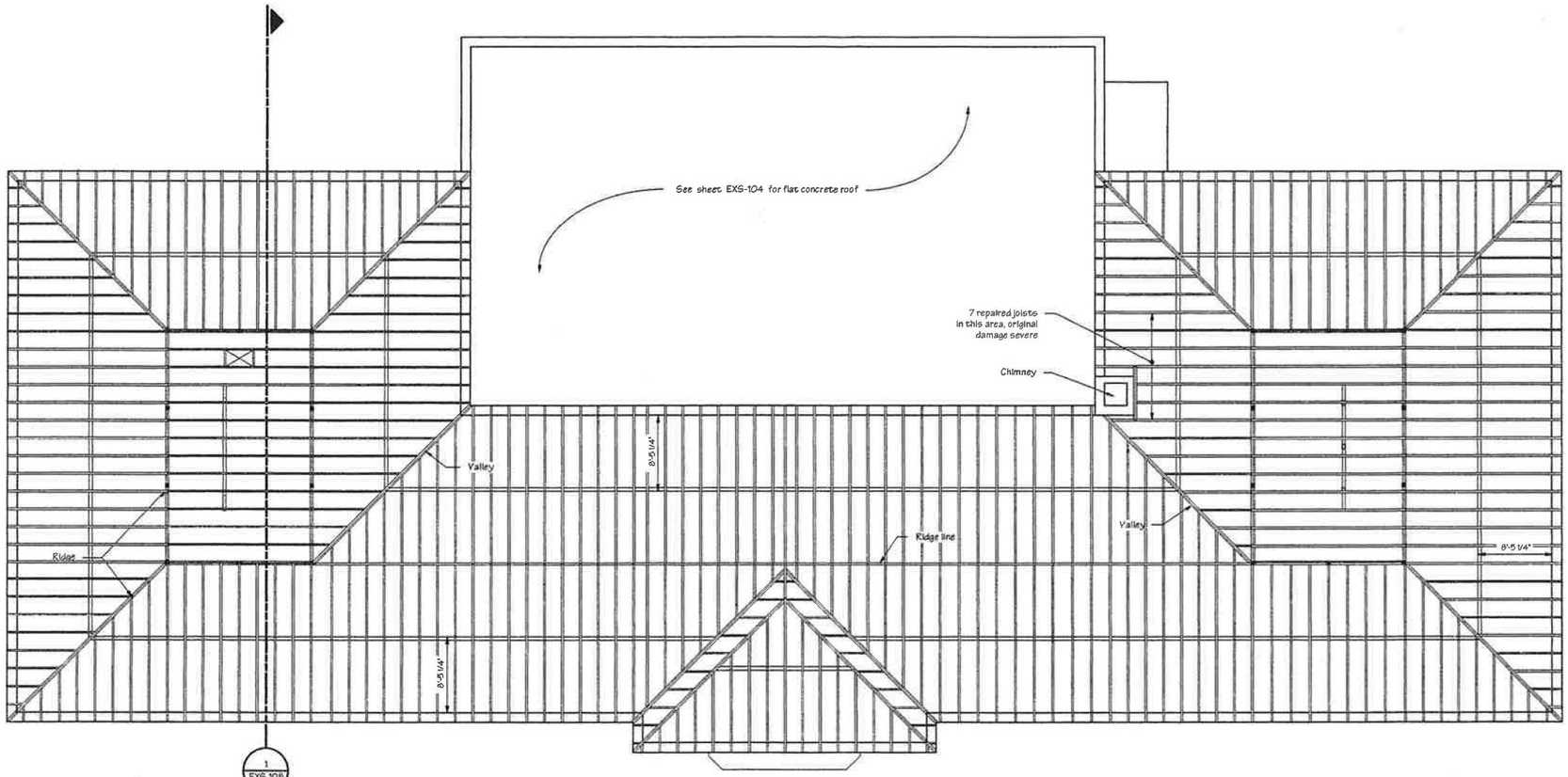
TITLE OF SHEET
Existing Auditorium Roof

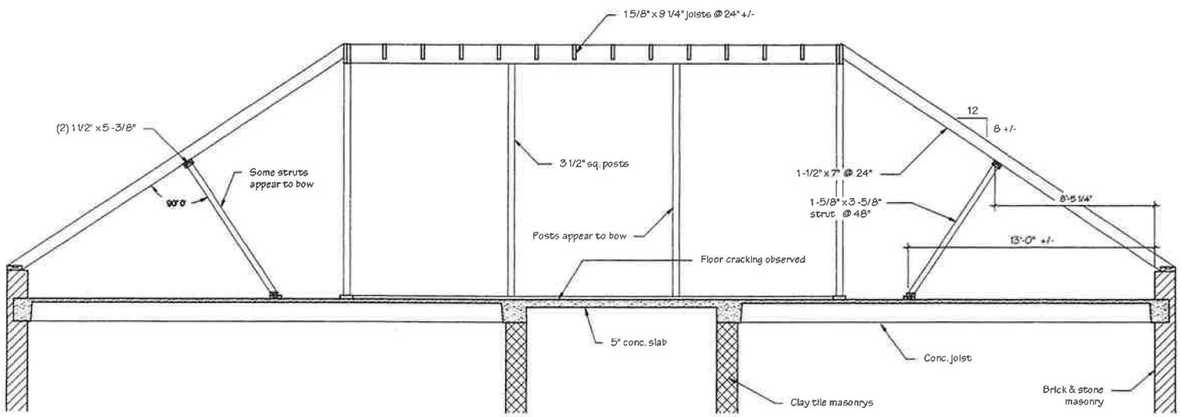
PARTIAL AUDITORIUM ROOF PLAN

MONROE SCHOOL
BROWN V. BOARD OF EDUCATION
NATIONAL HISTORIC SITE, TOPEKA, KANSAS

AUTOCAD FILE NO.
SUB SHEET NO.
EXS-104

DRAWING NO.
462
80002
SHEET 5
OF 6





1 EXS 105 Transverse Section at Attic

1/4" = 1'-0"

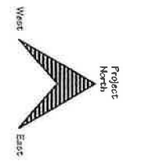
4 2 0 8

SCALE OF FEET

Scale: 1/8" = 1'-0"

8 6 4 2 0 8 16

SCALE OF FEET



True North

Plotted 1/2 size

Fitzpatrick Structural Engineering, P.C.
219-1/2 N. Main • Ann Arbor • Mi • 48104
313 - 769 - 0320 Fax 313 - 769 - 3015

QUINN EVANS ARCHITECTS
219 1/2 N. Main Street
Ann Arbor, Michigan 48104
313 665 6666

REVISED	
DATE	INITIAL

PREPARED
TRF
DESIGNED
TRF
DRAWN
TRF
CHECKED
03-21-97
DATE

TITLE OF SHEET
Existing Roof Framing

ROOF PLAN

MONROE SCHOOL
BROWN V. BOARD OF EDUCATION
NATIONAL HISTORIC SITE, TOPEKA, KANSAS

AUTOCAD FILE NO.
SUB SHEET NO.
EXS-105

DRAWING NO.
462
80002
SHEET 6
OF 6

Appendix C

Thomas Williamson & Co.

School Projects by Thomas Williamson & Co.

Date	School	Address	Comments
1912	School Building-District No. 59	Shawnee County	Year he opened his own office
1920s	Bethany College-Walfe Hall	831 Polk, Topeka	Gone by 1938
1920s	College Hill School Building Remodeling	Euclid & Redden, Topeka	Gone
1920s	East Indianola, Shorey School	334 6th, Topeka	
1920s	Lincoln Junior High School	504 Madison, Topeka	
1920s	Quinton Heights School Building	2603 Lincoln, Topeka	Gone
1920	Buchanan Street School	1191 Buchanan, Topeka	Black School in 1950's, is now Buchanan Center
1920	Lowman Hill School Remodeling	1100 Morris Ave, Topeka	
1920	Rural High School Building-District No. 5	2129 N. Tyler, Topeka	Assumes this is first Seaman Rural High School
1922	Washburn College-Mulvane Art Museum	17th & Washburn, Topeka	
1923	Parkdale School Building	1115 E. 10th, Topeka (north of Chandler	Gone
pre-1925	South Grade School	Paola, Kansas	Published in Bruce: Grade School Building, Book II, 1925.
1925	Roosevelt Junior High School	211 Buchanan, Topeka	
1926	Clay Grade School	635 Clay, Topeka	
1926	Curtis Junior High School (North Topeka)	300 W. Grant, North Topeka	
1926	Highland Park Central Elementary School	2704 Indiana, Topeka	Gone
1927	Monroe Grade School	1505 Monroe, Topeka	
1928	Franklin L. Crane Junior High School	17th & Tyler, Topeka	
1928	Oakland Junior High School Alterations	1035 N. Michigan, Topeka	
1928	Washburn College-Field House	17th & Washburn, Topeka	
1930s	Dawson Grade School	Seward Ave, Shawnee County	Address According to the 1938 City Directory
1932	Topeka High School	800 W. 10th, Topeka	
1933	Randolph Grade School Building	1400 Randolph, Topeka	
1935	East Side Junior High School	1210 E 8th , Topeka	Heating, ventilation, plumbing, and wiring
1935	Sumner Grade School	330 Western Ave, Topeka	
1939	State Street Elementary School	1820 State, Topeka	
1940s	Washburn College-Administration Building	17th & Washburn, Topeka	
1941	Quincy Grade School	1107 N. Quincy, Topeka	Heating system alterations
1946	Holliday Junior High School	2315 Pennsylvania, Topeka	Pictured in newspaper article
1946	Oakland Junior High School	1035 N. Michigan, Topeka	Replaced earlier one?
1948	East Indiana[Indianola] Grade School	2000 N. Fillmore, Topeka	School District No.42
1950s	Curtis Junior High Addition	300 W. Grant, North Topeka	Expresses structure w/brick infill
1951	Larned Eastside Elementary School	12th & Fry, Larned, Kansas	

1951	Larned High School	815 Corse, Larned, Kansas	Modernized
1952	Assumption School and Convent	721-723 Jackson, Topeka	
1952	Pauline Central Grade School Addition-District	Shawnee County	Near Forbes Field
1952	Rice School Addition-District No. 8	550 Norwood	Adventure Center indicated on map
1952	Washburn Rural High School	1900 Hope Ave, Topeka	According to the 1952 City Directory
1953	Dawson Grade School Addition-District No. 92	Bates Rd at Rice Ave, Topeka	Address according to the 1952 City Directory
1953	East Avondale School -District No. 97	455 Golf Park Blvd, Topeka	School District No.97
1953	East Indianola Grade School Addition	2000 N. Fillmore, Topeka	School District No.42
1953	Seaman Rural High School	1124 W. Lyman Rd., Topeka	This is the same vacinity of the original building
1955	East Avondale School Addition-District No. 97	455 Golf Park Blvd, Topeka	School District No.97
1955	Hayden High School Addition and Remodeling	S.W. Gage Blvd., Topeka	
1955	Seaman High School-Field House	1124 W. Lyman Rd., Topeka	Address according to the 1970 City Directory
1956	Boswell Junior High School	1301 Boswell Av., Topeka	
1956	Boy's Industrial School-Enclosed Pool & Industri	Upper Silver Lake Rd, Topeka	
1956	Dawson Grade School-District No. 92	Bates Rd at Rice Ave, Topeka	Address according to the 1952 City Directory
1956	Roosevelt Junior High School	211 Buchanan, Topeka	
1956	Southwest Avondale School and Addition	Washburn & Westview, Topeka	
1957	East Avondale School Addition-District No. 97	455 Golf Park Blvd, Topeka	School District No.97
1957	Topeka High School Swimming Pool	800 W. 10th, Topeka	
1959	Eisenhower Junior High School	3300 Minnesota Ave, Topeka	
1959	Jardine Junior High School	33rd & Randolph, Topeka	
1959	Washburn Rural High School Addition	1900 Hope Ave, Topeka	This is an assumption as to address
1960	Washburn Rural High School	1900 Hope Ave, Topeka	1970 City Directory does not list WRHS
1962	Parkdale School Addition	10th & Lake (north of Chandler Field)	Gone
1965	Highland Park Central Elementary School	2714 Indiana, Topeka	Replaced the earlier one?
ND	Highland Park Rural Highschool-Stadium Addition		High School was next to elementary school in 1920s
ND	Holliday Junior High School Addition	2315 Pennsylvania, Topeka	

Appendix D

Historic Paint Study

MONROE ELEMENTARY SCHOOL NATIONAL HISTORIC SITE

Historic Color Study - First Paint Campaign.

Executed By: SEEBOHM, Ltd. - Steve Seebohm
PO Box 4763
East Lansing, MI 48826
Phone: 517-339-1900 FAX: 517-339-1920

Executed For: Quinn Evans/Architects
219 1/2 North Main Street
Ann Arbor, MI 48104

Date Executed: December, 1995

Date Submitted: July 9, 1996

Note: All paint colors are matched to the Munsell Color Notation System.

FIRST FLOOR

ROOM #	Room Name	Surface	Munsell Color Match
1	Kindergarten	Ceiling	2.5Y 8/2
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	2.5Y 8/4
		Lower Wall	2.5Y 8/4
		Baseboard	7.5YR 6/4
2	Coat Room	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Baseboard	10YR 5/2
3	Room #3	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Baseboard	N/A
4	Girls' Toilet	Ceiling	5Y 8/1
		Upper Wall	2.5Y 8/4
6	Stage	Ceiling	N/A
		Upper Wall	2.5Y 8/4
		Middle Wall	N/A
		Chair Rail	N/A
		Lower Wall	N/A
		Baseboard	N/A
8	Gym/Auditorium	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4

9	Vestibule	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
10 (A)	Manual Training	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	10YR 6/6
		Lower Wall	10YR 6/6
		Baseboard	10YR 6/6
10 (B)	Manual Training	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	5B 8/1
		Lower Wall	5B 8/1
		Baseboard	5B 8/1
11	Boys' Toilet	Ceiling	2.5Y 8/4
		Upper Wall	N/A -too few layers, not original
13	Classroom	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	10YR 5/2
		Lower Wall	10YR 5/2
		Baseboard	7.5YR 2/4
14	Classroom	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	10YR 5/2
		Lower Wall	10YR 5/2
		Baseboard	7.5YR 2/4
15	Teacher Office-Restroom	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
17	Teacher Office-Storage	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
18	Teacher Office	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	10YR 6/6
		Lower Wall	10YR 6/6
		Baseboard	7.5YR 2/4

19	(Entry Hall)	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
20	Office	Ceiling	2.5Y 8/2
		Upper Wall	2.5Y 8/2
		Middle Wall	2.5Y 8/4
		Chair Rail	10YR 6/6
		Lower Wall	10YR 6/6
		Baseboard	10YR 6/6
21	Room #21	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Baseboard	10YR 6/6
22	Room #22	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
23	Classroom	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	N/A
		Lower Wall	N/A
		Baseboard	7.5YR 4/4
24	Classroom	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	N/A
		Lower Wall	N/A
		Baseboard	7.5YR 4/4
26	Corridor	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4

SECOND FLOOR

1	Classroom	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	5YR 6/4
		Lower Wall	5YR 6/4
		Baseboard	5YR 5/2
3	Janitor Room	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
4	Girls' Toilet	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
6	Classroom	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	10YR 6/6
		Lower Wall	10YR 6/6
		Baseboard	10YR 6/6
7	Boys' Toilet	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
9	Classroom	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	10YR 6/6
		Lower Wall	10YR 6/6
		Baseboard	10YR 6/6
10	Lunchroom	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	5YR 6/2
		Lower Wall	5YR 6/2
		Baseboard	5YR 6/2
11	Pantry Room	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	10YR 5/2
13	Fitting Room	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Chair Rail	10YR 5/2
		Lower Wall	10YR 5/2
		Baseboard	10YR 5/2

14	Domestic Science & Art Room	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	5YR 5/2
		Lower Wall	5YR 5/2
		Baseboard	5YR 5/2
15	Classroom	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	5YR 5/2
		Lower Wall	5YR 5/2
		Baseboard	5YR 5/2
16	Classroom	Ceiling	2.5Y 8/4
		Upper Wall	2.5Y 8/4
		Middle Wall	2.5Y 8/4
		Chair Rail	10YR 6/6
		Lower Wall	10YR 6/6
17	Corridor	Ceiling	N/A -too few layers
		Upper Wall	2.5Y 8/4

Interior Window Casing	5BG 5/1
Exterior Window Casing	5Y 8/1
Exterior Door	5BG 5/1
Exterior Door Casing	5Y 8/1

Appendix E

Lead-based Paint Study

MEMORANDUM

DOCUMENT: leadtest.96
DATE: 06/13/96 (Thursday) 6:21am
REPLY TO
ATTN. OF: CHAS SESSOMS SLBE
SUBJECT: Trip report HEHO AND BROWN VS. BRD. OF ED.
5/4/96 to 5/11/96

TO: FACILITY MANAGER, DICK FISHER AND FILES

==========

Departed Frankfort Mich. 5-4-96 at 0700 EST: Travel to Lincoln Ill. arr at 17:00 cst: Made hotel arrangements.
Departed Lincoln Ill 5-5-96 0700 cst; travel to Topeka Kansas arr. at 16:30 cst and made hotel accommodations.
Arr. Brown vs Board in Topeka Kansas 5-6-96 at 0900 cst: Begin testing at 10:00 am after meeting with Superintendent Ray Harper to discuss testing and potential results. Completed testing at 16:00 cst.
Depart Topeka 5-7-96 at 07:00 travel to Iowa City Iowa arriving at 16:00 cst.
Depart Iowa City 5-8-96 and arrive HEHO at 8:00 am. Meet with Doug Pratt Maint. Supervisor and begin testing at approx. 10:00 AM. Test through remainder of day to 16:00 cst.
Testing at HEHO 5-9-96 8:30 am to 16:00 cst. Train HEHO personnel on use of equipment during this day.
Testing at HEHO 5-10-96 8:30 am to 16:00 cst
Travel 5-11-96 depart HEHO at 9:00 am cst and travel to Frankfort Mich. Arriving at 17:45 pm est.

All results of testing at HEHO to be record by HEHO staff and information forwarded to Dick Fisher. The test equipment was left at HEHO under the care of Doug Pratt. He is to notify Dick Fisher when work is completed. Unit is to be returned to SLBE?

All test results from Brown vs Board were brought back to SLBE with paint samples for further testing. These paint sample test results were forwarded to SPL labs in Traverse City Michigan. Results obtained from these samples have been forwarded to Dick Fisher in MWRO along with test results using the XK 3 testing unit as of 6/7/96.

All travel was completed using Government vehicles with total milage of 2279 miles.

Any questions please direct to Dan Krieber or Chas. Sessoms SLBE

Thanks

Chas Sessoms

NATIONAL PARK SERVICE LEAD PAINT TEST REPORT TEST # SIBE 0185

Region _____ Park Topeka Bldg. Name Brown VS Board of Ed. Bldg. No. _____

Date 5-6-96 Time 8:30 AM Tech. C. Sessoms Inst. Calib. Ok No ____ Yes ✓

Floor Plan Yes ____ No ✓ Bldg. Data Sheet Yes ____ No ✓ Samples Taken for Lab Analysis Yes ✓ No ____

See Drawing on Back of Sheet

		LAB RESULT
BASEMENT		
Window Sash	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Window Trim	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
~~Door~~ STall Door	#1 1.7 #2 _____ #3 _____	
Door Trim	#1 _____ #2 _____ #3 _____	
Walls	.9	
Ceilings	1.1	
Room #1	Paint In Poor Condition	
1ST FLOOR KITCHEN		
Window Sash	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Window Trim	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Door	#1 _____ #2 _____ #3 _____	
Door Trim	#1 _____ #2 _____ #3 _____	
Cabinets	Upper _____ Lower _____	
Walls	1.8	
Ceilings	1.8	
Room # 2	Paint in Poor condition	
1ST FLOOR LIVING ROOM		
Window Sash	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Window Trim	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Door	#1 _____ #2 _____ #3 _____	
Door Trim	#1 _____ #2 _____ #3 _____	
Walls	3.	
Ceilings	1.5	
Room #3	Paint in Poor Condition	
1ST FLOOR DEN OR LIBRARY		
Window Sash	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Window Trim	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Door	#1 _____ #2 _____ #3 _____	
Door Trim	#1 _____ #2 _____ #3 _____	
Walls	1.9	
Ceilings	1.2	
Room # 4	Paint in Poor Condition	
Exterior Doors Tested 0.0		
1ST FLOOR DINING ROOM		
Window Sash	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Window Trim	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Door	#1 _____ #2 _____ #3 _____	
Door Trim	#1 _____ #2 _____ #3 _____	
Walls	1.5	
Ceilings	1.1	
Room #5	Paint in Poor Condition	

All Interior Doors were Varnished Random Test .26

NATIONAL PARK SERVICE LEAD PAINT TEST REPORT TEST # SLBE 0185

Region _____ Park Topeka Bldg. Name Brown VS Board of Ed. Bldg. No. _____

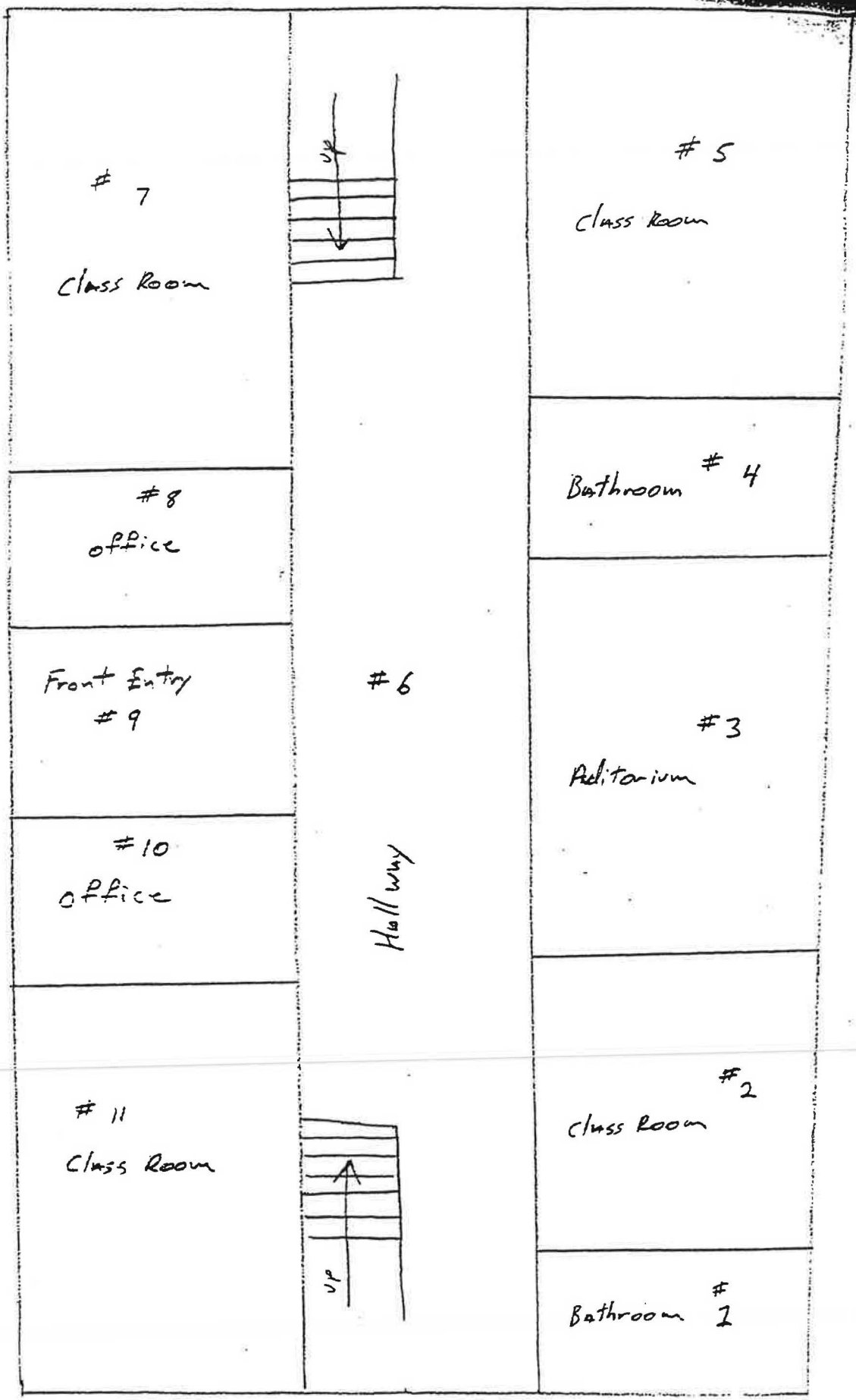
Date 5-6-96 Time 8:30am Tech. C. Sessoms Inst. Calib. Ok No ____ Yes ✓

Floor Plan Yes ____ No ✓ Bldg. Data Sheet Yes ____ No ____ Samples Taken for Lab Analysis Yes ✓ No ____

See Back of sheet

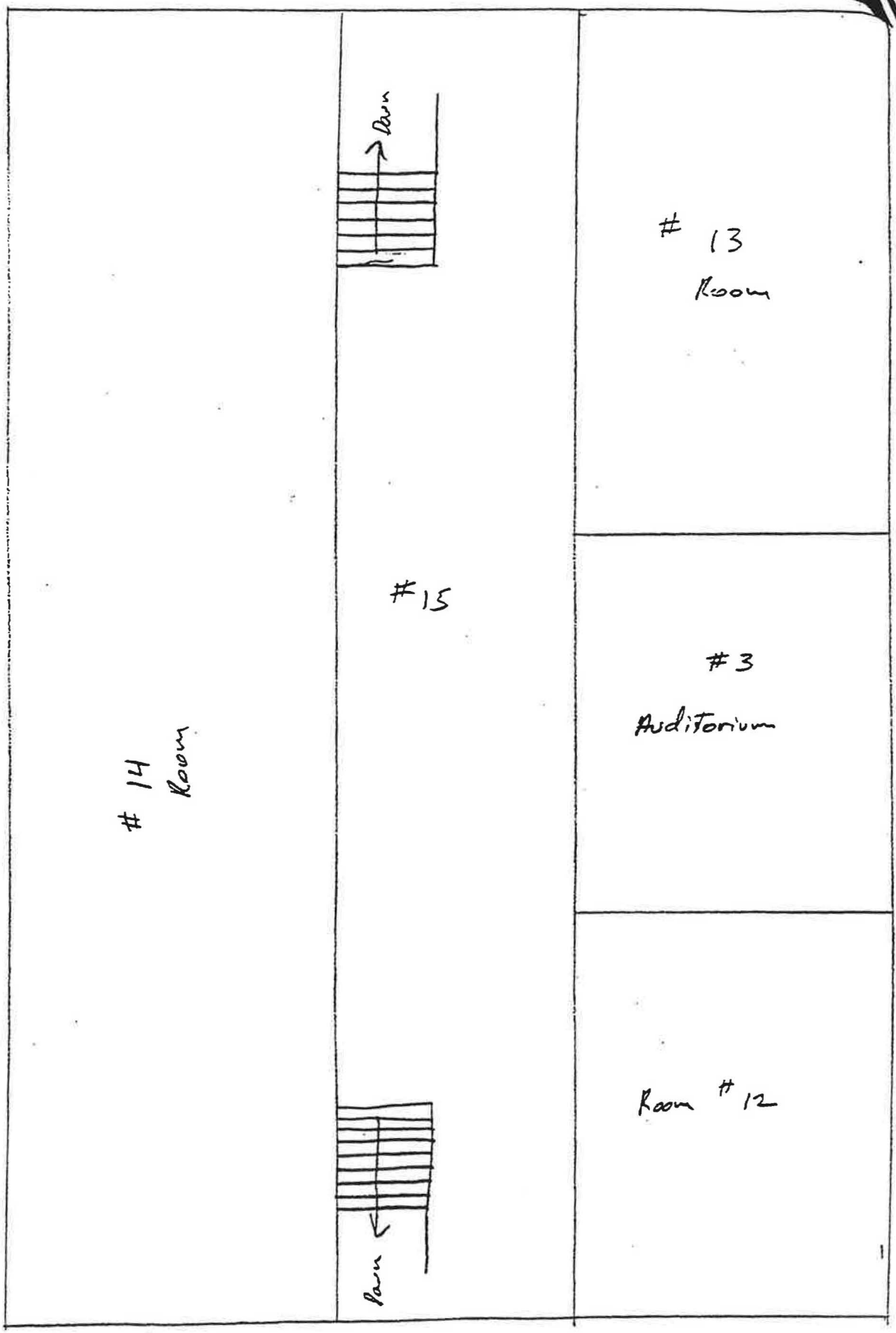
		LAB RESULTS
BASEMENT		
Window Sash	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Window Trim	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Door	#1 _____ #2 _____ #3 _____	
Door Trim	#1 _____ #2 _____ #3 _____	
Walls	1.8	
Ceilings	1.7	
Room #6 Hallway 1st Floor		
1ST FLOOR KITCHEN		
Window Sash	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Window Trim	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Door	#1 _____ #2 _____ #3 _____	
Door Trim	#1 _____ #2 _____ #3 _____	
Cabinets	Upper _____ Lower _____	
Walls	1.6	
Ceilings	1.3	
Room #7		
1ST FLOOR LIVING ROOM		
Window Sash	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Window Trim	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Door	#1 _____ #2 _____ #3 _____	
Door Trim	#1 _____ #2 _____ #3 _____	
Walls	2.1	
Ceilings	1.4	
Room #8		
1ST FLOOR DEN OR LIBRARY		
Window Sash	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Window Trim	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Door	#1 _____ #2 _____ #3 _____	
Door Trim	#1 _____ #2 _____ #3 _____	
Walls	1.5	
Ceilings	1.7	
Room #9		
1ST FLOOR DINING ROOM		
Window Sash	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Window Trim	#1 _____ #2 _____ #3 _____ #4 _____ #5 _____	
Door	#1 _____ #2 _____ #3 _____	
Door Trim	#1 _____ #2 _____ #3 _____	
Walls	2.1	
Ceilings	1.3	
Room #10		

1st Floor


#7
Class Room
#8
office
Front Entry
#9
#10
office
#11
Class Room
#6
Hallway
up
up
#5
Class Room
Bathroom #4
#3
Auditorium
#2
Class Room
Bathroom #1

2nd Floor

Company:
Site:
Project



MICHIGAN
459 HUGHES
TRAVERSE CITY
1-888-SPL-I
1-888-775-4

****SUMMARY REPORT*****

05/31/96

Company: NATIONAL PARK SERVICE
Site: KANSAS CITY, KS
Project No:
Project: NATIONAL PARK SERVICE

ANALYTICAL DATA
NOTE: ND - Not Detected

SPL ID MATRIX	CLIENT ID DATE SAMPLED	BENZENE	TOLUENE	ETHYLBENZ.	XYLENE	TPH-IR	TPH-GC	LEAD	MTBE
9605334-01 PAINT	RM 13 WALL 05/17/96 12:35:00							9300 1.00mg/kg	
9605334-02 PAINT	RM 1 CEILING 05/17/96 12:35:00							5610 1.00mg/kg	
9605334-03 PAINT	RM 13 CEILING 05/17/96 12:35:00							3670 1.00mg/kg	
9605334-04 PAINT	RM 1 DOOR 05/17/96 12:35:00							5900 1.00mg/kg	
9605334-05 PAINT	RM 3 WALL 05/17/96 12:35:00							4350 1.00mg/kg	

LEAD - METHOD 7420

MICHIGAN LAB
459 HUGHES DRIVE
TRAVERSE CITY, MI 496
1-888-SPL-MICH
1-888-775-6424

Certificate of Analysis No. MI-9605334-01

NATIONAL PARK SERVICE
Box 277
Empire, MI 49630
ATTN: Frank Smith

DATE: 05/31/96

PROJECT: NATIONAL PARK SERVICE
SITE: KANSAS CITY, KS
SAMPLED BY: NATIONAL PARK SERVICE
SAMPLE ID: RM 13 WALL

PROJECT NO:
MATRIX: PAINT
DATE SAMPLED: 05/17/96 12:35:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Lead, Total METHOD 7420 Analyzed by: JAS Date: 05/31/96 10:48:00	9300	1.00	mg/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses were performed in accordance with EPA Guidelines for analysis and quality control.

SPL, Inc., - S. L. Grenda

MICHIGAN
459 HUGHES
TRAVERSE CIT
1-888-SPL-
1-888-775-

Certificate of Analysis No. MI-9605334-02

NATIONAL PARK SERVICE
Box 277
Empire, MI 49630
ATTN: Frank Smith

DATE: 05/3

PROJECT: NATIONAL PARK SERVICE
SITE: KANSAS CITY, KS
SAMPLED BY: NATIONAL PARK SERVICE
SAMPLE ID: RM 1 CEILING

PROJECT NO:
MATRIX: PAINT
DATE SAMPLED: 05/17/96 12:3
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UN
Lead, Total METHOD 7420 Analyzed by: JAS Date: 05/31/96 10:48:00	5610	1.00	mg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses were performed in accordance with EPA Guidelines for analysis and quality control.

SPL, Inc., - S. L. Grenda

MICHIGAN LAB
459 HUGHES DRIVE
TRAVERSE CITY, MI 49686
1-888-SPL-MICH
1-888-775-6424

Certificate of Analysis No. MI-9605334-03

NATIONAL PARK SERVICE
Box 277
Empire, MI 49630
ATTN: Frank Smith

DATE: 05/31/96

PROJECT: NATIONAL PARK SERVICE
SITE: KANSAS CITY, KS
SAMPLED BY: NATIONAL PARK SERVICE
SAMPLE ID: RM 13 CEILING

PROJECT NO:
MATRIX: PAINT
DATE SAMPLED: 05/17/96 12:35:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Lead, Total METHOD 7420 Analyzed by: JAS Date: 05/31/96 10:49:00	3670	1.00	mg/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses were performed in accordance with EPA Guidelines for analysis and quality control.

SPL, Inc., - S. L. Grenda

MICHIGAN
459 HUGHES
TRAVERSE CITY,
1-888-SPL-M
1-888-775-6

Certificate of Analysis No. MI-9605334-04

NATIONAL PARK SERVICE
Box 277
Empire, MI 49630
ATTN: Frank Smith

DATE: 05/3:

PROJECT: NATIONAL PARK SERVICE
SITE: KANSAS CITY, KS
SAMPLED BY: NATIONAL PARK SERVICE
SAMPLE ID: RM 1 DOOR

PROJECT NO:
MATRIX: PAINT
DATE SAMPLED: 05/17/96 12:35
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UN
Lead, Total METHOD 7420 Analyzed by: JAS Date: 05/31/96 10:49:00	5900	1.00	mg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th e
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses were performed in accordance with EPA Guidelines for analysis and quality control.

SPL, Inc., - S. L. Grenda

MICHIGAN LAB
459 HUGHES DRIVE
TRAVERSE CITY, MI 496E
1-888-SPL-MICH
1-888-775-6424

Certificate of Analysis No. MI-9605334-05

NATIONAL PARK SERVICE
Box 277
Empire, MI 49630
ATTN: Frank Smith

DATE: 05/31/96

PROJECT: NATIONAL PARK SERVICE
SITE: KANSAS CITY, KS
SAMPLED BY: NATIONAL PARK SERVICE
SAMPLE ID: RM 3 WALL

PROJECT NO:
MATRIX: PAINT
DATE SAMPLED: 05/17/96 12:35:00
DATE RECEIVED: 05/17/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Lead, Total METHOD 7420 Analyzed by: JAS Date: 05/31/96 10:49:00	4350	1.00	mg/kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses were performed in accordance with EPA Guidelines for analysis and quality control.

SPL, Inc., - S. L. Grenda

MICHIGAI
459 HUGHES
TRAVERSE CIT
1-888-SPL-
1-888-775-

QUALITY CONTROL DOCUMENTATION

MICHIGAN LAB
459 HUGHES DRIVE
TRAVERSE CITY, MI 49686
1-888-SPL-MICH
1-888-775-6424

** SPL QUALITY CONTROL REPORT **

Matrix: Soil

Reported on: 05/31/96
Analyzed on: 05/31/96
Analyst: JAS

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Lead, Total
METHOD 7420

SPL Sample ID Number	Blank Value mg/kg	Amt Added mg/kg	Matrix Spike Recovery %	Matrix Spike Duplicate Recovery %	Relative Percent Difference %	QC Limits Recovery	RPD Max.
SPIKE	ND	100.0	92.0	94.0	2.2	74 - 115	20

9605311046JAS -9605198

Samples in batch:

9605334-01A 9605334-02A 9605334-03A 9605334-04A
9605334-05A 9605334-06A

COMMENTS:

SPL, Incorporated

Ann Benningfield

Ann Benningfield

SPL Environmental Laboratories, Inc.
459 Hughes Drive
Traverse City, MI 49684
(616) 947-5777 Fax: (616) 947-7455
Contact: Steve Grenda

Page _____ of _____

Analysis Request and Chain of Custody Record

96-05-334

Temp: | Storage: cool

Project No. | Company/Project Name: NATIONAL PARK SERVICE | Project Location: KANSAS CITY, KANSAS

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container No.	Sample Container Size	Sample Type (Liquid, Soil Sludge, Etc.)	Preservative	ANALYSIS REQUESTED Test	ANALYSIS REQUESTED Method	Remarks
RM 13 WALL	5-17-96 1235					paint		lead		
RM 1 CIELING	5-17-96 1235									
RM13 CEILING	5-17-96 1235									
RM 1 DOOR	5-17-96 1235									
RM3 WALL	5-17-96 1235									

Samplers: (Signature)	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
Affiliation:	Relinquished by: (Signature)	Date: Time:	Received by laboratory: (Signature)	Date: 5/17 Time: 1240	Intact

REPORT TO: CONSULTANT'S NAME & ADDRESS: NATIONAL PARK SERVICE Frank Smith
9922 FRONT ST EMPIRE, MICH 49630-9797

CONSULTANT'S PHONE #: 616-326-5134

CONSULTANT'S W.O./JOB #: _____

INVOICE TO: _____
PROJ. MGR.: _____

REMARKS:

Appendix F

Mortar Analysis

soil and materials engineers, inc.

43980 Plymouth Oaks Blvd. Plymouth, MI 48170-2584 (313) 454-9900 FAX (313) 454-0629

RECEIVED JUN 1 2 1997

Kenneth W. Kramer, PE
Frank A. Henderson, PG
Gerald M. Belian, PE
Garrett H. Evans, PE
Larry P. Jedele, PE
Starr D. Kohn, PhD, PE
Edward S. Lindow, PE
Robert C. Rabeler, PE
Robert E. Zayko, PE

Timothy H. Bedenis, PE
J. William Coberly, CET
Chuck A. Gemayel, PE
Cheryl Kehres-Dietrich, CGWP
Gerard P. Madej, PE
Sheryl K. Fountain
Michael E. Gase, CWI
Julie A. Hartner
Cary T. Keller, PE
Mark K. Kramer, PE
Truman F. Maxwell, CPA
Michael S. Meddock, PE
Timothy J. Mitchell, PE
Thomas M. Peet, PE
Thomas M. Powell
Thomas P. Rozman, PE
John C. Zarzecki, CWI

June 6, 1997

Ms. Brenda Rigdon
Quinn Evans/ Architects, Inc.
219-1/2 North Main Street
Ann Arbor, Michigan 48104

Transmitted by Facsimile (313) 663-5044

RE: Masonry Mortar Evaluation
Monroe Elementary School
Monroe, Michigan
SME Project No. PM28076

Dear Ms. Rigdon:

In response to your April 28, 1997 transmittal, SME has performed laboratory evaluation and aggregate classification of the submitted masonry mortar samples from the referenced project. The objective of the evaluation is to assist in selection of a restoration mortar.

We understand the submitted sample mortars are over 50 years old. Samples were submitted in hardened form from ten locations within the structure. These locations were reported as follows:

Sample 1	Hollow Clay Tile Mortar - First Floor
Sample 2	Hollow Clay Tile Mortar - Second Floor
Sample 3	Foundation Stone Mortar
Sample 4	Replacement Stone Mortar - Tuckpointing
Sample 5	Original Mortar Limestone Watertable - NE Corner
Sample 6	Glazed Brick Mortar - Corridor South Side
Sample 7	Face Brick Mortar - North Face
Sample 8	Original Stone Mortar - NE Corner at Fence Post
Sample 9	Glazed Brick Mortar - Second Floor Corridor North Side
Sample 10	Face Brick Mortar - South Side

AGGREGATE ANALYSIS

Current mortars are specified to meet ASTM C270 requirements. This specification requires the use of an aggregate which meets the gradation requirements of referenced ASTM C-144. The aggregate gradation obtained from five of the larger samples of the in-place mortar is presented in Table 1 and, for information, are compared to the C-144 gradation for natural sand. Remaining samples were not of sufficient size to perform a gradation analysis.

TABLE 1
AGGREGATE GRADATION ASTM C-144 - PERCENT PASSING

SIEVE SIZE	NATURAL SAND	SAMPLE No.1	SAMPLE No.3	SAMPLE No.6	SAMPLE No.7	SAMPLE No.10
No.4	100	100	100	100	100	100
No.8	95 - 100	99.1	99.5	99.8	100	100
No.16	70 - 100	95.0	97.6	94.6	95.5	94.7
No.30	40 - 75	85.7	84.5	83.5	84.7	85.5
No.50	10 - 35	40.5	45.5	42.0	41.7	43.5
No.100	2 - 15	10.5	11.3	11.7	12.7	12.0
No.200	---	1.5	0.50	1.0	2.0	2.0

The actual aggregate gradation for the historic mortar samples is generally finer than current ASTM C-144 materials. The original aggregates were from a natural source and contained few fractured particles. The analysis of the five aggregates indicates they may have been from the same source, as the variation on the individual sieves is only (±) 2%. The original sand is similar to an ASTM C-778 Standard Sand, Graded. This type of standard graded sand is typically a silica quartz material.

The majority of aggregate, with exception of samples 7 and 10, can be classified as a natural crystalline silica, with equal parts of quartz and dolomitic sand and traces of feldspar. The color appearance of the aggregate was light brown to tan , with only minute deleterious substances observed in the sample. To simulate this aggregate we recommend a mixture of 50% ASTM C-778 Standard Graded Sand (quartz silica) and 50% 2NS (concrete aggregate - manufactured) which has been sieved to remove all particles greater than a No.16 sieve.

The aggregate in samples 7 and 10 were observed to consist of quartz silica and a reddish cinder product. Based on the age of the application and coloration the cinder, the product could be a ground partially fired red brick material. Ground brick was commonly used to create desired colors in some applications. Addition of the quartz silica provided the desired grading and coarseness to the aggregate. To match this material using currently available materials we recommend the use of the sand aggregate mixture recommended for the eight other samples with the color achieved using a red mortar pigment which meets ASTM C-979 standards. Red pigment from natural red iron oxides is typically high in tint value and can easily color strong gray Portland cement/lime mortars or masonry mortars.

CEMENTATIOUS ANALYSIS

Analysis of the mortar composition was performed using both the ASTM C 85, Maleic Acid Method and microscopic evaluation. Based on the evaluation the mortar, the mixtures appear to have five specific ratios of cementitious material

(Portland Cement and Hydraulic Lime) to aggregate by volume. These proportions are presented in Table 2.

TABLE 2
CEMENTATIOUS : AGGREGATE RATIOS

MIXES	CEMENTATIOUS MATERIAL		SAND	RATIO
SAMPLES	Portland Cement	Type S Hydrated Lime	AGGREGATE (Natural)	Cement: Lime: Sand
No. 1 & 2	1 Part	1/2 Part	4 Parts	1:1/2:4
No. 3. 5. & 8	1 Part	3/4 Part	5 Parts	1:3/4:5
No. 6 & 9*	1 Part	1/2 Part	5 Parts	1:1/2:5
No. 7 & 10	1 Part	1/3 Part	4-1/2 Parts	1:1/3:4-1/2
No. 4	1 Part	1/4 Part	3-1/2 Parts	1:1/4:3-1/2

Notes: 1) Sample No.9 was reviewed by optical procedures only. The amount of sample (1.2 grams) was not adequate for chemical analysis.

2) The ratios are assumed to have a 1.5% error factor due to the possibility the mortar aggregates may yield dissolved calcium oxide and silica under the specific test conditions, which will alter the test results obtained from this procedure.

The tuckpointing mortar in sample No.4 is judged to be too hard for use with the existing original stone mortars. The existing material should be replaced with an acceptable mixture.

The mortar samples were noted to be carbonized, that is the majority of lime had absorbed carbon dioxide and converted into a dolomitic limestone. The samples also indicated accumulations of dirt and debris which resulted in color darkening. To meet the requirement of blending in the repairs, the initial step would be to clean the existing mortars to the point where they are acceptable. Once cleaned, the mortar color can be matched using various mortar pigments or addition of limestone dust to darken the new materials. Limestone dust should be treated as an aggregate and not combined with the cementatious materials volume.

This report has been prepared in accordance with generally accepted masonry engineering practices to aid in the evaluation of mortar materials. In the process of performing the analysis for this report, procedures are followed that represent reasonable and accepted practice in the field of restoration engineering. If the reported design criteria is found to have changed, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed, and the conclusions of this report are modified or approved in writing by our office. The analysis and recommendations within this report are based upon the data obtained from our reviews of the submitted samples provided by Quinn Evans/ Architects.

If there are any questions with regard to this report or the services performed, please do not hesitate to contact us. Thank you for selecting SME for these services.

Very truly yours,

SOIL AND MATERIALS ENGINEERS, INC.

John C. Zarzecki, C.E.T.
Senior Materials Consultant

Edward S. Lindow Jr., P.E.
Vice President

jcz/masn/28076QE.doc

Appendix G

Preliminary Cost Estimate

COST ESTIMATE

Monroe Elementary School
Topeka, Kansas

Prepared for:

Quinn Evans/Architects
219½ North Main Street
Ann Arbor, Michigan 48104

734-663-5888
Fax 734-663-5044

April 12, 2000

Prepared by:

R.W. Brown & Associates
404 Pine Street, S.E., Suite 202
Vienna, Virginia 22180-4871
703-255-2580
Fax 703-255-4927

COST ESTIMATE

Project: Monroe Elementary School, Topeka, Kansas	Page 1
Architect: Quinn Evans/Architects	RWB Job # 00-12-A
Estimated by: R.W. Brown & Associates	4/12/00

NOTES

1 Unit costs include subcontractors' overhead and profit, except mechanical and electrical, which are noted as separate line items at the end of their respective sections.

2 Unit prices, provided by suppliers, subcontractors, and past experience, reflect standard construction methods and materials. Sales tax and labor burden are included in the unit prices of each item. Labor prices are based on open shop conditions but do not reflect overtime.

3 This estimate is based on Historic Structure Report dated June 1998.

4 The total cost is based on a construction start of Spring 2001.

5 Exclusions:

Architectural and Engineering Fees
Furnishings or equipment not itemized in the estimate

6 An allowance for hazardous material abatement (if required) has been included in the itemized detail of the estimate.

COST ESTIMATE

Project: Monroe Elementary School, Topeka, Kansas	Page 2
Architect: Quinn Evans/Architects	RWB Job # 00-12-A
Estimated by: R.W. Brown & Associates	4/12/00

Project Recapitulation

Page	Item		Total Cost	Cost per SF
	Phase 1			
3	Exterior Envelope	663,169		$ 28.10
3	Site Work	267,354		$ 11.33
	Total Phase 1		$ 930,523	
	Phase 2			
9	Interior Renovations	2,698,620		$ 114.34
	Total Phase 2		$ 2,698,620	
	Total Project		**$ 3,629,143**	$ 153.77

Gross Area: 23,601 SF

COST ESTIMATE

Project: Monroe Elementary School, Topeka, Kansas		Page 3
Architect: Quinn Evans/Architects		RWB Job # 00-12-A
Estimated by: R.W. Brown & Associates	Phase 1	4/12/00

Recapitulation
Phase 1

		Exterior Envelope	Site Work	$/SF (Bldg Only)
DIV 1/GENERAL REQUIREMENTS	10%	43,267	17,443	1.83
DIV 2/SITE WORK		-	145,666	-
DIV 3/CONCRETE		13,255	-	0.56
DIV 4/MASONRY		44,515	-	1.89
DIV 5/METALS		10,000	-	0.42
DIV 6/WOOD & PLASTICS		15,830	-	0.67
DIV 7/THERMAL & MOISTURE PROTECTION		216,640	-	9.18
DIV 8/DOORS & WINDOWS		100,005	-	4.24
DIV 9/FINISHES		25,634	-	1.09
DIV 10/SPECIALTIES		1,800	-	0.08
DIV 11/EQUIPMENT		-	-	-
DIV 12/FURNISHINGS		-	-	-
DIV 13/SPECIAL CONSTRUCTION		-	-	-
DIV 14/CONVEYING		-	-	-
DIV 15/PLUMBING		-	-	-
DIV 15/HVAC		-	-	-
DIV 15/FIRE PROTECTION		-	-	-
DIV 16/ELECTRICAL		4,992	28,764	0.21
SUBTOTAL		475,939	191,873	20.17
GENERAL CONTRACTOR'S OH&P @	10%	47,594	19,187	2.02
SUBTOTAL		523,532	211,060	22.18
BOND @	1.5%	7,853	3,166	0.33
SUBTOTAL		531,385	214,226	22.52
DESIGN CONTINGENCY @	20%	106,277	42,845	4.50
SUBTOTAL		637,662	257,071	27.02
ESCALATION @	4%	25,506	10,283	1.08
TOTAL		$ 663,169	$ 267,354	$ 28.10

GROSS AREA: 23,601 SF

COST ESTIMATE

Project: Monroe Elementary School, Topeka, Kansas		Page 4
Architect: Quinn Evans/Architects		RWB Job # 00-12-A
Estimated by: R.W. Brown & Associates	Exterior Envelope	4/12/00

DIVISION 3/CONCRETE

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
CONCRETE REPAIRS					
PREP & PATCH AUDITORIUM ROOF DECK	3,648	SF	2.00	7,296	
SCAFFOLDS & EQUIPMENT	3,648	SF	0.40	1,459	
ELEVATOR PIT	1	EA	4,500.00	4,500	
					13,255
TOTAL DIVISION 3/CONCRETE					**13,255**

DIVISION 4/MASONRY

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
UNIT MASONRY					
REPOINT FACE BRICK	7,377	SF	3.00	22,131	
REPOINT LIMESTONE	2,804	SF	3.50	9,814	
CLEAN LIMESTONE	2,804	SF	2.50	7,010	
SCAFFOLDING & EQUIPMENT	13,900	SF	0.40	5,560	
TOTAL DIVISION 4/MASONRY					**44,515**

DIVISION 5/METALS

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
STRUCTURAL METALS					
MISCELLANEOUS STRUCTURAL STEEL REPAIRS - ALLOW	1	LS	10,000.00	10,000	
TOTAL DIVISION 5/METALS					**10,000**

DIVISION 6/WOOD & PLASTICS

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
ROUGH & FINISH CARPENTRY					
WOOD BRACING & BLOCKING OF ROOF STRUCTURE	4,059	BF	2.50	10,148	
REPLACE DECKING - SELECTIVE	8,118	SF	0.70	5,683	
TOTAL DIVISION 6/WOOD & PLASTICS					**15,830**

COST ESTIMATE

Project: Monroe Elementary School, Topeka, Kansas		Page 5
Architect: Quinn Evans/Architects		RWB Job # 00-12-A
Estimated by: R.W. Brown & Associates	Exterior Envelope	4/12/00

DIVISION 7/THERMAL & MOISTURE PROTECTION

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
WATERPROOFING & DAMPPROOFING					
EXCAVATE & BACKFILL - WATERPROOFING	300	CY	28.00	8,400	
MEMBRANE WATERPROOFING	3,744	SF	4.50	16,848	
FOUNDATION DRAINAGE	80	LF	12.00	960	
					26,208
ROOFING & SHEET METAL					
REMOVE BUILT UP ROOF	4,584	SF	0.85	3,896	
REMOVE ASPHALT SHINGLE ROOF	9,660	SF	0.48	4,637	
MEMBRANE ROOFING	4,584	SF	4.00	18,336	
CLAY TILE ROOF	9,660	SF	11.50	111,090	
RIGID ROOF INSULATION	14,244	SF	2.50	35,610	
MEMBRANE BASE FLASHING	840	SF	3.90	3,276	
METAL ROOFING	350	SF	12.00	4,200	
METAL RIDGE/VALLEY FLASHING	648	LF	4.25	2,754	
PENETRATION FLASHING	10	EA	50.00	500	
					184,299
CAULKING					
CAULKING	4,906	LF	1.25	6,133	
					6,133
TOTAL DIVISION 7/THERMAL & MOISTURE PROTECTION					**216,640**

DIVISION 8/DOORS & WINDOWS

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
WINDOWS & GLASS					
WINDOWS - REFURBISH & REGLAZE	3,105	SF	21.00	65,205	
					65,205
STOREFRONTS & ENTRANCES					
GLASS ENTRANCE DOORS - DOUBLE	4	PR	4,500.00	18,000	
DOOR OPERATORS	4	EA	4,200.00	16,800	
					34,800
TOTAL DIVISION 8/DOORS & WINDOWS					**100,005**

COST ESTIMATE

Project: Monroe Elementary School, Topeka, Kansas		Page 6
Architect: Quinn Evans/Architects		RWB Job # 00-12-A
Estimated by: R.W. Brown & Associates	Exterior Envelope	4/12/00

DIVISION 9/FINISHES

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
PAINTING					
PREP & PAINT GUTTERS & DOWNSPOUTS	863	LF	3.00	2,589	
PREP & PAINT METAL EAVES	1,644	SF	1.60	2,630	
PREP & PAINT WINDOWS	3,105	SF	3.00	9,315	
PAINT ENTRY DOORS	4	PR	150.00	600	
PAINT MISCELLANEOUS EXTERIOR TRIM	250	LF	2.00	500	
LEAD PAINT REMOVAL - ALLOW	1	LS	10,000.00	10,000	
TOTAL DIVISION 9/FINISHES					**25,634**

DIVISION 10/SPECIALTIES

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
LOUVERS					
REMOVE PLYWOOD BLOCKING	1	LS	300.00	300	
REPLACEMENT LOUVERS - ALLOW	6	EA	250.00	1,500	
TOTAL DIVISION 10/SPECIALTIES					**1,800**

DIVISION 16/ELECTRICAL

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
DEMOLITION					
REMOVE LIGHT FIXTURES & SURFACE CONDUITS	1	LS	300.00	300	300
DEVICES & CONNECTIONS					
CONNECT OPERATORS	4	EA	125.00	500	
BRANCH CONDUIT & WIRE	60	LF	4.00	240	740
LIGHT FIXTURES					
WALL MOUNTED EXTERIOR	6	EA	400.00	2,400	
BRANCH CONDUIT & WIRE	180	LF	4.00	720	3,120
SUBTOTAL					4,160
SUBCONTRACTOR'S OH & P @	20%				832
TOTAL DIVISION 16/ELECTRICAL					**4,992**

COST ESTIMATE

Project: Monroe Elementary School, Topeka, Kansas		Page 7
Architect: Quinn Evans/Architects		RWB Job # 00-12-A
Estimated by: R.W. Brown & Associates	Site Work	4/12/00

DIVISION 2/SITE WORK - SITE DEVELOPMENT

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
SITE DEMOLITION					
REMOVE BITUMINOUS PAVING	560	SY	3.25	1,820	
REMOVE CURB & GUTTER	550	LF	3.50	1,925	
REMOVE CONCRETE WALKS	7,000	SF	0.78	5,460	
MISCELLANEOUS DEMOLITION	1	LS	3,500.00	3,500	
					12,705
EARTHWORK & GRADING					
NEW TOPSOIL	130	CY	22.00	2,860	
MINOR GRADING	990	SY	2.50	2,475	
EROSION CONTROL	1	LS	2,500.00	2,500	
SEED/SOD	2,700	SY	1.20	3,240	
					11,075
PAVINGS, SURFACING & RAMPS					
BITUMINOUS PAVING	700	SY	21.00	14,700	
CONCRETE CURB & GUTTER	400	LF	16.00	6,400	
CONCRETE WALK	6,950	SF	5.00	34,750	
RAMP WALLS	312	SF	40.00	12,480	
RAMP SURFACES	104	LF	6.50	676	
STRIPING	840	LF	0.75	630	
					69,636
SITE IMPROVEMENTS					
SITE FURNISHINGS	15	EA	750.00	11,250	
					11,250
LANDSCAPING					
TREES - DECIDUOUS SHADE	10	EA	550.00	5,500	
TREES - ORNAMENTAL	15	EA	250.00	3,750	
SHRUBS	50	EA	75.00	3,750	
					13,000
STORM DRAINAGE					
STORM DRAINAGE	ALLOW				10,000
WATER SERVICE					
WATER SERVICE	ALLOW				10,000
SANITARY SEWER					
SANITARY SEWER	ALLOW				8,000
			TOTAL DIVISION 2/SITE WORK - SITE DEVELOPMENT		**145,666**

COST ESTIMATE

Project: Monroe Elementary School, Topeka, Kansas		Page 8
Architect: Quinn Evans/Architects		RWB Job # 00-12-A
Estimated by: R.W. Brown & Associates	Site Work	4/12/00

DIVISION 16/ELECTRICAL - SITE

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
LIGHTS					
FIXTURES - W/POLE & BASE	4	EA	3,000.00	12,000	
BURIED CABLE	420	LF	6.00	2,520	
RAMP LIGHTS	4	EA	350.00	1,400	
BRANCH CONDUIT & WIRE	200	LF	4.25	850	
					16,770
CONNECTIONS					
DUCT BANK - ALLOW	80	LF	90.00	7,200	
					7,200
SUBTOTAL					23,970
SUBCONTRACTOR'S OH & P @	20%				4,794
TOTAL DIVISION 16/ELECTRICAL - SITE					**28,764**

COST ESTIMATE

Project: Monroe Elementary School, Topeka, Kansas		Page 9
Architect: Quinn Evans/Architects		RWB Job # 00-12-A
Estimated by: R.W. Brown & Associates	Phase 2	4/12/00

Recapitulation
Phase 2

		Interior Renovation	$/SF (Bldg Only)
DIV 1/GENERAL REQUIREMENTS	10%	176,066	7.46
DIV 2/SITE WORK		150,005	6.36
DIV 3/CONCRETE		7,500	0.32
DIV 4/MASONRY		17,480	0.74
DIV 5/METALS		46,095	1.95
DIV 6/WOOD & PLASTICS		72,030	3.05
DIV 7/THERMAL & MOISTURE PROTECTION		-	-
DIV 8/DOORS & WINDOWS		90,342	3.83
DIV 9/FINISHES		268,561	11.38
DIV 10/SPECIALTIES		49,140	2.08
DIV 11/EQUIPMENT		-	-
DIV 12/FURNISHINGS		16,212	0.69
DIV 13/SPECIAL CONSTRUCTION		-	-
DIV 14/CONVEYING		83,000	3.52
DIV 15/PLUMBING		84,336	3.57
DIV 15/HVAC		506,005	21.44
DIV 15/FIRE PROTECTION		91,683	3.88
DIV 16/ELECTRICAL		278,272	11.79
SUBTOTAL		1,936,727	82.06
GENERAL CONTRACTOR'S OH&P @	10%	193,673	8.21
SUBTOTAL		2,130,399	90.27
BOND @	1.5%	31,956	1.35
SUBTOTAL		2,162,355	91.62
DESIGN CONTINGENCY @	20%	432,471	18.32
SUBTOTAL		2,594,826	109.95
ESCALATION @	4%	103,793	4.40
TOTAL		$ 2,698,620	$ 114.34

GROSS AREA: 23,601 SF

COST ESTIMATE

Project: Monroe Elementary School, Topeka, Kansas		Page 10
Architect: Quinn Evans/Architects		RWB Job # 00-12-A
Estimated by: R.W. Brown & Associates	Interior Renovations	4/12/00

DIVISION 2/SITE WORK - BUILDING

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
INTERIOR DEMOLITION					
REMOVE PARTITIONS, DOORS & FINISHES	23,601	SF	3.00	70,803	
LOAD & HAUL DEBRIS	800	CY	40.00	32,000	
					102,803
HAZARDOUS MATERIAL REMOVAL					
HAZARDOUS MATERIAL REMOVAL - ALLOW	23,601	SF	2.00	47,202	
					47,202
TOTAL DIVISION 2/SITE WORK - BUILDING					**150,005**

DIVISION 3/CONCRETE

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
CONCRETE					
ELEVATOR PIT	1	EA	4,500.00	4,500	
MISCELLANEOUS CONCRETE	1	LS	3,000.00	3,000	
TOTAL DIVISION 3/CONCRETE					**7,500**

DIVISION 4/MASONRY

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
UNIT MASONRY					
CMU PARTITIONS	1,920	SF	6.50	12,480	
MISCELLANEOUS CUT & PATCH MASONRY	1	LS	5,000.00	5,000	
TOTAL DIVISION 4/MASONRY					**17,480**

DIVISION 5/METALS

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
STRUCTURAL METALS					
MISCELLANOUS STRUCTURAL REPAIRS	1	LS	8,000.00	8,000	
					8,000
MISCELLANEOUS METALS					
STAIR REPLACEMENTS	5	FL	7,500.00	37,500	
FOLDING PARTITION SUPPORT	17	LF	35.00	595	
					38,095
TOTAL DIVISION 5/METALS					**46,095**

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DIVISION 6/WOOD & PLASTICS

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
ROUGH CARPENTRY					
INTERIOR BLOCKING	2,000	BF	1.50	3,000	
					3,000
FINISH CARPENTRY & MILLWORK					
INTERIOR WOOD TRIM	2,400	LF	6.00	14,400	
WOOD SILLS	460	LF	12.00	5,520	
CHAIR RAIL	500	LF	7.50	3,750	
WOOD BASE	3,100	LF	8.00	24,800	
WOOD STAIR RAILS - STANDING	98	LF	90.00	8,820	
WOOD HAND RAIL	110	LF	16.00	1,760	
BASE CABINETS	27	LF	180.00	4,860	
WALL CABINETS	24	LF	140.00	3,360	
COUNTERTOPS	16	LF	110.00	1,760	
					69,030
TOTAL DIVISION 6/WOOD & PLASTICS					**72,030**

DIVISION 8/DOORS & WINDOWS

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
WOOD & HOLLOW METAL DOORS & FRAMES					
DOOR FRAMES - SINGLE	68	EA	145.00	9,860	
DOOR FRAMES - DOUBLE	14	EA	155.00	2,170	
SIDELITES & TRANSOMS	20	EA	360.00	7,200	
SWINGING DOORS	96	EA	380.00	36,480	
CLOSET DOORS	4	EA	268.00	1,072	
EXTRA COST GLAZED	34	EA	140.00	4,760	
HARDWARE - PER LEAF	96	EA	300.00	28,800	
					90,342
WINDOWS & GLASS					
WINDOWS	INCLUDED IN EXTERIOR ENVELOPE				
TOTAL DIVISION 8/DOORS & WINDOWS					**90,342**

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DIVISION 9/FINISHES

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
DRYWALL & PLASTER					
METAL STUD FRAMING	14,300	SF	1.10	15,730	
BULKHEAD FRAMING	240	SF	4.20	1,008	
METAL FURRING	4,000	SF	0.78	3,120	
GYPSUM WALLBOARD - 5/8"	29,200	SF	0.98	28,616	
GYPSUM WALLBOARD - BULKHEAD	240	SF	1.01	242	
TAPE & SPACKLE	24,540	SF	0.44	10,798	
PLASTER VENEER - ALLOW	4,900	SF	1.80	8,820	
PATCH PLASTER	8,400	SF	3.00	25,200	
PATCH EXISTING CEILINGS	13,965	SF	0.75	10,474	
DRYWALL CEILING - SUSPENDED	1,272	SF	6.00	7,632	
SOUND INSULATION	10,000	SF	0.82	8,200	
					119,840
ACOUSTIC CEILINGS					
2X2 ACOUSTIC CEILING	5,940	SF	3.25	19,305	
					19,305
CERAMIC TILE					
CERAMIC FLOOR TILE	1,084	SF	9.80	10,623	
CERAMIC BASE	430	LF	7.95	3,419	
CERAMIC WALL TILE	1,740	SF	9.50	16,530	
MARBLE THRESHOLDS	10	EA	24.00	240	
					30,812
RESILIENT FLOORS					
LINOLEUM	3,842	SF	4.25	16,329	
CARPET	160	SY	35.00	5,600	
REFINISH WOOD FLOORS	14,334	SF	2.00	28,668	
RESILIENT STAIR TREADS	440	LF	7.00	3,080	
RUBBER TILE	192	SF	5.25	1,008	
VINYL BASE	720	LF	1.25	900	
					55,585
PAINTING					
PAINT DRYWALL/PLASTER	39,112	SF	0.41	16,036	
PAINT CMU	9,532	SF	0.44	4,194	
PAINT DOORS & FRAMES	100	EA	60.00	6,000	
PAINT MISCELLANEOUS METALS	1	LS	800.00	800	
PREP & PAINT EXISTING CEILINGS	13,695	SF	0.55	7,532	
PAINT INTERIOR TRIM	6,766	LF	1.25	8,458	
					43,020
TOTAL DIVISION 9/FINISHES					**268,561**

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DIVISION 10/SPECIALTIES

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
TOILET ACCESSORIES					
TOILET TISSUE DISPENSER	16	EA	52.00	832	
WASTE RECEPT/TOWEL DISPENSER	10	EA	400.00	4,000	
MIRRORS	16	EA	98.00	1,568	
SOAP DISPENSER	16	EA	48.00	768	
NAPKIN DISPENSER	1	EA	400.00	400	
NAPKIN DISPOSAL	4	EA	70.00	280	
TOWEL BARS	2	EA	28.00	56	
GRAB BARS	10	EA	72.00	720	
MOP STRIP	2	EA	58.00	116	
					8,740
TOILET PARTITIONS					
TOILET PARTITIONS - STD	8	EA	800.00	6,400	
TOILET PARTITIONS - HC	2	EA	825.00	1,650	
					8,050
MISCELLANEOUS SPECIALTIES					
GRAPHICS/SIGNAGE/DIRECTORIES	1	LS	10,000.00	10,000	
BLACK BOARDS, ETC	1	LS	10,000.00	10,000	
LOCKERS	24	EA	125.00	3,000	
FOLDING PARTITIONS	170	SF	55.00	9,350	
					32,350
TOTAL DIVISION 10/SPECIALTIES					**49,140**

DIVISION 11/EQUIPMENT

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
EQUIPMENT			NIC		

DIV 12/FURNISHINGS

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
BLINDS	3,045	SF	4.00	12,180	
ENTRY MATTS	96	SF	42.00	4,032	
TOTAL DIV 12/FURNISHINGS					**16,212**

DIV 14/CONVEYING

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
ELEVATOR - HYDRAULIC, 3 STOP	1	EA	65,000.00	65,000	
LIFT @ STAGE	1	EA	18,000.00	18,000	
TOTAL DIV 14/CONVEYING					**83,000**

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DIVISION 15/MECHANICAL - PLUMBING

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
FIXTURES					
WATER CLOSET	16	EA	680.00	10,880	
LAVATORIES	16	EA	665.00	10,640	
COUNTERTOP SINK	3	EA	650.00	1,950	
URINAL	2	EA	780.00	1,560	
SERVICE SINK	2	EA	800.00	1,600	
SHOWER DRAIN & TRIM	2	EA	850.00	1,700	
FLOOR DRAIN	9	EA	150.00	1,350	
WATER HEATERS	1	LS	4,000.00	4,000	
HOSE BIBB & MISCELLANEOUS	1	LS	250.00	250	
					33,930
ROUGHING					
SUPPLY, WASTE & VENT TO FIXTURES	43	EA	700.00	30,100	
WASTE - TO ROOF & FLOOR DRAINS	9	EA	250.00	2,250	
					32,350
GENERAL					
PERMIT, TEST & WARRANTY	1	LS	4,000.00	4,000	
					4,000
SUBTOTAL					70,280
SUBCONTRACTOR'S OH & P @	20%				14,056
TOTAL DIVISION 15/MECHANICAL - PLUMBING					**84,336**

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DIVISION 15/MECHANICAL - HVAC

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
EQUIPMENT					
HVAC EQUIPMENT - 120 TONS	120	TON	1,500.00	180,000	
EXHAUST FANS	2	EA	1,500.00	3,000	
MISCELLANEOUS EQUIP & ACCESSORIES	1	LD	10,000.00	10,000	
					193,000
DISTRIBUTION					
GALVANIZED STEEL DUCTWORK	16,500	LB	4.00	66,000	
DUCT INSULATION	11,550	SF	1.65	19,058	
FLEXDUCT	960	LF	5.00	4,800	
CEILING DIFFUSERS	160	EA	80.00	12,800	
RETURN GRILLES	80	EA	75.00	6,000	
EXHAUST GRILLE	10	EA	65.00	650	
CABINET HEATERS	4	EA	780.00	3,120	
BRANCH PIPING	2,000	LF	10.50	21,000	
MISCELLANEOUS AIR DEVICES	1	LS	5,000.00	5,000	
					138,428
CONTROLS & INSTRUMENTATION					
AUTOMATIC TEMPERATURE CONTROLS	23,601	SF	3.00	70,803	
					70,803
SYSTEM TESTING & BALANCING					
AIR & WATER BALANCING	23,601	SF	0.40	9,440	
					9,440
GENERAL					
PERMIT, TEST & WARRANTY	1	LS	10,000.00	10,000	
					10,000
SUBTOTAL					421,671
SUBCONTRACTOR'S OH & P @	20%				84,334
TOTAL DIVISION 15/MECHANICAL - HVAC					**506,005**

DIVISION 15/MECHANICAL - FIRE PROTECTION

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
SPRINKLER SYSTEM					
DRY SPRINKLER SYSTEM	23,601	SF	2.75	64,903	
SERVICE ENTRANCE	1	EA	5,000.00	5,000	
FIRE PUMP			Not Required		
MISCELLANEOUS CORE DRILL & PATCH	1	LS	2,500.00	2,500	
					72,403
GENERAL					
PERMIT, TEST & WARRANTY	1	LS	4,000.00	4,000	
					4,000
SUBTOTAL					76,403
SUBCONTRACTOR'S OH & P @	20%				15,281
TOTAL DIVISION 15/MECHANICAL - FIRE PROTECTION					**91,683**

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DIVISION 16/ELECTRICAL

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
EQUIPMENT					
MAIN DISTRIBUTION PANEL	1	EA	15,000.00	15,000	
PANELS	10	EA	3,200.00	32,000	
DISCONNECTS & MECH CONNECTIONS	10	EA	325.00	3,250	
TRANSFORMERS & MISC EQUIPMENT	1	LS	10,000.00	10,000	
BRANCH CONDUIT & WIRE	800	LF	4.00	3,200	
FEEDER CONDUIT & WIRE	800	LF	14.00	11,200	
					74,650
DEVICES & CONNECTIONS					
DUPLEX RECEPTACLES	240	EA	25.00	6,000	
DUPLEX RECEPTACLES - GFI	16	EA	42.00	672	
RECEPTACLE - ISOLATED GROUND	12	EA	180.00	2,160	
RECEPTACLE - FLOOR MOUNTED	12	EA	122.00	1,464	
SPECIAL RECEPTACLES	6	EA	50.00	300	
SWITCHES - 1 POLE	65	EA	25.00	1,625	
SWITCHES - 3 POLE	6	EA	32.00	192	
SWITCHES - DIMMER	8	EA	61.00	488	
MOTOR CONNECTIONS	20	EA	135.00	2,700	
BRANCH CONDUIT & WIRE	5,775	LF	4.00	23,100	
					38,701
LIGHT FIXTURES					
2X4 FLUORESCENT	85	EA	148.00	12,580	
DOWNLIGHTS	45	EA	128.00	5,760	
INDUSTRIAL STRIP FLUORESCENT	10	EA	130.00	1,300	
PENDANT LIGHTS	120	EA	300.00	36,000	
EXIT FIXTURES	24	EA	148.00	3,552	
BATTERY PACK	4	EA	325.00	1,300	
WALL SCONCE	20	EA	160.00	3,200	
BRANCH CONDUIT & WIRE	4,620	LF	4.00	18,480	
					82,172
COMMUNICATIONS					
TELEPHONE/DATA OUTLETS	52	EA	25.00	1,300	
EMPTY CONDUIT	2,500	LF	2.60	6,500	
					7,800

COST ESTIMATE

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DIVISION 16/ELECTRICAL (CONTINUED)

Item	Quantity	Unit	Unit Price	Total Cost	Group Total
FIRE ALARM					
FIRE ALARM CONTROL PANEL	1	EA	8,500.00	8,500	
ANNUNCIATOR PANEL	1	EA	2,200.00	2,200	
MANUAL PULL STATION	6	EA	165.00	990	
AUDIO/VISUAL ALARM	30	EA	180.00	5,400	
SMOKE DETECTOR	6	EA	160.00	960	
TAMPER SWITCH	2	EA	80.00	160	
FLOW SWITCH	2	EA	80.00	160	
FIRE ALARM CONDUIT & WIRE	2,400	LF	4.25	10,200	
					28,570
SUBTOTAL					231,893
SUBCONTRACTOR'S OH & P @	20%				46,379
TOTAL DIVISION 16/ELECTRICAL					**278,272**