Antietam National Cemetery Lodge

Physical History and Condition Assessment

Antietam National Battlefield
Sharpsburg, Maryland
architrave job #9402.17

Final Submission

prepared by
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Abbreviations

ASTM	American Society for Testing Materials
ADA	Americans with Disabilities Act
BOCA	Building Officials and Code Administrators
BOMA	Building Owners and Managers Association
BTU/H	British Thermal Units per Hour
ch	ceiling height
cmu	concrete masonry units (concrete block)
ds	downspout
GFI	Ground fault interrupted electrical outlet
HABS	Historic American Buildings Survey
HSR	Historic Structures Report
mtd.	mounted
NHL	National Historic Landmark
NPS	National Park Service
o.c.	on center
psf	pounds per square foot
RG	Record Group
T & G	tongue and groove
UFAS	Uniform Federal Accessibility Standard

Management Summary

architrave p.c., architects with a number of consultants has researched this site through:

- review of archival material
- interviews
- graphic and photographic documentation and careful examination of physical fabric
- physical analysis of various components of the structure including mortar analysis, paint analysis, testing for lead and asbestos, and cutting test holes for examination of otherwise concealed conditions
- calculation of floor load capacities and cooling loads
- analysis of site and structure for conformance to building codes including accessibility

From our research, we were able to identify the age and condition of the major building components. The superintendent's lodge,[1] designed by Washington architect Paul Pelz, was built in 1867.

The structure is very intact but has some significant areas of water penetration and a number of relatively minor other deficiencies.

The lodge has several health and life-safety issues that must be addressed if it is to be used by the public and NPS. The asbestos pipe insulation in the basement must be abated. Few of the floor structures have adequate load capacities for the projected uses and therefore must be strengthened. While lead-based paint is present in the building, it will only be an issue for workers during construction and must be addressed then, in that context.

For the building to be used for the projected visitor contact station and exhibit area with public restrooms, it will have to be made universally accessible and accessible restrooms provided.

Mechanical, electrical, communication, and plumbing repairs and improvements should be made in any use scenario and repairs made at areas of moisture penetration.

We prepared schematics for various accessibility options and the Park selected the one that is included in this report under *Recommendations for Treatment.* The estimated costs for the recommended treatments are:[2]

Critical Treatments	$	77,527.
Important Treatments (Exhibit Use &ADA Upgrades)	$	222,732.
Desirable Treatments (Restoration)	$	254,814.

[1] The 1867 Superintendent's Lodge at the Antietam National Cemetery is variously referred to as *the superintendent's lodge, the cemetery lodge, the national cemetery lodge, the lodge,* and *the old lodge*. In 1928 new quarters for the park superintendent were built just to the west of the 1867 lodge. This structure has been called *the superintendent's residence, the superintendent's quarters*, and *the new lodge.* In this report we will refer to the 1867 structure as the *Superintendent's Lodge,* except for the report title and page headings, which follow the terminology of the Scope for this project.

[2] From *Estimate of Probable Construction Cost* prepared by Project Cost, Inc., 30 July 2002.

Part 1. Physical History of the Building and Site with its Evolution

Statement of Significance

The Superintendent's Lodge at the cemetery of the Antietam National Battlefield is listed as a contributing structure in the National Register of Historic Places Inventory—Nomination Form prepared by Gary Scott in 1981.[1]

The exterior of the structure, an important aspect of the cemetery landscape, is of primary significance and should be treated under the principles governing *restoration.*

However, from our research and documentation of this structure, we believe that the significance of this structure extends beyond that of merely contributing to the cemetery landscape. The Superintendent's Lodge is extremely intact. It was designed by Paul J. Pelz, a late nineteenth century Washington architect subsequently involved in the design of other important Washington structures such as the Library of Congress. It is interesting as one of a group of cemetery lodge buildings built in the decades immediately after the Civil War especially as an exception to the standardized lodges built under the direction of the Quartermaster General, Montgomery C. Meigs, which it predates. Although this building was designed by an architect independent of the Quartermaster General's office, it is similar in many respects to the standardized lodge designs developed by Meigs. It is certainly important for its location in the National Cemetery system with all of its post-Civil War and Victorian-era associations.

Finally, the structure itself, solidly and well built, has considerable merit as a modest but fully realized example of a mid-nineteenth century romantic Gothic villa, in an unusual setting with an unusual functional overlay, being the business place of the cemetery superintendent. Although modified in 1935-6 with the addition of restrooms, the removal of the wraparound porch roof,[2] and further modified in 1977, the 1867 Superintendent's Lodge itself remains substantially intact. The building has been well maintained, but has historically suffered from roof leaks and continues to show evidence of water problems.

The period of significance of the Superintendent's Lodge building is 1867. (or 1867 to 1950.)

We believe the exterior and interior of the building should be treated as restoration zones with the exception of the already much modified historic kitchen, which may be treated as a rehabilitation zone.

[1] The entire battlefield was listed as a National Register Historic District in 1966. (The National Register Information System lists the Antietam National Battlefield designation as 10-15-66. The NPS List of Classified Structures states under NR Status "Entered-Documented date 08-20-81.")The 1981 documentation determined the status of the buildings and structures on the battlefield as contributing or not.

[2] The drawings for the 1935-6 work show repairs to be made to porch columns and a new copper roof for the wraparound porch. However, in photos from the Superintendent's Annual Report dated June 30, 1936 "removal of old low porch" was listed among the 1936 improvements. Also, file photos dated 1936 (PWA Project 605-Contract I-1P-3950) show the current porch configuration with the wrap around porch wings gone and a hood at the new opening into the historic living room. We can postulate that damage more extensive than that anticipated was discovered in the course of the work and it was decided largely to remove the porch.

A. Methodology For Construction History

I. Site Visits
We conducted site visits to photograph the property, become familiar with its historic characteristics, and to identify and record the building's significant features.

II. Inspected Other Civil War-Era National Cemeteries
We inspected superintendent's lodges and other features at Battleground, Alexandria, and Soldiers' Home National Cemeteries, built to standardized designs by Quartermaster General Montgomery C. Meigs and compared features of these cemetery lodges with those at Antietam.

III. Research at Antietam National Cemetery
We reviewed maintenance records, historic photographs, and other materials located in files at the cemetery.

IV. Review of Existing Documentation
We reviewed the National Register nominations "Antietam National Battlefield" and "Civil War Era National Cemeteries" and materials at the Department of Veterans Affairs relating to the national cemetery system.

V. Research at the National Archives
In two record groups, Records of the Office of the Quartermaster General (RG 92) and Records of the National Park Service (RG 79), we reviewed visual and textual materials relating to Antietam National Cemetery. We read Annual Reports of the Quartermaster General for information about the establishment and construction of national cemeteries.

VI. Photographic Research
We reviewed photographic files at the National Archives, the Historical Society of Washington County, and the HABS collection at the Library of Congress.

VII. Interviews
We consulted Karen Ronne Tupek, Historic Preservation Specialist at the Department of Veterans Affairs, for information about national cemetery lodges and the history of the national cemetery system. We spoke with Richard H. Brown, Sr., Chief of Cultural Resources Management for Antietam and Monocacy National Battlefields, about the history of the Superintendent's Lodge, particularly recent renovations.

VIII. Miscellaneous Research
We reviewed sources at the University of Virginia's Alderman Library, including *Antietam National Cemetery: An Administrative History* and consulted files at Robinson & Associates, Inc., including a file on architect Paul Pelz.

B. History of Building Design and Construction

Overview

The Superintendent's Lodge at Antietam National Cemetery, a Gothic-inspired design by noted architect Paul Pelz, represents an early and unique approach to Civil War-era military cemetery design. While most of the superintendents' lodges in post-Civil War national cemeteries were built according to standardized plans from the Quartermaster General's Office in 1870, the Antietam Superintendent's Lodge was individually designed in 1867. The Superintendent's Lodge provided living and office space for the cemetery superintendent, a full-time, live-in caretaker who maintained the cemetery and provided information to visitors.

Most Civil War-era national cemeteries were established after the war ended as part of the federal government's massive recovery and burial program. Antietam National Cemetery, by contrast, was one of very few founded during the Civil War, and came into being as a locally driven response to the devastation wreaked by the war in western Maryland. Local leaders conceived of the project as a venture that would be undertaken and financed collectively by the states whose soldiers died at the Battle of Antietam in 1862. The scope of the project was ultimately narrowed to include only Union soldiers, and widened to include the dead of other conflicts in Maryland. The cemetery is now the final resting-place of 4,776 Union soldiers, nearly 40 percent of them unidentified, and more than 200 veterans of other wars.

Antietam National Cemetery's unusual and early origins, together with its innovative funding plan, are reflected in the cemetery's distinctive appearance, most easily seen in the Superintendent's Lodge. A keeper's lodge is one of the typical features of national cemeteries, along with enclosing walls, entrance gates, and a formal arrangement of graves. The presence of these elements makes Antietam recognizable as a nineteenth-century national cemetery, yet the individual design of the Superintendent's Lodge and other features gives the cemetery a unique and special character.

Establishment of Antietam National Cemetery

Antietam National Cemetery was formed following the Battle of Antietam, one of the most significant engagements of the Civil War. Its creation was a local response to the gruesome realities of a war that left thousands of dead soldiers scattered through the countryside after each major battle. The need for local action reflected the ineffectiveness of the federal government's official burial policies. Beginning in 1861, the United States War Department issued a series of orders that gave commanding officers the responsibility to record and bury the dead from their units immediately following each engagement. While the orders were well intentioned, the system rarely worked as envisioned, particularly following bloody battles like Antietam. Intense and sustained campaigns required armies to move rapidly, precluding the luxury of dispatching troops to recover, record, and properly bury the dead. Furthermore, the War Department's orders did not include provisions for the acquisition of land on which to establish cemeteries. As a result, battlefields and surrounding areas were typically left strewn with exposed or hastily buried

bodies.[3] At the end of the Civil War in 1865, only 101,736 out of the 359,528 Union soldiers killed in the war had been properly buried and recorded.[4]

The situation was particularly severe after the Civil War's fiercest battles, such as Antietam. When the fighting near Sharpsburg, Maryland, ended on September 17, 1862, over 23,110 men were killed, wounded, or listed as missing. About 4,000 of those men had been killed, and many more died of their wounds or of disease in the following days and weeks. As the army had to move quickly, there was no time to conduct orderly burials, so the dead were hastily buried around Sharpsburg and the outlying farms where the fighting took place.[5]

Most Civil War-era national cemeteries came into existence after the war ended, when the federal government conducted a massive recovery, identification, and burial effort that cost millions of dollars and spanned several years. Antietam, by contrast, is one of the few national cemeteries founded during the war through the efforts of local citizens. State Senator Lewis P. Firey, a Washington County resident, proposed legislation in the State Senate in 1864 to form a committee that would undertake the practical steps needed to establish "a State and National Cemetery, in which the bodies of our heroes who fell in that great struggle and are now bleaching in the upturned furrows, may be gathered for a decent burial, and their memories embalmed in some suitable memorial." A new and more effective version of the same legislation was passed in March 1865, creating a Board of Trustees for the State of Maryland in charge of purchasing land and improving it as necessary for a cemetery. The legislation further specified that the cemetery be to be funded by the Union states whose soldiers participated in the battle of Antietam. The state of Maryland would hold the land it purchased in trust for the other states, which would be asked to contribute to the cemetery's expenses in amounts proportional to their total population. While some states ended up contributing more than their proportional share, and some contributed less, the system worked as it was envisioned.[6]

In May 1865, having selected and purchased a portion of the battlefield to be used for the cemetery, the Board of Trustees began the difficult task of recording the dead. This endeavor was greatly aided by the efforts of Aaron Good and Joseph A. Gill, two local residents who had undertaken the unpleasant duty of identifying as many of the dead as they could immediately following the battle. The process of reinterring the bodies in land designated for the cemetery began in October 1866. While the 1864 Charter for the Antietam National Cemetery had stated that Confederate remains were to be buried in a separate portion of the cemetery, the Board of Trustees had decided by this point that only Union soldiers could be buried there. The Board had also decided that in addition to the Union dead from the battle of Antietam, Northern soldiers

[3]Department of the Army, Office of the Quartermaster General, *Shrines of the Honored Dead: A Study of the National Cemetery System.* Vertical Files, Department of Veterans Affairs.

[4]*Report of the Quartermaster General to the Secretary of War, for the Year 1869*, RG 92, Entry 205, Annual Reports, 1850-1880.

[5]"Antietam National Cemetery," http"//www.nps.gov/anti/cemetary.htm [sic].

[6]*History of Antietam National Cemetery* (Baltimore: John W. Woods, Steam Printer, 1869).

who died in other engagements in Frederick, Washington, and Allegheny Counties were eligible for burial at the cemetery.[7] Burials were largely completed by 1867, well before significant progress at most national cemeteries in the identification and burial process. In 1869, the total number of burials was calculated at 4,695: 1,475 from Antietam and 3,220 additional soldiers from surrounding counties. Of the Union dead in the cemetery by 1869, 2,903 were unidentified.[8]

While the intention from the creation of the cemetery was that it should be considered a national cemetery, it was not until the late 1870s that the federal government took control of the land. In March 1877, the U.S. Congress passed an act calling for the transfer of Antietam Cemetery to the federal government. This was followed in June 1877 by a vote by the Board of Trustees to transfer the cemetery to the U.S. War Department under the Office of the Quartermaster General. On March 13, 1878, Antietam National Cemetery was formally transferred to the United States government, under the supervision of Quartermaster General Montgomery C. Meigs.[9]

Design and Construction of the Superintendent's Lodge

While the burial process was underway, the Board of Trustees also addressed beautification of the grounds in accordance with contemporary notions of the proper reverential treatment of the dead, particularly dead war heroes. In 1866, the Board decided upon a semi-elliptical arrangement of graves, with the graves grouped by state. The plan called for a monument in the center of the semicircle, macadamized drives and walks to permit visitors to access the site, and a Superintendent's Lodge house next to the main gate, within the enclosing walls.[10] The Board selected the design for an iron fence and gate in September 1866.

In June 1867, a special committee of the Board of Trustees decided to advertise in a Baltimore newspaper for a design for a Lodge House, to cost no more than $6,000, to be erected on the cemetery grounds. Three architects submitted plans for the Superintendent's Lodge: James G. Batterson, of Hartford, Connecticut; Paul J. Pelz, of Washington, D.C.; and J. W. Wilkinson, of Baltimore. Batterson's design was rejected because it lacked specifications or detailed drawings, and the Trustees determined that it would be too expensive to build. Wilkinson's proposal was also rejected because it "did not meet the views of the committee," and it was too expensive. The design submitted by Paul Pelz evidently achieved the effect the committee members desired, and at $5,500, its estimated cost was deemed acceptable. On July 25, 1867, the Board of Trustees contracted with Grant, Jackson & Co. to build the Superintendent's Lodge to be completed by November 1, 1867 – in fact completed after that date due to poor weather.[11]

[7] *Idem,* and National Park Service, "Antietam National Cemetery," http://www.nps.gov/anti/cemetary.htm [sic].

[8] *Report of the Quartermaster General to the Secretary of War, for the Year 1869,* RG 92, Entry 205, Annual Reports, 1850-1880. Subsequent burials have brought the current number of graves to 4,776."

[9] Charles W. Snell and Sharon A. Brown, *Antietam National Battlefield and National Cemetery: An Administrative History* (Washington, D.C.: The U.S. Department of the Interior/National Park Service, 1986) [hereafter "Administrative History"]; and National Archives, RG 79, Central Classified Files, Box 633, Entry 7.

[10] "Administrative History."

[11] "Proceedings of the Trustees of the Antietam National Cemetery, at their Meeting Held in Washington City, December 5, 1867." RG 92, Records Relating to Functions: Cemeterial, Box 5, Entry 576; and "Administrative History."

The Superintendent's Lodge was intended to serve two functions: to provide an office where visitors could obtain information about the cemetery and the burials therein; and to provide living space for the full-time, live-in superintendent, who maintained the site and provided visitors with information. It is similar in its function to the later standardized national cemetery lodges designed and constructed by the Quartermaster Department in the 1870s. Like the standardized lodges, the Antietam Superintendent's Lodge has three rooms on the first and second floors probably serving as a living room, kitchen, and office or reception room on the first floor with bedrooms upstairs.

While the Superintendent's Lodge resembles other national cemetery lodges in terms of its functions, it is visually much more complex than the simple, Second Empire-inspired lodges of the standardized design. The Superintendent's Lodge also cost much more to construct than the standardized lodges; for example, the 17 cemetery lodges constructed by the Quartermaster Department in Fiscal Year 1871 cost an average of about $2,700 each, as compared with the $5,956 total cost of the Antietam Superintendent's Lodge.[12]

The Antietam Superintendent's Lodge has had almost continuous renovations and repairs since shortly after its construction. A. A. Biggs, President of the Board of Trustees, noted in 1882 that "the Lodge House never came up to our expectations" due to mismanagement by the contractors resulting in structural problems and extra expenses.[13] The roofs, particularly the flat roof of the observation tower, have leaked since leaks were first noted in 1877. Major repairs, including roof and tower repairs and the installation of a bathroom, were undertaken in 1922-24. After construction of a new lodge in 1927 two rooms in the old Superintendent's Lodge were converted to museum use in the 1930s and the original kitchen and living room converted to restrooms. The museum function expanded and redesigned several times in subsequent years. The most recent major repair work was undertaken in the 1970s when the restroom layout was modified. Renovations at each stage have involved the repair or replacement of failed components such as heating units, wiring, plaster, and flashing.

Changes to the exterior have been minimal, except for the removal in 1935 of most of the porch that once extended across the east front of the building and wrapped around the corners, the addition of a pent roof at a new exterior opening cut into the historic living room, and replacement of what may have been the original back porch with a new roof.

Paul Pelz, Architect of the Antietam Superintendent's Lodge

Paul Johannes Pelz, the architect of the Antietam Superintendent's Lodge, was born in Germany in 1841. He immigrated to the United States in 1857 or 1858, and became an apprentice in the New York City office of architect Detlef Lienau in 1859. In 1864, Pelz was promoted to the position of chief draftsman in Lienau's office, a position he held for two years. Pelz left Lienau's office in 1866 and worked briefly in two other architectural offices before taking a position with

[12]*Annual Report of the Quartermaster General to the Secretary of War, for the Fiscal Year Ending June 30, 1871*, RG 92, Entry 205, Annual Reports, 1850-1880.

[13]A. A. Biggs to ?, 22 May 1882, RG 92, Records Relating to Functions: Cemeterial, General Correspondence and Reports Relating to National and Post Cemeteries, Box 4, Entry 576.

the United States Lighthouse Board. In this capacity, Pelz designed numerous lighthouses and life-saving stations. Pelz must have obtained the commission for the Antietam Superintendent's Lodge during the time he was working for the Lighthouse Board. In 1873, Pelz embarked on a trip to Europe, where he studied the designs of European lighthouses and libraries.

Pelz's research into European library architecture was related to his most famous design, that of the Library of Congress in Washington, D.C. In 1873 Pelz formed a partnership with John L. Smithmeyer, who was then working in the office of the U.S. Supervising Architect, to enter a design competition for the library. Smithmeyer and Pelz, whose firm was known as John L. Smithmeyer & Co. at the time, won the competition with a design inspired by Italian Renaissance architecture. Smithmeyer, who was named the supervising architect when the project was finally authorized in 1886, was dismissed in 1888; Pelz succeeded him as supervising architect but was dismissed in 1892. The building was finally completed in 1897, having undergone numerous revisions since the original design.

Pelz and Smithmeyer designed a number of other buildings, most of them academic or governmental commissions. These included work at Georgetown University, the U.S. Soldiers' Home Library, and the Carnegie Library and Music Hall in Allegheny, Pennsylvania. Pelz also undertook numerous projects on his own, including the Georgetown College Medical School, the administration building of the University of Virginia's Clinic Hospital, several churches, and many residences in the Washington area. Pelz died in 1918.[14]

The National Pike and Its Influence on Sharpsburg and Washington County

The National Road was created by federal legislation in 1806 to provide a reliable connection from the East Coast to the western sections of the country. Construction of the original National Road began at its eastern terminus in Cumberland, Maryland, in 1808 and was gradually extended farther west, reaching St. Louis in the 1850s.[15] While the National Road was only federally chartered from Cumberland to the west, various spurs connected it to Baltimore, generally along modern-day Routes 40 and 70. Many of these roads were privately funded and built as toll roads, or turnpikes. The National Road and its eastern connections vastly increased the importance of Baltimore as an important eastern outlet for western products.[16] In Washington County, Hagerstown was the main beneficiary of the National Road and eastern spurs, several of which passed through it. Sharpsburg was one of the many smaller towns in the region that were connected to the National Road and other transportation routes via Hagerstown. While Sharpsburg and other smaller towns and cities in Washington County never experienced the same level of growth that Hagerstown did, the county as a whole prospered in the nineteenth century as an important supplier of agricultural produce to east coast cities. Agriculture remains a mainstay of the county's character and economy today.

[14]"Pelz, Paul J," vertical file, Robinson & Associates, Inc., Washington, D.C.

[15] Karl Raitz, ed., *The National Road* (Baltimore and London: The Johns Hopkins University Press, 1996), pp. xi-xii.

[16] Karl Raitz, ed., *A Guide to the National Road* (Baltimore and London: The Johns Hopkins University Press, 1996), pp. 34-5.

C. Site Chronology

The following time line presents the construction chronology of the Superintendent's Lodge at Antietam National Cemetery from 1862 to 1998. Entries relating directly to the construction and alteration of the Superintendent's Lodge appear in bold type. While not the focus of this project, information about other site elements found in the process of researching the Superintendent's Lodge is included here as well.

Superintendent's Lodge and Antietam National Cemetery Construction History Timeline

September 17, 1862 — The Battle of Antietam left 23,110 men killed, wounded, or missing. +Sharpsburg became a hospital and bodies were buried throughout the area with great speed and little care.[17]

1862-64 — Local residents lobbied for the removal of the bodies buried in their land after the Battle of Antietam. Farmers, who often uncovered bones while tilling their fields, were especially concerned.

1864-65 — Legislation passed by the Maryland General Assembly authorized an initial expenditure of $5,000 to purchase ten acres for the creation of a state and national cemetery on a portion of the Antietam battlefield. Subsequent legislation clarified the practical provisions for the establishment of a national cemetery, creating a Board of Trustees to act on behalf of the state of Maryland to acquire property and appropriating an additional $7,000 for the purchase of land. The legislation further stated that the costs of establishing the cemetery would be divided among the Union states whose dead were to be buried there, with each state's contribution to be proportional to its population. (National Archives Record Group 92, Records of the Office of the Quartermaster General, Entry 225, "Antietam National Cemetery") [hereafter "Antietam National Cemetery"]

December 13, 1865 — **The Board of Trustees held a meeting to estimate costs related to the establishment of the cemetery and determined the amount to be requested from each state. One-seventh of the total budget, or $1,500, was set aside for a "keeper's lodge." Additional expenses included $207.60 for the stone for the Superintendent's Lodge and $328.00 for the excavation of the foundation.** ("Antietam National Cemetery")

August 1866 — The War Department provided 6,000 coffins and assistance in exhuming bodies from the battlefield and relocating them.

[17]Unless otherwise noted, all references are from the following source: Charles W. Snell and Sharon A. Brown, *Antietam National Battlefield and National Cemetery: An Administrative History* (Washington, D.C.: The U.S. Department of the Interior/National Park Service, 1986).

September 20, 1866	The Board adopted a ground plan for the cemetery, and orderly burials began in October. The burial ground was laid out as a semi-ellipsis, divided into segments of varying size to accommodate the dead from each of 19 states. A "macadamized" carriage drive and walks were spread around the grounds to facilitate access. The Board also selected a design for 606 feet of wrought-iron fence and a gateway, to be constructed by Messrs. Robert Wood & Co., of Philadelphia. ("Antietam National Cemetery")
October 1866 to January 1867	3,000 bodies were relocated by the United States Burial Corps before weather halted the first year's work.
April 1867	Work on exhuming and relocating bodies to the cemetery resumed.
June 30, 1867	The Board of Trustees noted that 4,240 bodies had been re-interred at the cemetery.
June 5, 1867	**The Board of Trustees established an Executive Committee to advertise in the Baltimore *American* for designs for the Lodge House. ("Proceedings of the Trustees of the Antietam National Cemetery, at their Meeting held in Washington City, December 5th, 1867." National Archives Record Group 92, Records of the Office of the Quartermaster General, [hereafter "RG 92"], Records Relating to Functions: Cemeterial, Box 5, Entry 576)**
July 25, 1867	**The Board of Trustees entered into contract with Grant, Jackson & Co. for the construction of the Superintendent's Lodge house designed by Paul J. Pelz, an architect from Washington. The Superintendent's Lodge was to be completed by November 1, 1867 for the amount of $5,500. Pelz received $220 for the plans. Pelz was to approve all materials, but Grant, Jackson & Co. was to supply them.** (RG 92, Records Relating to Functions: Cemeterial, 1820-1928, General Correspondence and Reports Relating to National and Post Cemeteries 1865-1890, Box 4, Entry 576)
September 1867	The gate and wrought iron fence were delivered and installed.
September 16, 1867	The Boards adopted a design for the monument, by J. G. Batterson, to stand in the center of the semi-elliptical arrangement of graves. ("Antietam National Cemetery")
Fall 1867	Hiram S. Siess, a veteran from Maryland, was appointed first keeper of the Antietam National Cemetery. Siess lived in the Superintendent's Lodge until June 1877.
November 1, 1867	**While the Superintendent's Lodge was scheduled to be completed on this date, it was not yet finished, due to poor weather. The actual date of completion is not known. ("Proceedings of the Trustees of the Antietam National Cemetery, at their Meeting held in Washington City, December 5th, 1867." RG 92, Records Relating to Functions: Cemeterial, Box 5, Entry 576)**

Detail of iron entrance gate, delivered and installed in September 1867. Photograph 1999, Robinson & Associates, Inc.

June 2, 1869	**The Board appropriated $500 for repairs to the Superintendent's Lodge, purchase of trees and shrubbery, and painting of the fences.**
October 5, 1877	The Adjutant General issued General Order No. 68, making Antietam National Cemetery a national cemetery of the first class.
October 30, 1877	James Grace, civil engineer, noted that the roof of the Superintendent's Lodge leaked. (National Archives, RG 92, Box 5, Entry 576)
Spring 1878	**The roof timbers of the tower of the Superintendent's Lodge were replaced and the slate roof was re-laid at a cost $405.34.** A new flagstaff was erected for $170. The grounds were graded and sodded, and trees were planted around the drive.

March 13, 1878 — Following an Act of Congress on March 2, 1877, and a vote by the Board of Trustees on June 7, 1877, the title to Antietam National Cemetery was formally transferred to the United States government, under the jurisdiction of Montgomery C. Meigs, Quartermaster General of the U. S. Army. (National Archives, RG 79 (Records of the National Park Service) [hereafter "RG 79"], Central Classified Files, Box No. 633, Entry 7)

May 11, 1878 — **The Superintendent's Lodge was thoroughly overhauled, repaired and repainted.** A report noted the progress made on landscape elements, including the grading, trees, flagstaff, and surrounding wall. (James Gould (?), Quartermaster's Assistant, to Captain A.F. Rockwell's office, May 11, 1878, RG 92, Records Relating to Functions: Cemeterial, 1820-1928, General Correspondence and Reports Relating to National and Post Cemeteries 1865-1890, Box 5, Entry 576)

September - December 1878 — A stone one-story tool shed measuring 20 by 16 feet was constructed on the west side of the cemetery grounds.

February - May 1879 — A rostrum was constructed according to a standard plan designed by Quartermaster General Montgomery C. Meigs.

April 7, 1879 — George A. Haverfield became superintendent of the cemetery, and received $75 per month in this post.

January 24, 1880 — The monument was completed, bearing the inscription "Not for themselves, but for their country, September 17, 1862." The total cost for the monument was $35,000. (Calvin Mumma, "Descriptive Story of National Cemetery," National Archives, Record Group 79, Central Classified Files, Box 633, Entry 7.)

March 13, 1880 — Walter A. Donaldson was appointed superintendent of the cemetery.

Fall 1881 — An arbor was constructed over a cistern located near the Superintendent's Lodge.

September 22, 1881 — **An inspection report noted that the kitchen, office, and first floor of the Superintendent's Lodge required a coat of paint.** (RG 92, Records Relating to Functions: Cemeterial, 1820-1928, General Correspondence and Reports Relating to National and Post Cemeteries 1865-1890, Box 4, Entry 576)

March 17, 1882 — An article in the *Sharpsburg Enterprise* noted that evergreen trees had been planted regularly throughout the grounds and that 700 new trees and shrubs were to be planted early in the season. Among these were Swiss stone pines and four cedars of Lebanon.

portion of:

Map of Antietam Battlefield and the U.S. National Cemetery, Antietam, Maryland
Office of the Depot Quartermaster, U.S. Army, Washington, D.C. 1914
This map shows the elements described for fiscal year 1898 (the Annex and passageway) as well as the cistern ("cist") located just to the southeast of the passage. Another "cist" is shown just to the north of the Superintendent's Lodge porch. Note the stable (built in 1901) and the building labeled "public toilet," probably the 1889 or 1909 privy. (from Richard Brown files)

May 9, 1884	**An inspection report issued by Major C.W. Foster listed the condition of the Superintendent's Lodge as excellent; however, the roof in the office leaked and required repair. The Superintendent's Lodge was repainted.** (RG 92, Records Relating to Functions: Cemeterial, 1820-1928, General Correspondence and Reports Relating to National and Post Cemeteries 1865-1890, Box 4, Entry 576)
1887	A monument was erected by the veterans of the 10th regiment NY Volunteers in the officers' section. (Calvin Mumma, "Descriptive Story of National Cemetery," National Archives, Record Group 79, Central Classified Files, Box 633, Entry 7.)
August 15, 1887	George Hess began his term as superintendent of the cemetery.
January 1889	A brick privy was constructed northwest of the Superintendent's Lodge. The structure measured six by ten feet and had a slate roof.
August 30, 1890	An Act of Congress created the Antietam National Battlefield Site, beginning the process of interpreting and commemorating the battlefield.
August 30, 1890-July 19, 1897	Construction progressed on the Antietam National Battlefield Site, involving the purchase of significant sections of the battlefield, identified with cast-iron markers. Other improvements included the installation of monuments, field artillery, and an observation tower.
November 1894	Norway maple trees were planted along the main carriage road approximately fifty feet apart.
March 23, 1897	Frank Barrows, a Civil War veteran who served in the 30th United States Colored Infantry, was appointed cemetery superintendent.
Fiscal Year 1898	**Repairs were made to the Superintendent's Lodge and to the tool house. Two rooms were added to the east end of the tool house, one a kitchen, and the other a dining room, both approximately 12 feet square. A frame passageway was constructed to connect the enlarged tool house to the rear of the Superintendent's Lodge. This addition became known as Building No. 2 or the Annex. A new 100-foot-tall flagstaff was installed. The total cost of these improvements was $400.**
March 30, 1898	The Antietam National Battlefield Site was transferred to the Quartermaster General's office. The care of the battlefield was assigned to the Antietam National Cemetery superintendent.
July 1, 1900	The maintenance duties of the battlefield were separated from those of the cemetery and a new superintendent was appointed for the battlefield.
1901	A brick stable measuring 29 feet long, 18 feet wide, and 12 feet high with a slate roof was constructed on the west side of the Superintendent's Lodge, near the cemetery wall. The cemetery acquired its first mule. Two privies, 6 ½ by 10 feet, were (presumably) relocated.

June 2, 1904	M. M. Bryant was appointed superintendent.
April 10, 1905	Joshua Davis, the last Civil War veteran to serve as cemetery superintendent, was appointed to the post. He served until February 2, 1909. (After 1911, the policy requiring superintendents' positions at national cemeteries to be filled by Civil War veterans was eliminated due to the advancing age of such veterans.)
1909	Sometime before this date, a second privy was constructed on the grounds, creating one public and one private privy.
By 1910	**A cast-iron tablet bearing the words of President Lincoln's Gettysburg Address was placed on the east entrance to the Superintendent's Lodge by 1910. Evidence suggests that the seven cast-iron plaques containing verses from Theodore O'Hara's poem, "The Bivouac of the Dead," were placed on the grounds at this time as well**.
1922	**The tower and porches were reworked in a series of extensive repairs.**
1923	**26 new window shades were purchased.**
March 1924	**A cesspool was constructed and the exterior and interior of the Superintendent's Lodge were repainted.**
November 1924	**A bathroom was installed in the Superintendent's Lodge house.**
1926	**Roof leaks were repaired again.**
May 1927	The Quartermaster Corps decided to build a new lodge and selected a site for the new building. The site of the new lodge was chosen to account for the view and to increase public access. Under this plan, the old Superintendent's Lodge was to be demolished.
June 2, 1927	The Quartermaster General approved the site for the new lodge house. He also approved the demolition of the 1878 tool shed with the additions, **but he preserved the old Superintendent's Lodge house, to be made into public toilets, rest rooms, and storage**. The stone from the outbuildings was to be recycled and used for the basement of the new lodge. (National Archives, RG 92, Box 57, Entry 1891.)
October 1927	The contract for the new lodge was awarded to Beston-Long Company for $9,244. Construction began on the new lodge and was completed in the spring of 1928. A well was drilled for the new lodge.
1928	The brick privy in the northwest corner of the cemetery was probably demolished at this time.

May 31, 1928	**Construction was completed on the old Superintendent's Lodge at a cost of $296, and it was repainted. The downspouts were also repaired at this time and new electric fixtures were installed. New plaster was placed in the interior.**
May 1928	A new flagstaff and drinking fountain were installed at the cemetery.
December 1928	**Repairs were made to the hot water fixtures of the old Superintendent's Lodge.** (Misc. correspondence relating to the tower, water system, and roadway at Antietam Battlefield. Folder: Lodge Building BLDG #1 [Constructed 1867], Richard Brown's files)
1929	281 trees on the property, 137 deciduous and 144 evergreen, reported.
September 26, 1929	The cemetery's mule was shot due to its advancing age. The mule was replaced by a gasoline-powered mower.
October 1929	**A request was made for the installation of a telephone in the old Superintendent's Lodge. The request was approved December 1929.** (National Archives, RG 79, War Department Records, Box 5, Entry 5.)
1930	**Repairs were made to the water closets of the old Superintendent's Lodge and the sheathing in the observation tower was recommended for re-plastering.** (Misc. correspondence relating to the tower, water system and roadway at Antietam Battlefield. Folder: Lodge Building BLDG #1 [Constructed 1867], Richard Brown's files)
August 8, 1930	**An inspection report noted that the wall sheathing in the observation tower of the old Superintendent's Lodge was warped and out of place.** (National Archives, RG 92, General Correspondence, Geographic file, 1922-1935, 601.53, Box 56, Entry 1891.)
1931	A 347.5 feet deep well was drilled with a pump providing 300 gph.
1932	**The ceilings of the old Superintendent's Lodge were replastered at a cost of $80. The soil pipes from the comfort station (old Superintendent's Lodge) were replaced due to clogging from root damage.**
September 1932	**A request was made for weather-stripping the old Superintendent's Lodge house for an estimated $152.06. The Quartermaster General's office approved this request in November 1932.** (National Archives, RG 79, War Department Records, Box 3, Entry 5.)
1933	Eleven national cemeteries, including Antietam, were transferred from the War Department to the Department of the Interior's National Park Service. (The Birth and Evolution of the National Cemetery System)

1933	**A water-softening system was installed in the old Superintendent's Lodge for $327.50.**
1935	**Drawings for extensive repairs to Superintendent's Lodge (including a new copper roof with cresting, ridge rolls, and finials; interior repairs and finishes; electrical and mechanical work; and the spiral stair to the tower roof) and the installation of men's and women's toilets.**
1936	**A small park library and a temporary museum were established by Superintendent Beckenbaugh in two rooms on the second floor of the old Superintendent's Lodge. Other work shown on 1935 drawings done. Wraparound porch roof largely removed at this time although that removal was not anticipated on the 1935 drawings.**
1939	**Under WPA projects, the old Superintendent's Lodge was rewired,** the roads within the cemetery were re-graded and the entry in the west stone wall was moved from north of the garage to south of the garage. The stone walls were repaired, and trees were cleared. (National Archives, RG 79, Box 2700)
April 5, 1942	The Antietam National Battlefield Site and the Antietam National Cemetery were consolidated into a single administrative unit. The position of superintendent of the cemetery was abolished and the responsibility for the maintenance of the cemetery was given to the superintendent of the battlefield.
June 1, 1942	The Acting Director of the Department of the Interior recommended that the national cemeteries associated with national military parks be merged, allowing park personnel to carry out the necessary cemetery work. He also recommended that the lodge houses that were in disrepair be demolished and that those that were suitable be used as a headquarters for the park staff. (National Archives, RG 79, 601.003-601.13)
July 3, 1942	The Department of Interior's Acting Solicitor held that if a cemetery no longer needed a superintendent, the NPS need not employ one, nor need it maintain the lodge. Cemetery lodges could be used for other purposes where appropriate. (National Archives, RG 79 601.033-601.13)
July 1944	**Exterior trim of the old Superintendent's Lodge was repainted.**
March 1948	**The office, museum, and public restrooms in the old Superintendent's Lodge were repaired. In June, they were also repainted, as was the exterior trim of the old Superintendent's Lodge.**
July 9, 1949	**C. V. Harbaugh of Hagerstown was contracted to install radiators in the museum on the second floor of the old Superintendent's Lodge.**
November 25, 1950	**Part of the roof of the old Superintendent's Lodge was torn off in a hurricane.**

November 1950 **The museum rooms of the old Superintendent's Lodge were remodeled and reorganized, and the exhibit, displaying artifacts from the battle, was expanded from two rooms to three.**

1952-55 **The Washington Regional Office sent two members of the museum staff to redesign the museum in the old Superintendent's Lodge.**

January 19, 1953 **A oil space heater was placed in the office of the old Superintendent's Lodge, following complaints from the superintendent about the inadequacy of the coal furnace**.

1964 **Upon the completion of a new visitor center, the museum was moved from the old Superintendent's Lodge to the new center.**

1970 **The Job Corps painted the exterior trim chocolate brown. The interior walls were painted aquamist, the ceilings off-white and the restrooms bone white.** (notes from folder: Lodge Building BLDG #1 [Constructed 1867], Richard Brown's files)

1977 **Extensive repairs were made to the old Superintendent's Lodge during the year. These included the following:**

- **existing flashing recaulked; new flashing and latex caulking installed**
- **stonework on the tower repointed with waterproof cement to match the old joints**
- **windows and steel over the windows replaced; storm windows installed**
- **woodwork in tower replaced**
- **plaster on north and east walls removed and replaced; all other walls patched**
- **screen door replaced**
- **two capstones reset on the front of the building**
- **wiring updated**
- **roof repaired**
- **observation tower floor repainted**
- **cornice woodwork replaced with the same type of wood cut to match original design**
- **new heating unit and pressure pump installed**
- **observation tower plaster replastered/repaired**
- **insulation installed over the ceiling of the second floor**
- **gutters repaired**
- **stairway repaired**
- **exterior trim repainted**
- **old concrete porch floor removed and reconstructed in brick**
- **brick and blacktop removed from in front of old Superintendent's Lodge; area**
- **repaved with handmade brick**
- **old cistern discovered and filled with sand for safety**

- (Sources: a report on the condition of the Superintendent's Lodge dated April 11, 1977, "Antietam", vertical files at the Antietam Administrative office, superintendent's files; Folder: Lodge Building BLDG #1 [Constructed 1867], Richard Brown's files; Misc. correspondence, Folder: Lodge Building, Richard Brown's files)

1978 **New screen doors, new window sills, a new oil heating unit and a new water pressure pump in the main water lines were installed in the old Superintendent's Lodge. Deteriorated plaster was replaced and old wiring was removed.**

1979 **Two woodburning stoves were installed in the old Superintendent's Lodge, one on each floor.** (Richard Brown's files)

1983 New septic system and water lines installed. (Richard Brown's files)

1985 **Chimney was lined and exterior trim painted.** (Richard Brown's files)

January 8, 1985 **The slate roof of the old Superintendent's Lodge was repaired as required. Repairs to the west cornice required the removal of the brackets, soffit, face board, moldings and rafter plate. Some of these parts were replaced as needed, and the remainder were re-installed. One basement window unit was replaced, and the window well in the basement was rebuilt. The three circular windows and frames on the tower were rebuilt, repainted, and reglazed. The tower plaster was repaired. The upper windows were scraped, repainted, and re-glazed. The copper ridge caps on the roof were replaced and the exterior woodwork was repainted.** (Memorandum, January 9, 1985 from Exhibit Specialist, Richard Brown, to Superintendent, Antietam National Battlefield, Folder: Lodge Building Project, Richard Brown's files)

May 1986 **Exterior lights were installed on the old Superintendent's Lodge.** (note in file, folder: Lodge Building, Richard Brown's files)

1987 Repairs and painting to the cemetery iron entrance gates and fence made.

1988 **The old Superintendent's Lodge was treated for termites.** (Records from folder: Lodge Building Project, Richard Brown's files)

Minor plaster repairs and painting of the interior were made, the two wood stoves were removed, and two new radiators were installed to replace radiators damaged by freezing.

1989 Septic system attached to Washington County Sanitary District.

1991 New telephone system installed.

1992 **Exterior of building painted.**

1998 **Concrete block in double basement window removed; frame and window sash repaired or fabricated and window made functional.**
Telephone network line installed.

1999 Iron fence and entrance gates were painted.

top. Elaborate iron gates mark the entrance to the cemetery. The area around the entrance to the cemetery and the east facade of the Superintendent's Lodge is paved in brick. Photograph 1999, Robinson & Associates, Inc.

bottom. A brick rostrum stands inside the northern wall, to the east of the Superintendent's Lodge. A simple flagpole is visible to the left in the photograph. Photograph 1999, Robinson & Associates, Inc.

View of Superintendent's Lodge, looking west. Photograph 1999, Robinson & Associates, Inc.

D. Existing Conditions Documentation

Site Description

Antietam National Cemetery is a trapezoidal 11-acre parcel of land, selected because its high elevation allowed a view over much of the battlefield. The entrance is off Route 34 (also known as East Main Street in Sharpsburg and Boonsboro Pike at the north end of the cemetery, marked by a set of elaborate iron gates. An iron fence mounted on a low stone wall continues along the north boundary of the site, while a stone wall encloses the other three sides of the cemetery. The surrounding wall becomes a retaining wall in places to contain fill placed within to create the relatively level area for the cemetery, an area once the top of a small hill. The bedrock of the area is apparently close to the surface, as some reports on cemetery burials state that bodies were buried in trenches three feet deep with the last foot excavated from stone.

The Superintendent's Lodge is located just west of the gates, with its main entrance on its east facade. An area at the front of the Superintendent's Lodge and the entrance gate is paved in brick. A short distance to the east of the entrance is a classically inspired brick rostrum. Located about fifty feet south of the entrance, two Civil War-era cannon, their muzzles pointing upward, frame the view of the rest of the site, dominated by the graves. The graves are grouped by state and arranged symmetrically in a partial ellipse. The shapes of the headstones, facing inward toward the center of the composition, correspond to several standard Army designs. Interspersed

Many of the headstones are of a standard Civil War-era design. Lower, square blocks mark the graves of unidentified soldiers. Photograph 1999, Robinson & Associates, Inc.

with the headstones are several more elaborate monuments commemorating specific regiments that fought in the Battle of Antietam. At the center of the partial ellipse is a statue of a Union soldier standing on a large pedestal; the height of the statue and pedestal is over 44 feet. An inscription on the pedestal reads, "not for themselves, but for their country, September 17, 1862." Benches around the statue mark this part of the site as the central point for contemplation. Also arranged around the statue is a series of low iron tablets bearing verses from the poem, "The Bivouac of the Dead;" these tablets are standard features at many national cemeteries. The site is richly vegetated with a variety of picturesque coniferous and deciduous trees and shrubs, most of which are grouped around the edges of the cemetery.

top. View from near the central monument to the north shows the relationship of the Superintendent's Lodge to the graves, the simple flagpole, several regimental monuments, and the richly varied vegetation of the site. Photograph 1999, Robinson & Associates, Inc.

bottom. Low plaques, standard features in many military cemeteries, bear the verses to the patriotic poem "The Bivouac of the Dead," composed by Theodore O'Hara in honor of American soldiers who died in the Mexican War. Photograph 1999, Robinson & Associates, Inc.

top. Two upright cannon, visible in shade in this image, stand between the entrance to the cemetery and the graves. Note the central statue, a Union soldier over 44 feet tall including the pedestal, weighing about 250 tons. Near the left edge of this photograph is one of the regimental monuments. Photograph 1999, Robinson & Associates, Inc.

bottom. This plaque at the cemetery depicts the arrangement of graves around the central monument. Photograph 1999, Robinson & Associates, Inc.

Exterior Description

The Superintendent's Lodge at Antietam National Cemetery is a small, yet visually rich building with features inspired by the Gothic Revival and picturesque architectural modes. The building has three intersecting masses, each with a different profile: a three-story castellated tower, a two-story block with a steep gable roof, and a two-story, hip-roofed section perpendicular to the gable-roofed block. The intersection of these three main masses creates a complex roof form and asymmetrical, yet regular, facades on all four sides. The complexity of the form is increased by secondary projecting elements, including a porch, two door hoods, and four dormers.

The Superintendent's Lodge is built of locally quarried limestone in a random-coursed ashlar pattern with a low water table. An unusual feature of the stonework is the occurrence of "L" shaped blocks at various locations on the exterior. The stone is generally pale beige, its color and texture enlivened by rather significant color variation in some individual blocks. Limestone was used for decorative details as well, including segmental arches at the windows, projecting window sills, the tower crenellation (or battlements) and a small pinnacle on the east gable end. The upper edge of the stone arches are slightly pointed, different from the simple segmental arch of the lower edge. This detail reinforces the Gothic appearance of the building. Other decorative details were executed in wood, including a simple bracketed cornice and cut and patterned porch and dormers. Roof materials consist of two different sizes of slate shingles on the gabled and hip-roofed sections, with standing-seam copper roofs on the porch and hoods. Copper is also used for flashing and as ridge rolls on the ridges of the shingled roof sections. The roofs drain to gutters built into a wood cornice. Slate-roofed gable dormers located in the hipped-roof section provide light and ventilation to two of the second floor rooms. The gable end of the dormers is trimmed to refer to the Gothic style with heavy bargeboards, boards and battens, and other decorative details. Two simple narrow brick chimneys extend from the roof near the center of the building.

While the Superintendent's Lodge is fairly small with only three rooms on each of the first and second floors, tall proportions lend the building a sense of verticality. The most prominent vertical element in the building is the three-story tower, providing an observation deck for cemetery visitors. Segmentally arched windows on all sides of the building are tall and thin in proportion, most consisting of either four-over-four double-hung sashes or paired four-over-one double-hung sashes and one six-over-six sash. Steep gabled roofs on the main gable-roofed block, the porch over the main entrance, and the dormers further emphasize the sense of verticality.

left: East elevation. The brick terrace on the three sides of the reception room replaced the original wrap-around porch. Photograph 1999, Robinson & Associates, Inc.

right: The main entrance to the building, on the east elevation, has a double door with a transom and segmentally arched stone head. Photograph 1999, Robinson & Associates, Inc.

East Elevation

The main, east, elevation is composed of a portion of each of the three main intersecting masses. From left to north, the elements visible on the east elevation are a portion of the hipped-roof section, the projecting gable end of the gable-roofed block, and one side of the tower. The most prominent of these elements is the gable end of the two-story gable-roofed block, forming the central portion of this elevation and projecting several feet forward from the other two sections of the building. The main entrance, centered on the gable end, consists of a heavy wood double

The main entrance porch, on the east façade, has ornamental scrollwork and an exposed hammer-beam truss system. Photograph 1999, Robinson & Associates, Inc.

door with diagonal bracing and a horizontal, four-light, operating transom. To the right of the door is a metal plaque bearing the text of the Gettysburg Address. A gable-roofed wood porch supported by an exposed hammer-beam truss system covers the entrance. The gable end of the porch is decorated with a symmetrical cut scrollwork pattern. The entrance and two four-over-four windows above the porch have arched stone lintels. Centered near the peak of the stone end gable, one stone block is decorated with a carved bas-relief crest of the Stars and Stripes. The gable end has a parapet capped at the ridge. To the south (left) of the projecting gable end is a portion of the hip-roofed section, where a secondary door is sheltered by a pent-roofed hood probably added in 1936 when the wraparound porch roof was removed. The door and opening were added in 1936. The diagonally braced door style matches the probably original front doors on the building.

To the north (right) is the tower with a door on the first story, although this door has no hood or porch. The second story of the tower has a four-over-four sash window, and the third story has a round, fixed window inset in stone blocks shaped into a rounded diamond.

Historic photographs show a principal character-defining feature – double wood porches with exposed hammer-beam trusses that wrapped the corners to either side of the main entrance

The Stars and Stripes are carved into this block near the peak of the gable on the east elevation. Note the stone arches at the window heads with segments of different radii at their lower and upper edges. Also note, clearly visible in this picture to the left of the left window, an "L" shaped stone, normally not found in stonework but frequent on this building. Photograph 1999, Robinson & Associates, Inc.

portico – has been removed from this elevation. The base of this original porch was originally wood, was replaced in concrete, which in turn was reconstructed in brick in 1977.[18]

North Elevation

The north elevation faces Boonsboro Pike, State Route 34, making it the most visible side of the building. As on the main elevation, all three of the intersecting masses are visible on this facade: from east (left) to west, the entrance porch, a side of the gabled block with a gabled parapet (referred in the original specifications as the "gable coping") visible, the tower, and the hip-roofed section can be seen. On this elevation the tower forms the central projecting element. All

[18] Per report in the vertical files at the Antietam administrative office.

top. North elevation. The three separate sections of the building, each with a distinctive roof shape and massing, can be seen clearly in this view. Photograph 1999, Robinson & Associates, Inc.

bottom. Detail of cornice on north elevation. The cornice was replaced in 1977, replicating the type of wood and shape of the original. Photograph 1999, Robinson & Associates, Inc.

windows have segmentally arched stone lintels with slightly pointed, Gothic, top chords. The tower has one four-over-four double-hung sash window on the first floor and another directly above it on the second floor. The third-story window is an oculus like that on the east elevation. This side of the building offers the most complete view of the tower's composition and the battlements at the top of the tower. The portion of the gable-roofed mass that comprises the east (left) part of this facade has a pair of four-over-one sash windows located near the tower, while the hip-roofed portion to the west (right) of the tower has a single six-over-six sash window with a steeply gabled dormer, with an inward-swinging four light window in it, in the roof directly above it.

above. West elevation.
right. The former Dutch door on west elevation. The lower portion is now fixed, and the upper portion is a window. The scrollwork on the gabled hood, echoes the ornamentation of the porch on the east elevation.
Photographs 1999, Robinson & Associates, Inc.

West Elevation

The west elevation is largely obscured by trees. On the first story there is a Dutch door from what was originally the kitchen, now the restrooms, to the north (left) and a six-over-six sash window. The Dutch door now operates as a window, not a door; the lower section is fixed and is not visible or accessible as a door from the interior. A gabled hood, similar to the porch on the east facade but much smaller and simpler in shape and ornamentation, shelters the door. A dormer with an inward-swinging four light window projects from the west surface of the hipped roof. The top story of the tower, with an oculus like that on three sides of the tower, is visible above the hipped roof.

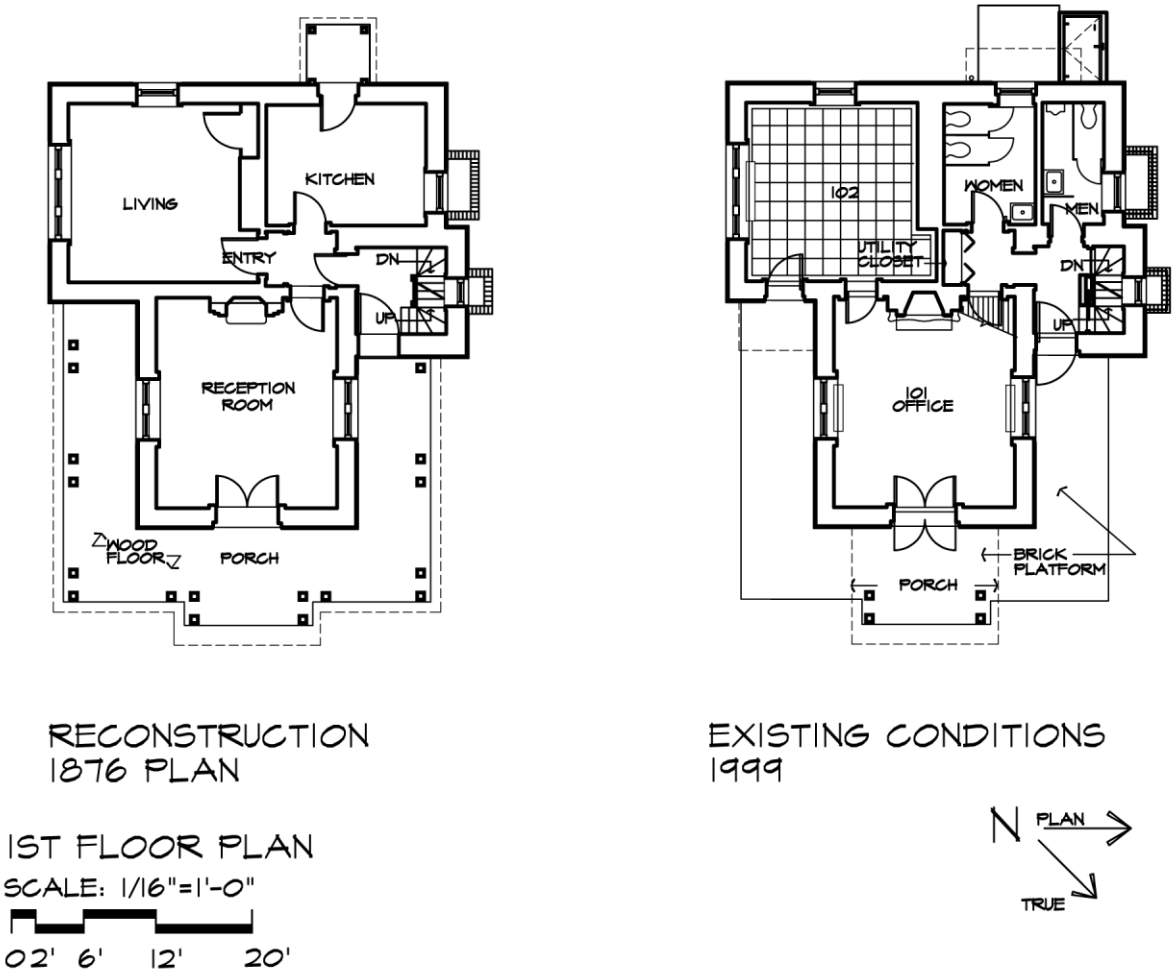
Triple window on south elevation with steeply pitched gabled dormer above. Photograph 1999, Robinson & Associates, Inc.

South Elevation

The tower is least visible on the south elevation, with only its castellated top visible behind the roof. This facade is composed of the hip-roofed portion of the building on the west (left), and the side of the gable-roofed block on the east. The hip-roofed section projects a few feet forward of the gable-roofed block, and has three four-over-four double-hung windows side by side under a single segmental arch. A dormer directly above the triple window echoes the pointed form of the roof behind it. Centered on the side of the gabled-roof block is a paired four-over-one sash window.

top. South elevation. Photograph 1999, Robinson & Associates, Inc.
bottom. Exterior detail drawings, 1986. HABS collection, Prints and Photographs Division, Library of Congress, HABS No. MD-936-A

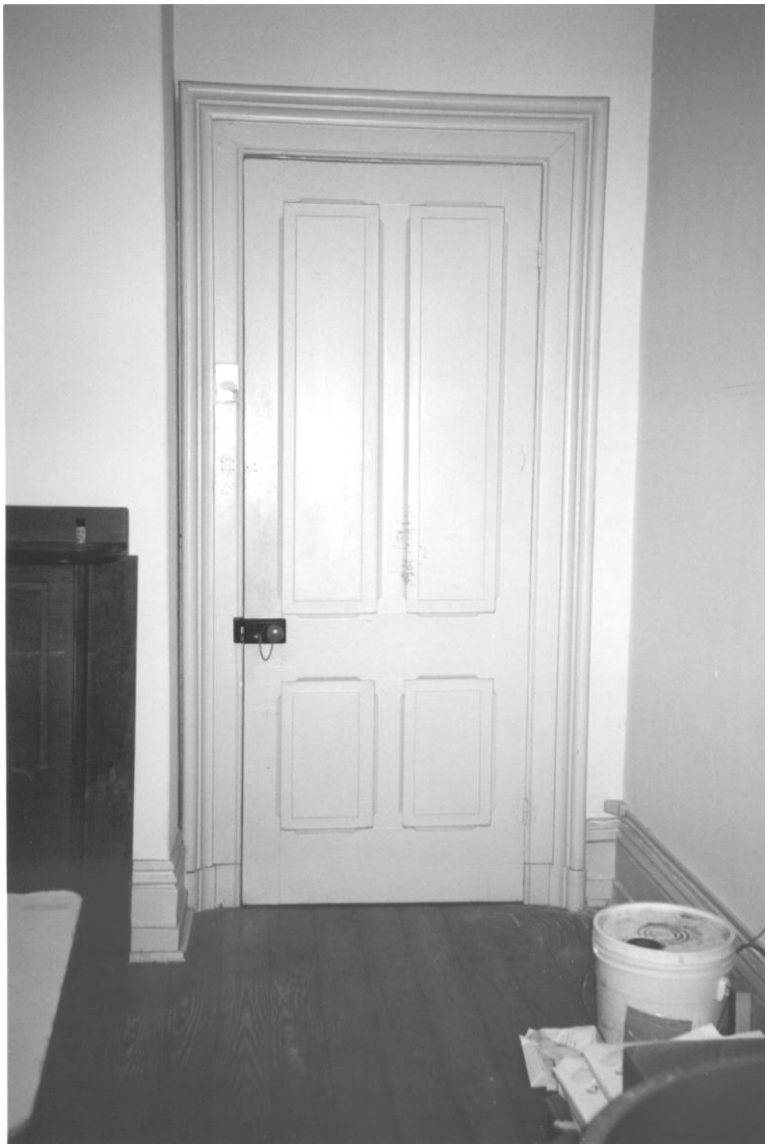
top. Tower oculus on north, south, and east sides and battlements at the third-floor level. Photograph 1999, Robinson & Associates, Inc.
bottom. Exterior detail drawings, 1986. HABS collection, Prints and Photographs Division, Library of Congress, HABS No. MD-936-A



Interior Description

First Floor

The floor plan of the Superintendent's Lodge is a "T" formed of the three rooms with the tower tucked into the intersection of the crosspiece and vertical, overlapping the crosspiece and projecting out from it. The interior reflects an original hierarchy of spaces between the rooms that were open to the public and the superintendents' personal living area. For example, the east room on the first floor, the "reception room," serving a public function, displays a higher degree of finish than the simpler private rooms. Door and window moldings are larger and more elaborate than elsewhere in the building; the mantle and fireplace surround is slate in contrast to wood on the second floor; and the paired windows on the north and south walls have four-over-one sash in contrast to the more economical four-over-four sash found in the rest of the building.



The door to the right (north) of the fireplace is typical of the interior paneled doors present throughout the building, although the doors are not all the same. This is an original door opening location. Note box lock on door. Photograph 1999, Robinson & Associates, Inc.

Some rooms on both stories retain their original configurations, and early or original materials, while others have been changed extensively. In addition to some of the early trim and other decorative details, the building retains a great deal of early or original hardware. Artificial lighting, on the other hand, is provided by recent fluorescent fixtures. All of the exterior doors consist of vertical boards with diagonal bracing, while interior doors are paneled doors of various configurations.[19] Radiators are located under most of the windows.

[19]Analysis of the finishes in the lodge suggests that the doors at the north and south ends of the east front are not original, while the main door is likely original, corroborating evidence from the 1935 modification drawings, which clearly show the addition of the door and opening at the south side of the east elevation, into what was originally the living room. Paint analysis further showed that some interior doors are probably original, but others are later. See Catherine S. Myers, "Antietam National Battlefield Keeper's Lodge: Analysis of Finishes," March 31, 1999.

The fireplace in the original reception room is one of the most elaborate interior features in the Superintendent's Lodge. Photograph, 1999, Robinson & Associates, Inc.

Reception (East) Room

The most formal room in the Superintendent's Lodge is the easternmost room on the first floor, originally serving as the reception room where the superintendents provided information and services to cemetery visitors. The room, measuring about 15 feet by 17 feet with a 10 foot 9 inch ceiling, is now symmetrical and regular in its arrangement. The main entrance to the building, a set of double doors on the eastern wall, is directly opposite the room's focal point, a fireplace with an arched brick opening and a decorative slate surround with a crest at the top of the arch and a simple border. The fireplace is flanked by two doors. Matching paired windows with four-over-one sash, centered on the north and south walls, complete the symmetrical arrangement of openings in the room. The trim in this room is the most elaborate of any room in the Superintendent's Lodge, consisting of robust, curved window and door surrounds and baseboards. These moldings were described in the specifications for the building as "architraves 7 inches wide, chamfered double moulded and with a large walnut bead."[20] The flooring, made of five-inch-wide pine boards, is not original; the specifications for the reception room called for "a hard wood floor 1 inch in thickness, to be alternately in strips of walnut and oack [sic], the strips not to be wider than 2 ½ inches."[21] These original floors do not remain.[22] The door to the left of the fireplace was apparently cut through to the original living room when the 1935 women's toilet was relocated into the structure's original kitchen area.

[20] "Specifications of a Keepers Lodge for the National Cemetery at Antietam Md," National Archives, RG 92, Records Relating to Functions: Cemeterial 1820-1929, General Correspondence and Reports Relating to National and Post Cemeteries, 1865-1890, Box 4, NM-81, Entry 576. [hereafter "Specifications"]

[21] "Specifications."

[22] Richard Brown reports the current floor was installed during his tenure at the site because of extensive termite/insect damage.

Terrazzo flooring remains in the south room, converted into a women's restroom in 1935 and to office space later. This view shows the transition from the south room to the east (reception) room. This opening was apparently cut after the 1935 installation of the women's restroom, possibly when the space was converted to an office, explaining the existence of terrazzo abutting vinyl tile, next to a wood threshold before the wood floor of the reception room.. Photograph, 1999, Robinson & Associates, Inc.

South Room

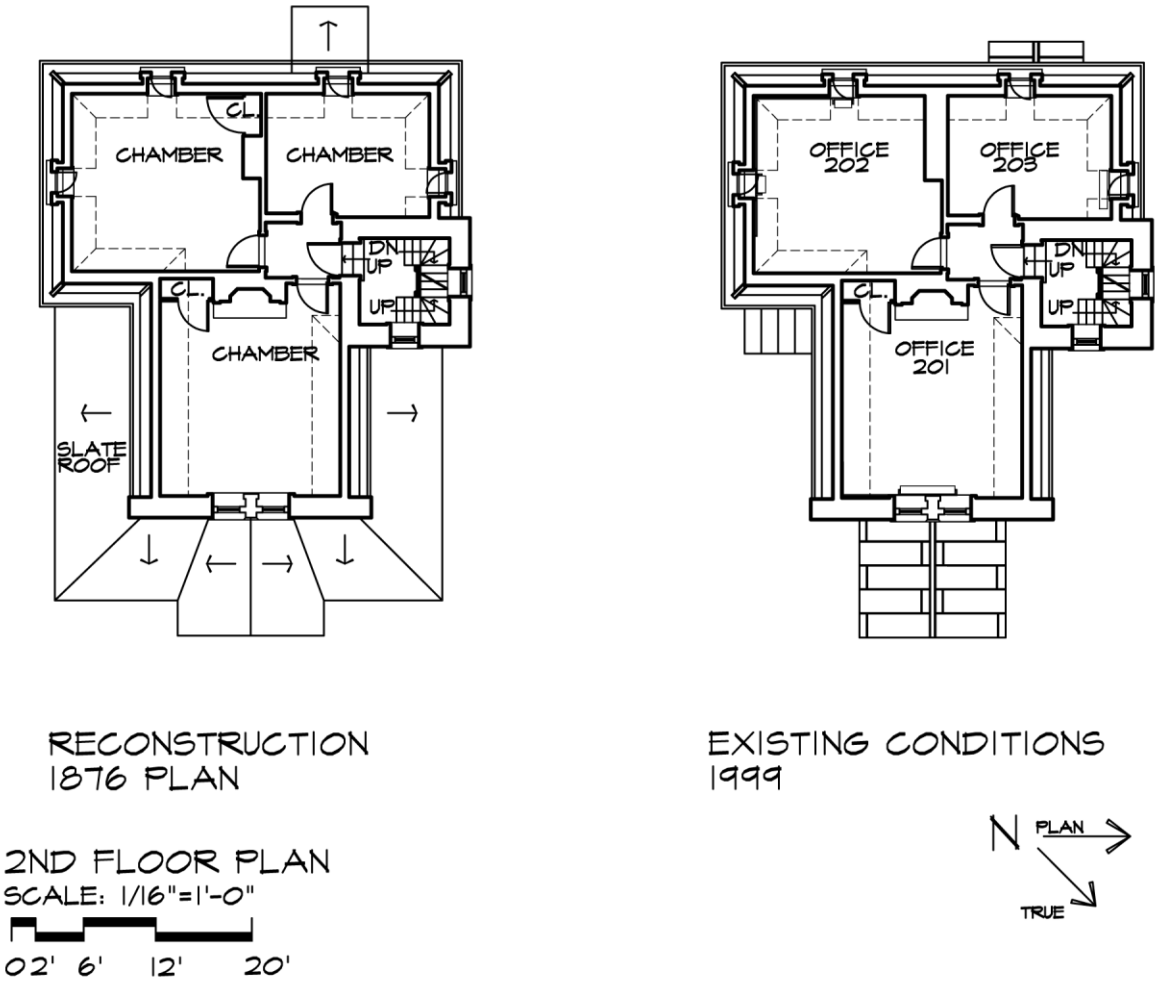
The south room, the original function of which is unknown but which was probably the superintendent's living room, measures about 14 by 15 feet with a 10 foot 9 inch ceiling. In 1935 it was converted to a women's restroom, and terrazzo flooring that continues about three inches up the walls remains from this use. With two doors on the east wall (neither original to the building, the one to the exterior having been cut in 1935 and the one into the reception room some time later), a triple window on the south wall, and a single window on the west wall, this room is not nearly as regular and symmetrical as the reception room. A small alcove on the north wall housed a door into the "entry" area that connected the tower, the kitchen, the reception room, and this room. This door was closed sometime after 1935, probably when the women's room was moved. The window and door surrounds are representative of the type of trim designated for rooms other than the reception room, described in the original specifications as "5 ins. wide, chamfered with backband and bead."[23]

[23] "Specifications."

Blue mosaic tile flooring, glazed wall tiles, metal toilet partitions, and moldings characterize the portions of the original north room that now function as men's and women's restrooms. This view of the women's restroom, facing west, also shows the window on the west wall that was once a Dutch door. Photograph 1999, Robinson & Associates, Inc.

North Rooms

The northwest section of the building, originally the kitchen, is now the most complexly configured of the three original first-floor areas. The several distinct spaces that now comprise this area share similar materials, including a non-original blue mosaic tiled floor and simple moldings that appear similar to those in the south room but executed in metal. A small vestibule with a utility closet, labeled "Hall" on a 1935 floor plan but probably that referred to in the original specifications as "Entry," connects the east room with the reconfigured north room and tower. The original north room, measuring about 10 by 14 feet, has been divided to accommodate separate men's and women's restrooms with 10-foot ceilings. The women's restroom, to the south, has modern fixtures, and the walls are clad in glazed white tiles to about six feet. A window on the west wall was originally a Dutch door. From the exterior, this opening still reads as a Dutch door, but from the inside, only the upper window portion is visible. This modification was made after 1935 when the women's restroom was installed in the north room.



The north corner of the building is occupied by a men's restroom with the same floor and wall tiles as the women's restroom and a double-hung window in the north wall. To the east of the men's restroom is the tower, about six by six feet in size, containing steep, narrow, winding stairs that lead up to the second floor and down to the partially excavated basement. The tower room has a door to the exterior on the east wall.

Second Floor

The layout of the second floor generally parallels the first. The rooms have the same type of moldings seen in the first-floor south room, indicating a secondary level of formality, although the east room is distinguished from the others by the presence of a fireplace. With the exception of the east (or gable end) wall of the east room, all of the exterior walls of the second-floor rooms cant inward, starting at a height of about four feet, to accommodate the slope of the roof. Due to this slanting, most windows on this floor are dormers with inward-swinging casements. Most floors are carpeted, with painted wood strip floorboards beneath the carpet.

The wood fireplace surround in the second-floor east room is much less elaborate than the stone one in the reception room directly below. Photograph 1999, Robinson & Associates, Inc.

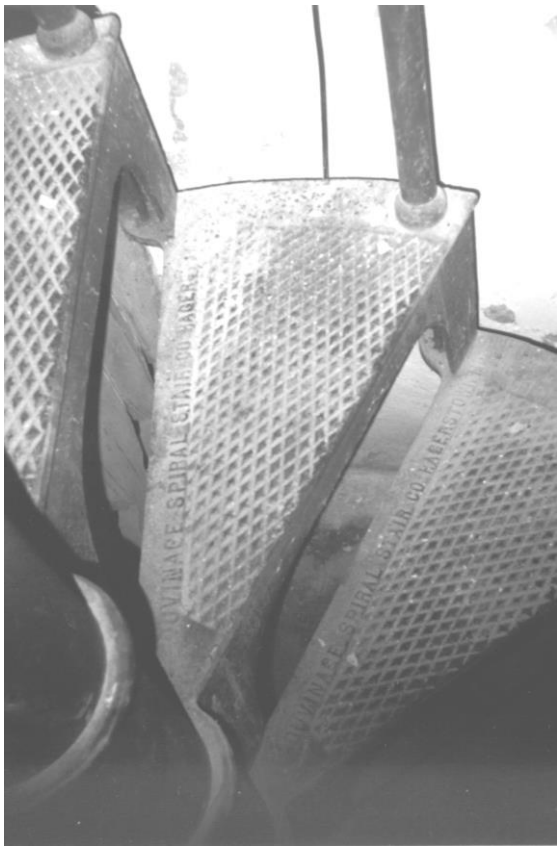
East Room

As on the first floor, the most formal second-floor room is the easternmost room, measuring about 15 by 16 feet with an eight and a half foot ceiling, and comprises the gable-roofed section of the building. On the east, or gable, end are two narrow, four-over-four sash windows. One window has an apron beneath the sill; the other, lacking this feature, contains an air-conditioning unit. The north and south walls have no windows. Centered on the west wall is a fireplace with a wooden mantel, flanked by two doors. The south door leads to a closet, while the north door leads to a vestibule that provides access to the stairway (located in the tower), the south room, and the north room.

Typical windows on the second floor are in-swinging casements set into dormers. Note the canted walls that accommodate the hipped roof. Photograph 1999, Robinson & Associates, Inc.

North and South Rooms

The north room, measuring about 14 by 10 feet with an eight foot ceiling, is considerably smaller than the other second-floor rooms, and has two dormer windows. It does not match the configuration of the room directly below it, as the room below it was divided to create two separate restrooms. The south room, measuring about 15 feet by 14 feet with slightly less than an eight foot ceiling, meanwhile, is very similar to the first-floor south room in its shape and window openings, but has no doors on the east wall.



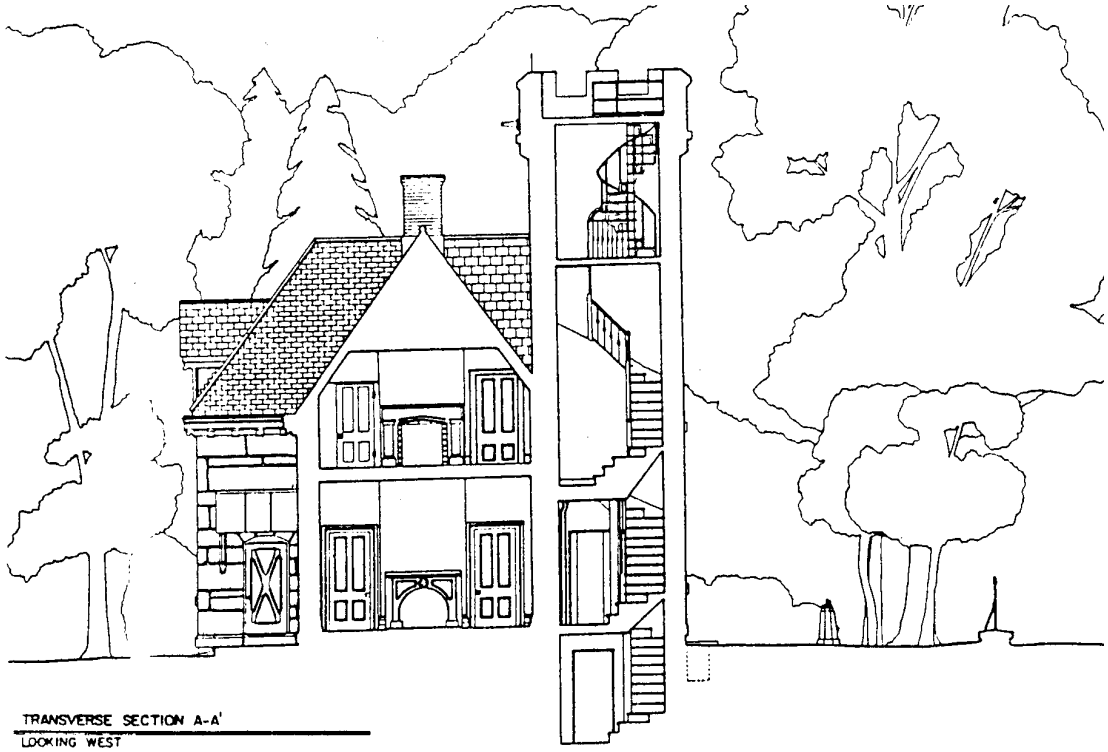
above. Iron spiral stair tread labeled "Duvinage Spiral Stair Co. Hagerstown."

left. The tower stair railing is decorated by cut quatrefoil patterns. Note the covered second floor level window behind the stair. Photograph 1999, Robinson & Associates, Inc.

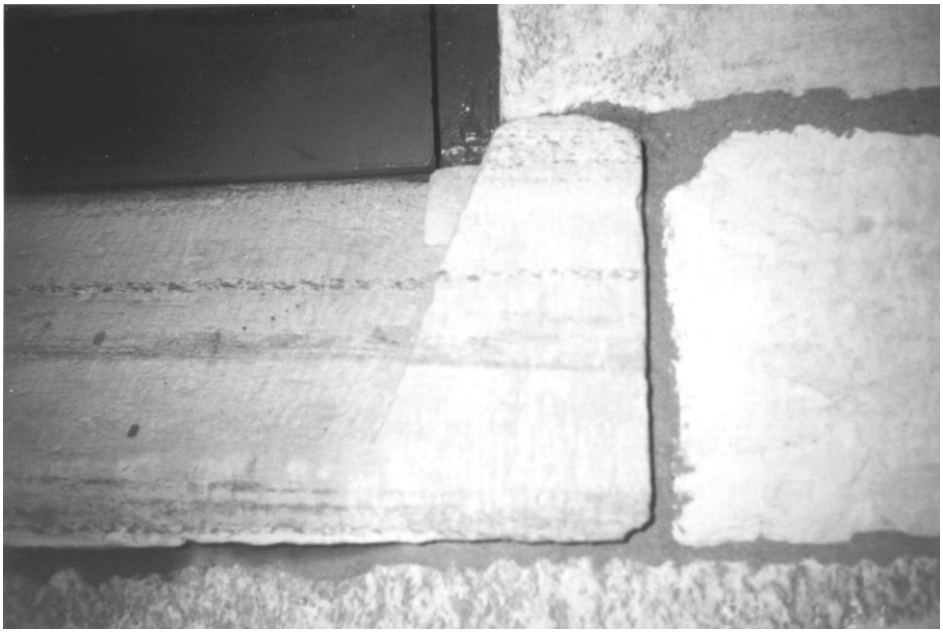
Tower

The tower houses a wood staircase with a railing of vertical beaded boards decorated with cut quatrefoil patterns. The stair leads past the second-floor double-hung tower windows, covered from the inside, and continues to the third floor, which is solely a small tower room with three small round oculi on the east, west, and south sides. From this level, an iron spiral stair installed in the 1935 work on the building leads to a heavy wooden hatch providing access to the rooftop observation level. The stair, manufactured by the Duvinage Spiral Stair Company of Hagerstown, bears the marking "24 RAD RD RH" under the treads.[24]

[24] The Duvinage Corporation has been in business since 1895. Steve Luhouse of Duvinage, in a telephone conversation, concurred that this stair appears to be an older one and that 1935 appears a reasonable date, but their records do not go back far enough to be certain.



top. The spiral staircase from the third story level of the tower to the rooftop observation area. Note water damaged plaster to left in photo and hatch to observation deck. Photograph 1999, Robinson & Associates, Inc. bottom. This HABS section drawing (1986) shows the easternmost rooms on the first and second floor and the tower staircase. HABS Collection, Prints and Photographs Division, Library of Congress, HABS No. MD-936-A.

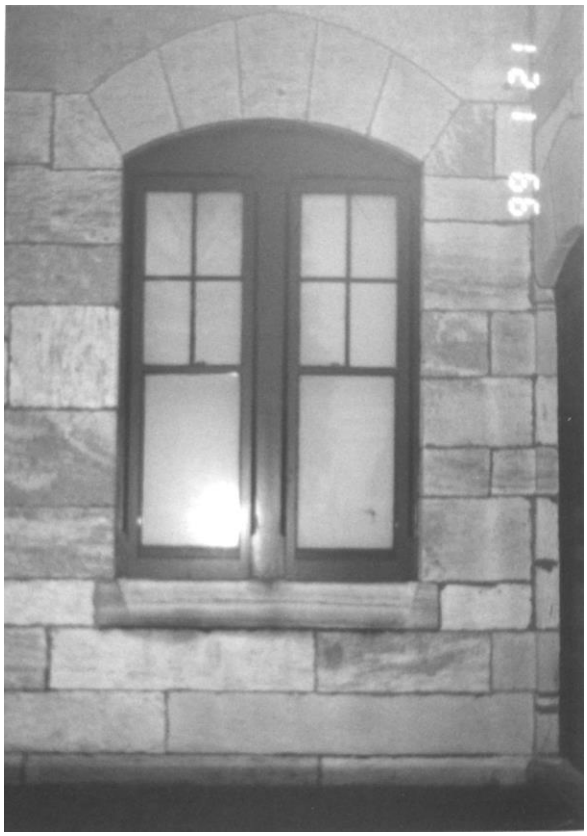


left. Dressed stone sills at windows.

Inventory of Existing Architectural Features

Exterior

The exterior of the building is characterized by its stone walls, slate roof, wood cornice, wood sash windows, and the decorative front porch, all that remains of the original wraparound porch. All these features are the original configurations although repaired and replaced in kind in some instances. Other exterior materials include the brick porch platform, not the original material, and the two porch hoods added when the wraparound porch was removed. The major exterior loss is the wraparound wood porch.



Four-over one windows on north elevation into front reception room.

Windows

The building's windows, (double hung 4/4 and 4/1, 6/6, inward-swinging 4 light casements, and round 4 light sash in the tower oculi) are appropriate to the building and are in good condition. Neither the limited paint analysis in this study nor physical or photographic evidence suggests other than that the windows are original to the building or are of the configurations original to the building. The list of extensive repairs in 1977 includes "windows and steel over windows replaced." We don't know to which windows this referred. Also, a memorandum dated January 9, 1985 mentions replacement of a basement window and that the three circular tower windows were "rebuilt, repainted, and reglazed."

Roofing

Photographs from around 1900 and 1904, the oldest ones known of the building, show it with slate shingles on the roof, the dormers, and the porch. The original specifications call for slate roofing. Interestingly, the original specifications said to "Cover the hips with beads and the ridges with a moulded (sic) cap as will be directed of pine" and called for all the valleys and flashing to be tin. The copper ridge rolls on all the ridges that are fairly prominent features of the roof today are much less prominent in the 1904 photographs. The building had roof leaks from early in its history,[25] not surprising with pine ridge caps. Also, if not well maintained, the tin installed in 1867 could well have been rusted out by 1935.

[25] See the *Construction History Timeline* for references to roof leaks. As early as October of 1877, just ten years after the building was completed, roof leaks were noted and the slate roof was relaid the following year. Leaks are again noted in May 1884; the tower and porches were repaired extensively in 1922; and leaks were again repaired in 1926.

The slate roofing shingles present on the main roof today are of two different sizes suggesting different replacement campaigns, possibly after part of the roof was lost in a 1950 hurricane.

The building apparently originally had built-in gutters as it does today.

While the original specifications called for "ridge ornament on the main roof and also on gable on piazza to be of wrought or cast iron, also the ornamental spear on the gable," such are not visible in the 1904 photos.

The copper roofing on the front porch and the back door hood was noted to be new in 1935, installed as part of that work. The 1935 drawings also show new copper batten seam roofing on the main gable and hipped-room section of the building and call for lead cresting with terminal finials along the main roof ridges, the dormer ridges, and the porch ridges. However, photographs taken in 1936 after that work was done show the wraparound porch removed with porch hoods added at the two doors that have them today and the main roof in slate without the lead cresting and terminal finials.

The original specifications called for a flagstaff to be installed on the roof of the tower, but no evidence of that is visible today or in the 1900-1904 photographs.

Stone

The exterior finish and structural material on the original house is dressed random coursed ashlar limestone.

The windows and doors have dressed stone sills

The exterior stonework of the structure is significant and its appearance is intact. However, as documented in the Construction History Timeline and as identified in the Historic Mortar Analysis in Appendix C in this report, the exterior stone of the entire structure has apparently been repointed using Portland cement-based repointing mortar.

Wood cornice

The wood cornice on the north, south, and west walls was replaced, replicating the original, in 1977 and is in good condition.

The cornice is a significant feature of the structure.

Wood porches

The building originally had a large wood-floored wraparound front porch that was largely removed in 1936, leaving the front gabled section at the reception room door. Comments in the record in 1977 mention concrete that was pulling away from the building that should be removed and replaced with brick so it seems that the original wood porch floor was replaced with concrete sometime before 1934 as a photo dated "about 1934" shows a concrete porch base. Photographs taken after the 1936 repairs show that the hood over the door into the southwest room was added then when the wraparound porch was removed. The door on the west elevation from the original kitchen had a standing seam metal shed-roofed porch with two columns supporting it before the 1936 work. After the 1936 repairs that door had the cantilevered gable hood it has today with

A view of the entrance to the cemetery in 1904 shows the original wrap-around porch. It also shows the roofs of the gabled and hipped sections and porches clad in slate shingles, and that the dormers once had small awnings. Most of the character-defining features appear today as they did at the time of this photograph. Note the piles of cannonballs along the fence to either side of the main entrance. National Archives, RG 92, Prints and Photographs Division, Photographs of Military Cemeteries, 1875-1912.

the same detailing as the front porch remnant from the original wraparound porch. The drawings for the 1936 work note "remove porch floor remains" at the former kitchen location and graphically show pilasters against the wall and two freestanding porch columns, but the drawings also show a hood of the configuration present today.

The detailing of both hoods present today is appropriate to the building.

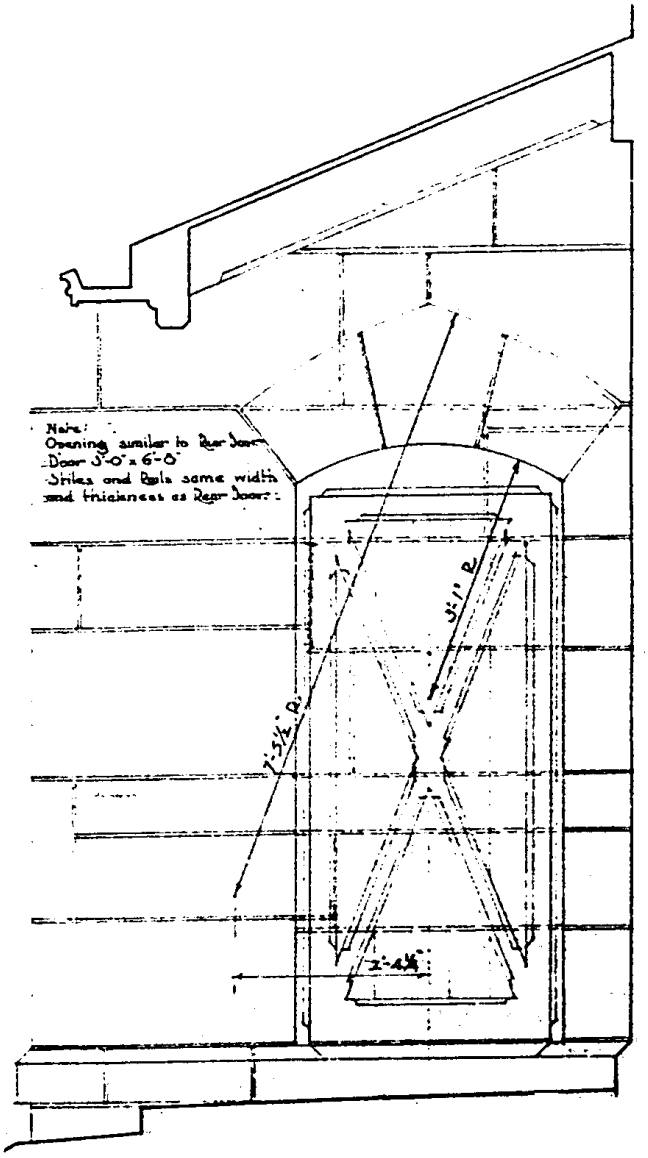
All the existing porch elements are in good condition including the brick platform that replaced the concrete that replaced the original wood porch floor.

A view of the entrance to the cemetery in winter, probably taken shortly before the 1904 photograph (based on the absence of ivy on the tower in this view), shows many of the same features visible in the 1904 image. The winter foliage and snow make it easier to see the landscaping of the center of the site, a tree-lined allee leading to the central statue prominent.

Exterior Doors

The building's exterior doors are appropriate to the building and are in good condition. The limited paint analysis in this study suggests that the paired main entrance doors and the door into the tower are original to the building. The drawings for the extensive work on the building in 1936 show the new door and opening into the southwest room and instruct that the "opening [be] similar to Rear Door—Door 3'-0" x 6'-8"—Stiles and Rails same width and thickness as Rear door." The door drawn is of the same configuration as the apparently original main entrance doors and the door into the tower.

The front entrance and the tower entrance both have screened doors, possibly those noted as added or replaced in 1977 and 1978 in the Construction History Timeline.



right. Drawing of new door and opening into historic living room from 1935 drawings for the 1936 modifications. Note to upper left of door and opening reads "Opening similar to Rear Door Door 3'-0" x 6'-8" Stiles and Rails same width and thickness as Rear Door."

Interior

Basement

The original building specifications called for a "cellar…under the kitchen, entry and tower only and to be 6 ft 6 inches in the clear." Today, the building has a basement under the tower, the original kitchen, and the entry. (As shown on our drawings reconstructing the original floor plan, the "entry" referred to above is probably the small vestibule that connected the tower, the original kitchen, the reception room, and the living room.). The basement ceiling height today is 7'-11" to 8'-0".

The basement is utilitarian space, modified in the 1935 when restrooms were installed on the first floor, and has no significant architectural features.

There are two crawl spaces, one under the original living room, the other under the original reception room. Neither is accessible.

Heating, Ventilating, and Air Conditioning Systems (HVAC); Electrical and Plumbing

None of the original heating elements to be expected in an 1867 building (stoves) are present. The radiators appear to date from the twentieth century and are not original to the building, but are historic. The 1935 drawings for extensive work to the building identify the boiler as "present" and include a list of "present" radiators on the job and direct these radiators to be rebuilt with additional sections and show piping to first floor radiators. The boiler was probably coal since an oil space heater was added to the office of the Superintendent's Lodge in 1953 after complaints from the superintendent about the inadequacy of the *coal furnace*. That boiler was replaced in 1977. There is a record of radiators being installed on the second floor of the Superintendent's Lodge in 1949. The park's maintenance history record notes that three

radiators were replaced upstairs in 1989.[26] The second floor radiators generally look fairly modern. Maintenance records also show three first floor radiators replaced in 1988.[27]

The original specifications for the building say to "Provide and put up 2 mantles for 2 fireplaces to be made of clean lumber of a neat ornamental pattern and set a marble mantle in receptions room, which will be furnished by the committee." This implies the building had three fireplaces, two to be utilitarian, doubtless for the use of the Superintendent and his family, and one, in the public reception room to have a grander mantle. Only two fireplaces remain in the structure today: in the reception room and in the east room directly above the reception room, both served by one chimney with two flues. The other chimney between the two rooms in the western part of the building is still present but there is no evidence of the third fireplace. A stove in the original kitchen no doubt connected to that chimney, large enough for two flues but with only one today. The present oil fired boiler vents to that chimney as did the coal boiler on the 1935 drawings.

We can only postulate about how the structure was lit at the time of its construction. The location was rural in 1867 so it is likely lighting was by lamps, leaving no architectural evidence.

There is no architectural evidence of gas lighting in the building or any other evidence that gas was supplied to the building. (Records of heating systems refer to coal, oil, and wood as fuels used in the building.) All lighting and power in the building today appears to date from the 1930s or later. New electric fixtures were installed in the building in 1928 and a request for a telephone was made in 1929. Light fixtures in the building today consist of pendant mounted fluorescents in the reception room and historic living room; surface mounted contemporary incandescents; and surface mounted fluorescents in the second floor bedrooms. None of these fixtures is historic or appropriate to the building.

Water was apparently originally provided at the site by cistern, as an arbor was constructed over a cistern located near the Superintendent's Lodge as noted in 1871. A well was drilled in 1927 in preparation for the new superintendent's lodge built west of the original Superintendent's Lodge. In 1931 another well was drilled to 347.5 feet deep and a pump installed providing 300 gallons of water per hour. Today the building is provided with public water.

Before installation of a cesspool outside the Superintendent's Lodge and a bathroom within in 1924, the needs of the Superintendent's family were undoubtedly served by an outdoor privy, possibly the brick privy to the northwest of Superintendent's Lodge built in 1889. Other information about privies on the site is vague and occasionally contradictory. When a brick stable was built to the west of the Superintendent's Lodge in 1901 two privies were noted as relocated. In 1909 a second privy was constructed on the grounds, creating one public and one private privy.

The old Superintendent's Lodge building, superceded as a residence for the Superintendent by the completion in 1928 of a new lodge building, was converted to public toilets, rest rooms, and storage.

There is no physical evidence of early water or waste systems in the building today.

[26] Work done by Fridinger-Ritchie, Co. of Hagerstown. Source, Jane Custer, 14 September 2000.
[27] Purchased from J & H Aitcheson, Inc. of Alexandria, Virginia. Work done by Beaver Mechanical. Source, Jane Custer, 14 September 2000.

left. Console trim at windowsill in reception room.

right. Typical in-swinging casement window in second floor dormer. Note water damage to right in picture.

Doors, Windows, and Trim

Many of the interior doors appear to be historic. (Notable exceptions include the flat steel doors into the restrooms, the louvered wood bi-fold doors into the utility closet, and the hollow core pocket doors at the tower stairs on the first floor.) Where not original, the interior doors are generally of appropriate configurations and profiles for the building. There is one interior transom at a door, at the head of the stairs to the second floor. All the historic doors in the building are in good condition.

As can be seen on the door schedule, the interior doors are of a variety of configurations and dimensions, many with box locks or evidence of formerly having box locks.

It appears that when the opening between the office and the historic living room was added, the door installed in the new opening may have been relocated from elsewhere on the first floor as the door is of the appropriate height for the first floor. What appears to be an original door (door

101) is a very simple recessed four panel design to the superintendent's residence side, but the design of the face of the door to the formal, public reception room side is a more elaborate raised panel design with chamfered rails and stiles. The door (102) in the non-original opening between the reception room and the historic living room, while of the appropriate height, is of the simple recessed four-panel design, further reinforcing the postulation that the door is relocated from elsewhere in the building into a new opening. These two doors are the only original or historic doors on the first floor.

The second floor doors are so miscellaneous in configuration and dimensions that it is difficult to determine which might have been original to the building. Virtually all of the second floor doors

Door schedule

show evidence of having been modified to fit their openings. While the four-panel configuration predominates, there are three different panel or panel edge designs among the four doors of that configuration. All the doors are in serviceable condition.

Box lock on what appears to be original door from "entry" to reception room, viewed from reception room.

The first floor windows follow the same pattern of higher level of finish/expense in the first floor public space and less expense in the superintendent's residence. Another typical pattern in the Victorian era was to use larger, more expensive panes of glass on facades, reverting to smaller panes for less important elevations. This pattern is found in this structure.

The reception room has paired 4/1 double hung sash in contrast to the 6/6 sash found in the historic kitchen area and on the west side of the historic living room. Interestingly, the historic living room has one 6/6 window and one much grander triple group of 4/4 windows looking south over the cemetery and sharing an elevation with the paired 4/1 windows of the reception room. All the first floor windows have wood 1/1 storm panels except the west elevation windows. The window into the restrooms, formerly a door, has a screen. Some panes of old glass are visible in all of the first floor windows.

The two second floor west bedrooms have two dormer windows each. The sash are 4 light in-swinging casements except for the southern window on the west elevation that is missing its sash being glazed currently with a sheet of plastic and some cardboard.

The east bedroom on the second floor, directly above the reception room, has two 4/4 wood double hung windows on its eastern wall, above the porch roof pediment below. Some panes of old glass are visible in these sash.

Window trim in second floor room above reception room.

The tower windows have 4/4 wood double hung sash with 1/1 wood storm panels. The round sash in the tower oculi are replacements and are held in place by two casement locks each.

The first and second floor frames and sash are in generally good condition, although a number of the sash cords are broken. The tower window sash, sills, and trim show signs of moisture damage.

Window and door trim in the building follows the hierarchic pattern of other elements in the structure. The public reception room has the most elaborate trim by far. The historic living room has a five-inch wide version of the trim profile found throughout the rest of the building in a four-inch wide version.

All the trim in the building is painted wood in good condition except for some of the tower window trim.

right. View of wood board stair rail in tower with cut quatrefoil pattern and damaged plaster on tower wall beyond.

Finishes

The walls and ceilings in the building were historically finished in flat plaster and are generally so finished today, with no moldings or embellishments. At our test holes, we found some cases of wood lath with plaster that could date from the original construction and instances of plaster, wood lath, and metal lath, likely from the twentieth century. Correspondence and notes relating to the building refer to frequent roof leaks, repainting, and frequent replastering suggesting that the plaster in the building has been reworked considerably. The plaster work in the building, whether original, historic, or recent is in relatively good condition except for cracks in several locations, and water damage on exterior walls in the reception room, the second floor, and in the tower.

Because the plaster on the exterior walls is applied directly to the interior face of the exterior masonry walls, a certain amount of plaster deterioration is virtually certain as moisture migrates through the masonry.

First Floor

The original first floor layout of three rooms, "entry," and tower is still present although openings and closets have been closed and added and the historic kitchen converted to restrooms. However the exterior window opening locations and trim, some interior door locations, ceiling heights, fireplace location, surround, and chimney are significant features and are intact. None of the original floor finishes are present.

Second Floor

The original second floor layout of three rooms, hall, and tower is significant and is intact. The door and window openings, ceilings heights, and "tray" type ceiling created by the steeply sloping roof are intact. The second floor was finished more simply than the first floor but is still significant because it is largely as it was when the building was completed. Original floor finishes appear still to be present under the carpet there today. The second floor landing in the tower has 5 ¼" tongue and groove wood flooring. The stair treads in the tower stair are wood, painted and unpainted. .

Graphic Documentation

The Historic American Buildings Survey (HABS) documented the Superintendent's Lodge building (basement, first and second floors, roof plan; east and north elevations; a building section, cemetery fence, gate, and miscellaneous structures) in 1986. That documentation provides the basis for those drawings following, converted to AutoCAD under this project. Between the summer of 1999 and the summer of 2000 we further documented the structure, drawing the south and west elevations, another building section, interior details, and revising the 1986 drawings to reflect current conditions.

We have also created a series of comparative drawings, reconstructing what we believe is the floor plan layout of the building in 1867 and its layout after the extensive work in 1935. Those are shown together on the following page.

Comparative Floor Plans:
Reconstructed Original, After 1935, Existing Conditions

Floor Plans
- Basement
- First Floor
- Second Floor
- Roof Plan

Elevations
- West
- East
- North
- South

Building Sections

Details

(See Appendix B for 1999 Site Survey)

place holder

11 x 17 foldout front

place holder

11 x 17 foldout back

Basement floor plan

First floor plan

second floor plan

Roof plan

east elevation

west elevation

North elevation

South elevation

Building Section A

Building Section B

details

details

View into test hole on east side of east chimney mass, first floor. Photograph 1999, McMullan & Associates, Inc.

Structural System Existing Conditions

Methodology

No original structural drawings were found or are believed to exist so we based our assessment on limited visual observations of existing conditions. We were able to examine the first floor framing from the basement. The framing under second floor room over the reception room was visible at three vent openings in the ceiling of the reception room. Removal of floorboards allowed examination of the rest of the second floor framing. The roof framing was visible from the attic, accessed through an access panel in the north west second floor room. We cut a small opening to the east side of the chimney in the southwest room. We examined framing conditions and measured framing members everywhere accessible. We assume inaccessible areas are similar to accessible areas. Framing plans are based on observations made in the field at test openings and locations where framing was visible.

We calculated allowable floor load capacities based on the apparent conditions of the visually accessible existing members.

Description

The building was constructed in 1867 and consists of a two-story wood framed building with exterior stone walls and an interior brick chimney. There is a basement under the restrooms and a crawl space under the remainder of the first floor. The first floor is framed with concrete slabs

Pipe penetration from basement mechanical room into inaccessible crawl space under reception room. Photograph 1999, McMullan & Associates, Inc.

and wood joists. The second floor is framed with wood joists. The roof is wood framed in a gable configuration with hips at the ends.

A stone walled tower extends one floor above the adjacent wood framed roof. The tower has a combination of wood and concrete floors, with wood stairs up to the top floor from which there is a steel circular stair to the roof.

The building was substantially modified in 1936 (drawings dated 1935), including removal of most of the wraparound porch roof at that time. The first floor north and south rooms' wood flooring was replaced with concrete slabs and men's and women's restrooms were installed.

In the 1970s,[28] both men's and women's restrooms were located in the north room and the former porch floor was replaced with brick.

The east office wood flooring was replaced within the last 10 years due to insect damage.

The building is currently used for offices for NPS personnel with public access to the first floor rest rooms only.

[28] *Classified Structure Field Inventory Report* by Patricia Heintzelman, 17 May 1976 and *National Register of Historic Places Inventory—Nomination Form,* October 1981, approved 10 February 1982.

Floor under first floor reception room. Photograph 1999, McMullan & Associates, Inc.

Basement and First Floor Framing

The foundations for the stone walls are not visible and there are only a few signs of minor settlement. The basement floor is a concrete slab. The stone walls are approximately 14 inches thick and extend up to the second floor. There is evidence of mortar repairs on the outside face of the exterior walls.

The crawl space under the south office is inaccessible. There is a 6" concrete slab indicated on the 1935 renovation drawings with reinforcing bars ½" diameter spaced 6 inches on center. The slab spans between concrete beams located along opposite exterior walls and one in the middle of the floor. Concrete beam reinforcing is not indicated.

The concrete slab soffit under the north office does not show signs of distress. The plans indicate a similar 6" concrete slab and beam framing as the south office.

The concrete slab at the base of the tower is badly cracked along the edge facing the stair. No information on this slab is given on the renovation plans.

The wood flooring under the east office can be viewed from a small opening in the basement wall. The floor joists are 2x8's spaced 16 inches on center spanning between double 2x12 beams. The beams span between 16"x16" concrete masonry piers that bear on 24"x24" concrete pads. The floor joists frame into the original joist pockets along the north and south exterior walls.

Crack in edge of slab in stair tower first floor. Photograph 1999, McMullan & Associates, Inc.

Second Floor Framing

All three offices on the third floor are framed with floor joists that vary from 2-1/2”x9” to 2”x9-3/4” and are spaced 16 inches on center. The floor joists span between exterior walls in the east office and from the exterior wall to the interior wall adjacent to the chimney in the north and south offices. There was minor staining caused by water on the wood joists observed in the east office. There was also evidence of minor insect damage. The wood joists are currently in a fairly dry condition. The plaster ceiling is attached directly to the floor joists. To account for the uneven depths of joists, wood shims are nailed to the bottom of the joists. Wood flooring is ¾”x 5-1/2” boards is nailed to the joists and covered with carpet.

The floor of the tower stair landing is framed with joists 1-7/8”x 10-1/2 spaced at 16 inches on center spanning between exterior tower walls. The wood flooring is ¾”x5-1/8” boards nailed to the joists.

Ceiling Joists/Attic Floor

The ceiling joists are 2-1/8”x 6” and are spaced 24 inches on center. The second floor plaster ceiling is fastened directly to the joists. The ceiling joists span between exterior and interior bearing walls. The space between joists is filled with insulation. A few loose boards resting on the ceiling joists serve as a walking platform. The attic space is not currently used for storage.

Roof framing at hip-roofed top section of roof. Photograph 1999, McMullan & Associates, Inc.

Roof Framing

The roof is framed with rafters measuring 2”x 8” spaced at 24 inches on center. The rafters are toenailed to ridge boards measuring 1-3/4”x 13-1/4” and to hip and valley boards measuring 3-7/8”x 9-1/4” at the ends of the gables. The rafters are sheathed with unevenly spaced ¾” board sheathing of varying widths. There are significant water stains on the roof framing and some minor signs of insect damage. There is a small hip framed portion of roof adjacent to the tower. The corner of the hip adjacent to the tower lacks any means of support and is being held in place by the redundancy of the wood framing. The roof slope is steep (more than 45 degrees) and the ceiling joists keep the rafters from spreading.

A gabled porch roof covers an outside entrance to the east office. This roof is framed with 2x 6 rafters spaced 24 inches on center. The rafters are toenailed to a 2x 6 ridge and to 3”x 6” beams at the base of the gable. The beams span between 5”x 5” posts. The posts bear on a brick covered concrete slab at the base of the porch.

Tower

The stone walls of tower extend to and through the roof of the Superintendent’s Lodge ending in a castellated parapet and a flat concrete roof slab. The stair landings in the tower are framed with concrete slabs or wood joists. There are stains on the inside walls of tower near the roof indicating roof leaks.

Water-stained roof framing against stone tower wall in attic. Photograph 1999, architrave p.c., architects.

Structural System Assessment

We analyzed the wood framing based on assumed wood engineering properties and measured typical joist sizes and spacing. A small sample of wood taken from a second floor joist was identified by a wood technologist as white pine. Since the wood framing was observed only in a few specific locations, a wood grading of No. 2 was assumed for determination of the wood engineering properties used in the calculations.

Calculations were performed using the National Design Specification (NDS) for Wood Construction. A repetitive member factor of 1.15 was applied to the allowable stress for joists according to the NDS.

The floor live load capacities were determined from the material properties of the wood, the span and spacing of individual members and the weights of existing finishes.

The floor live load capacity for the first floor east office is governed by the strength of the double 2x 12 wood beams that support the floor joists. The calculated floor live load for these beams is 36 psf. If supports were added under the 2 x 12's to reduce the span and the end bearing conditions were adequate, the 2 x 8 floor joists have a capacity to support up to 90 psf.

There is insufficient information given on the architectural renovation plans to determine the floor load capacity of the concrete because no beam reinforcing bar sizes are given. However, we investigated the concrete floor structure to determine if the information given on the architectural plans seemed reasonable. This information includes a slab thickness, reinforcing,

and overall beam sizes. We assumed strengths of concrete and steel of 3000 psi and 40,000 psi respectively and assumed beam tensile reinforcing consisting of 3#6 bars.

The size and number of beam tensile reinforcing bars govern the capacity. The floor load capacity of the concrete structure with the larger spans, under the historic living room, is governed by the concrete beam and is calculated using the assumed 3 #6 bars to be 30 psf. The concrete floor structure under the historic kitchen has shorter spans and so should be adequate for the proposed use.

The calculated floor live load capacity for the second floor wood joists is 59 psf .

The calculated attic floor live load capacity is 10 psf. However, this load produces deflections that exceed the code recommended deflection limitation of L/360, and cracking of plaster ceilings may occur.

The stresses in the load bearing masonry walls are relatively small and do not govern the load capacity of the floors. Foundations for stone walls at the time of the original construction typically consisted of the stone walls bearing directly on the soil, perhaps with some thickening of the wall at the base.

Code Compliance Evaluation

The building was originally constructed as a residence and small office. The structural live load requirements for various types of building usage are contained in the 1996 BOCA code.

The live load requirement for residential type loading is 40 psf, except for sleeping rooms, which is 30 psf. The live loading requirement for residential attic storage is 20 psf. The live load requirement for commercial office loading is 50 psf plus 20 psf for partitions (or their actual weight). The minimum live load requirement for light storage, is 125 psf. Large filing cabinets or heavily loaded shelving in a room could be considered light storage loading.

In its present condition, the east office of the first floor would meet the requirements for residential loading. The floor live load capacities for the concrete portions or the first floor cannot be determined, however there are no signs of distress from their current use as office and restroom space. The second floor joists are capable of supporting office loading provided no partitions are erected without strengthening the framing. The attic live load capacity is less than that required for residential loading. However, neither the east office of the first floor nor the south west room on the first floor has adequate floor load capacity for the projected use as for exhibit space and a visitor’s center without strengthening the floor system by adding supports or other means of strengthening.

FIRST FLR FRMG DWG

SECOND FLOOR FRMG

Second flr clg frmg dwg

Roof frmg dwg

Mechanical, Electrical, and Plumbing

General

The purpose of this report is to document the existing conditions and to evaluate the suitability of the mechanical, electrical, and plumbing systems for the intended use of the Antietam National Cemetery Superintendent's Lodge, Antietam National Battlefield, Sharpsburg, Maryland. The evaluation is based on existing observable conditions and National Park Service drawings for "Alterations to Lodge" dated 5/29/35.

Methodology

A building survey was performed on February 25, 1999, by JVP Engineers, P.C. The survey was limited to visible and easily accessible elements; no attempts were made by JVP Engineers, P.C., to dismantle, remove or uncover equipment, material or building components that were inaccessible or concealed. The survey was aided by interviews with National Park Service personnel concerning the condition of the mechanical, electrical, and plumbing systems and the operation of the building.

Using data from the survey and available drawings, preliminary heating and cooling loads have been calculated and analyzed in the evaluation of the mechanical systems.

Mechanical System Existing Conditions

Description

The building is presently heated by a two-pipe hot water radiator system with seven radiators, several convectors and an oil-fired boiler. The radiators are located below windows in each room of the first and second floors, except the toilet rooms, each of which has a convector. An additional convector is located in the stairway at the second floor, but it did not appear to be functional. The circulating pump and boiler are located in the basement along with the fuel oil storage tank. The boiler is model P566E manufactured by Weil McLain with a capacity of 147,800 Btu/h and includes a domestic water-heating unit. It vents to the building's west chimney Control of the heating system is by a thermostat in the east office on the first floor. The supply and return pipes to the boiler are insulated as they run along the basement ceiling and then below the first floor slab of the east and south offices. From below the first floor slab, the piping turns up in individual risers to serve the radiators and convectors on the first and second floors. Piping to the second floor radiators is exposed and uninsulated in some first floor rooms and is concealed in other rooms.

Cooling for the building is provided by three window-mounted air conditioning units. One unit is located in the south office of the first floor, but no rating is visible. The unit in the east room

on the second floor above the reception room is rated at 5,100 Btu/h of cooling and a unit in the southwest bedroom on the second floor has no rating visible.

Three 18"x 18" transfer grilles in the ceiling of the first floor east office and the floor of the second floor room above allow air to circulate between the floors.

Evaluation Including Projected Useful Life, System Quality, Reported And Observed Deficiencies

The existing system of radiator heating and window unit cooling is not an effective or efficient means of providing appropriate temperature, humidity, and air quality control for office and exhibit areas.

The model of the existing boiler was manufactured between 1978 and 1987. The estimated service life of a boiler is 25 years, so with proper maintenance this boiler should still have a service life of 10 years or more. Operating the boiler during the summer for the domestic hot water requirements of two lavatories is not energy efficient. Although the individual radiators and convectors appear to be in satisfactory condition, radiator systems typically provide poor temperature control. At a minimum each floor should be a separate zone with its own thermostat, and the vents between the floors should be closed.

The installation date of the window air conditioning units could not be determined, but window units have an estimated service life of 10 years. The existing capacity of these units does not provide adequate cooling, and window units are inappropriate for a historic structure.

Code Compliance Evaluation

The basis of the code evaluation is the 1996 BOCA National Building Code and the 1996 International Mechanical Code.

Mechanical exhaust is required for toilets in business occupancies according to Table 403.3 of the International Mechanical Code. A ventilation device is located on the ceiling of each of the toilet rooms, but no exhaust ductwork was discovered or indicated on the drawings, so the device is most likely an air freshener with no ventilation.

Combustion and dilution air is required for the fuel-burning boiler according to Section 701 of the International Mechanical Code. The boiler is located in a confined space and does not have a code-compliant source of combustion air.

Electrical System Existing Conditions

Description

Power and lighting - The building's electrical service is provided by one underground feeder from Allegheny Power Company. The meter and main incoming service are located outside of the building. The supply is a 240/120V, 1 phase, 4 wire system. The main disconnect is a 100A, 240V, 2 pole breaker. Two other breakers are with the disconnect: a 20A, 1 pole for the porch light, and a 50A, 2 pole for a single outside receptacle. The electrical service feeds a 240/120V, 1 phase, 3 wire, 100A main breaker, 12 circuit panel located in the basement. Another panel in the central closet on the first floor is a 100A MLO, 240/120V, 1 phase, 3 wire type with circuits for the lighting and receptacles on the first and second floor. The wiring consists of conduit, flat wire, and cable systems, generally concealed, but with surface raceway in some areas. Duplex receptacles are located throughout the Superintendent's Lodge serving personal computers and general purposes. The number of receptacles appears to be inadequate because a large number of extension cords are in use. Single outlets are located near windows for window air conditioning units. In several offices the power for systems furniture is from a receptacle. Except in the toilet rooms and the hallways, where the lighting is incandescent, interior lighting is generally provided by surface-mounted, 4 foot and 8 foot fluorescent fixtures. The lighting on the porch and other exterior locations is provided by high intensity discharge fixtures.

Telephone – Telephone service to the building is by underground wire. Most of the telephone wiring within the building is through surface raceways.

Fire alarm and life safety – One self-contained, battery-operated smoke detector is installed on each floor. The building has a lightning protection system consisting of two air terminals, a conductor, and a ground rod.

Evaluation Including Projected Useful Life, System Quality, Reported And Observed Deficiencies

The electrical panel is in good condition and is suitable for a residence, but the panel is undersized for office use. The number of receptacles is inadequate for existing uses. No surge protection is available for electronic equipment. Some flat wires are supported from piping.

Code Compliance Evaluation

The basis of the code evaluation is the 1996 BOCA National Building Code, the National Electrical Code (NFPA 70), the Life Safety Code (NFPA 101), and the Americans with Disabilities Act.

The building does not meet the requirements for illuminated exit signs, emergency lighting for egress, and ground fault interrupter (GFI) receptacles in the toilet rooms. The location of the

electrical panel in the first floor closet does not provide the required clearance in front of the panel.

According to BOCA Section 918.4.2, this building does not require a fire alarm system since only one floor is occupied above the level of exit discharge; therefore, manual fire alarm boxes and audible/visible alarms are not required.

Plumbing System Existing Conditions

Description

Plumbing fixtures – The building's only plumbing fixtures are in the men's and women's public toilets on the first floor. The men's room fixtures consist of a floor-mounted flush valve water closet, a wall-hung flush valve urinal, and a wall-hung lavatory. The women's room fixtures consist of two floor-mounted flush valve water closets and a wall-hung lavatory. All of the fixtures are in working condition.

Sanitary and waste systems – All of the plumbing fixtures' sanitary piping connects below the floor to the sanitary piping at the basement ceiling, and the fixtures' vents connect to a 4 inch diameter vent running through the roof. An apparently abandoned sump pump in the basement also connects to the sanitary piping with a 1-1/4 inch diameter copper discharge. Cleanouts are provided at each change of pipe direction. The sanitary main for the building is a 4 inch diameter cast iron pipe exiting the building through the north wall of the basement, connected to the Washington County Sanitary District in 1989. Drawings indicate that the women's toilet was previously in the location of the south office, and a floor drain remains in that room.

Domestic water system – The domestic water is supplied by a 3/4 inch diameter copper line coming into the building from an exterior meter for city water on the north side of the building. The water is piped to a 40 gallon storage tank, and then it is distributed to the water closets, urinal, boiler and lavatories via a water filter. Domestic hot water is provided from a separate coil on the boiler and feeds the two lavatories with a 1/2 inch diameter copper pipe.

Storm drainage system – Storm water is collected from the roof through built-in gutters and 4 inch downspouts and spills on grade except on the north side of the building where the downspouts connect to 5 inch cast iron hubs that empty into the old cistern.

Fuel oil system – The fuel oil for the boiler is stored in two steel tanks in the basement with a total capacity of approximately 520 gallons. The tank fill pipe and vent terminate outside along the north wall of the building.

Fire sprinkler system – No fire sprinkler system is installed in the building.

Evaluation Including Projected Useful Life, System Quality, Reported And Observed Deficiencies

Plumbing fixtures – The fixtures are operable and in good condition.

Sanitary and waste systems – The sanitary and waste piping appears to be in good condition with no visible oxidation or deterioration. The sump pump appears to be inoperable.

Domestic water system – The domestic water piping appears to be in good condition with no visible oxidation or deterioration. The piping is not insulated. The operation of the boiler during summer months to produce domestic hot water is not energy efficient.

Code Compliance Evaluation

The basis of the code evaluation is the 1996 BOCA Building Code, the 1995 International Plumbing Code, and the Americans with Disabilities Act (ADA).

The primary plumbing code deficiency is the lack of accessible toilet fixtures. The ADA requires the provision of handicapped height water closets and urinal with accessible controls, and handicapped height lavatories with wrist blade handles and insulated waste and supply pipes. As a business occupancy, other deficiencies under the Plumbing Code include the lack of a service sink and drinking fountain or water cooler.

MEP Basement existing conditions

MEP First floor existing conditions

MEP Second Floor existing conditions

E. Additional Codes and Regulations Compliance

The following code analysis looks at the Superintendent's Lodge in terms of how it conforms to the current code. Conformance with most code items is usually not required of existing buildings unless they are being altered, repaired, or their occupancy is changing. This building, originally built as a residence, has been used as both museum/exhibit space and office space. This analysis looks at a proposed use of exhibits and restrooms on the first floor and storage on the second floor as a "change of occupancy." The BOCA code permits a change in occupancy when the "structure meets the intent of the provisions of law governing building construction for the proposed new occupancy, and that the *change of occupancy* does not result in any greater hazard to the public health, safety or welfare."

Occupancy and Life Safety Code Analysis

Occupancy Classification

The Antietam National Cemetery Superintendent's Lodge located at the Antietam National Battlefield Cemetery in Sharpsburg, Maryland will be used to house a small exhibit area and public restrooms on the first floor. The second floor will be used for very light storage. There is a third floor in the stair tower that is only used for access to the roof of the tower. The exhibit area use is most similar to that described in BOCA (303.4) as Use Group A-3 Assembly Occupancy. The second floor storage area is most similar to that described in BOCA (311.2) as Use Group S-1 Storage. Because there is no fire separation between these uses the height and area limitations of the most restrictive use will apply. (313.1.1), then each occupancy use shall be considered separately (1004.2).

Allowable Height and Area

The construction classification of the Superintendent's Lodge is Type 3: exterior walls of concrete, masonry, or other approved non-combustible materials and the interior structural elements, loadbearing walls, partitions, floors, and roofs constructed of any approved materials. Since there are unprotected interior structural elements, it is further defined as a Type 3B unprotected construction.

Table 503 of BOCA permits Group A-3 and S-1 occupancies of Type 3B construction to be two stories, thirty feet high, and to have 8,400 sq. ft. per floor. This building is two stories (with a basement and attic), with approximately 1,000 sq. ft. gross area per floor, and is just under thirty feet, except for the tower. The basement is not counted in the allowable height and area determinations since it is not a *Story Above Grade* as defined in BOCA Section 502.1. The tower exceeds both the number of floors allowed and the height regulations. However, if a sprinkler system is provided, the building, including the tower, would be within allowable limits. It is our understanding that a sprinkler system is currently being designed for this structure.

Number and Capacity of Exits

The BOCA code (1008.1) allows the occupant load to be established either by *actual number* or by table 10008.1.2. Using the table, we assume an assembly space without fixed seats and

calculate the occupancy by dividing the first floor net area of 510 square feet by seven square feet per person. The calculated occupancy is therefore 73 people. It seems highly unlikely that that many people would ever occupy the space and the actual number might be used based on National Park Service previous experience with this space or other similar spaces. The second floor storage space calculated by table is gross floor area of 798 square feet divided by 300 square feet per person. The calculated occupancy is therefore 3 people, which seems consistent with what the actual number would be.

The exterior doors in rooms 101 and 102 provide adequate exit capacity from the assembly space. There is only one exit from the second floor storage area. Table 1010.3 allows one exit from a storage use, a maximum of two of stories above grade.

The level of exit discharge (1006.3.1) is required to be separated by a one-hour floor/ceiling assembly unless an automatic sprinkler system is provided. If the basement area under the toilet rooms is opened up and allowed to communicate with the area under the assembly space before the sprinkler system is installed a fire curtain should be provided to separate the spaces.

The capacity of the egress components (1009.0) is adequate. In arranging exhibits in the assembly space a forty-four inch minimum access passageways should be maintained to the exits. In arranging storage item on the second floor a 36” access passageway would be maintained to the exit.

The door into the tower at grade level does not comply with the requirements of 1011.1.4 as it projects into the clear space of the exit path. In addition it does not swing in the direction of exit discharge as required in section 1014.8.2. The doors to rooms 101 and 102 have the same deficiency. The door at the top of the stair, is allowed by exception to swing as it currently does. However, it does not comply with the required thirty-two inch clear width (1014.8.1) as the door itself is 32” wide. If the occupant load of the assembly space were limited to fifty people the door would not be required to swing in the direction of egress.

Stairs:

- The stair width is non-compliant. Section 1014.3 requires thirty-six inches. Existing stairways are exempted from the stair riser and tread dimensions (1014.6), however winders are not permitted in an exit stair (1014.6.3). Continuous handrails are required on both sides of the stair (1014.7).
- Exit stairs require a one hundred-pound live load capacity and a three hundred pound concentrated load capacity. We have not analyzed these stairs for load capacity.
- Section 1014.11 requires the stair enclosure to be 1-hour fire rated enclosure.
- Section 1014.11.4 requires exit signs on the doors to the stairway.
- Guardrails in stair are non-compliant with section 1021.0.
- Handrails in stair are non-compliant with section 1022.0.
- Floor surface of stairs is required to be slip resistant (1005.4).

Other provisions:

- Section 1017.1.1 requires the floor surface on both sides of exit doors to be the same elevation. The doors to room 101, 102 and the stair are all non-compliant with this provision.
- Exit door hardware is non-compliant with section 1017.4.
- Main exterior exit doors that are obvious and clearly identifiable as exits are not required to have exit signs (1023.1). The doors to rooms 101 and 102 fall into this category. The door to the stair at the second floor should be identified.
- Stairs and exit discharge areas are required to be lit. See electrical section of code analysis.

Fire Detection and Fire Suppression

- Except as required to satisfy the height and area requirement as stated above a fire suppression system in not required. (904.2)
- A standpipe system is not required (915.2)
- A fire alarm system is not required (918.4)
- An automatic fire detection system is not required (919.4)
- Fire extinguishers are required (921.2). Fire extinguisher shall be provided per NFPA 10

Miscellaneous

- The occupant load (50, recommended as below) must be posted in the assembly space (1003.3).
- Interior finishes shall be class III (flame spread of 76-200) in the assembly space. Interior finish shall be class II (flame spread 26-75) in the exit stair. If the building is sprinkled, class III material can be used in the stair (table 803.4).

Summary of Life Safety Issues

The building, with the planned addition of a sprinkler system, complies with the major life safety requirements of BOCA. The building has an inherent advantage because of its small size.

As shown above, the stair and stairway to the second floor is a major area of non-compliance. However, the stair appears to be in excellent condition and is adequate for the intended use of the second level. Section 3402.2 of the code allows existing stairs in existing structures to remain in service. Given the fact that the stair is historic and that the second floor is not an area that is open to the public there seems little justification for changing it.

We recommend limiting the occupancy of the assembly space to fifty people to allow the door swings to remain as they are. Providing *reversible* platforms, wood stoops, so that the floor surface on both sides of exit doors can be at the same elevation could be considered. However, the traditional step at a threshold seems to pose little risk and the change in the appearance to the historic exterior seems great. All of the other noted deficiencies seem easily addressed without significant compromise to the historic fabric.

Dwg showing graphic summary of access issues

Universal Access

Introduction

Universal access describes the need to provide for enjoyment of public property by everyone, from children in strollers, to toddlers, to grandparents, to the wheelchair bound and otherwise mobility impaired, to persons with grasping, visual, and hearing impediments, to fully abled visitors. The Americans with Disabilities Act (ADA) mandates access for the disabled and includes the highly specific range of detailed provisions that are to be made to provide access. The National Park Service and the National Forest Service have developed guidelines for providing access for public landscapes. The Federal Government has developed their own standards, called the *Uniform Federal Accessibility Standard* (UFAS). These guidelines, with ADA requirements, should be used to develop a comprehensive plan to provide as complete access to the park as is practical and consistent with the historic fabric of this historic site.

In early 1999, we conducted a thorough survey of the Superintendent's Lodge located at Antietam National Cemetery using BOMA International's ADA Compliance Guidebook to determine whether the National Park Service property is accessible. The Guidebook provides a checklist for compliance with Appendix A of 28 CFR Part 36 and investigates the accessibility of all aspects of the building and site from parking and site ramps to alarms and handrails. First, a visual survey was performed of the site and building. At this time we noted all deficiencies and any elements that could be checked visually were inspected including, but not limited to, materials, door hardware, alarms, signage, and equipment controls. Other elements such as stairs, doorways, heights of outlets and light switches, and diameters of handrails were measured to determine compliance.

Currently, the Antietam National Cemetery Superintendent's Lodge is not accessible. While access to the site is in compliance, several elements of the Superintendent's Lodge need to be reconfigured, replaced, or added in order to comply with the current ADA requirements, in particular on the first floor. The following summarizes the results of the survey. Recommendations for the changes needed to meet accessibility requirements are included in Part 2 of this report.

Existing Conditions:

Exterior

Accessible Route

Site Access	Road side parking, main gate at same level as road 8 to 11 inch step up to brick platform 3 ½ to 4 ½ inch step up at doors from brick platform with additional 2 inches of slope up to finish floor level and a ¼" threshold
Adjacent Routes	There are no paved paths connecting the band rostrum, the mule barn, or the newer Superintendent's House to the Superintendent's Lodge.
Width	The tower entrance and the entrance to the southwest office are 36 inches clear. The front double doors are 5 ft. and 1 inch. in total width although the individual door leaves do not meet the minimum 32 inch clear width.

Accessible Parking	
Location	Road side parking is available, but no designated accessible spaces are provided.
Signage	There is no signage provided.
Curb Ramps	There are no existing curb ramps and none are required as the brick surface in front of the Superintendent's Lodge is continuous and meets the surface of the road in front of the cemetery gates.
Entrances	None of the entrances are accessible because of the step up onto the brick platform and steps up at the entrances.

Interior

General Items	Adequate turning strength is required for the radiator controls.
Accessible Route	
Changes in Level	There is a 1/2 inch. change in elevation at the thresholds from the historic entry area to the front room and from the front room to the south west office on the first floor.
Opening Widths	None of the interior door opening widths meet the accessible width requirement of 32 inches clear width except the opening between the entry area to the reception room, which is almost 33 inches clear, and the opening between the tower entry area and the historic entry area.
Doors	The three existing exterior doors have lever handles to the exterior but small round knobs on the interior box locks. None of the interior doors has lever hardware
Clearance at Doors	The doors in the building that meet the requirement for 12 inches at the push side of the door and 18 inches at the pull side with forward access: the front double doors the door into office room 102 2'-8" clear opening doors that meet the requirement for the push side are: door into tower
Width at turns	The hall area in the building consists of the tower entry area communicating into the historic entry area. A path from the tower entrance to the front office, 101, would require two tight 90^{o} turns. While theoretically possible for a person using a wheelchair, the route is very tight and difficult.
Passing space	There is no passing space in the only corridor area on the first floor of the building.
Headroom	There is adequate headroom
Floor surfaces	The floor materials are wood, tile, and terrazzo on the first floor; carpet on the second floor; and painted or bare wood on the tower stairs and landings
Reach ranges	The lighting switches are at an acceptable height. The wall outlets are located at the baseboards, less than 4 inches above floor level. Minimum 15" above the floor is required.
Means of egress	There are no accessible exits.

Stairs	The second floor is not accessible to persons using mobility aids as the only access is by a stair.
Treads and risers	The interior stair located in the tower has winders, and approximately eight inch risers and treads.
Nosing	The nosing on the tower stairs overhangs an inch and meets the riser at a ninety degree angle.
Handrails	Handrails at the tower stairs are discontinuous and only located on both sides in one location. The handrails are located 30 inches from the nosing. The gripping surfaces are sometimes obstructed or flush with the wall, and are not continuous.
Doors	
Entrances	The double leaf doors are 30 inches each in width, which does not meet ADA standards.
Maneuvering	The front entrance is a hinged door, push side of door provides full clearance with front approach; pull side of door is difficult to maneuver with a front approach. The front entrance and the tower entrance have screen doors, which would make access for persons using mobility aids difficult.
Interior Doors	The restroom and front room doors are front approach.
Toilet Rooms	Neither of the toilet rooms is wheelchair accessible.
Stalls	The doors to the toilet stalls are too narrow.
Toilets	The height of the toilet seats and control valves are too low. The urinals are too narrow and positioned too high off the floor.
Sinks	The bottom of the sink apron is too close to the floor. The pipes beneath the sink are exposed. The valve controls require a twisting motion.
Mirrors	The mirrors are mounted too high.

Part 2. Treatment and Use

A. Treatment and Use

Although this building was originally built as the residence for an on-site superintendent, it is no longer used as such and has not been since 1928 when another superintendent's residence was built to the west of this building.

At a meeting at the site on 21 January 1999, the following was presented as a program for the building:

first floor: (currently has restrooms and a law enforcement office. The Park Police function will be relocated.)

Visitor Contact Station:
staffed or unstaffed, a place visitors to the cemetery can get more information

Exhibit Space:
to function staffed or unstaffed (possibly staffed by volunteers)
may include the register book for the cemetery, only accessible to public for reference with assistance from staffer
otherwise, no artifacts, probably just interpretive materials, boards, posters, displays, not high security and no museum level conditioning required

Restrooms:
for use by the public, by visitors to the cemetery, the visitors contact station, and the exhibit space
(additional capacity is provided when many visitors are expected by portable toilets)
they need to be accessible

second floor: (currently used by the Division of Natural Resources-Rangers: from 2- 15 people depending on season. That function will be relocated)

Light storage for second floor:
really light: buckets, standards etc. used in summer about the park for interpretation
don't want to use second floor for any habitational uses because of the tight stairs in the tower

Building deficiencies observed during our investigation:

- Water damaged plaster in tower and in other locations in building suggesting current or former water leaks at roof, flashing, or through exterior stone.
- Varied roof slates and face nailed slate roofing.
- Structural issues mentioned in structural existing conditions.
- Missing second floor window.
- Lack of access for those using mobility aids.
- Extensive surface mounted conduit and outlets, primarily interior but some exterior also
- Varying degrees of deterioration of exterior paint.
- Rot at back porch roof.

B. Recommendations for Treatment

Treatment Philosophy

The solidly built Superintendent's Lodge structure has considerable merit. A non-standardized design, it is nonetheless one of the group of other Civil War cemetery lodge structures, many of which were standardized under Quartermaster Montgomery C. Meigs in the post-Civil War year's establishment of the national cemetery system. It has much in common with the standardized lodges including size and the basic plan of three rooms on two floors, a public reception room on the first floor accessible to the public with the Superintendent's quarters accessed through a separate entrance. This Superintendent's Lodge, designed by Paul Pelz who was later to have a significant impact on Washington with his grand design of the 1893 Madison Building of the Library of Congress, is distinguished by its architectural aspirations and the observation tower. The standardized lodges are associated with Montgomery C. Meigs who had a major impact on Washington over a number of decades from his design and construction of a water system in 1852, still in use today, to the sublime exercise of the Pension Building, 1881, a super-scale palazzo.

In addition to its historical importance as one of the Civil War cemetery lodge structures, the building itself has great architectural merit as a beautifully realized romantic Gothic villa.

The exterior of the structure is an important part of the cemetery landscape and so is of primary significance and should be treated under the principles governing *restoration.*

We recommend that the interior of the building (with the exception of the original kitchen) should be treated as a *preservation* zone. The building interior is substantially intact although somewhat modified in the 1930s and in the course of maintenance. The original building fabric still present should be preserved and the non-original building fabric may be left in place. The historic kitchen area has been modified a great deal so there is very little original building fabric left. That area, the original kitchen, should be treated as a *rehabilitation* zone, available for a compatible use, namely accessible restrooms.

Recommendations

The following recommendations are organized hierarchically. First are minimum requirements to prevent further deterioration to the building, to repair damaged elements, and to correct health, safety, and structural problems. These recommendations are identified as *critical.* If done, these *critical* items would allow the building to be mothballed, requiring only occasional monitoring.

A second level of recommendations is *important* to do, necessary to allow the building to be used as projected for restrooms and exhibit space, but is not of the highest priority. They include reversal of non-original elements and replacement of missing elements. The recommendations considered *important* will allow the building to be used as projected by the park, meeting the associated and necessary code requirements.

The third level of recommendations are *desirable* to do in the long term when feasible such as replacement of non-original but functioning elements. The brick porch platform might be in this category.

There will be some confounding of these rankings. For instance, an action that is relatively non-critical in its impact on the site might be listed as *critical* because it is easily achieved.

View of damaged plaster in tower, typical of damaged plaster throughout the building. Photograph 1999, architrave p.c., architects.

Critical *(basically to mothball building)*

- Abate all lead and asbestos hazards.
- Make structural repairs at concrete slab, first floor to tower, and provide support for the corner of the low-hipped roof.
- Provide ventilation and access to the two unexcavated crawl spaces. This will allow easier access for monitoring for insects and other damage and the ventilation of these spaces will help prevent moisture damage to the wood floor structure under the office.
- Install new sash in second floor west dormer currently missing sash.
- Paint and maintain all exterior wood trim, repair all rot visible and discovered during painting. Re-paint in original colors.
- Roofing repairs as necessary. A roofer qualified in slate should go over entire roof, with particular attention to all flashing and other transitions, evaluating condition and making repairs. (Estimated at 2-3 workers, 2-3 days). Replace tower roof with hot rubberized asphalt roofing.
- Moisture-damaged plaster:
  Remove all deteriorated plaster on the basement, first, and second floors and in the tower. Monitor surrounding plaster to see if moisture penetration appears to be on going.

Important *(would allow building to be used for restrooms and exhibit space)*

- Reinforce floor in reception room and southwest room (historic living room) to accommodate proposed exhibit use.

- Make site accessibility provisions and provide accessible restrooms, including an accessible drinking fountain, accessibility to all the first floor rooms, and make other accessibility provisions required under ADA and UFAS.
- Remove all inappropriate lighting on the exterior and on the first floor, especially pendant-mounted fluorescents, and replace with more appropriate fixtures.
- Repair moisture damaged plaster on the first floor using a cementitious plaster to extend the useful life of the repairs.
- Repair all windows to make them fully operable.
- Install cooling systems for first floor using ground source heat pumps. Alternate, conventional system with condensing systems installed in an exterior vault. Retain existing hot water radiator heating system and implement energy conservation recommendations.
- Make all other necessary mechanical, electrical, and plumbing provisions for occupation of the first floor including rewiring building, removing all surface mounted wiring, interior and exterior, re-routing wiring as necessary to conceal it.
- Make all life safety modifications required for occupancy such as exit signs, fire pulls, alarms, and others as required.
- Re-roof building in correctly sized slate.

Desirable *(to accomplish exterior restoration and interior restoration of as much of first floor as possible)*

- Rebuild the wood wraparound porch, roofing it in slate.
- Remove terrazzo in original living room and return floor to wood.
- Consider closing/reversing non-original door openings.
- Monitor exterior mortar joints in stone masonry. If evidence of damage to the stone from the overly hard repointing mortar is found, the building should be repointed with an appropriately soft mortar. Otherwise, when the current mortar reaches the end of its useful life, the building should be repointed with an appropriately soft mortar.

The following technical recommendations assume the use projected by the Antietam National Battlefield Park, the use with the most demanding requirements. However, much of the following work must be done even for minimal use of the structure for restrooms.

Structural System Recommendations

Recommendations

The crack at the first floor slab edge of the tower stair needs to be repaired or the slab edge must be supported by other means. The crack can be repaired by combinations of epoxy injection and concrete patching. To patch, loose concrete must be removed, the steel reinforcing bars cleaned with new reinforcing spliced to them if sufficiently corroded, and new concrete installed. While such repairs are underway, temporary shoring must be installed.

The crack at the first floor slab edge of the tower stair needs to be repaired or the slab edge must be supported by other means. Photograph 1999, McMullan & Associates

The corner of the rectangular roof hip framing adjacent to the tower needs to be supported on the tower wall. The most straightforward method is to install a ledger on the tower wall to provide this support.

The building has a history of insect problems and should be monitored on a regular basis for insects. Many insect and decay problems in wood framing are associated with high moisture contents in the wood. By limiting water infiltration from roof leaks, poor ventilation, etc., insect and decay problems can be minimized.

The first floor east office live load capacity could be strengthened to support office loading by constructing small concrete masonry piers located at the midspan of the double 2x12 beams. A single pier located in the middle of the existing span should increase the live load capacity to approximately 60 psf. Two such piers, located at third points, would increase the load capacity to approximately 100 psf, adequate for the projected use of the first floor for exhibit and visitor contact uses. If this approach is taken, the detail where the 2x8 floor joists are connected to the double 2x12 beams needs to be strengthened, also. An alternative to installing additional piers would be to replace the double 2 x 12 wood beams with steel beams.

The actual size of reinforcing bars present in the concrete beam under the historic living room could be determined by removing enough concrete cover to allow the reinforcing to be examined so load capacities could be calculated based on actual conditions instead of assumed bar sizes. An alternative is to add one or two piers and footings at midspan to increase that floor structure's load capacity to meet the requirements of the projected uses.

The second floor framing is capable of supporting light office loading. We do not recommend using these rooms for storage type loading. The building code requires greater load capacity for "storage" than for light office loading, assuming that storage may consist of substantial supplies, files, or the like. However, the park has expressed their intention to use the space very minimally for very light storage: traffic cones, empty buckets, and other light items used in the summer with visitors. In order to assure code compliance with live load capacities at existing framing, it is probably a good idea to post signs in the space listing precisely what may and may not be stored there.

The attic framing is not capable of supporting additional loading without the likelihood of cracks developing in the plaster ceilings of the second floor. We recommend that this space not be used for any storage. If an air-handling unit to serve the second floor is installed in the attic, it should not be hung from the roof structure, which would be difficult to strengthen, but should be supported on the second floor ceiling joists/attic floor. The attic floor would need to be reinforced with new members sistered to the existing under the mechanical unit.

Impact on Historic Fabric

There should be no visual impact on the building from stiffening the first floor under the reception room and historic living room for exhibit use or from the other structural repairs or provisions needed to use the building as proposed.

Mechanical System Recommendations

Although the code does not require mechanical ventilation in this building because each space has operable windows, the use of a central mechanical system to furnish outside air to the first floor public space is strongly recommended by standard practice. A central mechanical system will provide proper quantities of outside air, air filtration, humidity control, and programmable temperature control.

Because of the difficulty in locating a louver or grille for outside air for the second floor unit and because the use of the second floor is projected only for very light storage, it is not necessary to provide outside air. As a matter of fact, since the second floor will not be occupied, it is not necessary to cool it at all. However, heat would build up in that space if not cooled and so ventilation would have to be provided, such as by opening windows. This poses its own challenges.

The mechanical system we are recommending for this building consists of two zones, one per floor, so that the second floor and first floor spaces may be maintained at different temperatures. An air conditioner of approximately three tons cooling capacity is needed for the first floor. This unit could be located in the basement and the ducts could be run under the first floor to floor registers. The second floor needs an air conditioner of approximately one ton cooling capacity. This unit and its associated ductwork could be located in the attic. Access to the attic would need to be improved with a larger opening and built-in stairs or ladder for installation and maintenance. Each air conditioner would require a condensing unit to be located outside within fifty feet of the interior air handler unit.

The radiators are not necessary for heating but should be kept as part of an operating heating system for historical reasons. Each radiator should be provided with an automatic valve for individual temperature control. The three transfer grilles between the first and second floors should be removed.

Electrical System Recommendations

To make this building suitable for its intended use for public restrooms and exhibit space on the first floor and very light storage on the second floor with no public access, we recommend providing a new larger electrical panel in a convenient location on the first floor or in the basement. While a location on the first floor is desirable for access , a practical location is not available so the new electric panel could be located in the basement. We also recommend providing more receptacles, providing surge protection for computer circuits, and switching to lighting appropriate to this historic structure that will provide acceptable illumination levels.

Although not required by code, we recommend a fire alarm system, including smoke/heat detectors, alarms and pull stations, for the protection of occupants and the historic structure and understand that this structure is one of five within the park scheduled to have a fire detection system, including smoke and heat, fire suppression systems, and security system installed during fiscal years 2000-2002.

Illuminated exit signs along egress routes, emergency lighting for egress, and ground fault interrupter (GFI) receptacles must be provided.

Plumbing System Recommendations

The toilet rooms must comply with ADA requirements. A water cooler or drinking fountain must be provided. A service sink is desirable but there may not be space for it on the first floor. Alternatives include locating a service sink in the basement, including a threaded fitting on one of the lavatories, or installation of a bib for bucket filling somewhere on the first floor.

Impact on Historic Fabric of Mechanical, Electrical, and Plumbing Recommendations

Heating, Ventilating, and Air Conditioning

If generous access to the crawl spaces is provided for periodic inspection of the floor structure, it will allow access to install underfloor ductwork for the new cooling system designed for the first floor as well as ventilate the two crawl spaces. The visual impact on the historic fabric on the first floor will only be floor registers. Their impact can be minimized through careful location. Removal of the three transfer grilles from the reception room to the second floor room above will have a positive impact on the appearance of the first floor ceiling.

Intake louvers for outside air will be needed somewhere on the exterior of the structure for the first floor unit. If the intake louver for the basement unit is installed in one of the basement window openings it would not damage original fabric and would have little visual impact on the exterior of the building. Air intake for the attic unit is much more difficult. The most feasible way, with the least permanent impact on the exterior of the building, would be to install a louver

or grille in one of the second floor window sash. Providing minimal cooling to moderate summer heat on the second floor and not providing outside air to the second floor, which is not anticipated for occupancy, is probably the best solution and would have minimal negative impact on the building.

An exhaust louver for the toilets will need to vent to the exterior. It is possible it could be hidden behind the porch roof on the west side of the building, but that would entail cutting an opening in the exterior stone. A better alternative would be to run the exhaust duct up in the west chimney. Since the boiler already vents to this chimney, it would have to be verified that there are two flues of adequate size so that one could be used for exhaust. Using a chimney to route exhaust ducting would avoid any permanent changes to historic fabric and would be reversible.

Conventional split system cooling requires exterior condensing units, which can be noisy and visually intrusive. Such units could be located on grade to the west of the building. This would be simplest but also least desirable.

We have only recommended energy conservation strategies that are appropriate to this historic structure and that would have minimal or no impact on the historic fabric.

Electrical

Exit signs can be intrusive. Stencil face designs are recommended with placement to minimize visual impact.

It appears that the least intrusive location for the building electrical panel board is in the basement. If located in the basement, it would have no negative visual impact on the building.

Plumbing

Because new accessible restrooms will be located in a part of the building (the original kitchen) that has been completely remodeled twice, there is little original fabric left to impact. Therefore, installation of accessible restrooms in that part of the building will have no negative impact on historic fabric. If, however, the park determines that more fixtures are required and decides to install a restroom in the historic living room, that will have more negative impact on the building. Ironically, a restroom was installed in that space in the 1935 renovation entailing the cutting of two new door openings, one exterior and one interior. However, using that room for a restroom today would require not only retaining those non-original openings but the addition of a wall intersecting the mullion of the large triple window on the south elevation of the building. While the negative impact on the exterior of the building could be minimized, the negative impact on the interior would be more severe as the original character of the historic living room would be lost.

It appears that the least intrusive location for a service sink, if determined it is required, is in the basement. If located in the basement, it would have no negative visual impact on the building.

Code Compliance Recommendations

Safety

The asbestos in the basement must be abated.

- Since there is quite a bit of lead-based paint in the building and on the exterior, lead paint abatement will be a necessary part of any work done on the building.
- If the building is used for exhibits on the first floor, exit signs, strobe/horn fire alarms, and emergency lighting for egress must be provided.

Energy Conservation

Improving the energy performance of this building begins with passive measures before addressing mechanical modifications. This discussion focuses on readily achievable modifications with little or no adverse impact on the viewable historic building fabric.

1. Improve the thermal performance of the building envelope. Although only new buildings are required to comply with ASHRAE Standard 90, an analysis of its requirements provides a standardized basis for considering upgrades.

   Insulation to achieve approximately R-12 between the basement and crawl spaces and the first floor is recommended for both enhanced comfort and energy conservation.

   Approximately two inches of insulation board is needed at the roof to bring it into compliance with ASHRAE Standard 90. Insulating the attic joist spaces, probably with fiberglass batt insulation, would be the best location both for cost and practical reasons including issues of ventilation and moisture in the attic.

   Infiltration should be minimized by weather-stripping and/or caulking all penetrations of the building envelope. If any windows are replaced, they should be double-glazed with low-E glass.

2. Maximize solar gain in winter and minimize solar gain in summer. The evergreen trees surrounding the Superintendent's Lodge already serve this purpose by shading it in summer, but since they do not lose their leaves in autumn, solar gain is not maximized in winter. Awnings are another effective means of minimizing solar gain in summer. The second floor dormer windows had awnings, as is visible in the 1904 photograph and could be installed to lessen overheating on the second floor in the summer. Interior shading with blinds or curtains is a less effective means of reducing solar gain but is readily achievable with little historical impact.

3. Optimize occupant comfort. To minimize the visual impact of ductwork, air registers and diffusers may not always be located to provide optimal air movement. The installation of ceiling fans could mitigate the effects of suboptimal air movement and improve occupant comfort with individual room control.

4. Optimize all equipment energy performance. Historically appropriate energy efficient fixtures should be used wherever feasible. Low ambient light levels could be employed in

the exhibit areas with higher, more direct light levels on exhibits or on any workspace provided. Occupancy sensors should be used to shut off lights when spaces are unoccupied.

Thermostats should be the programmable setback type. The boiler should be replaced with a high efficiency type. The central domestic water heater should be replaced with demand-type heaters at fixtures because of the low requirement for hot water.

Since the second floor is programmed for storage use only, cooling could be limited to the first floor.

5. Adjust operational procedures to the maximum extent possible. Program thermostats for set backs during unoccupied periods such as nights and weekends. Set water heater temperature for 110-120°F. Maintain mechanical systems in accordance with manufacturer's recommendations. Maintain caulking and weather-stripping.

Universal Access

The following recommendations are based on the accessibility analysis presented in Part I.

Because in the projected use of this building effectively only the first floor will be used regularly by NPS personnel or the public, the following assumes that no accessibility provisions will be made either to the stair or to the second floor.

General
Signage-
Signage to identify an accessible entrance to the building should be installed.

Any signage installed within the building in the course of any work done to the building must conform to ADA requirements for tactile and audio identification.

Exterior
Parking-
The National Park Service should designate a curbside accessible and designated parking space near the main entrance to the cemetery and identify it with signage.

Building Entrance –
An accessible entrance to the building must be provided and identified through signage.
(See sketches following this section).

Interior
General Items -
Light switches should be lowered to four feet above the floor to allow for forward reach from a wheelchair.

All other elements such as outlets and operating controls should be moved to within range for a person using a wheelchair.

The fire alarm should include visual alarms in all first floor rooms.

Doors and Doorways –
All doors and openings that are part of an accessible route need to have adequate clearances on the push and pull sides (12" and 18" for front approach, 18" and 24" for side approach), be provided with electric door openers, or be left open.

All doors and openings that are part of an accessible route need to have 32" clear openings.

All turn knobs on the doors need to be replaced by lever-style hardware at appropriate heights. Because this could mean removing historic hardware, alternatives could be considered such as fixing historic latches in open positions to allow doors to operate push/pull. When the building is occupied, interior doors between rooms or spaces could be left open.

The ½" change of floor elevation at the doors between the reception room and the historic entry and the historic living room must be tapered to conform to ADA requirements.

Restrooms--
An accessible restroom must be provided, with fixtures, clearances, grab bars and the like as required.

An accessible drinking fountain and telephone should also be included in the vicinity.

Impact on Historic Fabric of Code Compliance Recommendations

Safety

Abatement of asbestos and lead-based paint in this building has no negative impact on historic fabric.

Installing exit signs, strobe/horn fire alarms, and emergency backup lighting has a negative impact on the historic appearance of the interior of the building, but must be done. Such elements should be carefully located and carefully selected to minimize this impact. For example, stencil face exit signs are less intrusive than the type with illuminated panels. Emergency backup light can be provided by unobtrusive low wattage fixtures with remote batteries.

Energy Conservation

None of the energy conservation recommendations as proposed would have negative impacts on the historic fabric of the building and site. As a matter of fact, several of them would actually enhance the historic integrity of the building. Using a ground source heat pump would not only conserve energy but would also help preserve the historic appearance of the site by avoiding an exterior condensing unit. Installing awnings on the second floor dormer windows would both conserve energy and also return the building at least to a 1904 appearance.

All the other recommendations would have no or minimal impact on the building interior.

Universal Access

Site

A designated accessible parking place and a sign directing visitors to the accessible entrance is the extent of site modifications necessary for accessibility. The Park should also consider adding tactile information to all existing interpretive and other signage on the site. The above designation and signage will have a minimal visual impact on the site. In some ways, the cemetery landscape is already one that has accumulated signs, in memoriam, etc. over the last century and a half. Today's signage to allow greater access for all can be seen as a part of a developing signage continuum.

The accessible route selected by the Park, through the historic opening into what was the historic kitchen, will have a minimal visual impact on the Superintendent's Lodge building. There will be a very slight slope up a brick path along the north side of the Superintendent's Lodge to a new wood stoop built at the same level as the first floor, above the existing concrete stoop. The wood stoop should be designed and constructed to be reversible with no damage to the historic fabric of the building. If the slope is kept to no more than 1:20, the path will be considered a sloping walk and will need no handrails.

Building

The Park has selected a restroom scheme that restricts the area of the building devoted to restrooms to roughly the same area occupied by restrooms today: the historic kitchen. This room has had two previous campaigns of modifications for restroom use and there is no original surface fabric left in the space. Therefore, a third set of modifications to provide two new restrooms, one accessible, minimizes the impact of this rehabilitative use on the building. By reopening the historic passage between the historic entry and the original living room, closing the opening cut from the tower into the current men's room, reopening the original kitchen door, and using doors, trim, and finishes that are historically appropriate the overall historic condition of the first floor of the Superintendent's Lodge will be improved. The floor plan generated to facilitate accessibility will be much closer to the original floor than the current one.

Other accessibility provisions are relatively minor but can have a negative impact on the historic fabric if not handled carefully. The building has a great deal of historic door hardware still in place. Rather than changing it all to contemporary lever handles, a more nuanced approach should be taken. Limiting normal access to a single door that could be opened by a volunteer if necessary or stand open in warm weather are the sorts of possibilities that should be considered.

Modifications
Dwg---basement

Modifications
Dwg—ist floor
general

Modifications
Dwg---1st floor
2--demo

Modifications
Dwg---1st floor
2

Modifications
Dwg---site accessibility

Modifications
Dwg---accessible restrooms

Modifications
Dwg---2nd floor

Modifications
Dwg---structural repairs

Modifications
Dwg---roof

Modifications
Dwg---exterior

C. Alternatives for Treatment

We recommend that this structure be restored, rehabilitated, and preserved as detailed in the previous recommendations and access provided to the building, including accessible restrooms. However, if for funding, administrative, or sequencing reasons it is not possible to accomplish all of the recommendations, the alternative of mothballing the building may be considered. The following treatments are discussed in more detail in the *Recommendations for Treatment* section of this report and are enumerated briefly below:

Minimum treatment required for mothballing:

Secure building against moisture damage
Although the structure and envelope are basically sound, the building has a long history of roof leaks and the flat roof on the tower is clearly a current problem. Also, there is substantial evidence of moisture in the exterior walls, either from roof leaks or from moisture migrating through the exterior stone walls.

We recommend that all deteriorated plaster throughout the building be removed with the adjacent plaster monitored for evidence of on-going moisture penetration. Even if plaster repairs are made to the first floor to allow it to be used for exhibit space, this should be done elsewhere in the structure to judge the efficacy of the roof repairs.

Abate all asbestos hazards.
Abate all lead-based paint disturbed in any work.

Make critical structural repairs at roof and first floor cracked slab.

Paint and maintain exterior including deteriorated exterior paint and woodwork and replace missing sash on second floor west elevation.

Minimal use of the building for public restrooms and visitor contact/exhibit:

As long as the NPS is committed to providing public restrooms at the site, this structure is a natural location for them. Access must be provided to the building and the restrooms must be accessible. Making the structural provisions for use of the rest of the first floor for the anticipated visitor contact and exhibit uses is relatively minor.

D. Recommendations for Further Study

Paint Seriation

The historic paint analysis done for this report was not comprehensive as not every component of every painted element was analyzed. A complete paint seriation analysis could help to date all the interior trim and all the doors at least relative to the known sequence of modifications to the building, as well as establish whether all the apparently original windows are indeed original.

Also, since the original exterior paint color scheme apparently used light gray and dark gray on adjacent elements such as window frames and sash, before repainting the building in its historic color scheme a careful element by element analysis should be done for accuracy.

Since much of the first floor interior has been modified, additional analysis in light of what we know about sequence of modifications could help fine tune our knowledge. For instance, it appears the baseboard in the front reception room may have been replaced when the floor was replaced in that room. Additional interior, element by element analysis could help fine tune our understanding of the evolution of the interior layout and sequence of modifications.

Archeology

Although there are many written references to site elements:

1887 tool shed
1881 cistern
1889 brick privy
1898 rooms added to tool shed and a passage to the Superintendent's Lodge
1909 a second privy
1924 a cesspool
1931 a well

there is no physical evidence left above grade of any of these elements. An archeological investigation could allow the re-creating of the historical site plan, locating well, privies, the tool house and kitchen, the cistern and other site features that bear on the somewhat incongruous, from a modern point of view, juxtaposition of a domestic life in a cemetery.

Also, examination of the entire site might resolve the long-standing discrepancies in the numbers of internments recorded.

Cultural Landscape Report

With this report, much of the research necessary for the Superintendent's Lodge structure is done. A Cultural Landscape Report on the whole cemetery would both better establish the landscape context for the building and would add to the understanding of the cemetery landscape.

Annotated Bibliography

ARCHITECTURAL

Cultural Resource Management Guideline. NPS 28. Release #4. July 1994.

Harris, Cyril M. ed. *Dictionary of Architecture and Construction.* New York: McGraw-Hill Book Company. 1975.
Used for terminology.

Christopher Weeks, *AIA Guide to the Architecture of Washington, D.C.* Baltimore and London: Johns Hopkins University Press. 1994.
Used for additional background on Paul Pelz and Montgomery Meigs.

ACCESSIBILITY

Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities. Federal Register / Vol. 56, No. 144 / Friday, July 26, 1991 / Rules and Regulations.
Accessibility standards under ADA are widely recognized as establishing the standards for accessibility even in cases of exempt groups.

BOMA International. *ADA Compliance Guidebook: A Checklist for Your Building.* Washington: BOMA. 1992.
Used for access survey.

HISTORICAL

Archives, Primary Sources, and Unpublished Records

Antietam Administrative Office, Vertical Files.
Includes detailed information about repairs, especially repairs made in the past 30 years.

"Antietam National Battlefield." National Register of Historic Places Inventory – Nomination Form. 1982.
Focusing on the Battlefield site, the National Register nomination form provides a limited amount of information about the cemetery and a brief description of the Superintendent's Lodge.

Department of Veterans Affairs, Office of Facilities Management, Vertical Files.
In the office of Historic Preservation Officer Karen Ronne Tupek, these and other materials were useful: the text of the National Register Nomination, "Civil War Era National Cemeteries," reports on the development of the national cemetery system, and materials gathered from the National Archives.

Historic American Buildings Survey (HABS). Prints and Photographs Division, Library of Congress, HABS no. MD-936-A.

National Archives. Records of the National Park Service. Record Group 79.
This record group contains items relating to the cemeteries that were transferred to the National Park Service.

National Archives. Records of the Quartermaster General's Office. Record Group 92.
Record Group 92 includes numerous useful items, including inspection reports, information on standardized lodge plans, and other information on national cemeteries. The entry "Records Relating to Functions: Cemeterial," includes many items relating to Antietam, including the specifications for the Superintendent's Lodge. The Annual Reports of the Quartermaster General to the Secretary of War provide a great deal of information on the post-war efforts to recover, identify, and bury Union soldiers, although Antietam, as a separately established entity, is not covered in great detail.

National Park Service, List of Classified Structures, Single Entry Report, "Antietam National Cemetery; Keepers Lodge."
Provides basic facts about the building. The Field Inventory Report, written in 1976, includes a brief description of the Superintendent's Lodge.

Robinson & Associates, Inc., Library and Vertical Files.
Vertical file on Paul Pelz and other resources.

Washington County Historical Society, Hagerstown, Maryland, Photographic Files.
The Historical Society photographic file on Antietam National Cemetery includes several photographs of the Superintendent's Lodge, many of which appear to date from the 1977 renovations. There are several additional historic photographs of the cemetery, including views of the dedication ceremony.

Published Material

"Antietam National Cemetery." http://www.nps.gov/anti/cemetary.htm [sic]
This is an online version of a brochure with basic facts about the cemetery.

History of Antietam National Cemetery. Baltimore: John W. Woods, Steam Printer, 1869.
This publication provides detailed information about the early administrative history of the cemetery, including the process by which the architect and other designers were chosen, and describes the site as it appeared in 1869.

"Interments in National Cemeteries." Veterans Administration, 16 May 1983.
This publication by the Veterans Administration gives an outline of the history of the national cemetery system, including the transfer of some cemeteries to the National Park Service and others to the VA.

Raitz, Karl ed. *The National Road.* Baltimore and London: The Johns Hopkins University Press, 1996.

Raitz, Karl ed., *A Guide to the National Road.* Baltimore and London: The Johns Hopkins University Press, 1996.
This two volume set traces the history, construction, and context of the National Road.

Snell, Charles W., and Sharon A. Brown. *Antietam National Battlefield and National Cemetery: An Administrative History.* Washington, D.C.: The U.S. Department of the Interior/National Park Service, 1986.
This book presents the administrative history of the cemetery and battlefield from inception through 1986, and includes detailed information about the establishment and construction of the cemetery and Superintendent's Lodge as well as subsequent alterations.

Personal Interviews

Karen Ronne Tupek, Historic Preservation Officer, Department of Veterans Affairs, 29 December 1998.

Richard H. Brown, Sr., Chief, Cultural Resources Management, Antietam & Monocacy National Battlefields, 25 February, 1999.

TECHNICAL AND BUILDING CODES:

American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Handbook of Fundamentals, 1997. 1791 Tullie Circle, N.E., Atlanta, Georgia 30329.
This reference is used as the source for weather data and construction material properties for calculating thermal loads.

The BOCA National Building Code, 1996. Building Officials and Code Administrators International, Inc., 4051 West Flossmoor Road, Country Club Hills, Illinois 60477.
This code sets design guidelines for construction and renovation projects for life safety.

The International Mechanical Code, 1996.
This code establishes requirements for outside air, exhaust air, and other HVAC operational and design criteria.
The International Plumbing Code, 1995.
This code governs usage and distribution of potable water and the collection of wastewater.
The BOCA National Fire Prevention Code, 1996.
This code includes the requirements for the design of fuel oil storage and piping systems.

National Fire Codes, 1996. National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, Massachusetts 02269.

NFPA 31 – Oil Burning Equipment.
This reference supplements the International Mechanical Code and the BOCA National Fire Prevention Code.
NFPA 70 – National Electrical Code (NEC).
This code regulates the design and installation of electrical systems and devices.
NFPA 101 – Safety to Life from Fire in Buildings and Structures.
This reference supplements the National BOCA Code for the protection of building occupants in case of fire.

Appendix A
Historical Documents

"Specifications of a Keepers Lodge for the National Cemetery at Antietam Md." RG 92, Records of the Office of the Quartermaster General, Records Relating to Functions: Cemeterial, 1820-1928, transcribed and facsimile.

Hist spec transcription 1

Hist spec transcription 2

Hist spec transcription 3

Hist spec transcription 4

Hist spec facsimile1 of 9

Hist spec facsimile 2 of 9

Hist spec facsimile 3 of 9

Hist spec facsimile 4 of 9

Hist spec facsimile 5 of 9

Hist spec facsimile 6 of 9

Hist spec facsimile 7 of 9

Hist spec facsimile 8 of 9

Hist spec facsimile 9 of 9
Should be pg 155

Appendix B
Drawings

1935 Alterations

1986 Historic American Buildings (HABS)

The HABS cover sheet claims the restrooms were added to the ground floor in 1928 but this does not appear to be the case as the drawings dated 1935 for work done in 1936 show the addition of the terrazzo-floored men's and women's rooms.

1999 Site Survey

following:
next two pages: Alterations made to Superintendent's Lodge in 1935.
ten sheets of HABS drawings from 1986
1999 site survey

’35 alterations front

’35 alterations back

’35 alterations 2 front

’35 alterations 2 back

drwgs
Habs 1 of 1 pgs

drwgs
Habs 1 of 2 pgs

drwgs
Habs 2 of 2 pgs

drwgs
Habs 1 of 8 pgs

drwgs
Habs 2 of 8 pgs

drwgs
Habs 3 of 8 pgs

drwgs
Habs 4 of 8 pgs

drwgs
Habs 5 of 8 pgs

drwgs
Habs 6 of 8 pgs

drwgs
Habs 7 of 8 pgs

drwgs
Habs 8 of 8 pgs

Site survey front

Site survey back

Appendix C
Building Testing and Fabric Analysis

Appendix C-1
Asbestos

Appendix C-2
Lead in Paint

Appendix C-3
Historic Paint Color Analysis

Appendix C-4
Historic Mortar Analysis

Appendix C-5
Structural Investigation Calculations

Appendix C-6
HVAC Load Calculations

Appendix C-1
Asbestos

drawing showing locations of asbestos samples

Appendix C-1
Asbestos

Methodology

The Antietam National Cemetery Superintendent's Lodge located at the Antietam National Battlefield in Sharpsburg, Maryland, was surveyed on February 25, 1999 by an industrial hygienist trained as specified in the Environmental Protection Agency's (EPA) AHERA Model Accreditation Plan. The survey began with a walkthrough of the affected areas to identify various visually distinct homogeneous areas. Each homogeneous area was assessed for friability and exposure potential. Nineteen bulk samples of suspect materials were collected during the survey and placed in 6-mil polyethylene zip-lock bags for transportation to the laboratory. The sampling strategy used was adequate to meet all applicable local, state, and federal National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements for building renovations.

The nineteen bulk samples were analyzed at EMSL's asbestos laboratory, which participates in both the American Industrial Hygiene Association (AIHA) and the National Voluntary Laboratory Accreditation Program (NVLAP). Analysis was accomplished using polarized light microscopy (PLM) in conjunction with dispersion staining techniques. The EPA defines any material having an asbestos content of greater than one percent as an asbestos-containing material. Each material determined to be asbestos-containing was classified as whether a class I or II non-friable material or regulated asbestos-containing material (RACM) as defined in the federal NESHAP regulations.

Results

All sample results are summarized in Table I. Table I contains the sample location, sample number, homogenous area material description, and percent and type of asbestos present in the sample. Nineteen samples of suspect ACM were collected from thirteen distinct homogenous areas. Thirteen of the samples consisted of multiple distinct layers. Therefore, the total number of samples analyzed was thirty-two. The homogeneous areas consisted of wall plaster, ceiling plaster, pipe insulation, duct caulk, texturing material, roof tar, and floor tile with associated mastic. The following material was found to be asbestos-containing:

- Pipe insulation found in the basement. The pipe insulation was present on a pipe penetrating the limestone wall that separates the boiler room from a partially excavated space beneath the building (according to floor plans). Therefore, the quantity of asbestos-containing pipe insulation cannot be determined. However, based on floor plans showing piping runs in the partially excavated space, the quantity of asbestos-containing pipe insulation may be at least 300 linear feet.

Discussion/analysis

The asbestos-containing pipe insulation is classified as a friable material. Prior to planned renovation activities that will disturb this material, it is recommended that a licensed asbestos abatement contractor be hired to perform the removal of this asbestos-containing material. Air monitoring activities should be conducted during abatement activities to ensure compliance with existing environmental regulations. Chain-of-custody documentation and analytical results on EMSL Analytical, Inc. letterhead are provided at the end of this section.

Asbestos data sheet 1

Asbestos data sheet 2

Asbestos data sheet 3

Asbestos data sheet 4

Asbestos data sheet 5

Asbestos data sheet 6

Asbestos data sheet 7

Appendix C-2
Lead in Paint

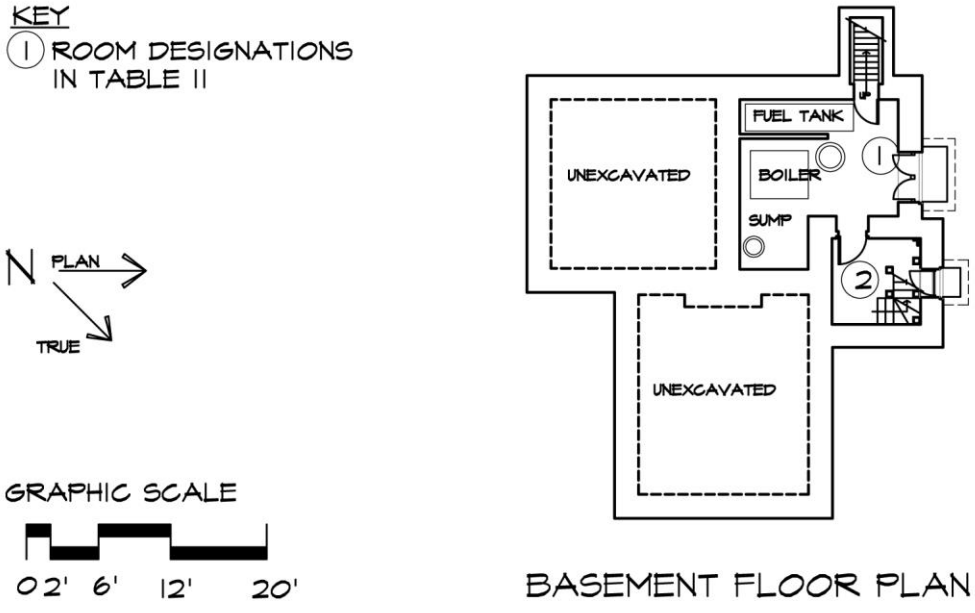
Appendix C-2
Lead in Paint

Methodology

On February 25, 1999 ManTech Environmental Corporation surveyed the Antietam National Cemetery Superintendent's Lodge located in the Antietam National Battlefield, Sharpsburg, Maryland. We surveyed and tested representative painted components for lead in paint using a Niton 703A Spectrum Analyzer Lead Detector (Serial No. U8382433LY), commonly referred to as an x-ray fluorescence (XRF) device. The Environmental Protection Agency (EPA) has defined a lead-containing substance as any paint, plaster, or other surface coating material containing 0.5 percent or more lead by weight, calculated as lead metal in the dried solid or 0.7 milligrams per square centimeter (mg/cm^2) of painted surface area. However, "lead-in-paint" is paint that contains some lead in any amount. Lead-in-paint issues become a concern for workers (from airborne and residual lead) when they are involved in paint disturbance activities. Levels exceeding this value require licensing and certification of contractors performing abatement of the painted surfaces. The major issue when levels are below 0.7 mg/cm^2 is worker protection, regulated by the Occupational Safety and Health Act (OSHA).

In Virginia, if the lead content is greater than .5 percent by weight or 1 mg/cm^2 or greater, it is considered "lead-based paint" and is therefore regulated under the EPA regulations requiring abatement by a licensed lead abatement contractor etc.

The amount of lead in the air is as dependent on the method of disturbance as it is on the concentration of lead in the paint.

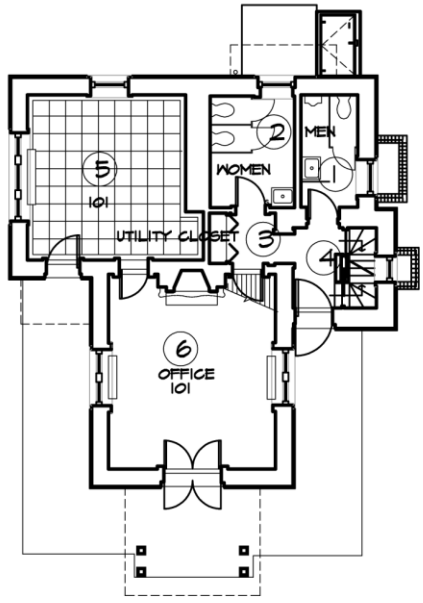


Results

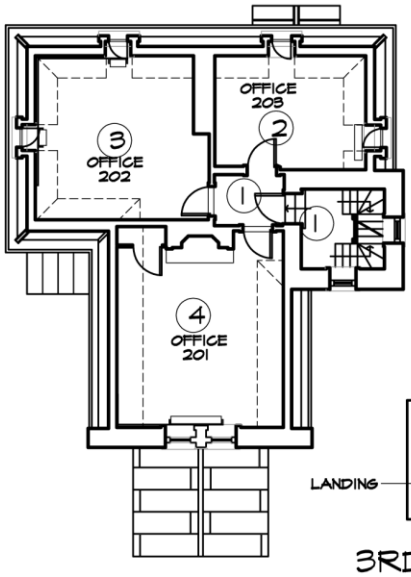
A visual inspection of the Antietam National Cemetery Superintendent's Lodge revealed that painted surfaces varied by building component. Most interior painted surfaces were observed to be in generally fair to poor condition with many areas of peeling paint. Most exterior structures were generally in good condition with some areas of severe deterioration, especially on the west side of the building. All sample results are summarized in Table II, which contains the location, description, condition, and amount o
f lead present in the paint. Lead-based painted components identified within the building consisted of white painted window components, radiators, and door components; grey painted doors and door casings; blue painted window components, door components, and walls; beige painted walls, door and window components, and stairs; yellow painted window and door components, and wall baseboards; and brown painted stair and window components, and fireplaces. Lead-based painted components identified on the exterior of the building consisted of brown painted doors, windows, walls, and porch components.

Discussion/analysis

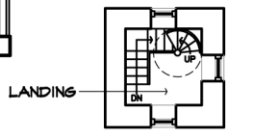
Lead-based paint was identified on and within the Cemetery Superintendent's Lodge. If any painted surfaces containing lead identified in this study will be disturbed in future renovations, it is recommended that a licensed lead abatement contractor or a contractor experienced in performing renovation work in accordance with OSHA's Lead in Construction regulations, 29 CFR 1926.62, be hired to perform the lead-based paint removal or disturbance, especially since many of the locations where lead was found have high concentrations of lead. Care should be taken to ensure that during the management in-place of this paint, the lead-based painted surfaces remain in good condition and are not chipped or flaked. Where lead-based paint is present in the solid waste stream to be landfilled, the contractor must undertake TCLP testing of the waste in accordance with EPA SWP 846 and local requirements to determine whether the waste is characterized as a hazardous material requiring disposal at a hazardous waste landfill or proper incineration.



1ST FLOOR PLAN



2ND FLOOR PLAN



3RD FLOOR
TOWER PLAN

Lead data sheet 1

Lead data sheet 2

Lead data sheet 3

Lead data sheet 4

Lead data sheet 5

Appendix C-3
Historic Paint Color Analysis

Appendix C-3
Analysis of Historic Finishes

The following report describes the preliminary historic finishes study of the Superintendent's Lodge at Antietam National Battlefield, Antietam, Maryland. The study was conducted by Catherine S. Myers from February 25- March 20, 1999 for architrave p.c., architects as part of the building analysis. It is informed by microscopical analysis of finishes samples.

This report describes the historic finishes colors of the exterior and interior from the building's original 1867 construction. As much as possible it also sheds light on building alterations indicated by chroma- chronological anomalies. To make the results as clear as possible, photographs of the building showing color with commercial paint chips illustrate the report. They are linked with standardized Munsell color notations equivalencies at the end of the report.

Methodology

After reviewing the history of the building, the analyst selected sample locations and took two to three small paint samples from each location. These samples were examined at low magnification (10X – 15X) with a stereomicroscope at the site. The samples were later studied at the same magnification with reflected daylight (filtered fiber optics) and color matched to Munsell color standards and Duron paint chips. Paint layers were assigned dates based on consistency of one sample to another, the order of the layer in the cross section stratigraphy, the presence of dirt or other surface accretions, their placement in stylistic trends and, where possible, primary documentary information.

A limited number of photomicrographs are included. Rather than serving as analytical data, provided here by the chromachronologies, they are intended to demonstrate the contents of a more in-depth study, to illustrate the analytical process, and to show the appearance of representative paint cross sections. Analytical data is appended and includes chromachronologies for the exterior and first floor interior and a limited number of photomicrographs of paint cross sections. Fuji Super G color print film, 200 ASA, was used for all photographs. Photomicrographs were taken at 12.5- 25 X magnification with a Nikon Optiphot 2-Pol compound microscope adapted with reflected quartz halogen light adjusted to daylight. As in all photography, the color represented in the photographic prints should not be relied on for accuracy. The Duron color chips and Munsell notations provide accurate color matches.

Background

Antietam National Battlefield is one of the country's most significant Civil War battlefields. It was the site at which the largest number of fatalities were suffered in one day (September 17, 1862). Although the battle did not result in a definitive victory, it weakened the Confederate position considerably and contributed to the eventual outcome of the war.

The Superintendent's Lodge was constructed to house a superintendent at the cemetery established to handle the burial and memorial of soldiers lost in the battle. Its design is similar to Montgomery Meigs' later concept for such buildings, usually masonry with a three room two story plan. The original three room plan at Antietam included the existing office (101) and a porch that wrapped around and covered the entrances on the east side of the building into the office and the tower base. This porch is no longer present; with only a small porch over the main office entrance remaining and a hood over the opening added in 1936 to the historic living room, now Room 202. Alterations in the interior included changes in configuration of the kitchen at the northwest part of the first floor and in the historic living room for the addition of restrooms.

The interior features regular fenestration, fireplace mantles, and heavy moldings at the windows and doors. Although interior cornices might have originally existed, they are no longer present, probably as a result of previous repairs and renovations, notably the replastering of the ceiling in 1932. Exterior wood trim and all wood and plaster interior surfaces were finished with paint or other finishes.

Within the stylistic and technological context of the finishes, the building may be viewed from the perspective of mid-nineteenth century style. Designed by noted architect, Paul J. Pelz, who later designed the Library of Congress, finishes in the Superintendent's Lodge would have reflected the influence of leading theoreticians of the period, such as Pugin and Ruskin, who espoused elaborate and well- developed theories of color. Color (Pugin) was intended to decorate the architecture; and to serve as a natural extension of it (Ruskin). Moreover, the influence of A.J. Downing's cottage style and muted use of color would have played a major role in this rustic type of structure.

Whereas commercial production of the late nineteenth century revolutionized architectural finishes, color prior to that time demonstrates a more limited palette. Architectural finishes of the middle nineteenth century tended to be hand-mixed and to include a range of paint types. Interior applications might include finishes applied during lime curing, such as distempers (pigments bound in glues) and, to a lesser extent, caseins (pigments bound in milk curd).

Results Summary

The finishes at the Antietam Superintendent's Lodge both complement the architecture with a muted, complementary palette, and embellish it, much in the spirit of A.J. Downing. Paints are oil based and probably contain lead pigments Surfaces were painted in colors similar to the building materials: light and medium shades of gray. There is no evidence of temporary finish types, such as distempers. All finishes are either oil bound paints or varnishes. Imitation wood finishes, also known as *faux bois* or wood graining, are found on the doors and door surrounds in the building interior. Imitation wood finishes are characterized by a finish sequence of a tinted paint color, pink in this building, followed immediately by a resinous varnish layer, usually composed of a mixture of oil, resin, and pigment. Applied thinly over the base coat, these resinous films were raked and otherwise manipulated to imitate the appearance of wood.

Certain changes to the architecture are seen among the paint samples, such as changes in doors, later construction, replacement, etc. However, due to the limited scope of work, questions

related to alterations and anomalies will require more extensive study. Specific recommendations for such inquiries are presented at the report conclusion.

Results--Exterior

Throughout the building's history, only the porches, windows, doors, with their frames, and cornices of the predominantly stone exterior were painted. In 1867, paint colors complemented the existing natural building materials, including the light tan stone and the blue/gray and green/gray of the slate roof. An exception is the bright red main door. The same general palette continued for two to three repainting campaigns. Later, dark green and, even later, dark brown appear as exterior colors.

The trim is monochromatic or painted in two values of a single color. Window and door frames were painted medium gray possibly with sashes a lighter gray. The same medium gray also appears on the doorframe and the brackets on the central main porch. The beams and ceiling of the main and side porch roofs, the decorative gable, and the posts and rails of the main porch are light gray. The cornice fascia (above the brackets) is medium gray while the cornice brackets are light gray. The second floor dormers were not sampled. Based on finishes elsewhere, they were probably also a combination of light and medium gray.

Photo 1. Exterior, east porch.

Brackets, door frame: Medium gray
(Ext. #5, 8, 9)

Porch roof, post, horizontals, ceiling: Light gray
(Ext. #1, 2, 3, 4, 6, 7)

Door: Bright red
(Ext. #16)

Photo 2. North door at east elevation.

Window frame: Medium gray
(Ext. #15)

Cornice brackets: Light gray
(Ext. #18)

Cornice fascia, above brackets: Medium gray
(Ext. #17)

Photo 3. South door at east elevation.

Door Surround: Medium gray

Door: later addition
(Ext. #10 & 12)

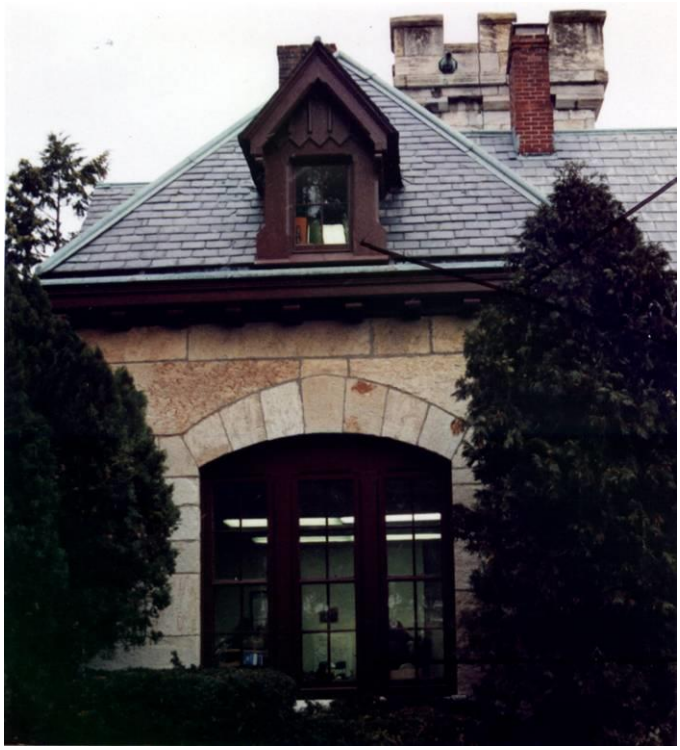


Photo 4. South elevation.

Cornice fascia: Medium gray

Dormer: Medium gray

Window frame: Medium gray

Results--Interior

Interior colors were muted and of moderate contrast. Ceiling colors are unknown since they have been replaced throughout the building.

Office 101 (Historic Reception Room) Paint Scheme

The earliest finishes (1867) in the office (101) are shades of gray/green. The walls are a light gray/green and trim and doors are a slightly darker gray/green. Baseboards appear to be dark brown, possibly replaced at the same time the floor replaced in this room. The window sashes are cream. The same wall and trim colors continue for two to three repainting campaigns. By around 1880-1900, the doors, door and window trim, and window sashes were grained (see photomicrograph 6, for an example of the graining sequence) although on the door installed in 1936 graining is the first layer. Later colors for the walls included cream and yellow ochre for the doors and trim.

Door trim: Gray green

Door: Gray green (#101.6)

Walls: Light gray green (#101.2, 101.3)

Photo 5. Office, Room 101. East wall.

Door & door trim: Gray green green (#101.4)

Walls: Light gray green

Photo 6: Office, Room 101. West wall.

Anomalies
The door at the south end of the east wall (between 101 and 102) reveals a slightly different paint stratigraphy than the other doors, the paint analysis suggesting that it was not a part of the room in the c. 1880's graining period. Indeed, the 1935 drawings show no door in this location so it undoubtedly dates to later. All doors appear to have been originally painted gray/green. The main door and east door at the north end both show graining layers that do not appear on the east door, south end.

Southwest Room 102 (Historic Living Room) Paint Scheme
The earliest finishes for the southwest room (102) appear also to have been gray/green. Later finishes are cream/yellow in color, both on the walls and trim. Due to the limited number of paint layers remaining, it is uncertain if the first paint layers (either gray/green or cream/yellow) are the original colors or later additions. Cream appears as the first finish color for the walls and doors, although it probably represents a later finish addition. Examination of a plaster sample from the test hole in this room shows what appears to be a medium gray first finish layer. This area was originally a closet, possibly explaining the dark color. Also, because so much work has been done in this room it is possible the limited number of paint layers in the other parts of the room reflects more recent construction and colors.

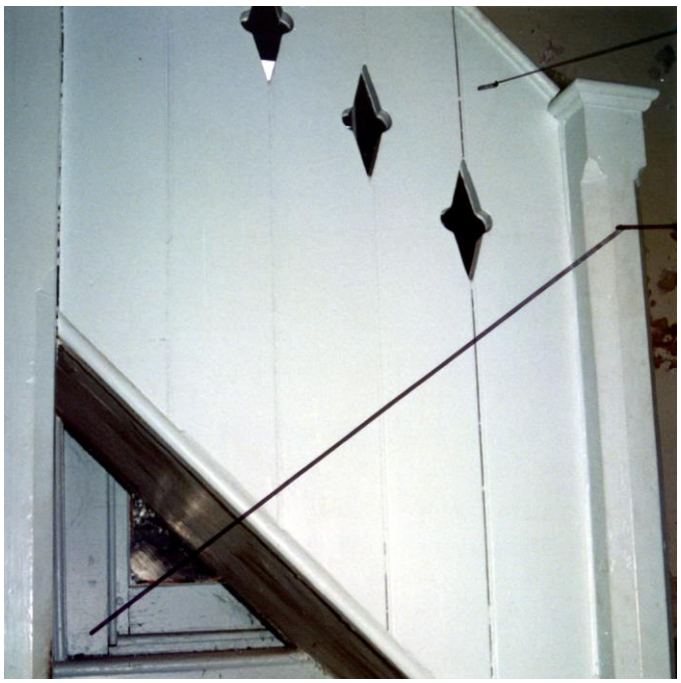
Window and door trim: Light gray/green (#102.2)

Doors: Cream

Photo 7. Southwest room 102. South wall.

Anomalies
The east door to the exterior, the baseboards, and the west window surround show as the first paint layer a light gray green finish whereas the walls, window surround, and door to the office were first painted cream. Based on the number of paint layers, the gray/green finishes appear to be earlier than the cream finishes. However, we also know the east door to the exterior was added in 1936.

Tower 103 and Stair Hall 200
Eight samples of the first floor tower and three of the second floor stair hall were examined. The earliest finish layer of the window surround and sash was light tan. Likewise, the rail and decorative apron above the stair rail was light tan. The door surround to the stair appears to be later due to the few number of paint layers (the earliest finish is cream). Stair risers are light green/ gray (the color found as the 1867 finish in the office). The newel post was originally unpainted and coated with a amber varnish.



Rail and apron: Light tan

Window trim: Light tan

Stair Riser: Light green/gray

Photo 8: Tower stair between first and second floor

The east window on the second floor shows as the earliest finish a light green gray paint. The door to the main building on the second floor appears to have been grained. Considering the two layer graining associated with the 1880's elsewhere, also seen here, it is possible that the door was added during that period.

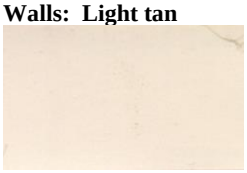
East Room 201, Second floor

The walls appear to be light tan. The main door surround and window surround have graining as their first finish layers whereas graining dates to later layers, around 1880-1900, in other locations in the building. The door itself appears to have been stripped, moved or replaced as there are few paint layers and the first ones (white) are inconsistent with finishes elsewhere in the room. There is considerable evidence that the doors on the second floor were variously replaced and relocated as discussed in the inventory of architectural features. The baseboards also appear to have been grained.

Other surfaces illustrate a different paint stratigraphy. The fireplace mantle, and closet door all show as the first layer light gray green. To verify these preliminary results, we recommend examination of additional samples.

Window trim: Graining

Walls: Light tan



Door trim and door: Graining

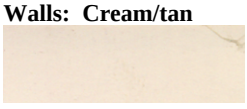
Photo 9. East room 201, second floor.

Southwest Room 202, Second Floor

All sampled surfaces in the room are cream/tan in color. The walls, door surround, door, window surround and sash all present cream/tan as the first finish layer. The baseboards are a darker gray/tan. Later layers of the same color or pinkish/tan or light green.

Window trim and sash: Cream/tan

Walls: Cream/tan



Baseboards: Darker tan/gray

Photo 10. Southwest room, second floor, southwest corner.

Northwest Room 203, Second Floor

The finishes of the earliest period show a warm light tan for the walls and door, followed by a later grained finish. Of the same period, the window sash and surround was white, also followed by later grained finishes.

Walls: Light warm tan

Dormer surface: Light warm tan

Window trim and sash: White

Photo 11: Northwest room, second floor, west wall.

Conclusions

Based on this preliminary finishes study, the following conclusions may be made: The exterior of the building was painted in shades of gray during its early history. Later colors included dark green and dark brown. Based on finishes stratigraphies, neither of the side doors (at the north and south ends of the east front) is original. The south door, in the historic living room, was added in 1936 and the other door was a replacement door. The main door appears to be original. It appears that the finishes for the removed porch were consistent with color elsewhere: two shades of gray.

In the interior, only the finishes in the office 101 (Historic Reception Room) may be linked to the earliest history of the building with any certainty. Here the light gray/green walls and darker gray/green trim are consistent with the fireplace mantle, a darker gray green. Evidence of changes in the doors is apparent in paint layers.

Finishes in the east room on the second floor (201) may date to the period when graining occurred, estimated to be between 1880-1900. The other second floor rooms and hall between them, are a warm light tan color.

Recommendations for Additional Research

Additional research is recommended both in the form of analysis of additional paint samples to confirm results found here and as part of a broader study of similar structures. Particular attention should be paid to alterations to the building, particularly in the tower. Additional sampling and study of samples in the southwest room is recommended to confirm original colors. We also recommend re-examination of the east room on the second floor for original colors.

Paint Sample locations 1
East Elevation

Paint Sample locations 2
North elevation

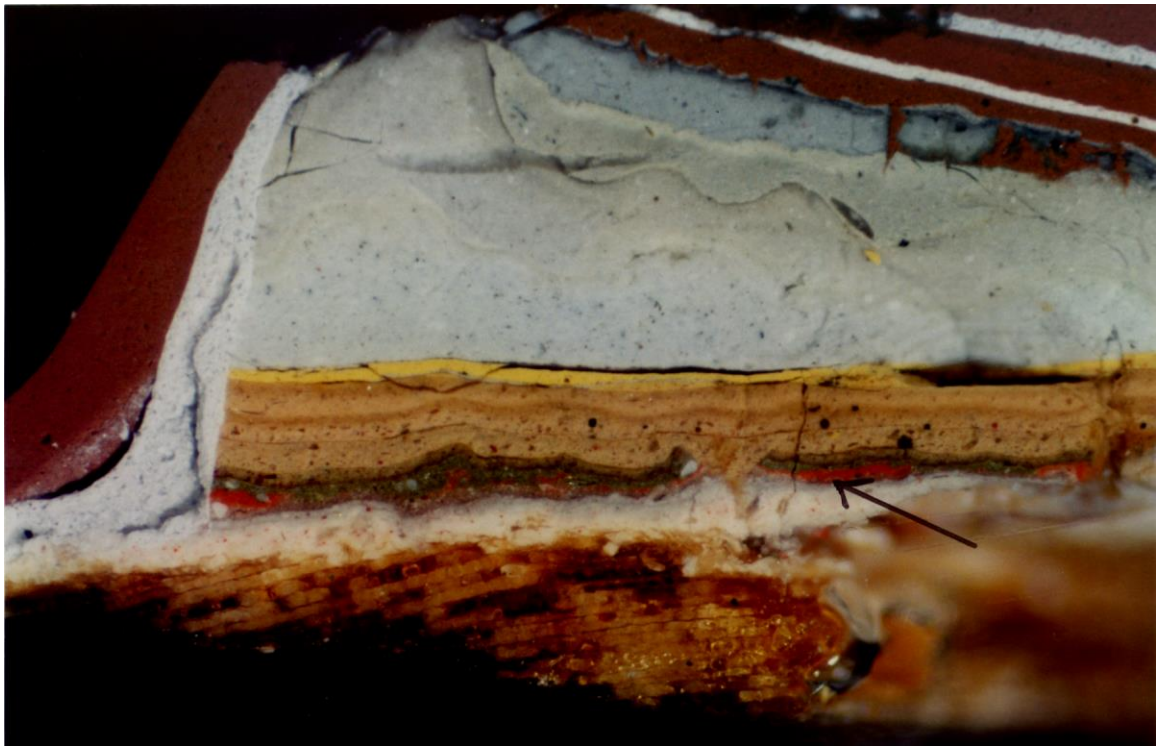
Paint Sample locations 3
Section A

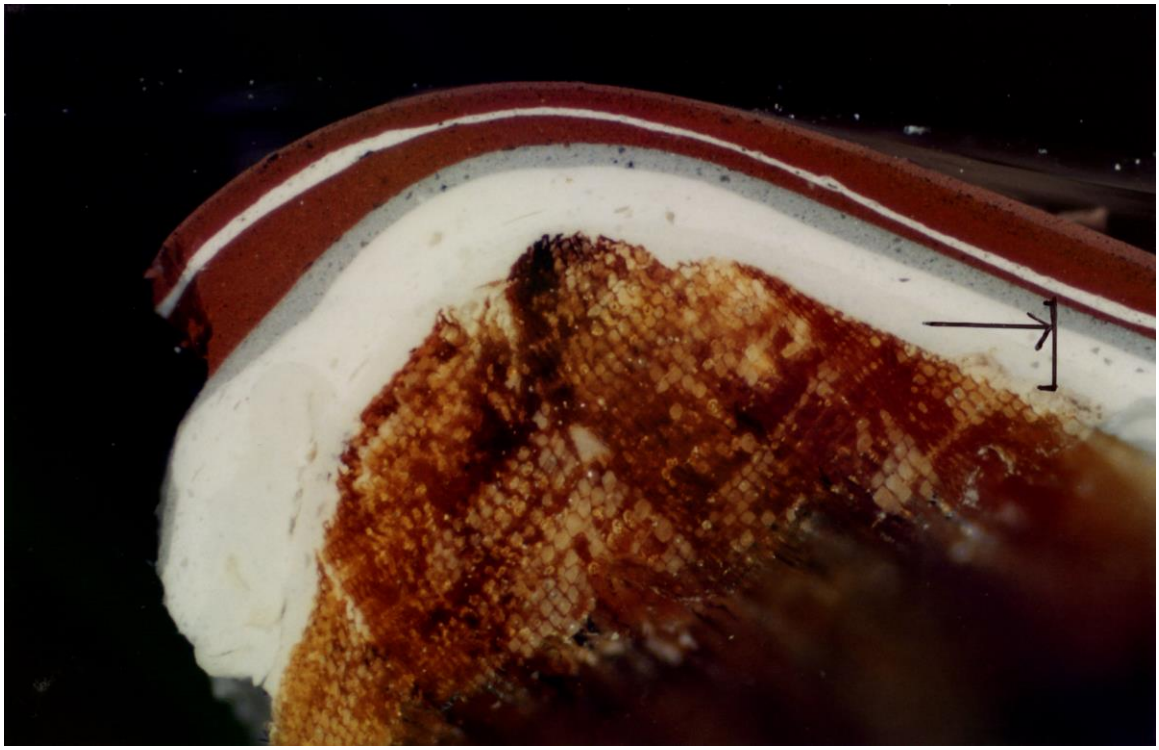
Paint Sample locations 4
First floor plan

Paint Sample locations 4
Second floor plan

Photomicrographs

1. (below) Photomicrograph. Exterior. East façade, porch. Doors. Note the white prime/bright red finish applied directly on top of the wood substrate.

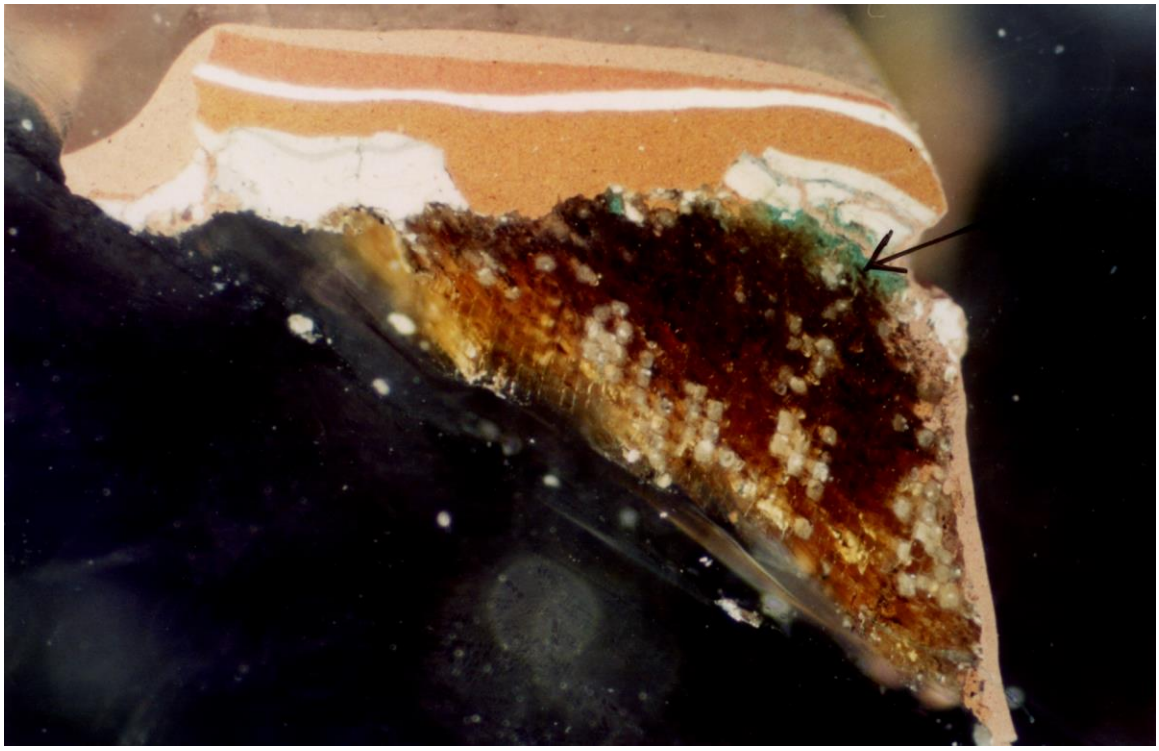


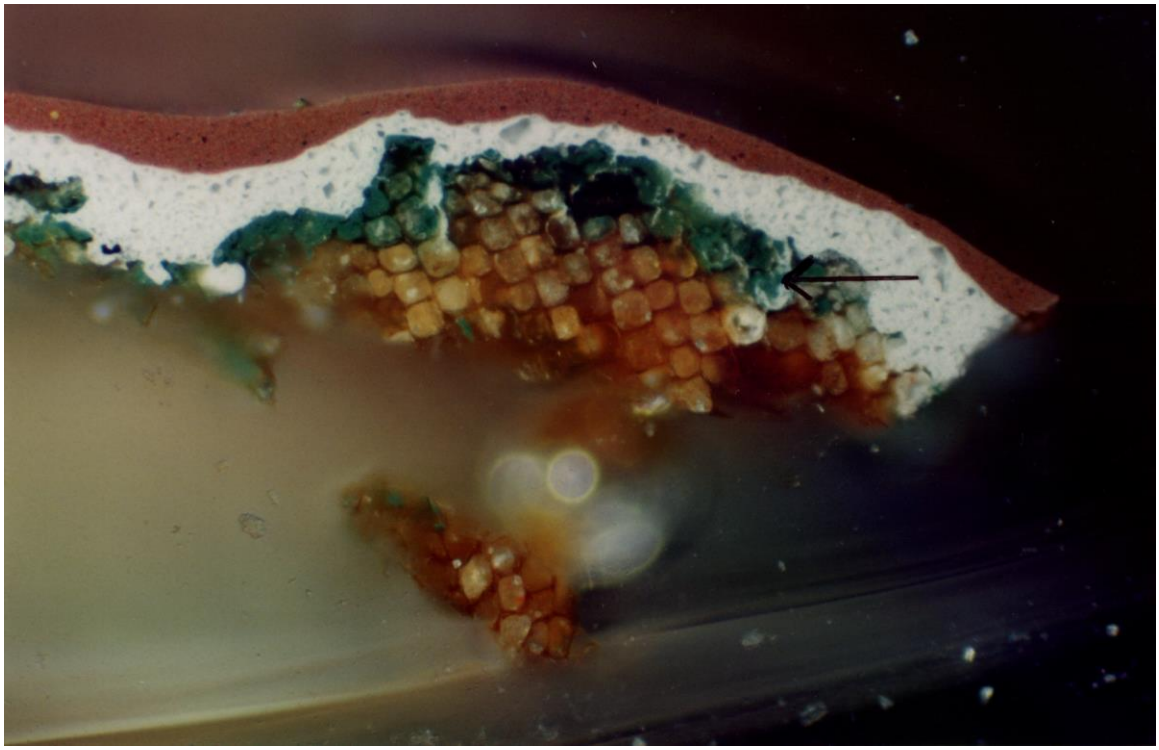


2. (above) Photomicrograph. Exterior. East porch horizontals. The paint stratigraphy illustrates that found on many of the exterior surfaces: white prime and gray.

Photomicrographs

3. (below) Photomicrograph. Exterior. In some cases, only later finishes remained on surface, as seen here with the later dark green paint.

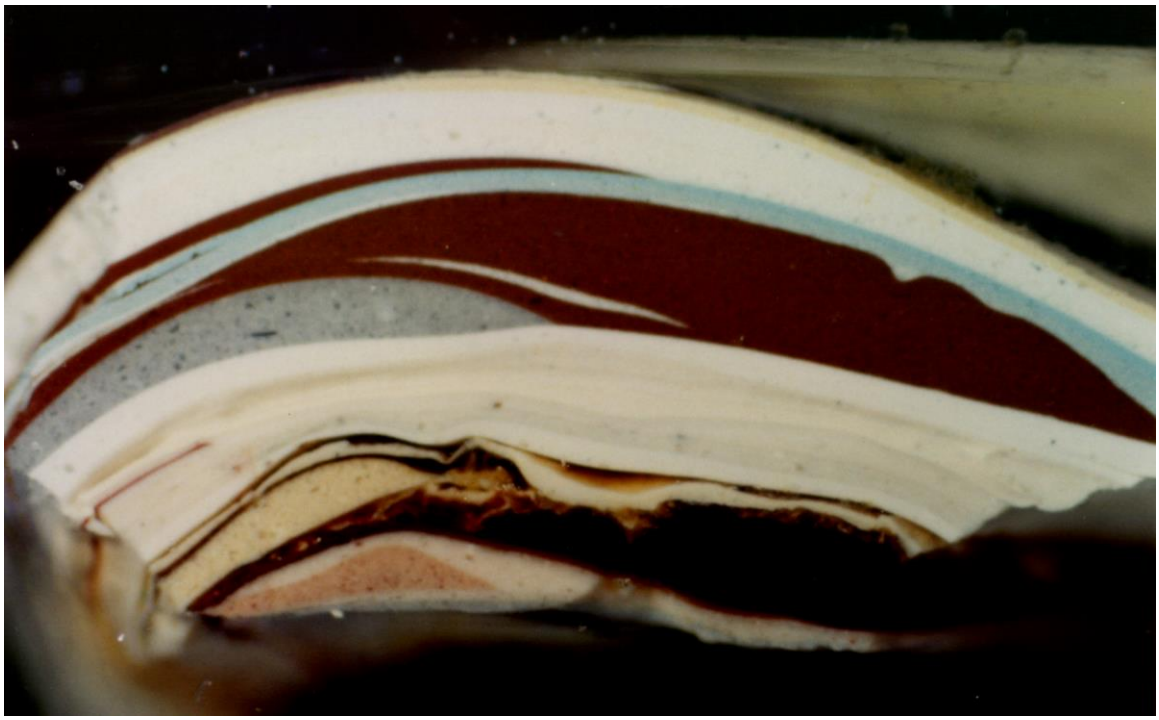


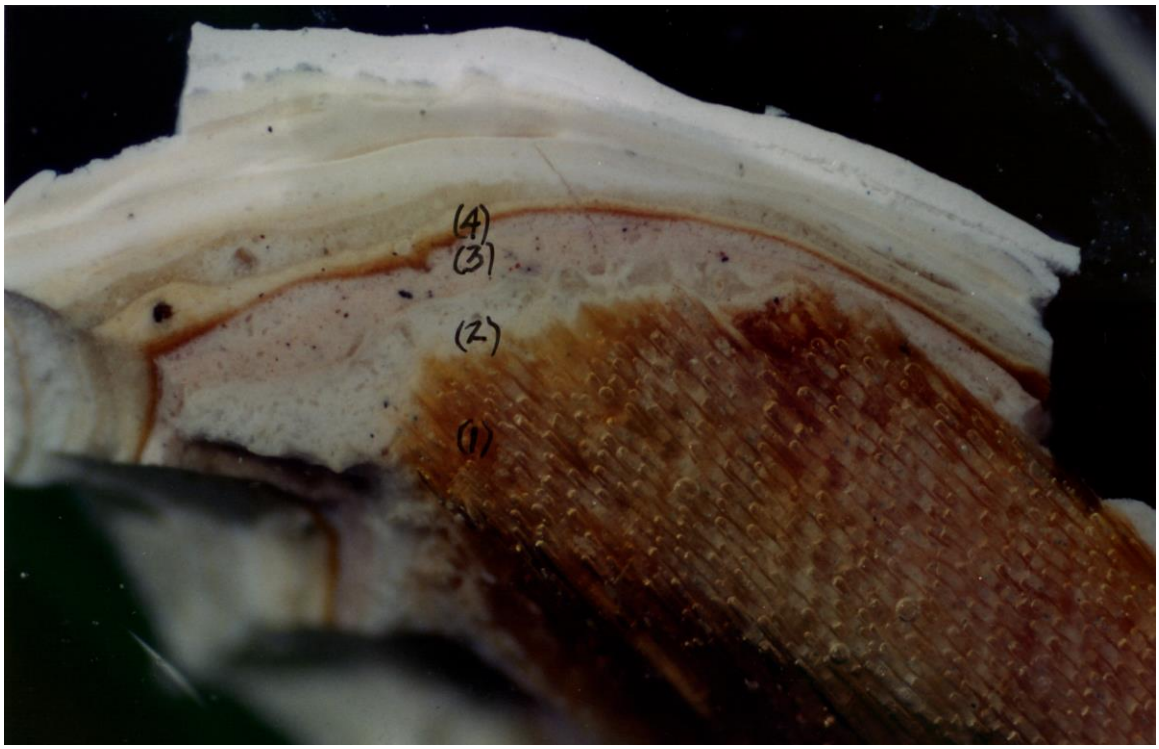


4. (above) Photomicrograph. Exterior. In other cases, the presence of a later paint suggests that the substrate was replaced, as here in a sample taken from the molding at the juncture of the roof.

Photomicrographs

5 (below) Photomicrograph. Interior. Office, main east door. Note the multiple layers of paint associated with historic fabric. Several color changes were made to most of the interior.





6. (above) Photomicrograph. Interior. Southwest room. Door trim. Note the stratigraphy associated with graining: 1) wood substrate; 2) white prime; 3) pink preparation coat; 4) resinous coating. Later layers were probably applied in the 20th century. This door was added in 1936, which is why graining is the first layer.

Chromachronologies

The chromachronology pages are in a separate file called “Antietam Chromachronologies”

1

Chromachronologies

2

Chromachronologies

3

Chromachronologies

4

Chromachronologies

5

Chromachronologies

6

Chromachronologies

7

Chromachronologies

8

Chromachronologies

9

Chromachronologies

10

Chromachronologies

11

Chromachronologies

12

Chromachronologies

13

Color Equivalencies

Color Name	Duron Color	Duron Chip	Munsell Equivalent
Light Gray	*Light Showers* 8532 W		N 7.75
Medium Gray	*Summer Fog* 8533M		N 6.5
Bright Red	*Real Red* 7406N		5R 5/12
Light Gray/Green	*Green Granule* 8602W		5G 8/1
Gray/Green	*Gray Nut* 8603M		10G 7/1
Light Tan **(aka Darker tan/gray)**	*Jogging Path* 8662W		10Y 8/1 75%+ 2.5Y 8/2 25%
Cream/Tan	*Orange Whip* CW028W		5Y 9/2 50%+ 10R 9/1 50%
Light Warm Tan	*Rosevale* 8840W		10R 9/1
Dark Brown	*Bavarian Chalet* 8336N		5YR 4/4

Appendix C-4
Historic Mortar Analysis

Drawing showing locs of test samples

Appendix C-4
Historic Mortar Analysis

Background

The Superintendent's Lodge at Antietam Battlefield Cemetery is a two-story stone structure, built in 1867. The stones are rough-hewn with even faces and squared edges laid up in horizontal courses with vertical joints in an ashlar pattern. The joints are roughly ½" to ¾" thick, with an occasional joint as large as 1 ¼". Mortar samples were taken from interior and exterior locations in an effort to identify mortar types and develop recipes for repair mortars.

Most of the mortar visible on the building's exterior appears to be replacement material. The predominant re-pointing mortar is a gray Portland cement-based mortar. However, at least two additional types or generations of replacement mortar are present. Both of these mortars are probably Portland cement-based as well. Other re-pointing mortar on the building appears to have been for more selective or isolated repair work, and was probably installed after the predominant re-pointing mortar. It's possible that some of the re-pointing mortar may be from the 1935 modifications. None of the re-pointing appears to have been done with an appropriately soft, lime mortar: Portland cement-based mortar is not appropriate for use on this building.

Methodology

Location of Samples: Three mortar samples were gathered from the building. See facing drawing for sample locations.

- Sample #1: joint located on the right side of the window into Room 101, south elevation.
- Sample #2: interior joint, sill level of the basement window on the north side of the building.
- Sample #3: same joint as sample #1.
- Sample #4: a joint on the tower where visible in attic, provided to Dell Corporation by **architrave p.c., architects.**

The samples were bagged and labeled on site and the sample locations documented.

Evaluation: Each of the four samples was divided into three smaller, evaluation units. These evaluation units were labeled with the appropriate sample number and an A, B, or C designation. A single evaluation unit from each location was then chosen for processing. The following is a general outline of the process that was used to evaluate the color, texture and general content of the samples.

1. The dry sample was weighed. It was then carefully crushed in an effort to separate the aggregate and the binder. The crushed sample was then weighed to determine a benchmark.

2. A mild acid, in this case white vinegar, was used in an effort to burn off lime in the mixture. Successive baths of acid were introduced until there were no more visible reactions, such as bubbling or fizzing, observed. The digested material was then allowed to stand in a fresh acid bath in an effort to dissolve remaining lime.

3. The unit was dried and weighed. The reduction in weight was recorded and the percentage of loss by weight was calculated. This figure was used to help determine the amount of lime that was probably in the original mix.

4. A stronger acid, in this case diluted muratic acid, was used in an effort to burn off Portland cement in the mixture. Successive baths of acid were introduced until there were no more visible reactions, such as bubbling or fizzing, observed.

5. **Note:** It is our experience that the first mild acid bath (white vinegar) acts primarily on lime. By using a second, stronger acid to act on cements, we believe reasonable conclusions can be drawn as to the amount of cement in the evaluation units.

6. The unit was dried and weighed. The reduction in weight was recorded and the percentage of loose by weight was calculated. This figure was used to help determine the amount of Portland cement that was probably in the original mix.

7. The loose sand that remained after the acid baths was visually inspected for color and texture. A series of sieves were used to determine the general proportion of aggregate sizes and fines in the sand. This information was then used to determine sources for sand and to determine the screen size for the sand. Locally available sands were compared to the resulting sand materials.

8. Several different colors and types of the locally available sands were then screened to the appropriate aggregate size and mixed with lime or Portland cement in appropriate proportions, in an effort to create an aesthetically acceptable replacement mortar.

Results and Discussion:

1. Samples #1, taken from a joint located on the right side of the window into Room 101 on the south elevation, appears to be the predominant re-pointing mortar on the building. The evaluation unit consisted of approximately six to seven parts sand, two parts Portland cement and one part lime. The use of both Portland cement and lime in these proportions is consistent with mortars in use during the first part of the 20th century. Since it is known that the building was modified in 1935, it is not unreasonable to believe that some of the re-pointing mortars may date from this period. It is a slightly "softer" mortar than typical Portland-based mortars currently in use. However, its use on this building is not appropriate. No recipe for this mortar has been included in this report.

   Note: A second layer of mortar was visible upon removal of sample #1. Samples of this second layer were subsequently taken and labeled as sample #3.

2. Sample #2, taken from the interior stone sill of the basement window on the north, is used as a setting mortar between stones and as parging on some places on the interior face of the foundation wall. The evaluation unit consisted of approximately three parts sand and one part lime. The location of the sample and the content suggest that it was placed during the original construction of the building.

3. Sample #3 is the layer beneath sample #1 and was taken from the same location. Sample #1 appears to be modern "re-pointing" mortar and sample #3 appears to be the original "setting" mortar. Stone is traditionally set using a separate setting and pointing mortar, it is probable that this mortar was placed during construction and is original to the house. The evaluation unit consisted of approximately three parts sand and one part lime.

4. Sample #4, from the exterior stone wall of the tower located where it is inside the building in the attic, was gathered by **architrave p.c., architects**. The color and texture of the sand is slightly different from that found in samples #2 and #3. However, the placement of the mortar and the content suggest that it is original to the building. The evaluation unit consisted of approximately three parts sand and one part lime.

5. None of the mortar samples that appear original to the building (samples #2, 3 and 4) could be conclusively identified as "pointing" mortars. These three sample were likely used as "setting" mortars. Sample #2 may be the possible exception to this since it appears it was used for both pointing mortars of this period (third quarter 19th century) tends to be the ratio of sand to lime. Setting mortars generally have less lime. However, all three of the "original" mortar evaluation units consisted of classical lime to sand proportions. These proportions being 1:3, one part lime to three parts sand (traditional masons usually list the binder first when describing mix ratios). It is therefore reasonable to conclude that the original pointing mortar was mixed in the same proportions as the evaluation units.

Repair Mortar Recipe

Samples #2 and #3: All proportions are by volume.

1. Sand: Six (6) parts clean mason's sand that has been put through a #10 sieve. The color of the dry sand should be a light, orange-brown.

2. Lime: Two (2) parts lime putty. The lime putty can be made by placing hydrated mason's lime in clean water and allowing the lime to slake for 1 to 2 weeks. The water that rises to the top should be poured off prior to use.

3. Notes:

a. Historically, quick lime was placed in a pit to be mixed with water to make a putty prior to mixing with sand. Naturally occurring cements already in the lime, materials added or soil contamination during firing may account for the traces of cement-like material often found in historic mortars. Since modern limes are manufactured in controlled environments, and are burned at higher temperatures, these natural cements are absent. One way to compensate is to add Portland cement (in this case white Portland cement) to the repair mortar recipe. The proportion of Portland cement added to the recipe is substantially less than in modern mortars.

b. No Portland cement is needed in this recipe unless additional strength requirements dictate its use. In such a case, the mix ratio would then become the following:

Sand: Seven to nine parts[1]
Lime: Two parts.
White Portland: One part.

c. Lime putty can be made from hydrated lime by placing approximately 3 gallons of water into a clean 5 gallon bucket and carefully pouring the dry lime into the bucket. Keep pouring lime into the water until the lime is 3-4 inches from the top of the bucket. Put a lid on the bucket and let this stand for one to two weeks. Approximately 10 gallons of lime putty can be made from a 50 lb. bag of hydrated lime.

d. Very little water should be added to the mix. The lime putty should provide sufficient plasticity to make a workable mix. During the placement of the mortar, it may be necessary to sprinkle the mix to keep it in a workable state.

e. The sand should be placed in the mixing pan first and the lime putty should then be added. The mortar should be mixed using a mortar hoe by hand and wooden tamper to ensure that the sand and lime are cohesive. The typical rotary mixer will not satisfactorily combine the lime putty with sand. Once the lime and sand have been thoroughly mixed, Portland cement may be added if appropriate. The dry Portland cement should be mixed with water to form a firm putty and then worked into the mix in the same manner as the lime.

f. Color: Care must be taken to replicate a historically appropriate color. Modern lime combined with modern white Portland cement results in a very *white* mortar. Experiment with the sand color and consider using grey Portland to achieve an appropriate mortar color.

Sample #4:

1. Sand: Three parts clean mason's sand that has been put through a #10 sieve. The sand should be a light tan, similar to the color of a paper bag.

2. Lime: One part lime putty.

Material Source List
Sample #2 and Sample #3:

1. Sand: Sakrete All Purpose Sand is available wholesale from American Stone Mix, Inc. in Towson, Md. This sand is currently being taken from their White Marsh pit. At this time, American Stone Mix, Inc. stated that there is no planned change in the source for the next 12 months.

[1] ASTM recommends a range of sand to cementitious material (Portland plus lime) between 2 ¼ to 3, which would result in this range of seven to nine.

2. Lime:

a. Hydrated Mason's Lime, manufactured by Bellefonte Lime Co., is available from T.W. Perry at their Chevy Chase, MD and their Gaithersburg, MD locations.

Bellefonte Lime Co.
North Thomas St.
P.O. Box 448
Bellefonte, PA 16823
Phone: 814-355-4761

T.W. Perry
8101 Snouffer School Rd.
Gaithersburg, MD 20879
Phone: 301-840-9600

b. Lime Putty is available from:

U.S. Heritage Group, Inc.
3516 North Kostner Avenue
Chicago, IL 60641
Phone: 773-286-2100

Sample #4:

1. Sand: Smooth Mason's Sand is available from Jack Irwin, Inc. in Rockville, MD.

Jack T. Irwin, Inc.
601 East Gude Drive
Rockville, MD 20850
Phone: 301-762-5800

2. Lime: Same as #2 and #3

Appendix C-5
Structural Investigation Calculations

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Appendix C-6
HVAC Load Calculations

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Chromachronologies

Exterior

Sample: Ext. # 1 Magnification: 12.5 X - 25 X

Location: Exterior. East porch, main entrance. Gable end, cut out.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	light gray	oil paint	1867
Finish 2:	white prime/dark gray finish	oil paint	
Finish 3:	dark gray	oil paint	
Finish 4:	brown	oil paint	1936

Sample: Ext.# 2 Magnification: 12.5 X - 25 X

Location: Exterior. East porch, main entrance. Flat molding around cut-out

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	white prime/light gray	oil paint	1867
Finish 2:	dark/med. gray	oil paint	1870
Finish 3:	med. gray	oil paint	1875
Finish 4:	brown	oil paint	1936

Sample: Ext. # 3 Magnification: 12.5 X - 25 X

Location: Exterior. East porch, main entrance. Gable end. Spherical ornament below cut out.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	light gray	oil paint	1867
Finish 2:	med. gray	oil paint	
Finish 3:	med/ dark gray	oil paint	
Finish 4:	brown	oil paint	1936
Finish 5:	brown	oil paint	

Sample: Ext. # 4 Magnification: 12.5 X - 25 X

Location: Exterior. East porch, main entrance. Molding at juncture with roof.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	light gray	oil paint	1867
Finish 2:	med. gray	oil paint	
Finish 3:	dark/med. gray	oil paint	
Finish 4:	brown	oil paint	1936
Finish 5:	brown	oil paint	
Finish 6:	brown	oil pain	

Sample: Ext. # 5 Magnification: 12.5 X - 25 X

Location: Exterior. East porch, main entrance. Brackets beneath roof, extending beyond roof.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	cream	oil paint	1867
Finish 2:	pinkish tan	oil paint	1870
Finish 3:	gray	oil paint	1875
Finish 4:	med/dark gray	oil paint	1880
Finish 5:	gray	oil paint	1885
Finish 6:	gray	oil paint	1890

Sample: Ext. # 6 Magnification: 12.5 X - 25 X

Location: Exterior. East porch, main entrance, horizontals, and posts.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	light gray	oil paint	1867
Finish 2:	med/dark gray	oil paint	
Finish 3:	brown	oil paint	
Finish 4:	white prime/brown finish	oil paint	1936

Sample: Ext. # 7 Magnification: 12.5 X - 25 X

Location: Exterior. East porch, main entrance. Porch ceiling.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	white prime/light gray finish	oil paint	1867
Finish 2:	med /dark gray	oil paint	
Finish 3:	brown	oil paint	1936
Finish 4:	white prime/ brown finish	oil paint	
Finish 5:	brown	oil paint	

Sample: Ext. # 8 Magnification: 12.5 X - 25 X

Location: Exterior. East porch, main entrance. Door frame.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	gray (blue gray)	oil paint	1867
Finish 2:	med/dark gray	oil paint	
Finish 3:	gray (blue gray)	oil paint	
Finish 4:	brown	oil paint	1936
Finish 5:	white prime/brown finish	oil paint	

Sample: Ext. # 9 Magnification: 12.5 X - 25 X

Location: Exterior. East porch. Brackets beneath roof.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	white prime/dark med. gray	oil paint	1867
Finish 2:	dark /med gray	oil paint	
Finish 3:	steely gray	oil paint	
Finish 4:	brown	oil paint	1936
Finish 5:	white prime/brown finish	oil paint	

Sample: Ext. # 10 Magnification: 12.5 X - 25 X

Location: Exterior. East facade. South side. Side door. (Door and opening added in 1936)

Layer	Color	Finish Type	Estimated date
Substrate:	wood		

Finish 1:	cream prime /brown finish	oil paint	1936
Finish 2:	brown	oil paint	

Sample: Ext. # 11 Magnification: 12.5 X - 25 X

Location: Exterior. East Facade. South side entrance. Pent roof. Beams. (Added after wraparound porch roof removed in 1936. Not clear if this pent roof was built from material salvaged from removed roof.)

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	white prime/light gray	oil paint	1867?
Finish 2:	med /dark gray	oil paint	1870?
Finish 3:	light gray	oil paint	1875?
Finish 4:	brown	oil paint	1936

Sample: Ext. # 12 Magnification: 12.5 X - 25 X

Location: Exterior. East Facade. North side entrance to tower. Door.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	gray	oil paint	1867
Finish 2:	gray	oil paint	
Finish 3:	gray	oil paint	
Finish 4:	brown	oil paint	1936
Finish 5:	white prime/brown	oil paint	

Sample: Ext. # 13 Magnification: 12.5 X - 25 X

Location: Exterior. East Facade. North side entrance to tower. Door frame.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	cream prime/lt gray/green finish	oil paint	1867
Finish 2:	lt gray/green	oil paint	
Finish 3:	brown	oil paint	1936
Finish 4:	brown	oil paint	
Finish 5:	brown	oil paint	

Sample: Ext. # 14 Magnification: 12.5 X - 25 X

Location: Exterior. East Facade, north side entrance to tower. Screen door frame.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	brown	oil paint	1935?

Finish 2:	white prime/brown finish	oil paint
Finish 3:	brown	oil paint

Sample: Ext. # 15 Magnification: 12.5 X - 25 X

Location: Exterior. East Facade, north side entrance. Window above north side entrance tower door. Frame.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	white prime/med gray finish	oil paint	1867
Finish 2:	dark green	oil paint	1870
Finish 3:	white prime/brown	oil paint	1936

Sample: Ext. # 16 Magnification: 12.5 X - 25 X

Location: Exterior. East Facade, main entrance. Doors.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	pinkish tan prime/red finish	oil paint	1867
Finish 2:	light green	oil paint	
Finish 3:	dark bright red	oil paint	
Finish 4:	dark bright red	oil paint	
Finish 5:	lt/med. blue/gray	oil paint	
Finish 6:	brown/tan	oil paint	1936

Sample: Ext. # 17 Magnification: 12.5 X - 25 X (see Photomicrograph #4)

Location: Exterior. Cornice. Facia molding. Above brackets.

The absence of layers on this sample suggests this piece is newer wood, probably replaced.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	pink tan	oil paint	
Finish 2:	cream prime/ med. gray finish	oil paint	
Finish 3:	dark green	oil paint	
Finish 4:	brown	oil paint	1936

Sample: Ext. # 18 Magnification: 12.5 X - 25 X

Location: Exterior. Cornice brackets.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	cream prime/lt. green gray finish	oil paint	1867
Finish 2:	rust /red	oil paint	
Finish 3:	dark olive green	oil paint	

Finish 4:	yellow ochre	oil paint
Finish 5:	bright yellow prime/gray green finish	oil paint
Finish 6:	gray green	oil paint

Sample: Ext. # 19 Magnification: 12.5 X - 25 X

Location: Exterior. North elevation. Wall where porch was located. Window frame (not storm windows).

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	gray/blue/green	oil paint	1867
Finish 2:	dark gray	oil paint	
Finish 3:	gray/blue/green	oil paint	
Finish 4:	brown	oil paint	1936

Sample: Ext. # 20 Magnification: 12.5 X - 25 X

Location: Exterior. East Facade. Porch posts.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	gray green	oil paint	1867
Finish 2:	gray green	oil paint	
Finish 3:	blue/gray	oil paint	
Finish 4:	darker blue gray	oil paint	

Sample: Ext. # 21 Magnification: 12.5 X - 25 X

Location: Exterior. East Facade, south side entrance. Porch ceiling.

Added after wraparound porch roof removed in 1936. Not clear if this was built from material salvaged from removed roof.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	white prime/light blue/ gray	oil paint	1870?
Finish 2:	med. gray	oil paint	1875?

Finish 3:	brown	oil paint	1936

Sample: Ext. # 22a Magnification: 12.5 X - 25 X

Location: Exterior. North elevation. Window frame at first floor. Window to office.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	med gray	oil paint	?
Finish 2:	dark green	oil paint	
Finish 3:	brown	oil paint	1936

Sample: Ext. # 22b Magnification: 12.5 X - 25 X

Location: Exterior. North elevation. Window sash at first floor. Window to office.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	white prime/light gray finish	oil paint	1867
Finish 2:	lt gray	oil paint	
Finish 3:	gray	oil paint	
Finish 4:	red/rust	oil paint	

Interior

Office: 101 (Historic Reception Room)

Sample: 101.1 Magnification: 12.5 X - 25 X

Location: Office. Ceiling.

Layer	Color	Finish Type	Estimated date
Substrate:	plaster		
Finish 1:	repainting: white		recent

Sample: 101.2 Magnification: 12.5 X - 25 X

Location: Office. North wall, between window and baseboard.

Layer	Color	Finish Type	Estimated date
Substrate:	plaster		
Finish 1:	light gray/green	oil paint	1867
Finish 2:	light blue	oil paint	
Finish 3:	skim coats/repairs		

Sample: 101.3 Magnification: 12.5 X - 25 X

Location: Office. South wall, west of window @ crack.

Layer	Color	Finish Type	Estimated date
Substrate:	plaster		
Finish 1:	light gray/ green	oil paint	1867
Finish 2:	light blue	oil paint	
Finish 3:	light gray/green	oil paint	
Finish 4:	cream	oil paint	
Finish 5:	white	oil paint	

Sample: 101.4 Magnification: 12.5 X - 25 X

Location: Office. West wall, north of fireplace. Door frame.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	warm light tan	oil paint	1867
Finish 2:	cream	oil paint	
Finish 3:	light green	oil paint	
Finish 4:	white prime/ochre	oil paint	

Sample: 101.5 Magnification: 12.5 X - 25 X

Location: Office. Baseboards from various locations. Possibly replaced with floor.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	dark brown	oil paint	1867
Finish 2:	gray blue	oil paint	
Finish 3:	brown	oil paint	
Finish 4:	ochre	oil paint	
Finish 5:	brown	oil paint	
Finish 6:	cream	oil paint	

Sample: 101.6 Magnification: 12.5 X - 25 X

Location: Office. East door.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	gray /green	oil paint	1867
Finish 2:	gray blue	oil paint	
Finish 3:	pinkishprime/ amber varnish	graining	
Finish 4:	ochre	oil paint	

Sample: 101.7 Magnification: 12.5 X - 25 X

Location: Office. West door, north of fireplace.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	cream prime/gray blue finish	oil paint	1867
Finish 2:	pinkish prime/amber varnish	graining	
Finish 3:	ochre	oil paint	
Finish 4:	blue/gray	oil paint	

Sample: 101.8 Magnification: 12.5 X - 25 X

Location: Office. Door at west wall, south of fireplace.

Door and opening added sometime after 1936. Door appears to have been relocated from elsewhere on the first floor to this location.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	green/gray	oil paint	
Finish 2:	blue/gray	oil paint	
Finish 3:	cream prime/tan finish	oil paint	
Finish 4:	brown	oil paint	
Finish 5:	gray	oil paint	
Finish 6:	blue green	oil paint	

Sample: 101.9 Magnification: 12.5 X - 25 X

Location: Office. South wall. Window frame.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	light tan warm	oil paint	1867
Finish 2:	light green	oil paint	1867 ?
Finish 3:	white prime		
or	cream/amber	graining	1870
	blue gray	oil paint	1875
	dark gray	oil paint	1880

Sample: 101.10 Magnification: 12.5 X - 25 X

Location: Office. South wall, window sash.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	warm cream	oil paint	1867
Finish 2:	pink cream prime/amber varnish	graining	1870

Sample: 101.11 Magnification: 12.5 X - 25 X

Location: Office. East wall. Transom.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	cream	oil paint	1867
Finish 2:	cream	oil paint	1870
Finish 3:	yellow ochre	oil paint	1875
Finish 4:	yellow ochre	oil paint	1880

Sample: 101.12 Magnification: 12.5 X - 25 X

Location: Office. East wall, above transom.

The fact that this paint series is so different from 101.2 and 101.3 may suggest the room had a picture rail with a different wall color above it. This sample is perhaps a clue to the original ceiling color.

Layer	Color	Finish Type	Estimated date
Substrate:	plaster		
Finish 1:	cream	oil paint	
Finish 2:	pale rose pink	oil paint	
Finish 3:	cream	oil paint	
Finish 4:	green/gray	oil paint	

Southwest Room: 102 (Historic Living Room)

Sample: 102.1 Magnification: 12.5 X - 25 X
Location: Southwest Room. East wall. Paneled door.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	light green	oil paint	added later
Finish 2:	green gray	oil paint	added later

Sample: 102.2 Magnification: 12.5 X - 25 X
Location: Southwest Room. South window. Frame.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	cream prime/light gray green	oil paint	1867
Finish 2:	steel gray	oil paint	1870
Finish 3:	steel gray	oil paint	1875
Finish 4:	cream	oil paint	1880
Finish 5:	light green	oil paint	1885

Sample: 102.3 Magnification: 12.5 X - 25 X
Location: Southwest Room. Window frame. Horizontal member.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	cream/yellow	oil paint	1867 or later

Finish 2:	light pink gray/varnish	graining	1880

Sample: 102.4 Magnification: 12.5 X - 25 X

Location: Southwest room. Baseboards.

Layer	Color	Finish Type	Estimated date
Substrate:	wood (light)		
Finish 1:	light green	oil paint	1885-1900
Finish 2:	cream	oil paint	
Finish 3:	gray	oil paint	

Sample: 102.5 Magnification: 12.5 X - 25 X

Location: Southwest room. South window sash.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	dark resinous layer	varnish	1867
Finish 2:	cream	oil paint	
Finish 3:	pink	oil paint	
Finish 4:	gray green	oil paint	

Sample: 102.6 Magnification: 12.5 X - 25 X

Location: Southwest room. Walls.

Layer	Color	Finish Type	Estimated date
Substrate:	plaster		
Finish 1:	white prime/cream yellow	oil paint	c. 1870

etc.

Sample: 102.8 Magnification: 12.5 X - 25 X

Location: Southwest room. West window sash.

Layer	Color	Finish Type	Estimated date
Substrate:	wood		
Finish 1:	cream	oil paint	1867
Finish 2:	tan/ varnish	graining	

etc.

Appendix D
Work Priority Plan

Appendix D
Work Priority Plan

Various approaches to organizing a site and structure into parts for maintenance, operation, or restoration can be taken. In this project we will use the general categories of interior and exterior work organized in a three-tiered priority ranking, as follows:

Critical:
to correct health, safety, regulatory, and structural deficiencies, to prevent further deterioration, to preserve space defining elements, or to repair broken elements, and to allow the building to be used as projected for exhibit space and public restrooms.

Important:
but not highest priority, including reversal of non-original elements, reconstruction/replacement of missing elements, and collateral efforts.

Desirable:
when feasible, such as reconstruction of original elements (like elements that are present and functioning but not the original design, or replacement of elements present and functioning but not consistent with the original).

There will be some confounding in these rankings. For instance, an action that is relatively non-critical in its impact on the site might be listed as *critical* because it is easily achievable.

Please also see the *Recommendations for Treatment.* In it, the alternative of mothballing the building is discussed.

General

Critical:
Abate all asbestos hazards.
Abate all lead-based paint that will be affected by any interior or exterior work.

Important:
Repair all windows to make them fully operable.

Exterior

Critical:
It is critical to halt the exterior deterioration of the building fabric and prevent further deterioration. Fortunately, most of this work falls within the category of maintenance.

Paint all exterior wood. Because some of the exterior paint on the building is not sound and it is lead-based, the paint will have to be abated and disposed of properly. The paint should probably be removed to bare wood wherever it is seriously deteriorated. Some of the wood may need to be consolidated or filled before repainting. Care must be taken in

preparation of the wood for new paint. It may require more than three coats of paint to establish a good coating or may require annual touching up for several years until good coats are established where there has been serious failure.

It is critical to address and remedy all moisture problems in the building.

The first step should be diagnostic. A reputable contractor with experience with slate roofing should be hired to go over the entire slate roofed sections of the building, evaluating and repairing. Attention must also be directed at flashing since it appears that many of the building's current moisture problem areas are located at places where roofing is flashed into vertical surfaces. The copper-roofed porches should be evaluated and repaired at the same time. Finally, the flat roof of the tower should be re-roofed in a hot rubberized asphalt system.

The evaluation of the main slate roof should allow longer-term decisions about its useful life to be made. At some point, the Superintendent's Lodge needs to be re-roofed at least as necessary to include all one size of slate. What the correct/original slate size was will have to be determined.

It is critical to make site access provisions, regardless of ultimate use of the Superintendent's Lodge building:

- Designate one or more parking spaces on Route 34 as accessible.
- Provide a sign indicating the accessible path to the brick plaza in front of the building.
- Make provisions for access to the Superintendent's Lodge.

It is critical to have an appropriate window sash fabricated and installed in the second floor dormer opening on the west side of the building that is currently missing a sash.

Important:
Remove surface mounted electrical conduit providing power to exterior light fixture on west elevation and rewire to conceal power.

Desirable:
It is desirable to reconstruct the historic porch including its wood deck. Careful detailing will have to be done to insure it does not become a future maintenance issue. Substitute materials may be considered to reduce the maintenance burden and extend its life.

Monitor exterior mortar joints in stone masonry. If evidence of damage to the stone from the overly hard repointing mortar is found, it would become critical that the building be repointed with an appropriately soft mortar. Otherwise, when the current mortar reaches the end of its useful life, the building should be repointed with an appropriately soft mortar.

Consider replacing existing exterior lights with more appropriate fixtures.

Interior

Critical:
It is critical to correct all health, safety, regulatory, and structural deficiencies.

> Repair the structural deficiencies (unsupported roof member at tower, cracked slab edge at first floor stair in tower). Increase floor-loading capacities as necessary for the proposed use of the building.

Make all life safety modifications required for occupancy such as exit signs, fire pulls, and the like.

Access: It is critical to provide an accessible restroom and drinking fountain on the first floor.

Provide ventilation and access to the two unexcavated crawl spaces. This will allow easier access for monitoring for insects and other damage and the ventilation of these spaces will help prevent moisture damage to the wood floor structure under the office.

Install cooling systems for first floor using ground source heat pumps. Alternate, conventional system with condensing systems installed in an exterior vault. Retain existing hot water radiator heating system and implement energy conservation recommendations.

Make all other necessary mechanical, electrical, and plumbing provisions for occupation of the first floor including rewiring building, removing all surface mounted wiring, interior and exterior, re-routing wiring as necessary to conceal it.

Moisture-damaged plaster:

Remove all deteriorated plaster on the basement, first, and second floors and in the tower. Monitor surrounding plaster to see if moisture penetration appears to be on going, especially after roof repairs are done.

Repair moisture damaged plaster on the first floor using a cementitious plaster to extend the useful life of the repairs.

Repaint all walls and ceilings in original colors.

Repair and repaint all wood trim in original colors.

Important:
Remove all inappropriate lighting on the first floor, especially the pendant mounted fluorescents, and replace with more appropriate fixtures.

Implement recommended energy conservation measures.

Replace all modern door hardware with appropriate historic hardware, possibly from second floor doors.

Desirable:
Remove terrazzo in original living room and return floor to wood.

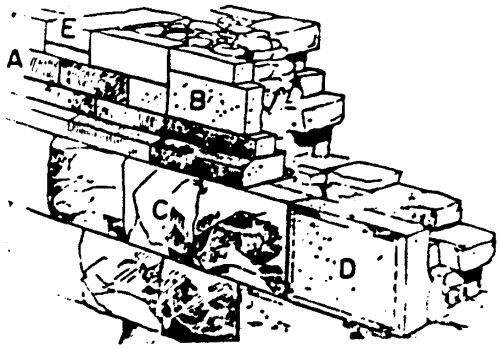
Consider closing/reversing non-original door openings.

Replace existing first floor surface mounted electric lighting with more appropriate fixtures.

Appendix E
Definitions

Appendix E: Definitions

ashlar masonry Masonry composed of rectangular units of burnt clay or shale, or stone, generally larger in size than brick and properly bonded, having sawn, dressed, or squared beds and joints laid in mortar. (Harris, Cyril M. ed. *Dictionary of Architecture and Construction.* New York: McGraw-Hill Book Company. 1975.)



ashlar masonry
A random-range quarry-faced ashlar; *B* random-range dressed-faced ashlar; *C* coursed quarry-faced ashlar; *D* coursed dressed ashlar with margin draft; *E* bonder in ashlar; *f* rubble filling back of ashlar

(Harris.)

broken rangework Stone masonry laid in horizontal courses of different heights, any one course of which may be broken (at intervals) into two or more courses. (Harris)

preservation Preservation maintains the existing integrity and character of a cultural resource by arresting or retarding deterioration caused by natural forces and normal use. It includes both maintenance and stabilization. Maintenance is a systematic activity mitigating wear and deterioration of a cultural landscape by protecting its condition. Maintenance is essential for the long-term preservation of the individual features and the integrity of the resource. Stabilization involves reestablishing the stability of an unsafe, damaged, or deteriorated cultural resource while maintaining its existing character. (NPS 28)

reconstruction Reconstruction entails depicting the form, features, and details, of a non-surviving cultural resource, or any part thereof, as it appeared at a specific period or as intended by its original constructed design. Reconstruction of an entire resource is always a last-resort measure for addressing a management objective and will be undertaken only after policy review in the regional and Washington offices. (NPS 28)

rehabilitation Rehabilitation improves the utility or function of a cultural resource, through repair or alteration, to make possible an efficient compatible use while preserving those portions or features that are important in defining its significance. (NPS 28)

restoration Restoration accurately depicts the form, features, and character of a cultural resource as it appeared at a specific period or as intended by its original constructed design. It may involve the reconstruction of missing historic features and selective removal of later features, some having cultural value in themselves. (NPS 28)

Appendix F
Itemized Cost Estimate for Work Priority Plan