MARGARET WHITE HOUSE AND BARN
Historic Structure Report

Falls Church, Virginia

Final Report
December 20, 2017
WJE No. 2015.3162.6

Prepared for:

Mr. David Buchta, MHP
Fairfax County Park Authority
Resource Management Division
12055 Government Center Parkway
Fairfax, Virginia 22035

Prepared by:

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3301 Hawthorne Lane, Falls Church, VA 22042

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INTRODUCTION

The Margaret White house and barn are located at the John C. and Margaret K. White Horticultural Park in Falls Church, Virginia. The Whites purchased the 13-acre property from Alfred Freeman in 1938, which was part of a larger land plot of 67 acres that accommodated agricultural activities such as a pig and chicken farm. A farmhouse, English bank barn and chicken house were included in the 13 acres of land that the Whites purchased. The English bank barn was constructed circa 1876 and has a stone foundation and board and batten exterior. During the White's ownership, this structure was modified into a play area for their children on the upper floor and a garage on the lower floor.

The White's home was designed by Joe Harry Lapish, an architect in the Washington DC area who attended George Washington University and studied at the Ecole des Beaux Arts. During the 1939 construction of the White's home, the original farmhouse was relocated just to the south of the home and west of the bank barn. The envelope of the two-story house is composed of brick masonry, fiber-cement siding and a slate shingle roof. The original 1939 porch located along the east facade was removed in 1956 and replaced with a much larger glass porch in 1958 that wraps around the north and east facades. In addition to the home and barn, the property boasts extensive gardens, which the Whites cultivated during their residence. Mr. White passed away in 1979 and Mrs. White sold the property to the Fairfax County Park Authority in 1999, with the agreement she could remain there until her passing. After the Park Authority gained ownership of the property, the gardens were opened to the public, and the original farmhouse and chicken house were removed from the property. Since Mrs. White's death in 2010, the property has remained unoccupied.

The Park Authority is proposing to include the main house and possibly the barn into the Resident Curator Program, which would allow the property to be occupied and maintained. The Park Authority has requested Historic Structure Report (HSR) documentation be performed, along with a cost estimate for all proposed recommendations. The cost estimates would be utilized to inform the Park Authority and any potential resident curator on repair and maintenance work.

Project Scope and Methodology

In preparing the HSR for the Margaret White house and barn, Wiss, Janney, Elstner Associates, Inc. (WJE) utilized Liz Sargent, affiliated WJE Consultant, to perform historic research. An HSR is typically the first phase of evaluation and planning for historic structures. It focuses on documenting the subject structure through narrative and graphical means for the property's historic development, physical information, and current condition and provides associated treatment recommendations. The goal of the HSR is to develop planning information for use in the repair, maintenance and preservation of these historically significant buildings. The HSR addresses key issues specific to the Margaret White house and barn, including the history and construction chronology of the building (as recorded in available archival documentation); the existing physical condition of the exterior envelope, basic structural systems, interior spaces and features, and the historic significance and integrity of the structure. Structural analysis, inspection openings, materials analysis and inspection of mechanical/electrical/plumbing systems were not included in this scope. It is our understanding that a separate Cultural Landscape Report is under development by others. The project methodology used for this study is described below.

Building Data

Current Building Name:	John C. and Margaret K. White House and Barn
Historic Building Name:	None
Location:	3301 Hawthorne Lane, Falls Church, VA 22042
Historical Designations:	None
Period of Significance:	circa 1876 - 1967
Current Use:	Vacant
Proposed Use:	Resident Curator Program
Proposed Treatment:	Rehabilitation for House and Preservation for Barn

Research and Document Review

Archival research was performed to gather information about the original construction and past modifications and repairs. This information was used in assessing existing conditions and developing treatment recommendations for the buildings. Documents reviewed included historic photographs, other written documentation about history and relevant historic contexts. Primary reference material for this study was obtained from the Fairfax County Courthouse and the Fairfax County Park Authority. A context history, as well as approximate chronology for the buildings, were developed based on the historical documentation gathered during the study.

Condition Assessment and Documentation

WJE performed a condition survey of the buildings on May 16, 17 and 31, 2017. WJE documented observations with digital photographs, field notes and annotations on sketch drawings prepared by the project team while on site. The condition assessment addressed the exterior and interior spaces and primary features of the buildings, as well as the roof and visible primary portions of the building enclosure systems. Archival documentation and physical evidence gathered during the field assessment were used to develop a chronology of design and construction. Exterior observations were performed from the ground with the use of binoculars (where needed) and from a 60-foot articulating aerial lift.

Evaluation of Significance and Integrity

An evaluation of the significance and integrity was prepared, taking into consideration guidelines provided by *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*.[1] This evaluation of history and significance provided the basis for the development of recommended treatment alternatives.

Guidelines for Rehabilitation

Based on the evaluation of historical and architectural significance of the structures, guidelines were prepared to assist in the selection and implementation of rehabilitation treatments.

[1] *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (Washington, D.C.: National Park Service, National Register of Historic Places, 1990, revised 1995).

Treatment Recommendations

The Secretary of the Interior's Standards for the Treatment of Historic Properties guided the development of treatment recommendations for the significant exterior and interior features of the building. Following the overall treatment approach of ***rehabilitation*** for the *house*, which ensures preservation of character-defining features while allowing new and continued use of the building. Specific recommendations were developed to address observed existing distress conditions, as well as, long-term preservation objectives.[2] A treatment approach of ***preservation*** is appropriate for the *barn* structure, which sustains the existing form, integrity and materials of the historic property.

Preparation of Historic Structure Report

Following the completion of research, site work and analysis, a narrative report was prepared summarizing the results of the research and inspection and presenting recommendations for treatment. The HSR was compiled following the guidelines of *NPS Preservation Brief 43: The Preparation and Use of Historic Structure Reports*, with modifications to organizational structure for purposes of this project.[3]

The report has been structured to discuss each building in total. That includes discussion on the exterior evaluation, exterior condition assessment, interior evaluation, interior condition assessment and related recommendations for that building.

DEVELOPMENTAL HISTORY

Historical Background and Context

The property developed by John C. and Margaret K. White in 1939 was part of a large land grant conveyed to King Charles II of England to a group of noblemen in the 1600s. The land was subsequently rented to farmers and other settlers and over time subdivided into smaller and smaller parcels. The historical narrative below describes the broader context for cultural use and settlement of the area prior to acquisition by the Whites. The historical narrative also provides information about the specific transactions leading to their ownership of the property and the changes made to the property during White ownership.

Early Contact and Settlement Period (1607–1685)

The English began to explore present-day Virginia during the sixteenth century. Little actual European settlement; however, occurred until the seventeenth and eighteenth centuries. In 1606, Capt. John Smith of the Virginia Company of London sailed to the New World to explore the region and identify possible colony sites under a charter provided by King James. Smith helped to establish a colony at Jamestown Island in 1607. In 1608, he left Jamestown and continued to explore the region by sailing the Chesapeake Bay and the rivers that emptied into it. Smith recorded his 3,000-mile journey in a series of maps and travel logs that serve as a record of American Indian settlements and other features present along the water courses that he traveled.

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[2] Kay D. Weeks and Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings* (Washington, D.C.: National Park Service, Historic Preservation Services, 1995).

[3] Deborah Slaton, *Preservation Brief 43: The Preparation and Use of Historic Structure Reports* (Washington, D.C.: National Park Service, Technical Preservation Services, 2005).

At the time, English colonists established a settlement at Jamestown Island, present-day Fairfax County was home to three American Indian groups—the Powhatan confederacy or chiefdom, the Manahoac and the Iroquois.[4] The Powhatan chiefdom was an association of tribes that paid tribute to a single leader. It generally extended through the Coastal Plain physiographic province between the James and York rivers, but also exerted some influence over the Algonquin-speaking people of the upper reaches of the Potomac River watershed. The Manahoac, along with other Siouan language speaking tribes, occupied the interior Piedmont south of the Potomac River watershed. The Iroquois entered the region from the north just prior to Contact.

Although these tribes encountered Europeans traveling through the region in search of resources as early as the sixteenth century, their lifeways were not extensively impacted until the English began to settle Virginia during the seventeenth century. Early English settlement tended to occur along navigable waterways, which also served as important routes of travel, and often served to displace American Indian groups. American Indians were also affected by the diseases introduced by the Europeans. Displacement led to armed conflict, territorial disputes, and other incidents that eventually resulted in the relocation of many indigenous groups.

Northern Neck Proprietary (1649–1690)

English settlement of the Virginia colony began in earnest after Charles II ascended the throne in 1649 following the execution of his father, Charles I, for treason. Soon after assuming the throne, Charles granted an approximately 5-million-acre tract of land, known as the Northern Neck Proprietary to a company formed by seven English noblemen and loyalists. The land was located between the Rappahannock and Potomac rivers within the eastern part of the Virginia colony. John Culpeper was one of the individuals involved in the company and a grantee.

At the time of his granting of the Proprietary, Charles II was forced into exile as a result of the changes to English monarchy privilege resulting from his father's rule. The English Commonwealth period lasted until 1660. During this period, the Proprietary was symbolic in nature. In 1660, the authority of the monarchy was restored, at which time the Proprietary's validity was also reinstated. John Culpeper, however, died in 1660. His claim to the Proprietary passed to his oldest son, Thomas Culpeper.

Charles II appointed Thomas Culpeper Governor of Virginia in 1677. Culpeper died in 1689 and family interest in the Proprietary passed to his wife and heir, Catherine Culpeper. Catherine married Thomas (1657–1709), 5th Lord Fairfax of Cameron, in 1690. The Fairfax family thereafter assumed the Culpeper interest in the Northern Neck Proprietary.

Between 1653 and 1742, four counties were formed from the Proprietary as settlement of Virginia increased. These included Westmoreland, Stafford, Prince William, and Fairfax. Fairfax County was formed in 1742 from portions of Stafford and Prince William Counties and named for Thomas, 6th Lord Fairfax. In 1757, the Virginia House of Burgesses passed an act dividing Fairfax County into two. Loudon County was established from the western portion of Fairfax at the time.

[4] Michael F. Johnson, *The Prehistory of Fairfax County, An Overview* (Fairfax, Virginia: Fairfax County, Heritage Resources Branch, 1986), 7.

Fitzhugh Ownership—Ravensworth (1685–1858)

The land associated with White Horticultural Park is principally situated on the 21,996-acre estate listed in the Northern Neck grant book, as patented by William Fitzhugh on October 1, 1694 from the Northern Neck Proprietary.[5] The property was originally granted to John Matthews on April 28, 1684 and apparently conveyed to William Fitzhugh in August 1685. By April 1686, Fitzhugh was making reference to tobacco shipments from his plantation, which he refers to as Ravensworth.[6] However, he is also listed as acquiring patent to the land in 1690 from Philip Ludwell. Records also indicate Fitzhugh's interest in renting land to or settling Huguenots on the property.[7] It appears that the 1690 deed may have been lost and a new deed was granted on October 1, 1694, by George Brent to confirm the title. A survey of the property was prepared in April 1694 by Samuel Wye. At the time, Fitzhugh also indicated his original acquisition of the property from John Matthews in 1685.[8]

Ravensworth occupied the south-central portion of present-day Fairfax County, stretching from Fairfax Courthouse to Shirley Highway south of Little River Turnpike.[9] Following Fitzhugh's death in 1701, the land was divided between his elder sons, William Fitzhugh, Jr., and Henry Fitzhugh. Henry Fitzhugh appears to have received the northern portion of the tract, which is associated with present-day White Horticultural Park. William Fitzhugh, Jr. maintained the name Ravensworth in association with his tract. Both men resided in Stafford County, and did not live on the property. The land was generally rented out until after the American Revolution. The land was predominantly farmed throughout the Fitzhugh tenure.[10]

At the time of the Revolutionary War, the tract owned by Col. Henry Fitzhugh (1723–1783) totaled 12,585 acres.[11] Ravensworth also remained in the Fitzhugh family. In 1789, a 2 acre parcel associated with William Fitzhugh's land was acquired by the Virginia General Assembly to establish the Fairfax County courthouse.[12] In 1796, William Fitzhugh built a plantation home known as Ravensworth in the area known as Annandale (Figure 1).

[5] Northern Neck Land Grant Book 2,14. A four-acre triangular tract associated with the White property was owned by the Carlyle and French families between the mid-1700s and the early 1800s. No development is known to have been associated with this portion of the property. See Ownership, 1858–1883 below for more information about the four-acre tract. Fitzhugh's will, dated 1701, bequeathed the property to his two elder sons, William and Henry. Nan Netherton et al., *Fairfax County, Virginia; A History* (Fairfax, Virginia: Fairfax County Board of Supervisors, 1992), 13, from Fairfax Harrison, *Landmarks of Old Prince William* (Berryville, Virginia: Chesapeake Book Company, 1964), 189.

[6] Harrison, Landmarks, 187–189.

[7] Ibid.

[8] Beth Mitchell, *Beginning at a white oak; Patents and Northern Neck Grants of Fairfax County* (Fairfax, Virginia: Fairfax County Board of Supervisors, 1979), 169.

[9] "Ravensworth," *Yearbook of the Historical Society of Fairfax County, Virginia, Inc.* 3 (1954): 15.

[10] Cecile Glendening, "Margaret White Horticultural Center," memo of historical summary to Michael Rierson, February 20, 2004, 1.

[11] Netherton et al., 161.

[12] Ibid., 43.

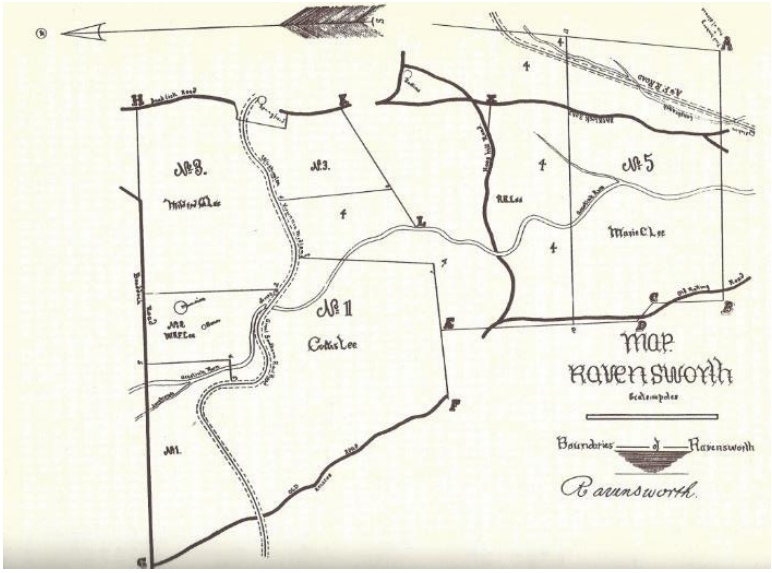

Figure 1. Survey of the southern part of Ravensworth, 1874.

Mordecai Fitzhugh ownership, 1783-1858

Colonel Henry Fitzhugh died in 1783, after which the property was divided between five sons—Nicholas, Richard, Mordecai, Battaile, and Giles—as recorded on a 1792 plat.[13] The northeastern corner of Colonel Fitzhugh's land contained the future White property; this portion of the land was acquired by Battaile Fitzhugh. Battaile later divided his inheritance and sold the northern third to his brother, Giles, in 1796.[14] Mordecai Cooke Fitzhugh (1767–1858) then purchased 600 acres containing the future White property from Giles in 1798.[15] Mordecai is known to have established a residence on his property, which was referred to as "Fontainebleau."[16] Mordecai Fitzhugh and his family are thought to have resided in a house near Holmes Run. Little else is known about the property, except that beginning in 1842, Mordecai Fitzhugh entered into a series of lawsuits against his neighbors, including Dabney Ball, Joseph Nicholson, James S. Scott, and William Ball. His complaints ranged from trespass, to holding land, constructing buildings and fences on his land. The records reside in the Chancery Court case file *Mordecai C. Fitzhugh V. Dabney Ball Etc.* located in the Library of Virginia's Circuit Court Records Preservation Program. Mordecai appears to have lost these cases, resulting in a resurvey of the northeast lines of his property.

Ownership, 1858–1883

Mordecai Fitzhugh died intestate in 1858, at which time his property was divided among his heirs. These included his widow, Mrs. Frances T. Fitzhugh, who received a dower tract measuring 375 acres associated with the family home and their eight children: Henrietta Fitzhugh Swann; Mary Ann Fitzhugh Mason; Fenton M. Fitzhugh; Amanda M. Fitzhugh Gooding; Frances M. (Fitzhugh) & Sanford Hutchinson; Lucinda Fitzhugh Henry; Juliana Fitzhugh Slade and Edwin C. Fitzhugh. Each child received roughly 175 to 275 acres. The future White property was included in the dower tract received by Mrs. Frances Fitzhugh.

An 800-square-foot wood two-story, three-bay, English bank barn that remains on the property today is thought to have been built in 1876 to accommodate agricultural use of the property (Figure 2**Error! Reference source not found.**).

[13] Fairfax County Deed Book (DB) A-2, 186; "Ravensworth," *Yearbook of the Historical Society of Fairfax County, Virginia, Inc.* 3 (1954): 20.
[14] Fairfax County DB Z-1, 236.
[15] Fairfax County DB A-2, 377.
[16] John H. Moore, Jr., "Fitzhugh Plantation House Still Stands," in *Echoes of History* 5(1):3–4. Pioneer Society of America, Falls Church, Virginia.

Figure 2. View of the barn south side, built circa 1876 (photo taken recently).

Mrs. Fitzhugh died in 1878. The Circuit Court ordered the dower tract divided by Special Commissioners of Fairfax County, ostensibly due to the earlier Chancery Court suits. The property was divided into five lots by the courts (Figure 3). Lot number 5, which totaled 103 acres and includes the land later associated with the White property, was assigned to daughters Mary Ann Mason and Henrietta Clews.[17] The sisters gifted the land to Mary Mason's son, James, in 1879.[18]

[17] Fairfax County court records, 1890-009.
[18] Fairfax County DB X-4, 379; also "The Story of Ravensworth; A History of the Ravensworth Landgrant in Fairfax County, Virginia," Available at http://ravensworthstory.org/land/2nd-partition/parcel-1-1-5/#borders (accessed May 1, 2017).

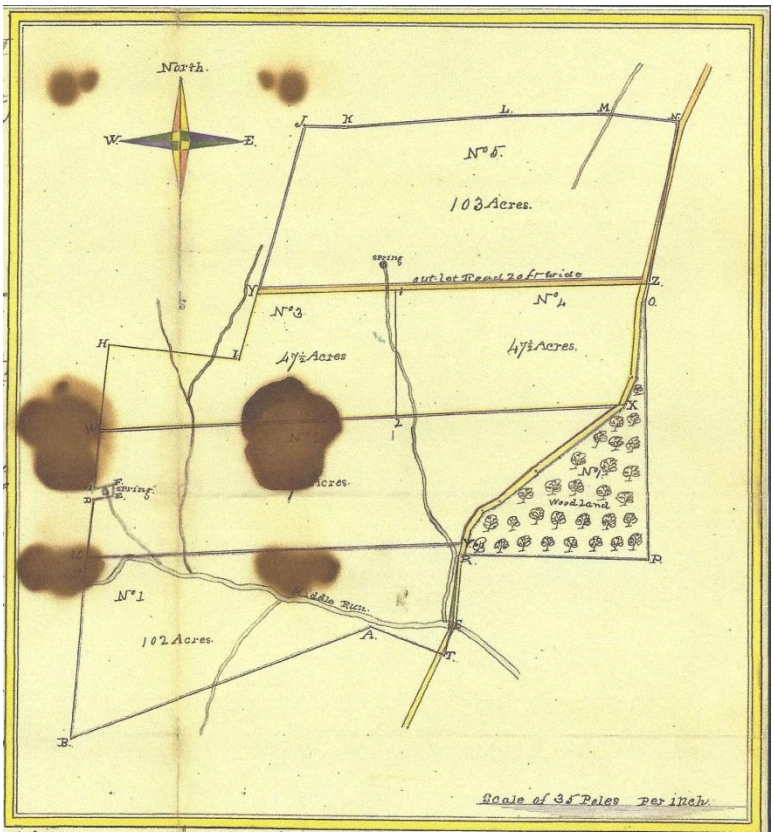

Figure 3. 1878 circuit court division plat (Fairfax County 1890-009).

During the fourth quarter of the nineteenth century, the northern 4 acre-portion of the future White property also changed hands. In 1876, owners of a small farm tract, Josiah H.D. Swoot and Frances P. Swoot, sold a 50 acre, 120-pole parcel of land to George S. Ely.[19] Ely was a farmer who is thought to have settled on the land. This land would later be part of the land acquired by Alfred Freeman in 1883.

Freeman Ownership, 1883–1920

In 1883, Alfred A. Freeman acquired 66 acres from James M. Mason on May 9 and another 4 acres from George Ely on September 17.[20] The White property falls within this parcel. Tax records indicate that there were buildings on the property valued at $1,000.[21] The property transfer of 4 acres from George Ely excluded a 30 foot by 100 foot strip of land along the northern margin to be used as a right-of-way corridor. It was shown on a tract map south of the "Garner garden."

Very little is known about the property during Freeman's period of ownership except that it was referred to as the "Home Place." Freeman also built a residence and at least one additional outbuilding on the property later acquired by the Whites.

In 1920, Alfred A. and Martha E. Freeman sold a 54.23-acre parcel to Thomas J. Pearson, which was described in the deed as part of the Alfred A. Freeman "Home Place." The deed referenced a 1908 survey prepared by Henry Crocker.[22]

[19] Fairfax County DB U-4, 499–500.
[20] Fairfax County DB C-5, 284–286; Fairfax County DB D-5, 373–375,
[21] John Milner Associates, Inc., *John C. and Margaret K. White Horticultural Park Landscape Management Plan* (Fairfax: Fairfax County Park Authority, January 2006), 2-1.
[22] This survey has not been located for this study, but would be of interest to acquire.

In 1922, Pearson sold the 54.23-acre property to Olive Portch.[23] The transaction similarly referenced a 30 foot by 100 foot excluded strip south of the Garner garden.[24]

In 1925, Olive R. and George S. Portch sold a 54.23-acre parcel to George T. Reeves and Annie J. Simcox. The transaction excluded a strip of land 30 feet by 100 feet that had been conveyed to Olive R. Portch by Thomas J. Pearson and his wife on October 22, 1922.[25]

In 1935, George T. and Mabel S. Reeves and Annie Simcox conveyed a 7.887-acre parcel to William Edward and Evelyn Catherine O'Haire.[26]

In 1936, George T. and Mabel S. Reeves and Annie J. Simcox acquired a 4.7-acre parcel from Alan F. Garner (Figure 4).[27] The parcel excluded a 30-foot-wide by 166-foot-long strip, described in the deed as acquired by John W. Garner from Alfred A. Freeman in 1916, as the unconveyed portion of a 1920 transaction between Alfred A. and Martha E. Freeman and Thomas J. Pearson.[28]

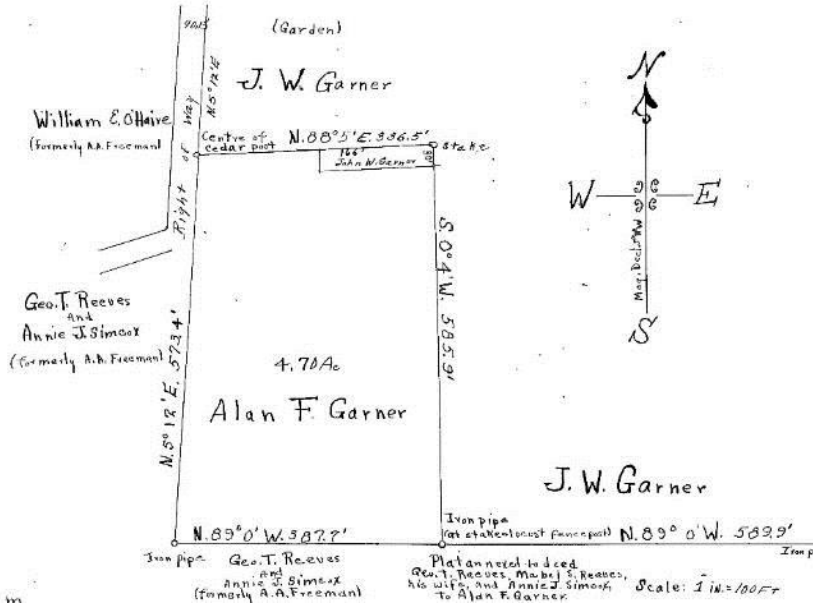

Figure 4. Reeves and Simcox property, and the 4.7-acre Garner property acquired in 1936.

In 1937, Reeves and Simcox sold three additional parcels to William E. and Evelyn Catherine O'Haire.[29]

[23] Fairfax County DBA-9, 157–158.
[24] Fairfax County DB Q-8, 447.
[25] Fairfax County DB A-9, 157.
[26] Fairfax County DB X-11, 552–553.
[27] Fairfax County DB L-12, 387–389.
[28] Fairfax County DB Q-8, 447.
[29] Fairfax County DB P-12, 538.

White Ownership, 1938

In July 1938, the Whites acquired a 7.76-acre property (Parcel B/2) near Falls Church, Virginia, from William E. O'Haire and Evelyn C. O'Haire.[30] In 1939, the Whites acquired a 3.1-acre parcel (Parcel A/3) from George T. and Mabel S. Reeves, Annie J. Simcox, and William E. and Evelyn C. O'Haire. They also acquire a 1.84-acre parcel from the O'Haires (Parcel C/4) and another that measures 3190 square feet (Parcel D/5).[31]

The 1939 deed includes a survey completed in 1939 (Figure 5) that shows the composition of the four parcels, labeled A, B, C, and D. Parcel A is recorded at 3.1 acres, Parcel B at 7.76 acres, Parcel C at 1.84 acres and Parcel D at 3,190 square feet. Rights of way are shown along the margins of the parcels.

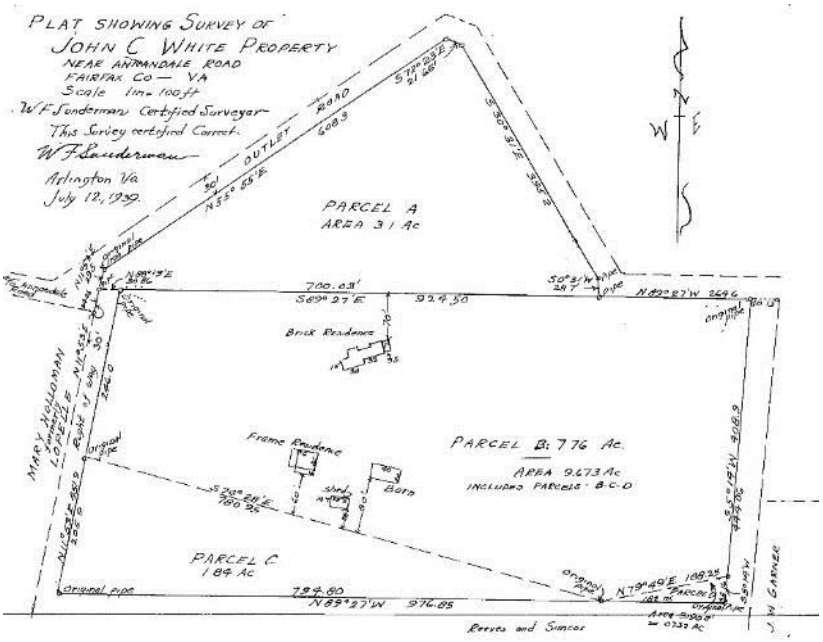

Figure 5. 1939 Plat of White property. Source: W.F. Sunderman, certified surveyor, Arlington, Virginia, July 12, 1939. (DB 0-13, 355).

Several rights of way edged the property when the Whites purchased the land. These were located along the western, northern and eastern boundaries. One was at the foot of Hawthorne Lane, which crosses what is now Princess Anne Lane and served as the driveway for getting into the White and Kennedy properties by going around the Hollowman farm to the west of the White property. Kerns Road, a dirt road named for a local dairy farmer, edged the property. There was also a connector to the county road referred to as the Annandale to Falls Church Road. The road that is now called Princess Anne Lane was also a dirt road. A creek nearby always used to flood the road.

Mr. and Mrs. White moved to Fairfax County from Washington D.C. just as the formerly open farm land of the area was beginning to experience suburban development. During the late 1930s, the federal government began to expand, attracting professionals and business people to relocate to the city. As a result, suburban residential communities began to develop in response to the rising demand. A concurrent rise in the number of people who owned automobiles contributed to the suburbanization of the D.C. metro area. As land prices rose, the economic viability of farming started to decline, further leading to development.[32]

[30] Fairfax County DB B-13, 389–391.
[31] Fairfax County DB O-13, 353–355.
[32] Nan Netherton, "End of the Agricultural Era," in *Fairfax County, Virginia A History 1978,* (Fairfax: Fairfax County Board of Supervisors, 1978), 549, 558.

The land acquired by the Whites was in an area characterized by family farms. There were few residences in the area and the property was relatively isolated. There was only one house nearby and it was located along Annandale Road.[33] Otherwise, the region was composed of fields as seen in a 1937 aerial photograph of the property (Figure 6).[34] Douglas White suggests that the family found evidence on the property that it had been used previously as a pig farm, including feeding dishes for the pigs that were buried in the garden areas.[35]

Figure 6. 1937 aerial photograph of the White property prior to development of the White house and gardens.

Present on the property at the time of the sale were a house, a chicken house and a barn (Figure 7, Figure 8, and Figure 9). The chicken house, sometimes referred to as the tool house, which had been used by a previous owner to raise fancy fowl. To the north of the house was the trace of a road that had once connected Annandale and Sleepy Hollow roads. It pre-dated Kerns Road, closely passing the site of the Freeman House. Mrs. White believed that Alfred Freeman, tired of having traffic pass his back door, decided to purchase a triangle of land north of the house on which to establish a right-of-way for Sleepy Hollow Road. Mrs. White believed that a row of maples in the north woodlands follows the alignment of the road.[36] Part of the Freeman property, located to the east of the White property, was given to Freeman's daughter when she married a Mr. Garner. This land is now the adjacent Goldsboro neighborhood.

[33] Margaret K. White, personal interview, June 15, 2001. The address for the property was Annandale Road. The name changed to Princess Anne Lane after the adjacent development was completed. Mrs. White did not like the name and applied for permission to name the right-of-way along the edge of the property and use that as her address. She named it Hawthorne Lane. It ran up to the Kennedy property, part of the original Fitzhugh Grant. It was still present in 2001.
[34] ERSI, "Historic Imagery Viewer," aerial view of 3301 Hawthorne Lane, Falls Church, VA 22042, 1937, Available at http://fairfaxcountygis.maps.arcgis.com/apps/webappviewer/index.html?id=0612f9deb6bb4f0a9fa5cdce0cc75144 (accessed May 2, 2017).
[35] Douglas White interview with Clare Jeter, June 2, 2016.
[36] Margaret K. White, personal interview, June 15, 2001.

Figure 7. House that pre-dated White ownership and was moved in 1939.

Figure 8. View from the new house of the chicken house (left), the barn (center), and the previous house after being moved (right).

Figure 9. North and south views of the barn c. 1940.

The White property also featured a large oak tree and a rock outcrop that formed a small hill near the house. The Whites believed that the stone foundation of the barn and the surface of a road that once crossed the property was quarried from the rock outcrop. The property contained a dirt driveway.

The Whites decided to build a new brick home on the high point of the knoll, where a circa 1900s house already stood. In order to build their new home the Whites first had to relocate the existing house, which they moved near the barn.[37] It served as a residence for live-in help for a few years, but during the 1940s, it was locked and abandoned.[38] The Whites engaged Washington, D.C. architect, Joseph Harry Lapish, to design their home. Lapish had studied at George Washington University and the Ecoles de Beaux Arts and was in practice in the Washington, D.C. area.[39] His work is recorded as part of the Historic American Engineering Record documentation of the Uline Arena located at 1140 3rd Street, NE, Washington, D.C. The documentation indicates that Lapish was considered a "master of the unusual shell concrete construction" as seen in his involvement with the design and construction of army hangars in Puerto Rico and two navy hangars in San Diego, dating to the same time period as the Uline Arena."[40] Lapish was also involved in a group of architects who organized to assist Perpetual Building Association (PBA) with a project that would provide "architectural advice and assistance with construction supervision for new home builders as part of its lending services."[41] This group was called the Architects Small Home Service and gained the endorsement of the Washington Chapter of the American Association of Architects.[42] They created six standard house plans for the program, which became the national model for savings and loans and was later referred to as the "Washington example."[43] Lapish completed plans for the Whites' 2,340-square-foot house in 1938 and construction was finished in 1939 (Figure 10).[44] At the same time, the Whites modified the barn to serve as a garage and play area for their five children.[45]

The Whites were also eager to improve the appearance of the property. They immediately removed large yews (*Taxus baccata*) from the former house site, as well as rows of Norway maple (*Acer platanoides*) from along the property boundary. They cleared other unwanted vegetation, while lining the driveway with maple trees. Concerned about the potential for their neighborhood to be developed, John White started to plant trees around the edge of the property.[46] A willow oak (*Quercus phellos*) that currently stands in front of the house between the driveway and the building was planted around 1942 or 1943.[47] He also noted that there was also a flagpole in the area at the time.

During the 1940s, development within Fairfax County slowed as a result of World War II. The Whites increased their home production of food by raising chickens and two pigs, while establishing a large fenced vegetable garden behind the barn.[48] Mrs. White continued to maintain the vegetable garden for years after the war ended.[49] The Whites later expanded the garden after abandoning the pigs.[50]

During the late 1940s and early 1950s, development on the land surrounding the White property began to increase dramatically. Former farmland quickly evolved into a suburban landscape. Douglas White believes

[37] John Milner Associates, Inc., Landscape Management Plan, 2-2.
[38] Ibid.
[39] Historic American Engineering Record, "Written Historical and Descriptive Data Field Records- Uline Arena" (Field Records, Washington, D.C., 2010), Pg. 2.
[40] Obituary, Washington *Star*, February 8, 1948, A24.
[41] EHT Traceries, Inc., "Silver Spring Branch Office of Perpetual Building Association 8700 Georgia Avenue, Silver Spring, Maryland," (Washington, D.C., December 31, 2007), 9.
[42] Ibid.
[43] Ibid.
[44] Joseph Lapish, architectural drawings, White House, September 28, 1938. Historic American Engineering Record, "Written Historical and Descriptive Data Field Records- Uline Arena" (Field Records, Washington, D.C., 2010), 2.
[45] John Milner Associates, Inc., Landscape Management Plan, 2-2.
[46] Margaret K. White, personal interview, June 15, 2001.
[47] Douglas White interview with Clare Jeter, June 2, 2016.
[48] Ibid.
[49] Margaret K. White, personal interview, June 15, 2001.
[50] Douglas White interview with Clare Jeter, June 2, 2016.

his father began planting trees and shrubs on the property during the late 1940s and early 1950s, partially in response to changes in the surrounding landscape.

Eventually, residential subdivisions of single-family homes would be established around the White House property on all sides. An aerial photograph dated 1953 shows an increase in development along the roads surrounding the property, although open land also remained nearby.[51]

With the encroachment of development, the address of the White property was changed from Annandale Road to Princess Anne Lane. Margaret White, wanting to maintain the rural vernacular character of her property, requested permission to name the right-of-way along the edge of the property and use that as her address—Hawthorne Lane.[52]

In 1955, the Whites engaged the architectural firm McGaughan + Johnson architects of Washington, D.C., to design a new glass porch addition for the house.[53] The drawings were completed in 1958 and the porch was completed by 1959. The porch was designed in the mid-century modern style that was popular at the time (Figure 10). The porch both took advantage of the prevailing breezes in the summer and allowed the Whites to view the gardens which were quickly becoming an important part of their lives (Figure 11). [54]

Figure 10. Margaret White house; note 1958 glass porch addition (FCPA 2013)

[51] ERSI, "Historic Imagery Viewer," aerial view of 3301 Hawthorne Lane, Falls Church, VA 22042, 1937, Available at http://fairfaxcountygis.maps.arcgis.com/apps/webappviewer/index.html?id=0612f9deb6bb4f0a9fa5cdce0cc75144 (accessed May 2, 2017).
[52] Margaret K. White, personal interview, June 15, 2001.
[53] Photo: "Addition to Residence of Mr. & Mrs. John C. White, Fairfax, Virginia, architectural drawings," date accessed: March 25, 2016.
[54] Fairfax County Park Authority, "Inventory of Historic Places Nomination for the John C. and Margaret K. White Horticultural Park" (2013), 4.

Figure 11. View of the gardens from the glass porch.

It was also during the 1950s that the Whites hand-dug a pond in the southeast corner of the property to fill their interest in having a water feature. The pond was watered by the outflow of a natural spring.[55] They planted wildflowers and ferns around the pond. An additional small stream was once located at the edge of the property, but is no longer present due to encroaching subdivision of the surrounding lands.[56] They also built a clay tennis court with a tractor by the area they referred to as "the mountain," which was where stone was quarried for the barn foundation. The clay required so much maintenance that the Whites let it go.

After their children left for college in the late 1950s and 1960s, the Whites became more focused on their gardens. Most of the work in the gardens was done personally by Mr. and Mrs. White.[57] Although the exact date is not currently known, John White added a greenhouse adjacent to the house (Figure 12) and a nearing frame near the chicken house, which he kept full of cuttings. White propagated plants from cuttings, rather than breeding plants.[58] The nearing frame was referred to as the camellia house. John's earliest cuttings came from plants advertised in nursery catalogs. He is known to have propagated rhododendrons, boxwoods and other evergreen species, to plant on the property. Mrs. White recalled that all of the boxwoods growing on the property originated from two small plants that she and her husband purchased.[59] As Mrs. White recalls, they "never had an overall plan or garden design. It just grew over time."[60] Like the circa 1900s house and chicken house, the greenhouse is no longer extant (although the partial height brick walls at the perimeter of the greenhouse are still present).[61]

[55] Fairfax County Park Authority, *John C. and Margaret K. White Horticultural Park Master Plan* (Fairfax: Fairfax County Park Authority, 2006), 11.
[56] Margaret K. White, personal interview, June 15, 2001.
[57] Douglas White interview with Clare Jeter, June 2, 2016.
[58] Margaret K. White, personal interview, June 15, 2001.
[59] Ibid.
[60] Ibid.
[61] Fairfax County Park Authority, Master Plan, 3.

Figure 12. The greenhouse; date of photograph unknown.

Don Hyatt, a friend of Mr. and Mrs. White, has noted, "with respect to garden design, I remember them saying that having visited mature rhododendron gardens in the UK, they realized that those plants needed to be viewed from a distance when they gained size." Hyatt observed that the Whites were interested in establishing "garden rooms with plants around the perimeter of open areas rather than planning flower beds separated by paths."[62] Douglas White noted in a 2016 interview that his parents had modeled their garden to a degree on Wintertour in Delaware, with azaleas all through the woods and along the edge of the woods. He also described the property as a tree garden. They used woodlands to contain spaces as well as to screen views of nearby development.[63]

As part of their passion for rhododendrons, the Whites traveled to western North Carolina/eastern Tennessee to visit the Great Smoky Mountains, where many azaleas grow naturally. From these trips, they brought back ideas for the garden.[64] They also acquired their rhododendron hybrids from Joe Gable, "a pioneer rhododendron hybridizer in Stewartstown, Pennsylvania."[65] They learned about Gable by reading a 1954 article titled: "The Flowering Forest of Joe Gable."[66] They may also have acquired camellia hybrids from Dr. William Ackerman, the camellia expert at the National Arboretum and former member of the Camellia Society.[67] In the early 1970s, the Whites joined the American Rhododendron Society. The Potomac chapter often met at the White property.

John White died in 1979. After John's death, one of the rhododendrons located north of the house was named by American Rhododendron Society member George Ring the "John C. White" rhododendron. The cultivar was bred by Ring and cultivated by the Goodgriches, also members of the Society.[68] Later, Society members would also name a "Margaret K. White" rhododendron. After John White's death, Mrs. White hired a neighbor, John Kennedy, to help her care for the gardens and to mow the meadow.[69]

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[62] Don Hyatt (friend of J.C. and Margaret K. White), communication with Clare Jeter.
[63] Don Hyatt, "The John C. and Margaret K. White Horticultural Center," Available at https://www.tjhsst.edu/~dhyatt/mwhite/ (accessed May 1, 2017).
[64] Don Hyatt (friend of J.C. and Margaret K. White), communication with Clare Jeter.
[65] Ibid.
[66] Henry R. Yates, "The Flowering Forest of Joe Gable," *Journal American Rhododendron Society*, 21 no. 2 (April 1967), Available at http://scholar.lib.vt.edu/ejournals/JARS/v21n2/v21n2-yates.htm (accessed May 3, 2017).
[67] Kathleen Graham (member of the Camellia Society of the Potomac Valley), communication with Clare Jeter.
[68] Margaret K. White, personal interview, June 15, 2001.
[69] Douglas White interview with Clare Jeter, June 2, 2016.

During the 1990s, Mrs. White was approached by developers about plans to develop the property into 22 lots for single family residential homes.[70] Douglas White remembered finding a document from OT & W.A. Carr Builders that stated "The following are our estimates on the proposed new residences…"[71] Margaret White, in a 2001 interview, recalled, "I couldn't bear to see the plants torn up or trees cut down and turned into more housing. For a long time I wished I could afford to give it to the County. Then someone suggested the County might be willing to pay me something for it. I had to decide between not denying my children, selling to developers and what I was willing to take for it. No one will ever know what sacrifice the children were willing to make by not selling to developers. It was the children who made the sacrifice, not me."[72]

In October 1999, Mrs. White sold the property to Fairfax County.[73] The deed indicated that Mrs. White would receive a life estate and would continue to oversee the day-to-day workings of the gardens while residing on the property.[74]

In 2003, the original residence was moved by the Whites to accommodate their brick home suffered damage as a result of Hurricane Isabel and was removed.[75]

In 2006, Fairfax County Park Authority engaged John Milner Associates, Inc. to prepare a Landscape Management Plan for the property, while concurrently developing a Master Plan. After these documents were completed, volunteer crews began to assume responsibility for some of the garden work using the plans for guidance.[76]

Mrs. White died in 2010. The local community continues to take a strong interest in the care and maintenance of the gardens developed by the Whites. Neighbors actively participate in public meetings and volunteer days to help out with the small residential park.

In 2013, Fairfax County Park Authority prepared a historic inventory nomination for the property.
An internet posting dated 2016 indicates the following plans are underway for the White Garden:

> A community meeting was held on June 2, 2016, to discuss planned improvements at the John C. & Margaret K. White Gardens in Falls Church, Virginia. Tucked away in a residential area, this 13.6-acre park is characterized by a perimeter of maturing woodlands and an extensive collection of cultivated ornamental shrubs, such as azaleas and rhododendrons. The property includes several structures, including a circa-1876 barn and a 1940s residence. White Gardens is named for the property's most recent owners, John C. and Margaret K. White who established their family home and gardens there in the mid to late 1900s. They sought to have the gardens enjoyed by the public and engaged the Park Authority to preserve the gardens following the expiration of a life estate for Mrs. White which occurred in 2010.
>
> Prior to her death, Mrs. White asked that a master plan be established. Using a horticultural landscape and treatment plan as a basis, the master plan was developed through an extensive public process and approved by the Park Authority Board in 2006. The master plan guides future park improvements and funding for initial park improvements was included in the 2012 Park Bond, in the amount of $500,000.
>
> At the public meeting, Fairfax County Park Authority representatives presented the proposed scope and schedule for $500,000 in improvements at White Gardens. They shared the agency's approach

[70] Ibid.
[71] Ibid.
[72] Margaret K. White, personal interview, June 15, 2001.
[73] Ibid.
[74] John Milner Associates, Inc., Landscape Management Plan, 2-4, 2-5.
[75] Ibid., 2-2.
[76] Douglas White interview with Clare Jeter, June 2, 2016.

to site management, including garden collections protection, historic structures preservation and interpretation, and natural resource restoration, trails, wayfinding and entry road resurfacing. No funding is included to establish a formal vehicle entrance at this time. Community members were asked for input on the proposed improvements.

Phase I Development will focus on site management and the protection of natural, historic, and cultural resources. These recommended improvements will enhance the walkability to and through the site, create more opportunity for the public to engage in physical activity and greater access to the historic property and open space provided at the park. No offsite work will be included in the scope of work at this time.[77]

Chronology of Development and Use

1649 King Charles II of England grants seven English noblemen the Northern Neck Proprietary, an area associated with the portion of present-day state of Virginia bounded by and within the heads of, the Potomac and Rappahannock Rivers, an area that includes approximately one-fifth of the state.[78] Thomas, Lord Culpeper, one of the seven English noblemen, eventually acquires the entire Northern Neck Proprietary. Upon his death, the land passes to his wife, Margaret, Lady Culpeper.

1685 William Fitzhugh secures a patent for 21,996-acres acres of land within the Northern Neck Proprietary from John Matthews. The property becomes known as Ravensworth.

1694 Fitzhugh's patent is recorded and his land surveyed.

1701 William Fitzhugh dies. Ravensworth passes to two of his sons, William and Henry Fitzhugh.

c. 1783 The northern section of Ravensworth, totaling 12,585 acres, is owned by Col. Henry Fitzhugh. Col. Fitzhugh dies and the property is divided between his five sons. Mordecai Fitzhugh inherits the part of the property the Whites later purchase.

1858 Mordecai Fitzhugh dies. The property passes to his heirs. The property later acquired by the Whites is inherited by daughter Mary Ann (Fitzhugh) Mason and gifted to son James Mason.

c. 1876 A barn is built on the land later acquired by the Whites.

1883 Alfred Freeman acquires two parcels totaling 70 acres from George Ely and James Mason. He builds a home on the property in the vicinity of the later White House. Freeman's house appears to have been lost to fire at a later date.

c. 1900s A small house is built on the property to replace Alfred Freeman's House.

1920 Alfred A. and Martha E. Freeman sell a 54-2/3-acre property to Thomas J. Pearson.[79]

1922 Thomas J. and Luella N. Pearson sell a 54-2/3 acre parcel to Olive R. Portch.[80]

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[77] Fairfax County Park Authority, "Improvements Planned at White Gardens," Available at http://www.fairfaxcounty.gov/parks/plandev/white-park.htm (April 30, 2017).
[78] A. Smith Bowman, Jr., "A History of Sunset Hills Farm," *Historical Society of Fairfax County, Virginia, Inc. Yearbook* 6 (1958–1959): 36.
[79] Fairfax County DB Q-8, 447–448.
[80] Fairfax County DB X-11, 157–158.

1925 Olive R. and George S. Portch sell half interest in a 54-2/3-acre parcel each to George T. Reeves and Annie J. Simcox.[81]

1927 John Carpenter White and Margaret Keister are married. Margaret, originally from Pennsylvania, majors in economics at Wellesley College and then attends Brookings Institute in Washington D.C. John, who holds a law degree from University of Texas, attends a Ph.D. program in economics at the Brookings Institute, where the Whites meet. John later practices law in Washington D.C. The Whites raise five children.

1935 Parcel B of the White property (7.76 acres) is acquired by William E. O'Haire, Evelyn Catherine O'Haire from George and Mabel S. Reeves and Annie J. Simcox.[82]

1938 The Whites purchase a 7.76-acre property (Parcel B/2) near Falls Church, Virginia, from William E. O'Haire and Evelyn C. O'Haire.[83] They engage architect Joseph Harry Lapish to prepare plans for a house for the property. While the Whites waited for their house to be built, they rent a house in Alexandria. While there, John starts a garden in the vacant lot next door, which initiated a lifelong interest in gardening.

1939 Construction of the White House is completed and the Whites move in. They clear existing yews from around the house and Norway maples from the property line, while otherwise working to improve the appearance of the property. The Whites also renovate an existing barn on the property by reflooring it with hardwood for the children to use for play.

1939 The Whites acquire a 3.1-acre parcel (Parcel A/3) from George T. and Mabel S. Reeves, Annie J. Simcox, and William E. and Evelyn C. O'Haire. They also acquire a 1.84-acre parcel from the O'Haires (Parcel C/4) and another that measures 3190 square feet (Parcel D/5).[84]

1948 The Whites acquire a parcel totaling 17,762 square feet (current Parcel 1) from Harold S. Kennedy and Agnes M. Kennedy.[85]

1950s The Whites add a small pond in the southeast corner of the property and plant wildflowers and ferns around it. The Whites also build a clay tennis court near the barn.

1958 The Whites engage the firm of McGaughan & Johnson Architects of Washington, D.C. to design a porch addition for their house. The new porch replaces an earlier porch that did not take advantage of the prevailing breezes from the west. The new porch also affords views of the garden.

1959 A letter dated July 17 from Hugh B. Johnson notes "I hope you are getting along well with the "porch" now and the air conditioning. We have heard about the difficulty over low voltage. Please let me know if you need any further help."

1960s The Whites begin to grow rhododendrons after ordering from a nursery catalog. John White also begins to propagate rhododendrons, boxwoods and camellias, building a small propagation house

[81] Fairfax County DB P-9, 204–205.
[82] Fairfax County DB X-11, 552–553.
[83] Fairfax County DB B-13, 389–391.
[84] Fairfax County DB O-13, 353–355.
[85] Fairfax County DB 667, 258–259.

structure near the barn. They also plant various other ornamental plants on the property, expanding and enhancing their garden.

c. 1972 The Whites visit the National Arboretum. While there, they become intrigued by an exhibit of rhododendron blossoms where they learn about the American Rhododendron Society. They join the Society (the local chapter is currently known as the Potomac Valley).

1973 Margaret and John White acquire "Parcel C" (0.226 acres) from William H. Kennedy and Rita McGuire Kennedy. This is later referred to as a quitclaim parcel.[86]

1979 John C. White dies.

1999 Fairfax County Park Authority acquires six parcels of land from Margaret K. White through Special Warranty Deed with Retained Life Estate.[87] The deed indicates that the property will be named the "John C. and Margaret K. White Horticultural Park" once Mrs. White vacates the life estate. The deed further stipulates that "the Property is being conveyed upon the express, accepted and agreed upon conditions that until September 30, 2075, the Property shall only be used primarily as a horticultural park and shall not be used for golf or equestrian activities and athletic fields." The Nature Conservancy and American Horticultural Society are granted legal standing to enforce the covenants in the deed.

Exhibit A describes the parcels that comprise the White property: Parcel 1 (17,762 square feet); Parcel 2 (7.76 acres); Parcel 3 (3.1 acres); Parcel 4 1.84 acres); Parcel 5 (3,190 square feet); and Parcel 6 (30-foot outlet road). A 30-foot-wide strip of land is indicated as quitclaimed property in Exhibit A that appears to represent Parcel 6.

2001 Margaret K. White is interviewed on June 15, 2001, by a representative of Fairfax County Park Authority as a way to learn more about the history of the property.

2007 Fairfax County Park Authority posts a modification to the Special Warranty Deed with Retained Life Estate for the White property. The modification indicates a change in the name of the property to John C. and Margaret K. White Gardens at the time the retained life estate is terminated.[88]

2010 Margaret White dies.

2016 Douglas White, son of Margaret and John White, conducts a personal interview with Clare Jeter on June 2, 2016. The interview fills in several gaps in the understanding of the history of the property.

A Friends group is being organized to help support and maintain the gardens at the John C. and Margaret K. White Horticultural Center.[89]

[86] Fairfax County DB 3913, 476–478.
[87] Fairfax County DB 11134, 0060–0067.
[88] Fairfax County DB 19232, 1671–1675.
[89] Don Hyatt, "The John C. and Margaret K. White Horticultural Center," Available at https://www.tjhsst.edu/~dhyatt/mwhite/ (accessed April 30, 2017).

PHYSICAL DESCRIPTION AND CONDITION ASSESSMENT

Site

Overview Description of the Property

The John C. and Margaret K. White Gardens property is located at 3301 Hawthorne Lane, Falls Church, Virginia and falls within the Mason Supervisory District and Jefferson Planning District. The 13-acre parcel currently falls within a thickly settled suburban neighborhood located approximately 10 miles west of Washington D.C. The east subdivision is known as Sleepy Hollow Park, accessed by Goldsboro Road. Residences located to the south are part of the Icabod Grove neighborhood, accessed by Korseman Lane and Wraywood Place, which arise from Kennedy Lane. Residences to the west fall within the Knollwood subdivision, accessed from Nicholson Road, Rolfs Road and Princess Anne Lane all of which arise from Holloman Road. To the north is a row of houses that face Kerns Road. The Garner Acres subdivision is located to the northeast (Figure 13).[90]

Currently owned by Fairfax County and administered by Fairfax County Park Authority, the property constitutes the former residence of John C. and Margaret K. White, who built a house on the property in 1938 and 1939 and later translated their love of plants into an impressive complex of gardens that is currently open to the public. In addition to designed shrub and flower borders, woodland rambles, a large meadow and a pond, the property features a late nineteenth century barn, entry drive, walks, and paths. A notable feature of the gardens is its extensive collection of rhododendron and azalea species.

Although the property, which encompasses tax parcels 60-2 (1) 20, 60-2 (1) 21, and 60-2 (1) 22, was transferred to Fairfax County ownership in 1999, Mrs. White maintained a life tenancy until her death in 2010. During her later years, Mrs. White engaged a caretaker to help with upkeep and maintenance of the gardens. Since 2010, volunteers have assisted the county in these efforts.

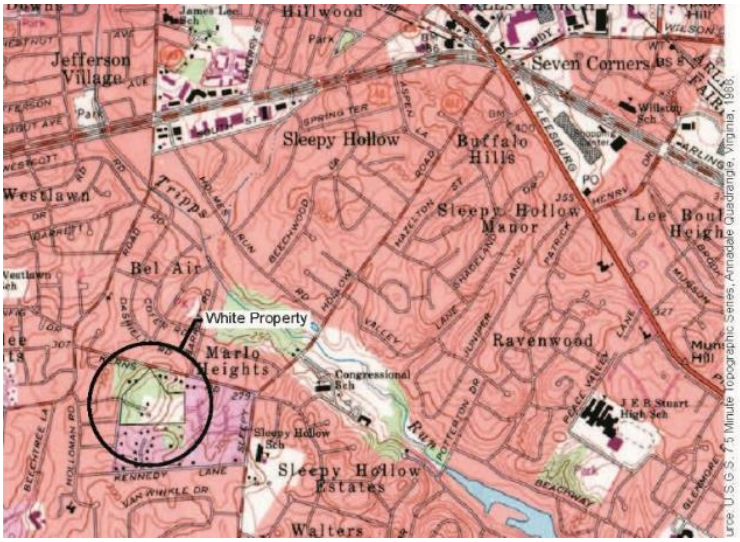

Figure 13. Context/location map, White House property. (JMA, Landscape Management Plan, 2006)

[90] Fairfax County Park Authority, Master Plan, 1.

Site Features

Visitors access the property from Princess Anne Lane, following an earthen driveway southeast to a circular turnaround set between the house and barn (Figure 14). The property address is marked by a small wood sign near the driveway entrance and a Fairfax County Park Authority identity sign is located further along the driveway. A brick walkway connects the barn and the house and edges the driveway circle to the east. A large willow oak (*Quercus phellos*) tree stands in front of the house. Portions of the brick walk are buckling as a result of tree root growth.[91] Additional paths lead through the gardens to the north and west of the house (Figure 15 and Figure 16) and to the south of the driveway toward the southwestern corner of the property.

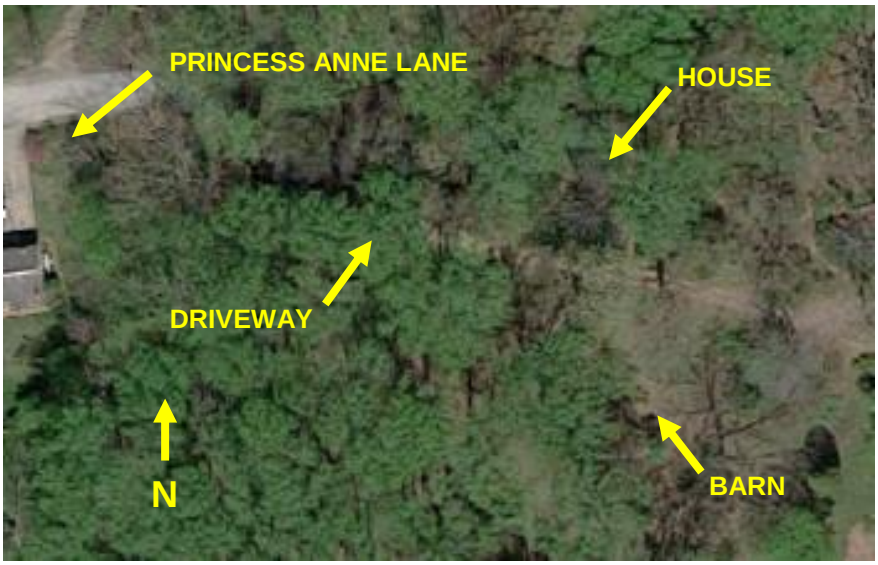

Figure 14. Aerial view of Margaret White house and barn (Google maps).

Figure 15. Current view of house from the pathway that leads from the home into the gardens.

Figure 16. Current view of paths that lead from the home to the gardens on the north and northwest sides of the property.

[91] Douglas White interview with Clare Jeter, June 2, 2016.

Garden Areas

The White Gardens were developed beginning in the late 1940s. The Whites especially enjoyed planting and propagating ornamental evergreen species, including rhododendrons and azaleas. As members of the American Rhododendron Society the Whites contributed to work conducted by local area residences in developing new cultivars. Based on these contributions, rhododendron cultivars were named for both John and Margaret White (Figure 17).

Figure 17. Rhododendron "John C. White" (left) and Rhododendron makinoi 'Margaret White" (right). (FCPA)

After John C. White died in 1979, Margaret White continued to enhance the gardens and maintain them. Faced with increasing pressure by developers to establish residential subdivisions on her property, Mrs. White decided to preserve the gardens by entering into an agreement to transfer the property to the county with the provision that it would be administered by Fairfax County Park Authority as a horticultural center.

Preparation of a landscape management plan in 2006 suggested division of the property into several character areas based on the existence of such features as woodland areas, shrub borders and meadow (Figure 18). The areas are referred to as the North, East, and West Woodlands; Upper and Lower Gardens; Field Area; Residence Surrounds; and Utilitarian Area in the landscape management plan.[92]

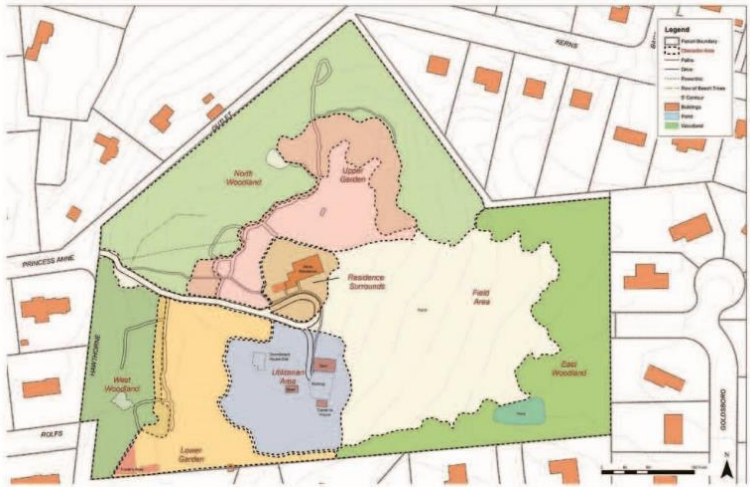

Figure 18. Garden areas and buildings associated with the White House property. (JMA, Landscape Management Plan, 2006)

[92] John Milner Associates, Inc., Landscape Management Plan, 1-6.

North Woodlands

The woodlands that frame the property to the north occupy approximately 3-1/2 acres. It occupies relatively steeply sloped topography that slopes toward the northern property boundary. Dominant canopy tree species include tulip popular (*Liriodendron tulipifera),* red oak (*Quercus rubra*) and hickory *(Carya* spp.). A line of beech (*Fagus grandifolia*) trees planted by John White form the southwestern corner of the woodland.[93] Hard-packed earth trails also extend throughout the woodland; some of the paths are edged by small benches.

East Woodlands

Woodlands along the eastern property boundary total approximately 2 acres and contain a small spring-fed pond, while those located along the western margin occupy approximately 1 acre. The east woodland occupies bottomland and contains a combination of ornamental and native plants.[94] There are open woodlands with grassy understory, as well as areas of more developed understory such as around the pond. Dogwoods (*Cornus florida*) and redbuds (*Cercis canadensis*) line the property in this area.[95] There are few paths that extend through the east woodland.

West Woodlands

The west woodland is very similar to the north woodland, although it has a denser understory and is overrun with invasive species, including English ivy (*Hedera helix*).[96] Fences edge the property boundaries in several locations as these are property lines of adjacent neighborhoods.

Upper Garden

To the north of the house is an extensive rhododendron and azalea garden that occupies a level area approximately 1-1/2 acres in size. It is edged in turn to the north and west by woodland gardens. This upper garden area features defined garden beds and shrub massings composed of species such as rhododendrons and azaleas (*Rhododendron spp.*), camellias (*Camellia spp.*), Japanese andromeda (*Pieris japonica*), dog hobble (*Leucothoe fontanesiana*), dwarf fothergilla (*Fothergilla gardenii*), bush honeysuckle (*Lonicera spp.)* and spicebush (*Lindera benzoin*).[97] The Whites established a clay tennis court in this area that was later replaced with gardens after it proved to require more maintenance than pleasure.[98] This garden area features a series of "outdoor rooms" created by the garden beds and massed shrub plantings.[99] Grass paths and small benches edge many of the garden areas.[100] It also features an outcropping of stone that includes quartz. This stone is thought to have been quarried to construct the barn foundation.[101]

Lower Garden

To the southwest of the house is an additional shrub garden, similarly edged by woodlands to the west. The approximately 1-1/2-acre lower is comprised of shrub and garden beds, trees and meandering pathways. Rhododendrons and azaleas are also prominently featured within this garden area. There are also perennials in some of the beds.[102] Although this area contains several interesting specimens, it has been negatively affected by the encroachment of invasive species.[103]

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[93] John Milner Associates, Inc., Landscape Management Plan, 4-5.
[94] Fairfax County Park Authority, Master Plan, 10.
[95] John Milner Associates, Inc., Landscape Management Plan, 4-8.
[96] Ibid., 4-8.
[97] Ibid., 4-14.
[98] Douglas White interview with Clare Jeter, June 2, 2016.
[99] John Milner Associates, Inc., Landscape Management Plan, 1-4.
[100] Fairfax County Park Authority, Master Plan, 8.
[101] Douglas White interview with Clare Jeter, June 2, 2016.
[102] Fairfax County Park Authority, Master Plan, 9.
[103] John Milner Associates, Inc., Landscape Management Plan, 1-4.

Field Area

To the east of the house and barn is a large open field, approximately 3 acres in size, edged to the north, east and south by woodland gardens associated with the North and East Woodland character areas. The field slopes gently away from the house. It is maintained in grasses and forbs through periodic mowing. A line of three crape myrtles (*Lagerstroemia indica*) edges the field to the north.[104]

Residence Surrounds

The White House is edged by foundation planting, while ornamental tree and shrub species are planted within the circular driveway turnaround. Deciduous shade trees edge the glass porch. There is a large white oak (*Quercus alba*) located within the lawn near the house as well.

Utilitarian Area

The area around the support buildings that edge the driveway to the south is maintained in a combination of mown grass, trees and shrubs. Several fruit and nut trees are also located in the vicinity of the barn and outbuildings.[105] A small clearing behind the barn was the site of a former vegetable garden and pig pen, There is also the site of a former plant nursery site located in the northern part of the character area.[106]

[104] Ibid., 4-29.
[105] Ibid., 1-5.
[106] Douglas White interview with Clare Jeter, June 2, 2016.

House

Character-Defining Features

The historic nature of significant buildings and structures is defined by their character, which is embodied in their identifying physical features. Character-defining features can include the shape of a building; its materials, craftsmanship, interior spaces, features and the different components of its surroundings.[107] Based upon observations onsite, WJE has identified the following character-defining characteristics:

- Isolated property due to tree line that surrounds property perimeter and extensive gardens within view of glass porch
- Red brick masonry home with white fiber-cement siding accents and multi-width slate shingle roofs with two clay brick chimneys extending above the main roof line
- Original wood exterior doors with paneling detail
- Original hung and casement wood windows with wood sills and brick basement window wells with original metal windows
- Decorative brick segmental arches over windows
- Enclosed wrap-around porch with glass and aluminum glazing and copper flat-lock soldered seam roof,
- U-shaped wood staircase with decorative wood railing
- Ornamental wood fireplace frame and mantle
- Original wood chair rails, baseboards and crown moldings
- Original wood countertops and kitchen cabinets
- Original doors, interior finishes, wallpaper, flooring, hardware, light fixtures and plumbing fixtures throughout home.

Exterior Evaluation

The house can be divided into three main sections: the core, the east wing and the west wing. Notated 1938 and 1958 house drawings are provided in Appendix A. The core is the center of the home and is covered with a gabled roof that runs north-south. This portion is comprised of two above-grade floors and attic space (Figure 19). The east wing of the house is a long, rectangular section with a gabled roof that runs east-west. This portion of the home is also comprised of two above-grade floors and attic space (Figure 20). The west wing is comprised of one above-grade floor and attic space (Figure 21). This attic space at the west wing aligns with the second floor of the rest of the home. The basement is located beneath the core and west wing. Adjacent to the west wing is an area that was previously the greenhouse. The glass has been removed leaving ghosting of the roof outline at the west facade of the house above the kitchen door and a partial height brick knee wall with embedded greenhouse frame anchors and a brick pathway. Along the brick wall are hoses and spigots that were used to water the plants. While the roof of the greenhouse has been removed, the metal clips that previously secured it to the wall still remain (Figure 22).

Walls and Foundation

The exterior facade is primarily red brick with tan mortar, arranged in an American bond pattern with six courses of running bond bricks between headers (Figure 23). The running bond bricks are generally 8 inches by 2-1/4 inches and the header bricks are typically 3-1/2 inches by 2-1/4 inches. Some header bricks are between 6 and 6-1/4 inches to accommodate window and door openings. The head and bed joints ranges from 1/2 to 3/4 inch wide and are tooled in a flush profile. Per the original structural/architectural drawings, the total exterior wall thickness is approximately 8 inches, comprised of the 4 inch thick red brick exterior wythe, with a 4 inch thick concrete masonry unit (CMU) back-up wythe.

At discrete areas along the gables and under the eaves, the home is clad in what appears to be a white fiber-cement siding (Figure 19). The fiber-cement siding that is currently installed is not original based upon the

[107] Lee H. Nelson, FAIA, *Preservation Brief 17: Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character* (Washington, D.C.: National Park Service, Technical Preservation Services, 1988).

presence of a weather-resistive barrier behind the siding (visible from the interior at the window jambs) and contemporary vinyl windows within the siding at the gable ends.

The foundation walls of the home are not visible from the exterior but were viewed from within the basement. These walls are comprised of one wythe of 12-inch CMU with one course of brick in a rowlock orientation at the top of the foundation wall (Figure 24).

Exterior Porch and Entryway

The original design for the 1939 house included a smaller porch on the east side of the house. Based on the original architectural drawings, the original porch was comprised of partial height brick walls, stone pavers and a sloped standing seam copper roof. The porch was later replaced by the flat-roofed, single-story glass porch that exists today. The glass porch wraps around the north and east sides of the house (Figure 25). The porch facades are storefront windows primarily comprised of insulating glazing units (IGUs), aluminum framing and brick (Figure 26). Per the glass porch architectural drawings, the brick portions of the porch utilized the existing brick from the original porch.[108]

There is a covered entryway located on the south facade at the front entrance of the home (Figure 27). This entryway is raised approximately 1 foot above the ground and has stone pavers as flooring (Figure 28). The entryway is enclosed by a short brick wall that wraps to the front. There is a small slate roof that covers the entryway and is supported by white wood posts and the wall.

Chimneys

The main house has two brick masonry chimneys with copper flue caps. One is an exterior chimney located on the north eave wall of the east wing (Figure 29). The other is an interior chimney located on the south gable end of the center core (Figure 30).

Roof

The steep-slope gable roof features a main ridge running north-south along the center core of the home. The ridge running east-west along the east wing intersects the main ridge (Figure 31). An open valley with copper sheet metal flashing is present along this intersection (Figure 32). The ridge running east-west above the west wing terminates into the second floor of the center core (Figure 33). Small secondary lower steep-slope roofs are located above the front porch and adjacent to the north chimney (Figure 34). The typical steep-slope roof assembly consists of a 9:12 pitch roof assembly consisting of gray-black slate shingle installed over at least one layer of bituminous roofing felt underlayment and 1x6 plank decking. Several iterations of isolated slate shingle repair or replacement are visible. The slate shingles are approximately 15 inches long, installed with 6 and 7 inches exposure and 2 to 3 inch headlap and nominally 1/4 inches thick. The shingle widths vary from 9 to 12 inches. The slate shingle ridge is a strip saddle ridge type with slates laid horizontally and face-nailed; roofing cement or sealant is installed to cover the exposed nail heads and treat the unprotected shingle joints along the ridge apex. Three rows of wire loop style copper snow guards are installed above the eaves (Figure 35). Wood trim is installed beneath the roof eaves and is painted either brown or white; at some locations the trim is overclad with prefinished sheet metal or replaced with composite materials to match the replacement gable end siding. Gutters and downspouts have been removed from the majority of the home, except for the glass porch. Abandoned metal straps to attach the gutters to the slate roof can be seen at many locations along the roof eaves. Abandoned fasteners from downspouts can also be seen at several locations on the brick facades of the home (Figure 36).

The roof over the glass porch addition is a copper flat-lock soldered seam roof (Figure 37). The copper panels are about 22-1/4 inch square panels, arranged with continuous seams that extend east-west and alternating north-south seams. The roof shape is made of one large rectangular section on the north side of the porch and one smaller rectangular section located on the east side. In between these sections is a

[108] White Gardens Photo 13, Addition to Residence of Mr. & Mrs. John C. White, Fairfax, Virginia, architectural drawings, see photos in section 11.

continuous copper expansion strip/bellows. Soldered copper sheet metal gutter liners infill the built-in gutter along the outside perimeter of the glass porch, with varying depth from about 4 to 8 inches as the gutter slopes toward downspout drain outlets at the two ends of the gutter (Figure 38). The gutter liner is approximately 8 inches wide across the bottom and is soldered rigidly to the roofing field panels. An aluminum gravel stop edge conceals the outside termination of the copper liner and matches the porch window wall frames below. Copper straps span across the gutter liner to enhance the gutter rigidity. There is one downspout currently located on the south side of the porch and a missing downspout at the north side of the porch (Figure 39). Per the original 1958 drawings and our observations on site, beneath the gutters is a 1/2 inch resin surfaced Douglass Fir plywood soffit with a 6 inch wide aluminum bird screen adjacent to the aluminum storefront windows (Figure 40). The soffit is painted brown and is attached to the gutter with aluminum trim and screws.

Windows

There are five main types of windows at the original 1939 home: paired metal casement windows, paired wood casement windows, single wood casement windows, single vinyl casement windows and double hung wood windows. All windows appear to be original except for the vinyl windows. The window types are depicted on the notated 1938 and 1958 house elevations provided in Appendix A.

Paired Metal Casement Windows

There are four paired metal casement windows, all of which are found at the basement level within brick window wells. Two are located on the south facade, one is on the north facade, and one is on the west facade. The window sashes and frames are painted white and each sash contains six lites of glass (Figure 41). One sash has been replaced with a louver connected to a mechanical unit and a dryer vent pipe extends through a lite in another sash (Figure 42). At the interior, the windows have handles at the center meeting rail with crank levers at the sills. A wood lintel within the masonry wall is present above each basement window.

The basement window at the west facade was not visible upon first inspection of the area as it was covered with dirt and foliage (Figure 43). This debris was removed, revealing the window well and a typical paired metal casement window.

Paired Wood Casement Windows

There are two paired wood casement windows, one located at the first floor of the south facade and the other located at the second floor west facade. The paired casement window at the south facade contains six lites of glass in each sash and the assembly at the west facade contains four lites of glass in each sash (Figure 44 and Figure 45). The interior and exterior surfaces of the frames and sashes are painted white and a typical brick segmental arch is present above the first floor window frame on the south facade. The windows have sliding locks top and bottom on the left sash (as viewed from the interior) and a latch lock with handle at the meeting stile (Figure 46). Abandoned hardware was observed on the window that may have been used for window treatments (Figure 47 and Figure 48). The paired casement windows appear to open to the exterior.

A paired casement interior storm window with white metal hinges is in place at the west facade (Figure 49). It is also secured by a metal latch in the center meeting stiles, but the sliding locks have been removed from the left window sash (Figure 50).

Single Wood Casement Windows

There are four single wood casement windows (Figure 51). Two are located on the east facade and two are on the north facade. The single wood casement windows have one latch handle and lock on one stile. All casement windows open to the exterior and have an operable interior screen that opens towards the interior. Each sash contains six lites of glass. The exterior surfaces of the frames and sashes are painted white and a typical brick segmental arch is present above the window frames at the first floor. The interior surfaces of the casing and sash are either painted white or stained to match the other wood trim finishes in the room.

The second floor window on the east facade has a pulley on the interior window casing (Figure 52). The purpose of the pulley is unclear, but it may have been used for a previous window treatment.

Single Vinyl Casement Windows

There are four single vinyl casement windows, one on each facade (Figure 53). Each vinyl window is installed at a gable end, within the siding portions of the facades. The vinyl frames and sashes are white and each sash contains a single lite of glass. The windows have metal hinges at the head and sill and two plastic latches on one stile (Figure 54 and Figure 55). A fixed exterior screen is present on each window.

These windows are contemporary replacements, as one of the original windows was found in the attic. The original window was a single wood casement window with three panes of glass (Figure 56). A contemporary weather-resistive barrier is visible at the interior of the window jamb, confirming that the adjacent original siding was removed to facilitate installation of the weather-resistive barrier (Figure 57).

Double Hung Wood Windows

There are seventeen double hung wood windows (Figure 58). Six are located on the north facade, one on the east facade, one on the west facade and nine on the south facade. The double hung windows have a pulley operating system and a metal bevel sash lock at the meeting rail. The number of lites within the double hung windows varies. The exterior surfaces of the frames and sashes are painted white and a typical brick segmental arch is present above the window frames at the first floor. The interior surfaces of the casing and sashes are either painted white or stained to match the other wood trim finishes in the room. Abandoned hardware and anchor holes were typically observed at the interior casing suggesting previously installed window treatments.

There are two ganged double hung window assemblies on the first floor south facade. One assembly has one central 8/8 double hung window with a 2/2 double hung window on each side (Figure 59). The other assembly has one central 8/8 double hung window with a 4/4 double hung window on either side (Figure 60). This assembly has exterior storm windows on all three double hung windows, attached to the exterior casing by “L” brackets. The exterior storm windows are a single lite of glass set in a white painted wood frame.

The second floor of the south facade has three typical 8/8 double hung windows. These windows all have two shutters on each side of the window, except for the west-most window that is missing one shutter. The missing shutter was found in a window well on the north side of the house. These shutters and those on the rest of the home, do not appear to be original to the house, as they are vinyl and the house pre-dates the introduction of vinyl shutters in the 1990s. In addition, several windows have abandoned shutter dogs that appear to have been used by the original shutters.
The second floor window on the east facade is a 6/6 double hung window with vinyl shutters on either side. An exterior screen with interior metal handles is outboard of the lower sash.

The middle window on the north facade above the glass porch is a 6/6 double hung window with shutters on each side. A typical exterior storm window is attached to the frame with four “L” brackets (Figure 61). The western most window above the glass porch is a 12/8 double hung window with a brick segmental arch above the frame (Figure 62).

The two windows on the first floor north facade are typical 6/6 double hung windows with shutters on either side. Both windows have typical exterior storm windows. At the second floor are two more typical 6/6 double hung windows. The exterior storm windows are attached to the frame by metal hinges on the top of the frame in lieu of “L” brackets on the sides (Figure 63 and Figure 64).

The window on the first floor west facade is a typical 6/6 double hung window with shutters on either side. A typical exterior storm window was also observed.

Doors

The home has a total of four exterior doors. The main entry door on the south facade is a wood door that opens to the interior of the home (Figure 65). It has nine lites of glass on the upper half of the door. The lower half of the door has wood set in a herringbone pattern. The exterior face of the door is painted blue and the frame is white. The interior face of the door is painted white and displays the same herringbone pattern on the bottom half of the door, as on the exterior. The metal mortise handle and key escutcheon are located on the right side of the door (Figure 66). There is an additional handle installed on the door frame, which appears to have been added in recent years based on the condition and hardware (Figure 67). There are several other similar retrofit handles throughout the house. A small round doorbell is located on the frame to the right side of the door and is painted white (Figure 68). Abandoned hardware can be seen on the frame of the door that was likely used for an exterior screen door (Figure 69). A screen door was found stored in the barn on the property (Figure 70).

A second wood exterior door is located on the west facade and opens to the kitchen. This door is also painted blue and has nine lites of glass in the upper half of the door, however, this door has vertical wood paneling on the bottom half (Figure 71). The door frame is painted white with a subtle arch at the head and has a typical brick segmental arch above. The interior face of the door is painted white and displays the same vertical wood paneling on the bottom half of the door. The metal door knob and escutcheon are located on the right side of the exterior of the door (Figure 72). A metal doorknob with a metal turn-knob latch are present at the interior. The knob is a simple round shape with a raised circular center detail. The key escutcheon is located above the knob and is a round lock manufactured by Corbin & Russwin. This door also has a typical retrofit handle that has been added to the left side of the door frame as well as abandoned hardware that may have been used for a screen door. The doorbell was located on the left side of the door and was missing at the time of our survey (Figure 73).

The other two exterior doors are matching sliding glass doors that are located on the east and north sides of the glass porch (Figure 74). Both doors have metal oval recessed handles to slide the doors open and closed (Figure 75). The doors are each equipped with an exterior sliding screen door, a metal lock, a stone threshold and metal tracks (Figure 76).

Light Fixtures

There are two original exterior light fixtures at the home. One fixture is located on the west facade, approximately 1 foot south of the door frame (Figure 77). It is a lantern-style fixture with a copper base, top and bottom. The copper on the top and bottom of the glass globe is decorated with cut stars. The top copper piece has a decorative cap. A single bulb is encased in a spherical glass globe. The other fixture is affixed to the ceiling of the front entryway (Figure 78). This fixture has a single bulb with a metal base and is currently missing its encasing glass globe. The metal base has decorative edges that hold the glass globe in place.

Eight exterior light fixtures were observed at the glass porch soffit (Figure 26 and Figure 40). Per the original 1958 electrical drawings, the fixtures are 150 watt Swivelier #6081 floodlights comprised of aluminum bases connected to the soffit and aluminum swivel hoods. The bulbs are missing from several of the fixtures.

Figure 19. Core section of the home with north-south gabled roof.

Figure 20. Front entryway at east wing of the home.

Figure 21. West wing and remains of previous greenhouse.

Figure 22. Metal clips remain embedded in the greenhouse walls

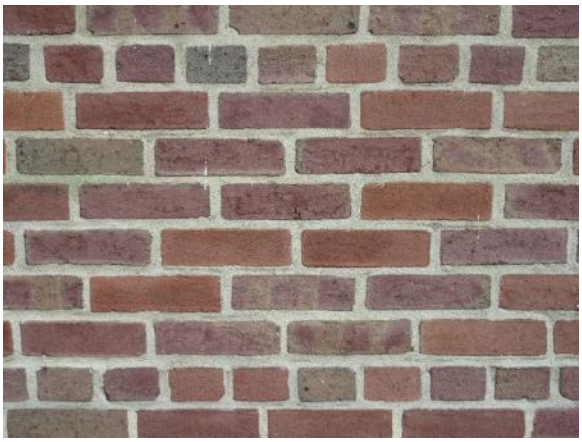

Figure 23. Typical American Bond coursing pattern on the home.

Figure 24. Typical CMU foundation walls.

Figure 25. View of the north elevation of the home, including the glass porch addition that wraps around the north and east sides.

Figure 26. Typical aluminum-framed storefront windows at the glass porch. Note typical floodlight at soffit (yellow arrow).

Figure 27. Front entryway on the south facade.

Figure 28. View of front porch stone pavers.

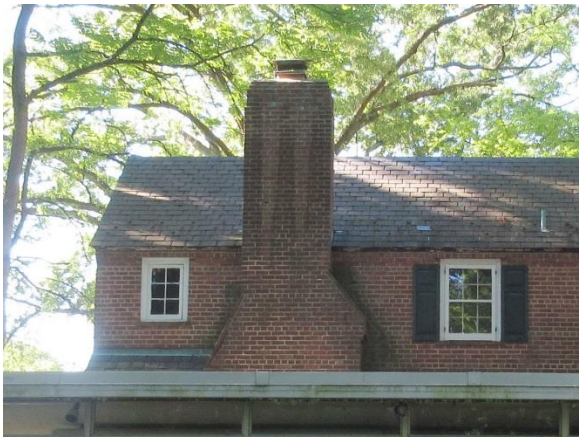

Figure 29. Exterior chimney located on the north eave wall of the east wing.

Figure 30. Interior chimney located on the south gable end of the center core.

Figure 31. View of gable roof over center core of home and gable roof over east wing that intersects the center core.

Figure 32. Open valley with copper flashing between core north-south gable and east wing.

Figure 33. Roof above west wing that terminates into north-south core of home.

Figure 34. Small roof located adjacent to the north chimney.

Figure 35. Side view of the slate roof. Note the copper snow guards on top of the roof and the wood trim below the roof.

Figure 36. Abandoned fasteners from downspout connections.

Figure 37. Copper flat-lock soldered seam roof located over the glass porch addition.

Figure 38. Metal-lined gutter with copper straps and aluminum edge metal.

Figure 39. Downspout has been detached from location of previous drainage.

Figure 40. Glass porch soffit with 1/2 inch plywood and aluminum bird screen. Note aluminum light fixture on the corner.

Figure 41. Typical paired casement basement window within a window well.

Figure 42. Basement casement window with one sash replaced with a louver.

Figure 43. View of west basement window well that has been covered with dirt and foliage.

Figure 44. Paired casement window with six lites of glass in each sash at south facade.

Figure 45. Paired casement window with four lites of glass in each sash, located on the second floor of the west facade.

Figure 46. Typical metal latch in center of meeting stile for paired casement windows.

Figure 47. Typical abandoned hardware associated with previously installed window treatments.

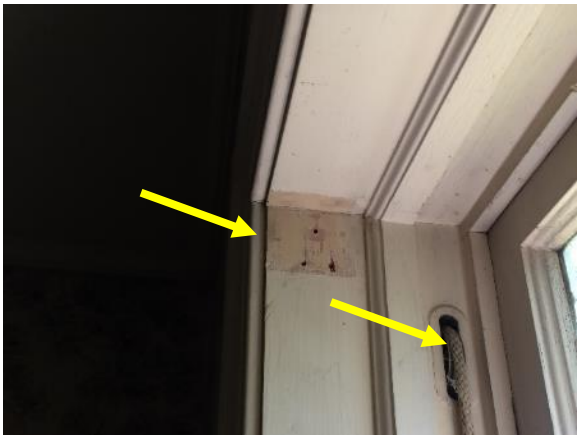

Figure 48. Typical abandoned anchor holes associated with previously installed window treatments. Note rope lifting hardware for double hung sash.

Figure 49. Interior paired casement storm windows on west window in Bedroom B.

Figure 50. Missing sliding locks on interior storm windows of west window in Bedroom B.

Figure 51. Typical six-paned single casement window (east facade).

Figure 52. Pulley from previous window treatment attached to top corner of east window in Bedroom A.

Figure 53. Typical replacement attic window.

Figure 54. Typical metal hinges for operation of an attic window. The window opens to the interior and has an exterior screen.

Figure 55. Typical plastic lock on the interior of an attic window.

Figure 56. Original casement window that was located in the attic.

Figure 57. Contemporary weather-resistive barrier can be seen around frame of storage room window.

Figure 58. Typical 8/8 double hung window with fixed replacement shutters. Note abandoned shutter dog (yellow arrow).

Figure 59. Double hung window assembly on south facade.

Figure 60. Double hung window assembly on south facade.

Figure 61. Storm window and typical "L" brackets (north facade).

Figure 62. 12/8 double hung window at north facade above glass porch roof.

Figure 63. North facade second floor windows are typical 6/6 double hung windows with shutters and exterior storm windows.

Figure 64. Exterior storm windows attached with hinges at the top of the frame. Abandoned hinge from original shutter (blue arrow).

Figure 65. Front door of home, located on south facade under front entryway.

Figure 66. Front door metal mortise handle with thumb latch.

Figure 67. Retrofit handle added to front door frame, typical of other exterior retrofit handles.

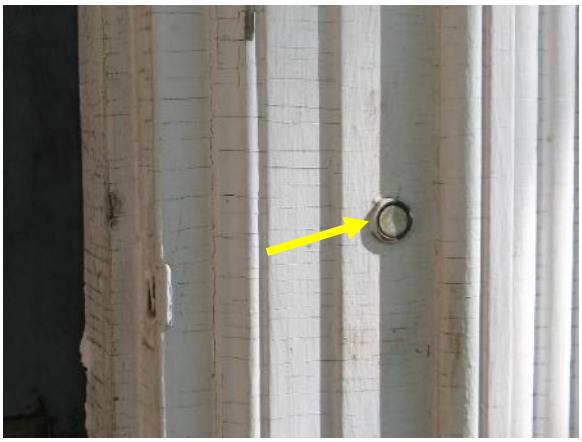

Figure 68. Front door doorbell, painted white, located on door frame.

Figure 69. Abandoned white metal hinges, possibly for a screen door.

Figure 70. Exterior screen door found in barn on property.

Figure 71. Exterior door on west facade.

Figure 72. Metal doorknob and escutcheon located on west side exterior door.

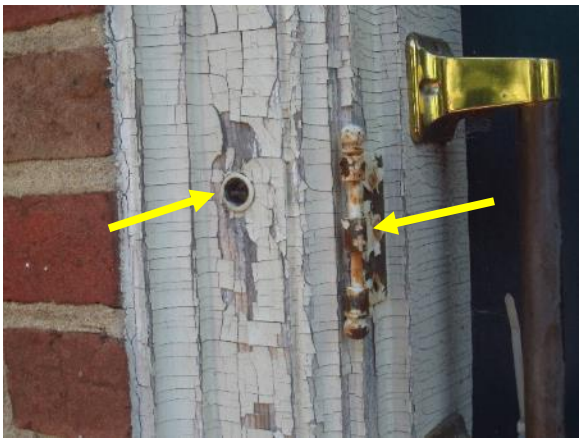

Figure 73. Missing doorbell and abandoned hinges located on frame of west exterior door.

Figure 74. Typical sliding glass door and sliding screen door located on east side of glass porch.

Figure 75. Detail view of oval sliding door grab.

Figure 76. View of metal tracks at bottom of door and stone threshold.

Figure 77. Exterior wall mounted light fixture located to the south of the west exterior door.

Figure 78. Exterior ceiling mounted light fixture located on the front entryway on south elevation.

Exterior Condition Assessment

Brick and Mortar

- In general, the brick was observed to be in very good condition with very limited, localized areas of distress. The mortar was typically bonded to the brick, but the face of the mortar was sandy to the touch. The sandy surface suggests that the mortar is likely the original mortar and the binder that holds the sand aggregate together has slightly eroded away from the surface over the years, leaving the sand aggregate loose at the outer surface.
- Cracked mortar joints and/or missing mortar were observed at several discrete locations.
  - The cracking typically had a stepped pattern and was located near edges of the home or at windows (Figure 79).
  - At one location on the east facade, a vertical crack was observed along the south edge of the building (Figure 80).
  - On the south facade, open and cracked mortar joints were observed along the second floor line, corresponding to embedded metal (Figure 81). Minor surface corrosion was observed on the exposed metal. It is likely that the embedded metal is a steel shelf angle to support the brick units at the second floor.
  - Missing and cracked joint mortar was also observed on the north chimney (Figure 82).
- Isolated small spalls and cracks were observed at the brick units. The spalls corresponds to an embedded nail that has corroded (Figure 83) and the cracks correspond to the aforementioned vertical crack pattern through the mortar at the southeast corner of the home.
- Discolored, peeling and missing coating was observed on the surface of the bricks in the basement window wells. This is likely due to the consistent presence of moisture on the backside of the coated brick units.
- Multiple forms of deterioration were observed at the greenhouse walls.
  - Several sections of the greenhouse wall are missing mortar in the collar joint, resulting in the wall being out of plumb (Figure 84). Several cracked mortar joints were also observed, which typically had a stepped pattern (Figure 85). A few horizontal cracks along mortar bed joints were also observed (Figure 86).
  - Several missing or cracked brick units were observed along the greenhouse wall, typically corresponding to the step cracking. Several missing brick units were located at one corner at the west end (Figure 87).
- Copper staining was observed at isolated locations. On the south facade, the staining was associated with abandoned copper elements embedded in the facade (Figure 88). The staining was also observed below the copper chimney caps (Figure 89).
- Surface staining was observed at the brick masonry of both chimney stacks on the home. The staining was dark in color and followed the path of runoff from the chimney cap (Figure 90). Surface staining, residual sealant, and abandoned fasteners were also observed around the outline of the previously attached greenhouse on the west facade (Figure 91).
- Green biological growth was observed at multiple locations on the brick of the home, primarily at corners or interfaces between portions of the home (Figure 92) and at the basement window wells.
- Residual sealant and abandoned fasteners were observed on the east facade above the glass porch along the outline of the original porch (Figure 93).

Stone and Mortar

- The stone pavers on the front porch are typically in good condition.
- One spalled stone paver was observed on the front porch (Figure 94).
- The setting mortar is missing from beneath a portion of one stone paver at the front entryway; however, the paver was still stable at the time of our survey (Figure 95).

Wood

- Holes from removed hardware were observed in the wood posts at the front entryway (Figure 96). One post was cut short approximately 3 inches and an undersized wood block is located between the post and the brick wall below (Figure 97).
- The front entryway ceiling is in fair condition with typical cracked and peeling paint at the entryway ceiling (Figure 98).
- Several areas of the plywood soffit of the glass porch exhibit water damage and are beginning to sag (Figure 99). Cracked and peeling paint was also typically observed at the plywood soffit (Figure 100). The aluminum bird screen is torn in several locations. In one such location, a cable penetrates the screen in order to reach the interior of the porch (Figure 101).

Fiber-Cement Siding

- The contemporary fiber-cement board siding is in good condition (Figure 102).

Roof

- In general, the slate roofing of the home is in fair condition, but the metal flashings utilized in the slate roof are in poor condition (Figure 103).
- Isolated loose slate shingles were evident and isolated broken shingles have been repaired with roof cement. Approximately two dozen slate shingles have been replaced recently with new shingles secured by copper sheet metal straps.
- The slate ridges have been treated with surface-applied roofing cement at nail heads, vertical butt joints and along the ridge apex joint. Roof cement has also been applied across the intersection point between the lower west wing roof ridge and the center core roof eave (Figure 104), indicating possible leakage concerns throughout the roof life.
- The slate shingle joints along the lower half of the south valley between the center core and east wing roofs have been recently detailed with remedial black sealant (Figure 105). It is our understanding that significant water infiltration was previously active below this valley and that this repair appears to have mitigated the water leakage.
- Many of the wire loop copper snow guards are bent from their original vertical orientation. Based on the pattern of the snow guards, several appear to be missing.
- The copper flashings are beginning to lift up at the edges (Figure 106). Several areas have been patched with mastic (Figure 107).
- The copper cricket flashing at the north chimney exhibits cracked solder joints, loose lap joints and roof cement repair efforts (Figure 108 and Figure 109). This corresponds to water damage observed in Bedroom A.
- Ineffective cricket flashing and drainage path were observed between the south chimney and the sloped attic roof (Figure 110 and Figure 111). The south chimney interrupts the rake of the center core slate roof, but no sloped diverter flashing is installed; the copper counterflashing is installed with less than 4-inches vertical rise against the chimney.
- Vent stack penetrations are detailed with pre-fabricated lead flashing boots (labeled “Monarch Star 2”) and copper counter-flashing, sealed together with roof cement. The seal between the prefabricated boot and the copper counterflashing has failed and is susceptible to snow melt leakage (Figure 112).
- The copper flat-lock soldered seam roof is in fair-to-poor condition. Many soldered seams between copper panels and alongside the expansion strip are cracked. Several seams have been repaired with mastic (Figure 113 and Figure 114).
- Hanging gutters are missing from all of the eaves of the steep-slope roofs; the gutters were reportedly removed by the Park Authority (Figure 115). The remnants of cut strap hangers are evident within butt joints of slate shingles in the first course and occasional wood spacer blocks that would have braced the hanging gutters are affixed to the trim.
- A built-in gutter with soldered copper gutter liners is installed on the glass porch.

  - The gutters are in fair condition, though their function is directly tied to the flat-lock roofing. Currently, the gutters are filled with foliage and debris, which does not allow them to drain (Figure 116).
  - Many copper straps installed on the gutters are missing or detached from one side of the gutter (Figure 117).
  - Biological growth was observed at multiple locations along the gutter (Figure 118).
- The wood trim under the roofline is in fair condition. Cracked and peeling paint was typically observed along the length of the trim (Figure 119). Trim located above gable end siding has typically been replaced with composite material similar to the siding (Figure 120 and Figure 121).

Windows

- The majority of the original windows at the home are in fair to poor condition.
- One missing glass lite was observed at the first floor of the south facade. As a result, there is no barrier between the exterior and interior at this location. Isolated cracked lites of glass were observed on the first floor of the north facade and on the second floor of the south facade. Cracked glass was observed at one storm window on the first floor of the west facade.
- The upper and/or lower sashes of multiple double hung windows are displaced resulting in window sash locks not being engaged (Figure 122).
- Corrosion of the basement window sashes and frames was observed (Figure 123 and Figure 124). Foliage and dirt accumulation was observed to varying degrees against all basement windows; the basement window well on the north facade is missing the covering grate, resulting in additional foliage build-up against the window (Figure 125).
- Typical cracked and peeling paint was observed on the windows and storm windows (Figure 126). Many of the windows appeared to be painted shut. Cracked, displaced, or missing glazing putty was observed at the majority of the windows (Figure 127 and Figure 128).
- Adhesive and cohesive failures of the sealant was typically observed at the perimeter of all windows, including the interface between the IGUs and the aluminum framing in the glass porch storefront windows (Figure 129).
- At the glass porch, the majority of the aluminum window frame components show signs of oxidation, such as spots on the surface of the metal (Figure 130). Surface corrosion was observed at the fasteners that connect adjacent window casings (Figure 131).
- The replacement fixed window shutters are in good condition (Figure 132).
- Biological growth was observed on the basement windows and at several windows on the first and second floor of the north facade (Figure 133).
- The wood lintel above the west basement window is rotting and exhibits various forms of potential microbial growth (Figure 134). If this lintel continues to rot, it will no longer support the floor joists above, which may result in displacement of the wood floor components and/or interior wall finishes in Bedroom D above.

Doors

- The exterior doors are in fair condition. The paint is generally faded, cracked and peeling on the doors as well as the frame and casing (Figure 135). Cracked and missing glazing putty was observed at the perimeter of the glass lites within the doors (Figure 136). Separation at wood joinery was observed on both exterior doors (Figure 137).

Light Fixtures

- Light fixtures on the exterior of the home are in good to fair condition.
- Multiple light fixtures on the exterior of the glass porch are showing signs of oxidation, such as white spots on the surface of the metal (Figure 138).

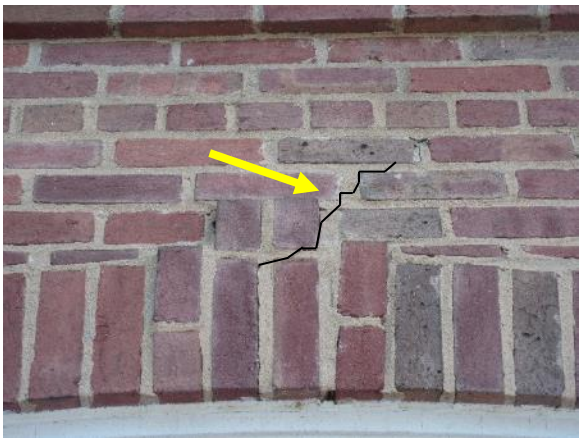

Figure 79. Stepped cracks in mortar above segmental arch. Crack traced for clarity.

Figure 80. Vertical cracking at south east corner.

Figure 81. Cracks in mortar at floor line, revealing minor surface corrosion at steel shelf angle behind.

Figure 82. Missing and cracked mortar at chimney on north facade.

Figure 83. Localized face spall on west facade near exterior door.

Figure 84. Missing mortar from greenhouse wall collar joint and bed joints.

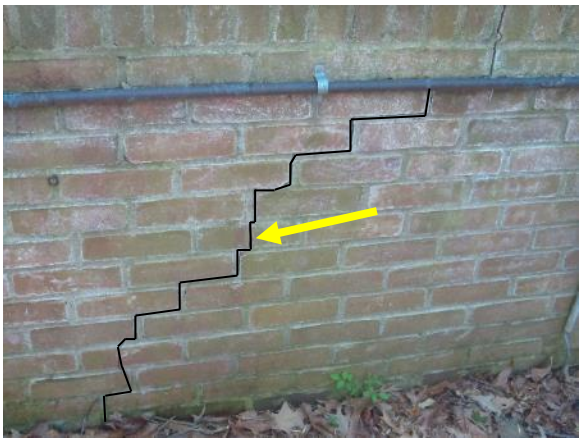

Figure 85. Crack pattern through mortar and brick on greenhouse wall. Crack traced for clarity.

Figure 86. Horizontal crack through mortar on greenhouse wall. Crack traced for clarity.

Figure 87. Missing brick units at west end of greenhouse wall.

Figure 88. Typical copper staining due to metal fasteners (south facade).

Figure 89. Copper staining due to chimney cap.

Figure 90. Surface staining of brick due to water runoff from chimney cap.

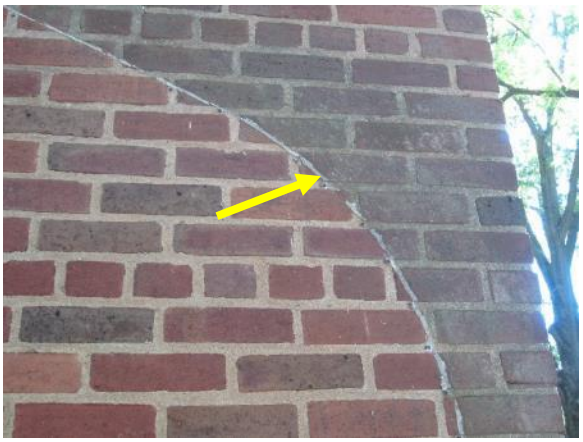

Figure 91. Surface staining and residual sealant and fasteners around previously-attached greenhouse on west facade.

Figure 92. Biological growth and staining of brick at entryway corner.

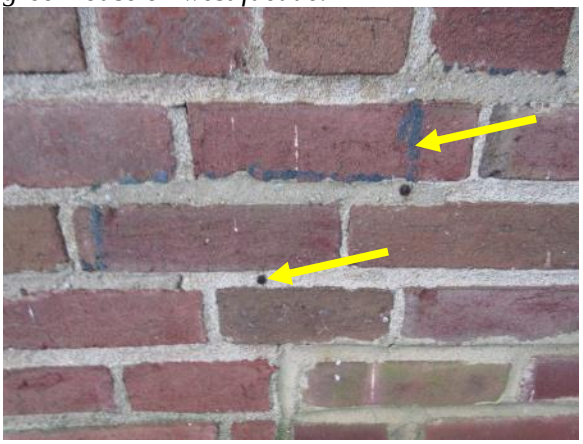

Figure 93. Residual sealant and fasteners at location of previously attached porch on east facade, above current glass porch addition.

Figure 94. Spalled stone paver on front porch (south projection).

Figure 95. Setting mortar missing from underneath stone paver on front entryway.

Figure 96. Typical holes in front porch wood post.

Figure 97. Undersized wood block under wood post at front entryway.

Figure 98. Typical cracked and peeling paint at front porch ceiling.

Figure 99. Glass porch soffit sagging from water infiltration.

Figure 100. Typical peeling paint on the glass porch soffit.

Figure 101. Hole in screen of glass porch soffit with cable fed through opening.

Figure 102. Fiber-cement siding in good condition.

Figure 103. View of east portion of slate roof, typical roof condition for entire roof.

Figure 104. Intersection of west wing roof to main north-south gable roof. Note the repair with mastic at the ridge and meeting point.

Figure 105. Copper valley between east-west and north-south gable roofs.

Figure 106. Warped copper flashing at front entryway roof.

Figure 107. Copper flashing at porch roof. Note the mastic repair at the interface between the copper and the brick masonry.

Figure 108. Copper cricket behind north chimney with mastic repairs.

Figure 109. Copper flashing at north chimney. Note the mastic repairs and detached edges.

Figure 110. Copper chimney flashing on south chimney with mastic repairs.

Figure 111. Copper chimney flashing on south chimney.

Figure 112. Failed copper counterflashing at pre-fabricated lead flashing boot.

Figure 113. Copper flat-lock soldered seam roof. Note the seams that have been repaired with mastic.

Figure 114. Cracked seams at expansion joint of copper roof over glass porch.

Figure 115. Cut gutter strap hanger and wood block.

Figure 116. Glass porch gutters blocked with debris.

Figure 117. Missing and broken gutter straps along gutter of glass porch.

Figure 118. Typical biological growth along gutter of glass porch.

Figure 119. Typical paint deterioration of wood trim underneath roof.

Figure 120. Painted wood trim above siding (west elevation).

Figure 121. New trim covering old trim (north elevation).

Figure 122. Typical displaced upper and lower sash on double hung windows.

Figure 123. Corroded window casing and sash in basement.

Figure 124. Corroded window casing and sash in basement.

Figure 125. North window with well missing covering grate and debris accumulation. Note miscellaneous shutter stored in window well.

Figure 126. Typical cracked and peeling paint at exterior of window.

Figure 127. Typical cracked glazing putty at exterior windows.

Figure 128. Typical missing glazing putty at exterior windows.

Figure 129. Typical deteriorated sealant at interface between IGU and aluminum framing at glass porch storefront.

Figure 130. Typical oxidation of glass porch window frame.

Figure 131. Typical corroding fasteners at glass porch window frame.

Figure 132. Typical fixed replacement shutter on exterior of home.

Figure 133. Typical biological growth on storm window and adjacent brick sill.

Figure 134. Potential microbial growth and rot on wood lintel in basement.

Figure 135. Typical faded and peeling paint at exterior doors.

Figure 136. Typical cracked glazing putty at exterior doors.

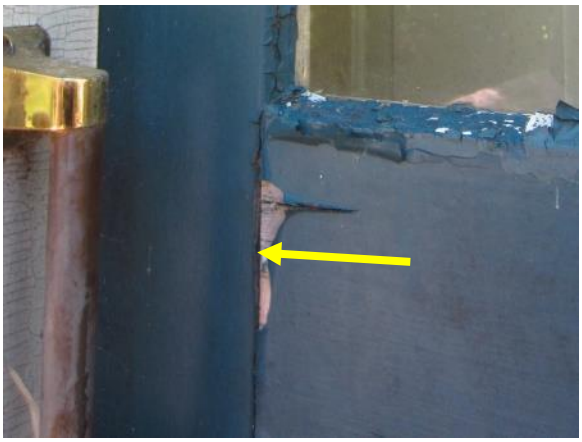

Figure 137. Typical separation of wood between stile and rail on door.

Figure 138. Typical oxidation of exterior glass porch light fixtures.

Interior Evaluation

The house consists of two floors of living space above ground and a basement below ground. The notated 1938 and 1958 house drawings are provided in Appendix A. All room names used within this report are in reference to the names provided in the 1939 and 1958 drawings. The as-built construction, including overall dimensions and specific detailing, matches the original drawings very closely. The main entry to the house is located at the center of the south facade. The doorway leads into the foyer on the first floor in which the U-shaped staircase to the second floor is located. The first floor bedroom (Bedroom D), the first floor bathroom, the dining room and the living room can be accessed directly off of the main hallway and foyer. The kitchen and basement stair can be reached through the dining room or by way of a secondary door on the west facade. The glass porch addition is accessed through the living room or from the exterior through sliding glass doors located on the north and east sides of the porch. On the second floor, another main hall provides access to all three bedrooms (Bedroom A, Bedroom B, and Bedroom C) and one bathroom (Bathroom B). An additional second floor bathroom (Bathroom A) may only be reached through Bedroom A. A small storage room located above the kitchen can be accessed through one of the closets in Bedroom C.

Typical interior finishes throughout the house include wood floors, plaster walls and ceilings and wood baseboards, chair rails, door trim and crown moldings. Finishes vary depending on floor level and intended use, but the wood floor boards consistently run east to west throughout all applicable rooms. The plaster walls and ceilings are wallpapered in all rooms except the bathrooms and the kitchen, which are painted. The wallpaper pattern varies on the walls in each room, but is consistently solid white at all ceilings unless otherwise noted. Typical interior doors are multi-panel wood-framed hinged doors with metal doorknobs and key escutcheons. There are French doors leading to the glass porch from the north wall of the living room. All interior finishes and interior doors appear to be original to the home or historic.

Circulation

Main Staircase

The main staircase is located in the foyer on the first floor and connects the first floor to the second floor. The stair has a U-shaped plan with two small, intermediate landings at the northeast and northwest corners (Figure 139 and Figure 140). The second floor landing is located at the top of the stair and overlooks the staircase and part of the foyer (Figure 141). The floral wallpaper present in the first floor foyer continues on the walls surrounding the staircase to the second floor landing. Stair treads, risers and nosings are made of stained wood (Figure 142). The stair treads are approximately 1 foot wide and 3 feet 2 inches long. The stairs rise about 7-3/4 inches and the top of the handrail is about 34-1/2 inches above the stair. The stringers are white painted wood. The staircase is adjacent to the wall on one side and has a railing on the other side. The handrail is stained wood, supported by wood balusters painted white to match the stringers (Figure 143). There are two balusters for every stair. Stained wood newel posts support the handrail at the bottom, top and intermediate landings (Figure 144). At the newel posts, the handrail forms a steep curve to meet the elevation of the post (Figure 145). At the first floor the handrail curves away from the staircase, forming a spiral (Figure 146). The handrail continues onto the second floor landing, serving as the rail for the overlook to the first floor (Figure 147).

Basement Staircase

Access to the basement is gained through the kitchen by way of the basement staircase. The door is a typical six-paneled white painted door (Figure 148). The door opens into the kitchen, allowing access to the circuit box on the north wall directly across from the door opening. Wood stairs with a stained wood handrail lead down to the basement. The handrail at the top of the staircase is attached to the wall and turns vertically to extend up along the door jamb (Figure 149). The first floor of the stairwell is painted tan. Once the basement level is reached, there is no wall on the right (south) side, only a handrail. The handrail at the basement level is a flat wood plank attached to simple square newel posts. On the left (north) side of the stairwell, the exterior foundation wall is comprised primarily of concrete masonry units (CMU) with brick units at the

corner at the base of the stairs (Figure 150). The stair treads are stained wood and the risers, posts, stringers, and lower handrail are white painted wood (Figure 151).

Basement

The basement floor plan extends below the center core and the west wing of the home. A closet is located on the west wall of the basement. The closet door is a five-paneled white painted wood door with a typical key escutcheon and metal doorknob (Figure 152). The door was locked and consequently the closet behind was not evaluated.

The masonry foundation walls are comprised of one wythe of standard 12-inch CMU with one course of brick in a rowlock orientation at the top of the foundation wall (Figure 153). The window rough opening on the west wall contains header bricks in lieu of CMU at three corners of the rough opening. Three stacked brick units are equivalent in height to one course of the CMU. The left bottom corner of the opening has six courses of header bricks, equaling two courses of CMU (Figure 154).

The structural columns are made of brick units that are typically 8 inches by 2-1/4 inches (Figure 155). The western brick column has ten courses of CMU that tie the column into the wall (Figure 156). Both the walls and the columns are coated in a white paint. The floors of the basement are poured concrete. Numerous utilities, such as electrical, plumbing and mechanical are located in the basement. Multiple conduits and ductwork span across the basement ceiling and through the first floor slab into the upper floors of the house. The larger openings are covered with metal screens. Pipes also penetrate the foundation walls in several locations. On the east wall mechanical ducts extend through a large opening in the foundation wall to reach the rest of the house. The opening is covered with a metal screen (Figure 157). The basement ceiling is comprised of plaster. The plaster is typically continuous, however, at a few discrete locations the plaster was previously removed, allowing visual access to small portions of the floor structure above. Several wood joists and the underside of the wood floorboards above were observed; however, due to the presence of the mechanical equipment, dimensions were not obtained. Per the original 1938 drawings, the joists are either 2 inch by 10 inch or 2 inch by 12 inch members, spaced at either 16 inches or 12 inches on center.

Several window screens and a set of five-paned wood French doors were found in the basement (Figure 158). The door has a metal key escutcheon and a round metal doorknob. The original color could not be discerned due to water damage and microbial growth. The doors appear to have originated from the east doorway between the living room and glass porch that is missing its set of doors.

There are two utilitarian light fixtures in the basement, which are both a single bare bulb, with a white base.

First Floor

Foyer

The foyer features typical wood floors and the wood baseboard is painted white with a stained wood quarter-round on the bottom to match the floors. The north, east and west walls of the foyer are covered with floral wallpaper and the south wall is covered with vertical wood panels painted white (Figure 159).

Two closets flank the front door and the ceiling directly above the front door has been lowered, creating an entryway into the foyer (Figure 160). The two closets on either side of the front door are mirror images of one another, both containing two wood shelves, a metal rod for hangers and several metal hooks. The closet doors have a round metal knob and do not include a locking mechanism. The two closet doors are also made of wood panels painted white and cut to match the paneling pattern of the wall above (Figure 161). The baseboard along the perimeter of the foyer continues below the doorway into each closet (Figure 162). The closet walls have white wallpaper with stained wood quarter-round at the interface with the stained wood floor.

To the west of the front door is an unframed passageway leading to a short hallway that provides access to other living spaces on the first floor (Figure 163). To the east of the front door is framed passageway leading to the living room. To the northeast is the staircase to the second floor. To the northwest is a closet that extends under the stairs. This closet has typical a six-paneled white painted door. Inside the closet are wood shelves and a board for hanging keys. The walls are covered with white wallpaper with a typical baseboard. The ceiling of the closet is sloped, following the slope of the stairs.

There is one light fixture in the foyer located approximately in the middle of the space on the ceiling. The fixture has two lightbulbs and a metal circular base (Figure 164). The fixture likely was enclosed with a glass globe originally; however, it no longer has one. There are two heating, ventilating and air-conditioning (HVAC) vents in the foyer. One is located along the baseboard to the right of the door in the entryway. The other is located above the northwest closet door under the staircase. Both vents have typical white painted metal registers (Figure 165). There are several outlet and switch plates located in the foyer, which are all clear plastic allowing the wallpaper beneath to be visible (Figure 166).

Hallway
The hallway has the same finishes as the foyer (Figure 167). The doorway through the south wall leads to the dining room, to the north leads to the first floor bathroom and to the west wall leads to Bedroom D. There is one light fixture in the hallway. It has one bulb with a decorative metal base and is currently missing a glass globe (Figure 168). The hallway has one wood switch plate (Figure 169).

Dining Room
The dining room door to the hallway is a typical white six-paneled wood door that is wider than most of the other doors in the house (Figure 170 and Figure 171). The door to the kitchen is a white six-paneled wood swing door with a clear plastic push plate in lieu of the doorknob or key escutcheon observed at typical interior doors (Figure 172). The dining room has typical wood floors, evergreen design wallpaper, wood chair rail, wood crown molding and wood baseboards with stained wood quarter-round (Figure 173, Figure 174, and Figure 175). The typical chair rail, crown molding and baseboards are all painted white.

A light fixture extends from the ceiling in the center of the room. It has a metal plate, an ornamental glass stem and three lightbulb sockets; one lightbulb and the globe surrounding the bulbs was missing (Figure 176). There are two HVAC vents with white painted metal registers in the room: one at the baseboard on the east wall and near the ceiling on the west wall. The switch and outlet plates are all clear plastic. There is one metal outlet plate on the floor near the center of the room (Figure 177).

Kitchen
The kitchen may be accessed through the swing door in the dining room, the door to the basement staircase, or the exterior door on the kitchen's west wall that previously connected to the greenhouse (Figure 178). There is an additional interior door located on the north wall of the kitchen that opens to the pantry. The pantry door is a typical six-paneled white painted door.

The kitchen walls and ceilings are painted white. The floors are made of linoleum and are a tan and brown marbled pattern in the center of the room with a black perimeter (Figure 179). The stove and refrigerator have been removed from the room with evidence of previous locations based upon staining on the floors and abandoned electrical connections (Figure 180).

The kitchen currently consists of a series of counters and cabinets on the north and south walls as well as a sink and dishwasher on the south wall (Figure 181). The primary feature of the kitchen is the porcelain sink with a metal faucet. The porcelain extends over the KitchenAid dishwasher to form a surface for drying dishes (Figure 182). Due to the configuration over the dishwasher, it is possible that the sink was a replacement sink that was installed when the KitchenAid dishwasher was installed. A towel bar is installed adjacent on the western most cabinet along the south wall (Figure 183).

The countertops are made of wood and are approximately 25 inches deep and 1-1/2 inches thick. The countertops rest approximately 3 feet above the floor. Above the countertops are cabinets that extend to the ceiling (Figure 184). The cabinets are a mix of the original wood cabinets and metal replacement cabinets. The replacement cabinets are white metal with streamlined flat metal horizontal handles with white plastic behind (Figure 185). Each replacement cabinet is outfitted with metal racks to be used as shelves, except the cabinet under the sink, which is open (Figure 186). The replacement cabinet on the southwest side of the kitchen is equipped with a two (2) -tiered metal Lazy Susan (Figure 187). Two units of replacement cabinets are located on the north wall, adjacent to the basement door and on the south wall under and adjacent to the sink and dishwasher (Figure 188 and Figure 189). The original wood cabinets are currently white but may have been green in the past based upon scraped areas of the current paint. Flat metal handles are installed on the wood cabinets and drawers, except for the highest cabinets, which have oval metal knobs (Figure 190 and Figure 191). The wood cabinets below the counters, east of the sink, have metal shelving racks (Figure 192). The rest of the wood cabinets have wood shelves. Next to the replacement cabinets on the north wall is a tall wood cabinet, about three-fourths the height of a typical interior door (Figure 193). Inside the cabinet is a large open space containing several hooks and wood shelves. Above this cabinet are two more rows of cabinets with wood shelves. Directly adjacent to this cabinet is the pantry. Inside the pantry is a large open space with several white wood shelves above. The inside walls are painted white. The linoleum and the white wood baseboards from the kitchen continue into the pantry.

Lighting for the kitchen is provided by a window and two fluorescent light fixtures. The largest fluorescent light is located in the center of the kitchen on the ceiling (Figure 194). The other fluorescent light fixture is located on the underside of the cabinet above the sink (Figure 195). Throughout the kitchen, the utilities and switch plates are metal. Two HVAC vents with typical white metal registers are installed in the room, located on the east wall next to the dining room door and on the ceiling above the basement door.

Bedroom D

The door to Bedroom D is a typical white six-paneled wood door. The bedroom walls have a leafy design wallpaper and tan wallpapered ceilings (Figure 196). The bedroom features typical wood floors and the wood baseboard is painted white with a stained wood quarter-round on the bottom to match the floors. There is one (1) closet in the southwest corner of the room. The typical bedroom closet (found in Bedroom B, Bedroom C and Bedroom D) can be accessed by a typical white six-paneled wood door. The door has a typical round metal doorknob and key escutcheon on the bedroom side. On the closet side the lock has a metal turn-knob latch unless otherwise noted. The closet walls are painted white and the typical flooring and baseboard extend into the closet. There is also one light fixture consisting of a single, bare bulb with a white base and a metal pull chain (Figure 197). The interior features of the closet varies in each bedroom. Inside the Bedroom D closet there is one wood shelf, a wood rod for hanging clothes and several metal hooks.

The curtains and blinds covering both windows are still in place and are likely original (Figure 198). The curtains are tan colored, made of a heavy fabric and swing on hinges to cover the windows (Figure 199). The curtain rods are metal and ornamented at the top and ends (Figure 200). The blinds are white with fabric connectors.

There is one light fixture fixed on the ceiling in the center of the bedroom. It has a circular metal base with two bulbs and the glass globe is missing (Figure 201). This fixture is typical for all bedrooms. Bedroom D has two HVAC vents: one on the north wall and one on the south wall. The vent on the north wall is missing the metal register; however, the register was found in the adjacent first floor bathroom sink (Figure 202). The south wall vent is covered with cardboard and taped over (Figure 203). The outlet and switch plates in bedroom D are all clear plastic except for one outlet plate on the east wall, which is white plastic (Figure 204).

Bathroom

The first floor bathroom is located off the hallway adjacent to Bedroom D. The bathroom door is a typical white wood six-paneled door. The bathroom has linoleum flooring with a brick paver pattern. A 3-5/8 inch wood threshold separates the bathroom floor from the wood floor of the hallway. The walls and ceilings of the bathroom are painted white and have a white tile baseboard at the floor (Figure 205). There is one closet in the bathroom directly behind the shower. It can be accessed by a two-paneled white wood door and contains white wood shelving (Figure 206). The door has a metal doorknob and escutcheon on the bathroom side and a metal turn-knob latch on the closet side. The closet flooring, walls and ceiling are consistent with the rest of the bathroom; however, the closet has a white wood baseboard in lieu of tile baseboard.

The bathroom plumbing fixtures and accessories are visually intact and appear to be original to the home (the components were not tested for functionality). The plumbing fixtures consist of a console sink, shower and toilet. The console sink is made of white porcelain and has two metal legs on the front (see also Figure 205). A towel bar extends from the legs to the wall on either side of the sink. The faucet spout is metal; the handles are metal with clear plastic tips (Figure 207). The piping underneath the sink is exposed. There is a medicine cabinet with a mirror directly over the sink on the west wall. Below the mirror is a built-in soap holder. To the right of the holder is a glass shelf with metal supporting rods (Figure 208). The mirror and shelf appear to be original to the home. The shower is located to the right of the hallway door. The frame surrounding the shower entrance is white plastic and has a metal curtain rod (Figure 209). The shower has metal faucets, a detachable shower head, a soap holder in the wall and a drain through the terrazzo shower pan (Figure 210 and Figure 211). The wall surfaces of the shower are painted. Directly across from the shower on the west wall is a metal towel bar. The toilet is a typical white porcelain fixture; a built-in toilet paper holder is included in the east wall (Figure 212).

The blinds over the window on the north wall are white with fabric connectors. A curtain rod was observed above the window suggesting curtains were previously installed (Figure 213). There are two light fixtures in the bathroom. One fixture is located above the shower on the ceiling (Figure 214). This fixture has a single bulb, which is currently missing, with a metal base. The glass globe is also missing. The second fixture is located above the sink, extending from the west wall. This fixture has a metal base with a single bulb, covered by the original frosted glass shade (Figure 215). There is one HVAC vent with a typical white metal register at the baseboard of the west wall next to the door. All of the bathroom outlet and switch plates are metal (Figure 216).

Living Room

The living room features wood floors with wood baseboards and quarter-round stained to match the floors (Figure 217). Stained wood crown molding wraps the perimeter of the ceiling. The south, east and west walls are covered with light green wallpaper and a stained wood chair rail and the north wall is covered with vertical stained wood panels. The trimmed passageway back into the foyer is stained wood matching the rest of the trim and paneling in the room. Access to the glass porch can be found on the north and east walls. On the north wall the doorway consists of a set of stained wood French doors (Figure 218). The west door includes an original metal doorknob and key escutcheon that face the living room. The original metal handle faces the glass porch (Figure 219). The east door has a metal sliding lock at both the top and the bottom. Each door has five glass lites that extend almost the full height of the door. These doors open towards the living room. On the east wall an open stained wood framed doorway remains (Figure 220). Evidence, such as abandoned door hardware, was observed that suggests another set of French doors was previously installed at this location. To further reinforce this, a set of matching French doors was found stored in the basement (Figure 158).

A primary feature of this room is a fireplace that sits in the center of the north wall (Figure 221). The fireplace has a slate surround with carved wood pillars, apron and mantel (Figure 222). The interior of the fireplace is brick with a slate hearth extending into the room. Above the fireplace are two wall sconces. These fixtures contain one bulb each and are covered by curved glass (Figure 223). Screws in the shape of

flowers hold the glass cover over the bulb (Figure 224). Directly east of the fireplace is a set of floor-to-ceiling built in wood shelves and cabinets (Figure 225). Open shelves occupy the top of the assembly and three tongue and groove wood cabinets occupy the bottom of the assembly (Figure 226 and Figure 227). The center cabinet is the largest and has two doors while the cabinets on either side are smaller with one door each. Each door has a small round metal door pull. Behind the doors is more storage space, with the bottom half occupied by vertical slots and the top half occupied by one large shelf.

A large window assembly is centered on the south wall (Figure 228). Two light sconces, which match those on the north wall over the fireplace, flank the window on the south wall. A typical wood paired casement window opens out to the glass porch on the east wall (Figure 229). The surfaces of the window sashes and casing that face the living room are stained. Each sash has four lites of glass in a 2/2 arrangement.

Three HVAC vents were observed in the living room. Two metal registers are located near the top of the west wall at the north and south corners. One metal register is positioned at the baseboard on the east wall next to the built-in shelving. Clear outlet and switch plates are installed at all locations except on the north wall where wood plates are installed to match the wood paneling.

Glass Porch

The glass porch wraps around the north and east walls of the living room making an L-shape. While the rest of the first floor is raised approximately seven inches above the ground, the glass porch sits at ground level. The wood door frame through the east door of the living room is painted white on the porch side. Directly to the south after passing through this doorway are wood and brick shelves (Figure 230). Directly in front is the east sliding glass door (Figure 231).

There is a ramp that eases the transition down to the porch at the entrance through the French doors on the north wall of the living room. On the porch side these doors are painted white and are bordered by green painted wood shutters that appear to be original to the home, as they are wood (not plastic like the shutters observed at the exterior windows) and they utilize the surrounding metal shutter dogs (Figure 232). West of the door is a light fixture with a single bulb, encased in a lantern-style metal and glass cover (Figure 233). Directly across from the French doors is the north set of sliding glass doors (Figure 234).

Full height continuous aluminum-framed storefront windows provide the room with a view of the backyard and gardens. The glazing is comprised of approximately 6 feet 8 inch by 6 feet 1inch and 1 foot 6 inch by 6 foot 1 inch insulating glazing units (IGUs) with aluminum vertical and horizontal mullions. Each bay is divided into one tall IGU that rises from the floor with the short transom IGU at the top (Figure 235). At the northwest corner of the porch the glazing is interrupted by a 4 feet 8 inch wide brick wall that houses two utility plates (Figure 236).

Sections of brick are also present where the storefront assembly interfaces with the original brick facades. On the south wall of the porch a portion of the original porch wall was preserved; this wall was approximately 9 feet wide by 2 feet 7 inches high. An additional brick wall, approximately 2 feet 6 inches wide, was added from the top of the original wall to the aluminum framing of the glass porch (Figure 230). On the west wall a section of brick approximately 8 inches wide and the full height of the porch is present at the transition between the storefront windows and the brick facade (Figure 237). The south and east interior walls of the porch are the original exterior brick face of the home. A “lighting cove” for recessed lighting, made of white pine and painted white, is in place along the top of the interior brick walls (Figure 238). The walls meet square white ceiling tiles at the top that conceal the mechanical equipment above (Figure 239). Per the original 1958 drawings, the tiles are “mechanically suspended acoustic tiles.” A pattern of brick pavers made up of square and rectangular bricks of varying size and color covers the floors (Figure 240).

Rectangular metal vent registers are installed on the floor along the perimeter of the glass porch, spaced in front of every-other IGU. Raised metal utility ports are also installed on the floor along the perimeter of the porch generally placed in the vicinity of the registers (Figure 241). Several more metal utility and switch plates are located at various places on the brick walls. On the interior south wall, to the west of the living room door, resides one large metal register (Figure 242). Further east on the wall is a smaller vent with a decorative register and a water spigot both identical to those on the exterior of the home, indicating that these are original to the home and were not part of the addition (Figure 243).

Second Floor

Landing

The main access point to the second floor landing is by way of the main staircase from the foyer. The floral wallpaper that decorates the foyer continues through the stairwell to the landing. In addition, the white wallpapered ceilings, wood floors and white baseboards with wood quarter round of the foyer are replicated at the landing. To the west of the main staircase is an unframed arched passageway that leads into the second floor hallway (Figure 244). To the east a typical white six-paneled door leads to Bedroom A. Directly across from the top of the stairs is a closet with white painted wood French doors (Figure 245). A metal doorknob and key escutcheon is installed on the left door and sliding bolt locks are installed at the top and bottom of the right door. White wood shelves are installed on the right side of the closet and a hanging rod and hooks with a shelf above are installed on the left side. The wood floors of the landing continue into the closet as well as the white baseboard with the wood quarter-round. The walls inside the closet are covered with white wallpaper.

One hanging light fixture is centered above the landing rail (Figure 246). The fixture has a gold metal base, chain, and cage with one lightbulb. The bulb is encased in a glass shade. There is one wood switch plate and one clear outlet plate in the landing. A white metal register is located in a small alcove on the south wall that contains the window.

Hallway

Two bedrooms and one bathroom can be reached through the hallway off the second floor landing. The doorway through the south wall leads to Bedroom C, through the north wall leads to Bathroom B and through the west wall leads to Bedroom B. The finishes in the foyer and landing continue into the hallway. An access hatch is located in the center ceiling of the hallway providing access to the attic (Figure 247). A white switch located on the wall appears to turn on a house fan that is located above the trap door. A light fixture is located east of the access hatch, directly in front of the arched passageway. This fixture has a gold metal base with one bulb and is missing its glass globe.

Bedroom A

The entrance to Bedroom A is through the east wall of the second floor landing. The main door of the bedroom leads into a walk-through closet in which “his and hers” closets are located on both the north and south walls (Figure 248). Each side has two closet doors with a continuous space behind the doors. All four doors are typical six-paneled doors with a stained wood finish. The closets on the north wall contain a wood hanging rod, hooks, and shoe parks with shelves above (Figure 249 and Figure 250). On the south wall, the closets contain only shelves (Figure 251). A light fixture is located in the center of the walk through closet ceiling (Figure 252). The fixture has a gold metal base and a single light bulb with the glass globe currently missing. A wood frame outlines the passageway into the main bedroom space.

Both the bedroom and the walk through closet are covered in a decorative floral wallpaper and feature typical wood floors (Figure 253). The wood baseboard and quarter-round are stained to match the floors. The tops of the north and south walls are sloped symmetrically to follow the roofline (Figure 254). Two built-in stained wood shelves are situated in the northeast and southeast corners of the bedroom (Figure 255). A built-in corkboard is mounted on the west wall (Figure 256). Below the corkboard is a plumbing hatch that provides access to the bathtub plumbing behind the wall (Figure 257). A typical six-

paneled wood door that leads to the bathroom is located on the west wall, adjacent to the corkboard (Figure 258). The door is stained on the bedroom side and painted white on the bathroom side. The switch and outlet plates are clear plastic allowing the wallpaper to be visible. Two metal registers provide air to the room. One register is located on the baseboard near the north window and the other is located in the southwest corner next to the door frame to the walk through closet.

Three windows provide light to the space as well as a typical ceiling-mounted bedroom light fixture which is missing the glass globe.

Bathroom A
Bathroom A is accessed through a door in the northwest corner of Bedroom A. A wood threshold separates the linoleum bathroom floor from the wood floor of the bedroom. This linoleum matches the linoleum used in the kitchen (Figure 259). White tile walls rise from the floor about halfway up the wall until they meet a white painted wall that extends to the ceiling, which is painted blue (Figure 260 and Figure 261).

Immediately across from the entryway is an original white porcelain toilet with a toilet paper holder built into the north tile wall (Figure 262). Adjacent to the toilet is an original console sink made of white porcelain with two metal legs on the front and exposed piping beneath (Figure 263). One towel bar extends from the legs on the side closest to the toilet. The faucet spout and handles are metal. There is a built-in soap holder and medicine cabinet/mirror directly over the sink on the west wall. Above the mirror is one light fixture with an original frosted glass shade extending from the wall that matches the frosted shade in the first floor bathroom. To the left of the doorway is a combined bathtub and shower with tile walls and metal faucets that appear to be original (Figure 264). A metal shower curtain rod is installed over the tub. A silver metal towel bar is fastened to the back of the door (Figure 265).

Two metal registers are located in the bathroom. One is located on the west wall above the shower. The other is located at the baseboard on the east wall adjacent to the bathtub. All switch and outlet plates are metal.

Bedroom B
Bedroom B is accessed through the second floor hallway. The bedroom door is a typical six-paneled white door. Floral wallpaper covers the walls, and the top of the west wall slopes to follow the roofline (Figure 266 and Figure 267). The bedroom features typical wood floors and the wood baseboard is painted white with a stained wood quarter-round on the bottom to match the floors. A typical six-paneled white door leads to a typical bedroom closet in the southwest corner of the room. The closet contains white wood shelving and a metal hanging rod. The walls and ceiling inside the closet are painted white.

A typical bedroom light fixture is located in the center of the ceiling. There are two metal registers that provide air to the room. One is located at the baseboard in the northeast corner and the other is near the top of the south wall adjacent to the closet door. Switches and outlets are covered with clear plastic switch and outlet plates.

Bathroom B
Bathroom B is located off the second floor hallway adjacent to Bedroom B and across the hall from Bedroom C. The bathroom door is a typical white wood six-paneled door. Both the ceilings and walls are painted white and have a white tile baseboard. White patterned carpet covers the floor (Figure 268). The wood floors in the hallway and the carpet in the bathroom are separated by a 3-5/8 inch wood threshold. The east wall is slanted at the top following the roofline (Figure 269). There is one closet in the bathroom located directly behind the shower. The features of the closet mimic those found in the first floor bathroom closet.

The bathroom plumbing fixtures and accessories are visually intact and most appear to be original to the home (components were not tested for functionality). The console sink is made of white porcelain and has two metal legs on the front similar to the other bathrooms (Figure 270). Unlike the other console sinks in the home there are not towel bars on this sink. The faucet spout is metal and the handles are clear white plastic knobs that may be replacement knobs. There is a medicine cabinet mirror and built-in soap holder directly over the sink on the west wall. The shower is located east of the hallway door and the components and finishes match the shower in the first floor bathroom. The toilet is a typical white porcelain fixture and is situated against the north wall (Figure 271). A built-in toilet paper holder is adjacent to the toilet on the east wall. Directly across from the shower on the west wall are two typical metal towel bars (Figure 272).

The light fixtures match those in the first floor bathroom. The frosted glass tube was in place at the fixture located on the ceiling above the shower on the ceiling (Figure 273). There is one white painted metal register at the baseboard of the west wall next to the door and another register located on the west wall near the ceiling. All of the bathroom outlet and switch plates are metal.

Bedroom C

Bedroom C is accessed from the second floor hallway. The door to the bedroom is a typical six-paneled white door. The walls are covered with floral wallpaper (Figure 274). The bedroom features typical wood floors and the wood baseboard is painted white with a stained wood quarter-round on the bottom to match the floors. Two doors provide access to two separate closets on the west wall. A typical six -paneled white door leads to a typical bedroom closet in the southwest corner of the room. The door holds a full-length mirror on the closet side (Figure 275). This closet contains one white wood shelf with a wood hanging rod and hooks underneath. Additionally, built-in white wood shelves are installed in one corner and a white wood shoe park is located on the floor (Figure 276). A typical six-paneled white door leads to a typical bedroom closet in the northwest corner of the room. In lieu of a typical turn-knob latch at the closet side of the door, a typical round metal doorknob is in place. White wood shelves with hooks underneath are installed on the north and south walls of the closet and an angled door provides access to the storage room on the west wall (Figure 277).

A typical bedroom light fixture is located in the center of the room on the ceiling. Metal registers are located on the south and north wall. On the south wall, the register is located at the baseboard near the southwest corner. On the north wall, the register is located near the ceiling, adjacent to the bedroom door. All of the outlet and switch plates are made of clear plastic.

An existing opening in the wall allowed for examination of the plaster wall layers (Figure 278). The base layer is a white plaster that resembles a cementitious wall board. The second layer is a brown coat layer and is separated from the first layer by paper. The top layer is a typical white plaster layer, onto which the wallpaper is adhered. It is assumed that this wall composition is typical throughout the home.

Storage Room

The storage room is a small attic space located under the west wing gable that can be accessed through the northwest closet in Bedroom C. The door to the room is angled at the top, made of wood panels that are painted white and has a small metal doorknob (Figure 279). The interior of the room has wood floors, oriented diagonally across the floor. The north and south walls are made of wood rafters and deck boards that are slanted and meet at the roof ridge line. At the base of the north wall, insulation is packed around the rafters adjacent to the wood floors (Figure 280). At the base of the south wall, the rafters bear on a wood nailer board that is on top of the brick exterior wall (Figure 281). Wood panels, oriented diagonally, were observed at the east and west walls with brick at the base of the walls (Figure 282). A portion of the south chimney brick wall is visible in the southeast corner of the room (Figure 283). Several screens that may have been taken off windows in the house are currently stored in the room. There is one light fixture at the ridge of the roofline that is similar to those in the bedroom closets. Wires run along the ridgeline to provide electricity for the light.

Attic

The attic of the home is accessed through a hatch in the second floor hallway ceiling. This hatch leads into a metal duct that serves as an entryway for the attic and a house fan (Figure 284, Figure 285, and Figure 286). The attic extends over the east wing and the center core of the home. The area above the center core is covered with wood floor boards (Figure 287). The attic above the east wing is not floored, exposing the floor joists and insulation (Figure 288). The triangular profile of the roof is reflected in the attic space. Wood rafters and roof decking cover the space, typically meeting the wood floor boards and insulation at the base of the walls (Figure 289). At the south gable end of the main core, the wood rafters and decking meet the brick wall of the south chimney (Figure 290). A wood ridge beam runs along the centerline of each of the two attic areas (Figure 291). Wood panels, oriented diagonally, were observed at the gable ends of the attic (Figure 292).

"Shur-Stop" fire grenades are hanging from the ridge beam above the center core (Figure 293). These fire grenades contain toxic extinguishing chemicals, such as carbon tetrachloride, that are intended to release during a fire when the encasing glass is broken due to high temperatures. The chemicals act to smother the fire. The grenades appear original to the home; it is unclear if they would still function as originally designed.

Figure 139. View of the main staircase from the first floor.

Figure 140. View of the main staircase from the second floor.

Figure 141. View from the second floor landing looking north through the railing.

Figure 142. Stained wood treads, risers, and nosings.

Figure 143. Typical white balusters.

Figure 144. Typical base of newel posts on main staircase.

Figure 145. Typical top of newel posts and steep curve in handrail on main staircase.

Figure 146. Railing detail at bottom of staircase, where handrail curls away from stairs.

Figure 147. View of landing from staircase.

Figure 148. Typical six-paneled wood door with metal doorknob and key escutcheon (kitchen to basement staircase).

Figure 149. View of basement staircase from top of stair.

Figure 150. View of basement staircase from bottom of stair at basement. Note brick at corner.

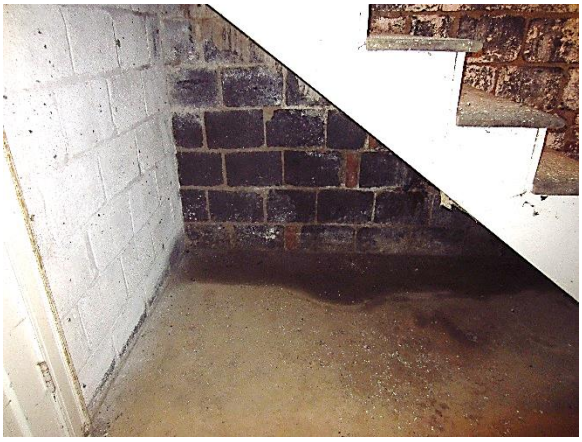

Figure 151. Side view of basement staircase. Note moisture in CMU and edge of slab beyond.

Figure 152. Five-paneled closet door located in the basement.

Figure 153. Basement CMU wall with brick course at top.

Figure 154. Window on west wall with brick at three corners of the window rough opening.

Figure 155. Typical brick columns in basement. Note the white coating on the brick.

Figure 156. Western-most brick column with CMU tie-in to wall.

Figure 157. Hole through east CMU wall to allow air duct to reach the upper floors.

Figure 158. French doors stored in the basement.

Figure 159. View of the foyer, looking southeast.

Figure 160. View of the lowered ceiling at the entryway to the foyer.

Figure 161. Foyer closet door with wood paneling to match south wall.

Figure 162. Baseboard continues across opening to foyer closets.

Figure 163. Passageway that leads to hallway west of the foyer.

Figure 164. Circular light fixture in foyer with metal base and missing globe.

Figure 165. Typical white painted metal vent.

Figure 166. Typical clear plastic outlet and utility plates.

Figure 167. View of first floor hallway, looking west.

Figure 168. Hallway light fixture with decorative circular metal base and missing globe.

Figure 169. Typical wood switch plate.

Figure 170. Six -paneled door between hallway and dining room. Door is wider than typical door in home.

Figure 171. Typical metal door knob and metal key escutcheon.

Figure 172. Swing door between kitchen and dining room stored in dining room.

Figure 173. View of dining room, looking north. Note evergreen design wallpaper and typical painted chair rail, crown molding, and baseboards.

Figure 174. Chair rail in dining room. The profile is typical for all other chair rails in the home.

Figure 175. Baseboard in dining room. Baseboard profile is typical for all other baseboards in the home.

Figure 176. Dining room hanging light fixture. Glass globe and one bulb currently missing.

Figure 177. Metal outlet plate on floor of dining room.

Figure 178. Kitchen door to exterior.

Figure 179. View of kitchen floor, looking west.

Figure 180. Stained linoleum flooring where kitchen appliance once sat.

Figure 181. View of the kitchen south wall.

Figure 182. KitchenAid dishwasher.

Figure 183. Metal towel bar in kitchen, typical towel bar style for entire home.

Figure 184. Cabinetry above countertops extends to the ceiling.

Figure 185. Typical replacement drawer and cabinet handle.

Figure 186. Interior of replacement cabinets.

Figure 187. Lazy Susan located in a kitchen cabinet to the right of the dishwasher.

Figure 188. Lower replacement metal cabinets and drawers on north wall.

Figure 189. Upper replacement metal cabinets on north wall.

Figure 190. Original metal handles for lower cabinets and drawers in kitchen.

Figure 191. Original oval knobs for upper cabinetry in kitchen.

Figure 192. Metal racks are used in lieu of wood shelves in some of the original cabinets.

Figure 193. View of large cabinet on north wall and pantry door.

Figure 194. Fluorescent light on ceiling in kitchen.

Figure 195. Fluorescent light above sink in kitchen.

Figure 196. View of typical finishes on east wall in Bedroom D.

Figure 197. Typical bulb with pull chain located in closets throughout the home.

Figure 198. Bedroom D windows with blinds and curtains in northwest corner of room.

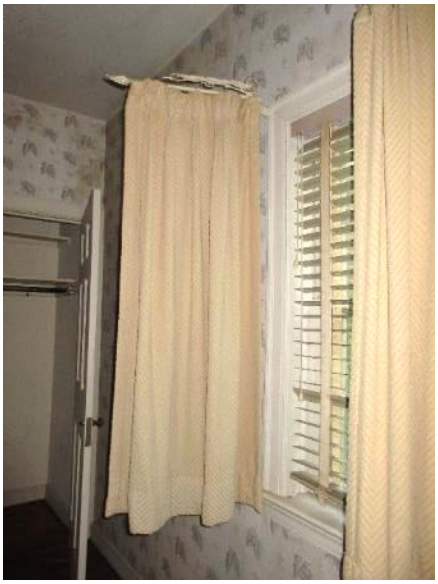

Figure 199. Typical curtains in Bedroom D.

Figure 200. Bedroom D curtain rod detail.

Figure 201. Typical bedroom light fixture with missing glass globe.

Figure 202. Missing register from Bedroom D located in first floor bathroom sink.

Figure 203. Vent on south wall taped over in Bedroom D.

Figure 204. Typical white outlet plate. These were observed at isolated locations throughout the house.

Figure 205. View of typical finishes in first floor bathroom looking north. Side view of original console sink.

Figure 206. Typical white two -paneled door to bathroom closets.

Figure 207. First floor bathroom sink details. Note the clear plastic tips on the ends of the flow and temperature controls.

Figure 208. Glass and metal shelf in first floor bathroom.

Figure 209. First floor bathroom shower curtain rod and plastic frame.

Figure 210. First floor shower faucets and soap holder. Note staining and peeling paint on shower wall.

Figure 211. Terrazzo floor and drain in first floor shower. Typical for Bathroom B as well.

Figure 212. First floor bathroom toilet and toilet paper holder.

Figure 213. First floor bathroom window with white blinds. Note the curtain rod installed at the top of the window frame.

Figure 214. First floor bathroom light fixture above shower missing bulb and glass globe. The fixture is typical for Bathroom B as well.

Figure 215. Original light fixture above sink. Typical for all bathrooms.

Figure 216. Typical metal switch plate.

Figure 217. View of typical finishes in the living room, looking northeast.

Figure 218. French doors from living room to glass porch, looking north.

Figure 219. Detail view of the original handle used to open the French doors to the living room.

Figure 220. View of east wall of living room and doorway to glass porch. Doors have been removed, but hinges are still in place.

Figure 221. View of fireplace on north wall of living room.

Figure 222. Detail view of mantle over fireplace.

Figure 223. Wall sconce located over fireplace in living room.

Figure 224. View of flower detailing on screw head.

Figure 225. Built-in shelving and cabinets on north wall of living room adjacent to fireplace.

Figure 226. Built-in cabinets located on north wall of living room, adjacent to fireplace.

Figure 227. Detail view of tongue-and-groove construction of built-in cabinet doors, adjacent to fireplace in living room.

Figure 228. View of large window assembly on south wall of living room.

Figure 229. View of paired casement windows on east wall of living room.

Figure 230. View of south wall of glass porch. Note the shelves adjacent to the storefront windows.

Figure 231. Sliding glass doors located on the east side of the glass porch.

Figure 232. Original shutters with original shutter dogs framing the French Doors.

Figure 233. Lantern-style light fixture located on the south wall of the glass porch.

Figure 234. Sliding glass doors located on north wall of glass porch,

Figure 235. Typical storefront windows at glass porch, looking north.

Figure 236. Northwest corner of glass porch. Note the brick wall that makes up the north side of the corner.

Figure 237. Southwest corner of glass porch. Note the vertical joint in the masonry between the original brick of the home and the brick added during construction of the glass porch.

Figure 238. View of underside of white "lighting cove" that is installed on the perimeter of the brick face in the glass porch.

Figure 239. View of the acoustic ceiling tiles, "lighting cove," and brick wall on the south interior wall of the glass porch.

Figure 240. Brick pavers make up the flooring of the glass porch.

Figure 241. Typical rectangular metal registers and utility ports located along approximately every other IGU in the glass porch.

Figure 242. Large register located on interior south wall of glass porch, adjacent to the French doors that lead to the living room.

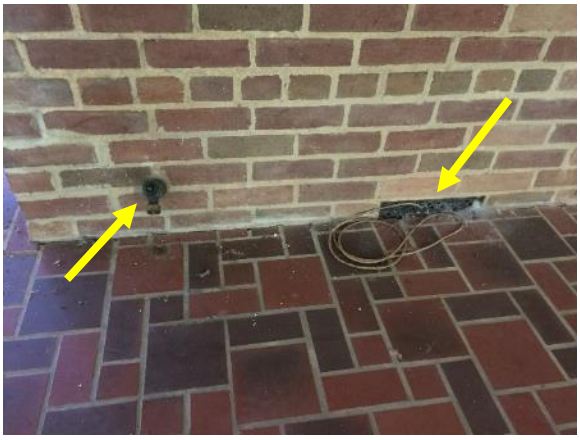

Figure 243. Spigot and decorative metal vent register located on the south wall of the glass porch. These appear to be original to the house and were enclosed with the addition of the porch.

Figure 244. Typical interior finishes of second floor landing, matching those in the first floor foyer. Photo taken looking west.

Figure 245. Six (6)-paneled closet French doors at second floor landing.

Figure 246. Second floor landing hanging light fixture.

Figure 247. Access hatch located on the ceiling of the second floor hallway.

Figure 248. Bedroom A "his and hers" closets on both sides of entryway to room.

Figure 249. "His and hers" closets on north wall in Bedroom A.

Figure 250. "His and hers" closets on north wall in Bedroom A. Note the built-in shoe parks at the bottom of the closet.

Figure 251. "His and hers" closets on south wall in Bedroom A.

Figure 252. Light fixture with gold base and missing glass globe located in walk through closet to Bedroom A.

Figure 253. Typical finishes in Bedroom A, looking east.

Figure 254. West wall of Bedroom A. The left doorway leads into the walk through closet and the right doorway leads into the bathroom.

Figure 255. Built-in shelves at northeast and southeast corners of Bedroom A.

Figure 256. Cork board on west wall of Bedroom A.

Figure 257. Access hatch for bathroom plumbing on west wall of Bedroom A.

Figure 258. Stained wood door to Bathroom A from Bedroom A.

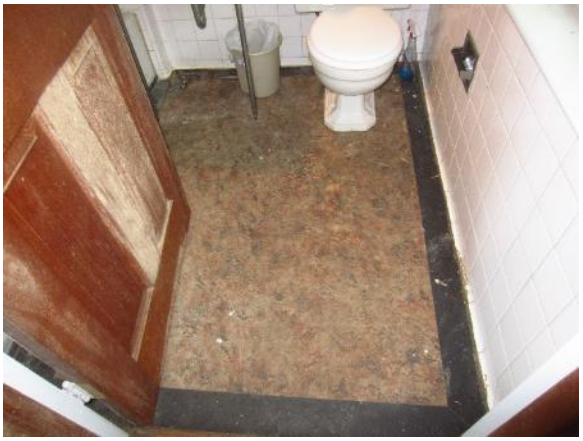

Figure 259. Tan and black marbled linoleum floor with a black border in Bathroom A.

Figure 260. View of Bathroom A, looking northwest.

Figure 261. Blue painted ceiling in Bathroom A.

Figure 262. White porcelain toilet and metal toilet paper holder in Bathroom A.

Figure 263. Porcelain sink with metal legs, faucet and towel bar in Bathroom A.

Figure 264. Silver metal faucets located in Bathroom A shower.

Figure 265. Towel bar on back of door to Bathroom A.

Figure 266. Typical finishes in Bedroom B, looking east.

Figure 267. West wall of Bedroom B. Note the sloped wall at the top.

Figure 268. View of Bathroom B, looking north. Note the carpet floors painted white walls and original sink.

Figure 269. Northeast corner of Bathroom B. Note the sloped wall and painted white walls and ceilings.

Figure 270. Porcelain console sink in Bathroom B. Note plastic replacement knobs for temperature control.

Figure 271. Bathroom B porcelain toilet and metal toilet paper holder.

Figure 272. Metal towel bars on west wall of Bathroom B.

Figure 273. Light fixture located above shower in Bathroom B. Note this fixture's glass globe is still intact.

Figure 274. Typical finishes in Bedroom C, looking north.

Figure 275. Back of southwest closet door with full length mirror.

Figure 276. Built-in shelves in the southwest closet in Bedroom C.

Figure 277. Angled doorframe to storage room through northwest closet of Bedroom C.

Figure 278. View of plaster layers at an existing hole in the wall.

Figure 279. Door to storage room.

Figure 280. View of north wall of storage room. The wood rafters meet insulation next to the wood floors.

Figure 281. View of south wall of storage room. The wood rafters meet a wood nailer on top of the brick wall.

Figure 282. West wall of storage room, under gable. Note the diagonal wood boards and attic casement window.

Figure 283. Southeast corner of storage room. Note the diagonal wood wall with a portion of the brick chimney exposed.

Figure 284. Attic hatch as viewed from attic through house fan.

Figure 285. House fan located in metal duct over attic hatch.

Figure 286. Door from metal duct into attic.

Figure 287. Wood attic floors above center core of home, looking south.

Figure 288. Floor joists are exposed in attic space above east wing. Note the attic window under the east gable end.

Figure 289. Roof rafters meet wood floor joists and insulation in attic.

Figure 290. Brick chimney wall at southwest corner of attic above center core. Note moist wood above and adjacent to brick indicating water infiltration.

Figure 291. Typical attic ridge beam.

Figure 292. Diagonally-oriented wood boards at north gable end.

Figure 293. "Sure stop" fire grenades found attached to ridge of attic. These were used to extinguish fires.

Interior Condition Assessment

Interior Damage due to Water Infiltration

The specific locations of water infiltration described below are depicted on the notated 1938 and 1958 house floor plans provided in Appendix A. Each of these locations is related to a deficiency in the exterior envelope which is described below. Four areas of *significant* water infiltration and subsequent deterioration of the wall assembly and/or interior finishes were observed.

- **Basement Foundation Walls -** The following water damage was observed in the basement:
  - WJE was on site during a natural rain event and observed significant standing water in the basement (Figure 294). WJE was also on site for several dry weather days during which the foundation wall was consistently damp below the basement window sills (Figure 295). The perimeter of the concrete floor slab was damp as well.
  - The mortar throughout the walls was sandy and easily broke apart (Figure 296).
  - Staining, missing and unadhered coating, efflorescence and potential microbial growth were observed along the full perimeter of the CMU foundation walls.
  - All of these conditions are common results of prolonged saturation of mass masonry walls. The missing gutters and downspouts, as well as the debris accumulation in the window wells, result in bulk water being directed towards the foundation walls in lieu of away from the walls during natural rain events. The single 12 inch wythe of CMU is very porous in nature and is not capable of serving as a waterproof barrier on its own, particularly in a below-grade application. As the mortar within the CMU joints continues to break down due to prolonged saturation, it will allow an increasing amount of bulk water to penetrate the foundation walls. Additionally, if the mortar deteriorates to the point of substantially decreasing its compressive strength the structural integrity of the foundation wall will be compromised.
  - Based on a detail in the original 1938 drawings, a below-grade waterproofing membrane may be present on the exterior face of the foundation walls; however, WJE was unable to visually confirm the presence or the condition of the membrane. If such a membrane was originally installed, it is no longer is functioning as originally designed.
  - WJE did not observe a drainage system within the basement floor during our survey and no indication of a drainage system is shown on the original 1938 drawings. Although sump pumps in basements may not have been as common in residential construction during the 1930s, it is possible that the Whites would have installed a sump pump or similar mechanism in subsequent years if water infiltration in the basement was a continual problem. If such a pump or other drainage system is in place, it is not currently functioning to sufficiently handle the volume of water infiltration in the basement during a typical rain event.

- **South Interface between East Wing and Center Core -** The following water damage was observed to varying degrees in the second floor landing closet, Bedroom C, the first floor foyer closet and the dining room:
  - The wood stud wall framing members are very soft, exhibit section loss, and several members have split apart, indicating wood rot (Figure 297). It should be noted that the plaster is missing at the northeast corner of Bedroom C, which allowed WJE to observe and confirm the condition of the wood stud framing members. *Similar deterioration may be present at the wood framing in the closets and dining room as well as Bedroom A and the southwest corner of Bedroom C; however, the plaster in those rooms was still mostly intact at the time of our survey and therefore the condition of the wood could not be confirmed.*
  - Extensive water staining and possible microbial growth were observed at the wood framing members, plaster, wallpaper, and wood floors (Figure 298 and Figure 299). Blistering and powdery plaster were also observed.
  - It is our understanding that the roof valley flashing above this area was recently detailed with remedial black sealant (see Exterior Condition Assessment above). Using a moisture meter,

- WJE confirmed that the plaster in these rooms is relatively dry, indicating that the remedial work performed at the valley flashing has temporarily mitigated the water infiltration.

- **North Facade of East Wing -** The following water damage was observed in Bedroom A adjacent to the north chimney:
  - Extensive water staining and possible microbial growth were observed at the plaster, wallpaper and wood floors at the north wall of Bedroom A. Blistering and powdery plaster were also observed (Figure 300).
  - The CMU chimney wall and the layers of plaster are visible where an area of the plaster is missing (Figure 301).
  - To our knowledge, the deficient flashing conditions at the chimney have not been addressed and the resulting water infiltration will continue to negatively impact the CMU and the wood stud framing members within the walls. Using a moisture meter, WJE confirmed that a significant area of the plaster on the north wall contains a very high moisture content, indicating that this is an active location of water infiltration (Figure 302).

- **Interface Surrounding South Chimney -** The following water damage was observed in the southwest corners of Bedroom C and the attic:
  - The wood stud wall framing members are very soft, exhibit section loss and several members have split apart, indicating wood rot in the attic immediately adjacent to the south chimney (Figure 303). This is likely due to the ineffective cricket flashing and drainage path at the interface between the chimney and the roof above (see Exterior Condition Assessment).
  - Extensive water staining and possible microbial growth were observed at the plaster and wallpaper at the southwest corner of Bedroom C (Figure 304).
  - To our knowledge, the deficient flashing conditions at the chimney have not been addressed, and the resulting water infiltration will continue to negatively impact the brick masonry and the wood stud framing members within the walls. Using a moisture meter, WJE confirmed that a significant area of the plaster on the north wall contains a very high moisture content, indicating that this is an active location of water infiltration.

The following areas of *minor* water infiltration and subsequent deterioration of the wall assembly and/or interior finishes were observed.

- **Glass Porch Ceiling -** Moisture staining, holes in the ceiling tiles and potential microbial growth were observed in several isolated areas. These areas are primarily located against the original north brick facade, along with streaking on the brick (Figure 305 and Figure 306); however, several isolated areas are located in the center of the room (Figure 307). This staining is indicative of water infiltration, likely from the roof and associated flashings above. It should be noted that due to the joist framing of the glass porch roof, it is possible that the breach in the roof assembly is not directly above the observed staining. Water possibly infiltrates the copper roof at a certain location and then travels along the roof joists until it drops down to the ceiling tiles.
- **Main Stairwell -** Evidence minor water infiltration, including staining and missing plaster top coat, was observed in the stairwell between the first and second floor of the home (Figure 308). Per the original drawings, a pipe runs vertically behind this wall. The pipe penetrates through the roof (Figure 309); it is possible that there is a breach in the flashing around the pipe penetration or a leak in the pipe that caused the observed staining of the plaster and wallpaper.
- Minor streaked surfaced staining, indicative of limited water infiltration, was observed in several locations (Figure 310).

The following observations are likely a result of unregulated temperature and relative humidity levels within the home for extended periods of time, particularly due to the observed water infiltration listed above. Moisture drive through the exterior wall assembly may also be contributing to these conditions; further study is required to confirm the source.

- The paint and wallpaper inside the home are generally in poor condition. The wallpaper is discolored, peeling, and/or missing to varying degrees in all rooms (Figure 311 and Figure 312). Potential microbial growth was observed at the wallpaper in several rooms. Cracked and peeling paint with minor staining on both the walls and ceilings was observed at the painted surfaces throughout the home (Figure 313).
- Potential microbial growth was observed on many of the wood surfaces, both painted and stained, throughout the home (Figure 314 and Figure 315).

The following observations are typical material conditions, excluding the specific areas of observed water infiltration listed above:

Plaster

- The plaster is typically in fair to good condition.
- Potential microbial growth was observed on the ceiling of the basement (Figure 316).
- Several holes were cut into the basement ceiling to accommodate pipes and duct work. Some of the duct work has detached from the ceiling, resulting in holes in the plaster (Figure 317).
- Isolated cracks through the plaster were observed in the home. The cracks may be due to deterioration of one or multiple of the joists in the ceiling; however, this could not be confirmed because the attic space above these cracks was inaccessible due to the lack of floorboards over the joists and the presence of batt insulation between the joists.
    - One substantial crack runs along the ceiling of Bedroom A, running parallel to the south wall from above the doorway to the window on the south wall, at which point it turns at a right angle and continues towards the wall. The crack extends down the wall to the window head (Figure 318).
    - Another crack stems from the corner of a passageway in the second floor hallway (Figure 319).

Finishes

- Dark staining torn wallpaper was observed around a vent in Bedroom D, possibly caused by excessive heat or smoke from the vent (Figure 320). No damage of this kind was observed at the interior finishes in the pantry (opposite side of the wall).
- The wood countertops in the kitchen in good condition, with isolated stains and minor dents. The wood cabinets in the kitchen are in fair to good condition. Some of the paint has been scratched from the surface, but the wood itself is sound (Figure 321).
- The painted wood paneling in the entryway on the first floor is in good condition.
- The painted and stained chair rails, window frames, crown molding, baseboards and wood built-in shelves and cabinets are typically in good condition with the following isolated deterioration.
    - The corner of one window casing in Bedroom B is cracked (Figure 322). There are two nails through the casing that are within 1/2 inch of the edge. The crack extends through these nail holes and was likely formed when the nails were installed due to the limited edge distance.
    - In Bedroom C, wood at the baseboard and the wallpaper below the window in the south wall is scratched and marked (Figure 323). This is likely from a repetitive motion, such as scraping a shoe against the base of the wall.
    - The stain is typically faded.
- The wood handrails in the main staircase and second floor landing are in good condition.

Floors

- The wood flooring throughout the house, including the steps, is typically in good condition; however, the finish of the wood varies significantly from room to room.
    - The perimeter of the wood flooring in the dining room, living room and Bedroom D is much darker in color than that in the center of the rooms, likely due to the presence of area rugs (Figure 324). The darker color extends into the hallway and closets, and therefore is likely due to application of a dark stain and/or sealer to the exposed portions of the floors. Further analysis would be required to confirm the cause of the color disparity.
    - Dark spots, scratches, and minor dents were observed on the floors in Bedroom B and Bedroom A (Figure 325).
    - Moisture staining on the floor was observed at multiple locations, primarily in the second floor bedrooms (Figure 326). Some of these locations are related to the aforementioned water infiltration issues from the roof. Others appear to be unrelated to the building envelope and were likely due to someone dropping a liquid on the floor.
- The linoleum in the kitchen is in poor to fair condition. The floor is cracked or stained in several locations (Figure 327). The linoleum in the first floor bathroom is in good condition with the exception of one tile that is missing. The linoleum in Bathroom A is in poor to fair condition. The floor is cracked and blistering in several locations, primarily below the sink and adjacent to the bathtub (Figure 328). This is likely due to water spillage from the sink and bathtub.
- The carpet in Bathroom B is in poor condition. The carpet is stained and worn and has debonded from the subfloor around the perimeter of the bathroom (Figure 329).
- Isolated brick pavers are cracked in the glass porch. The cracks extend from the base of the aluminum mullions near a corner of the porch (Figure 330). This may be due to unaccommodated thermal expansion and contraction of the aluminum against the pavers.
- One brick paver is loose in the glass porch near the east sliding glass door (Figure 331).
- Missing joint mortar was observed between several pavers in the glass porch (Figure 332).

Doors

- The wood doors on the interior of the home are typically in good condition.
- Minor chips and cracks were observed at the bottom of several doors (Figure 333).
- The swinging door from the kitchen to the dining room has been removed from its hinges and is currently propped up against the west dining room wall, adjacent to its frame.

Fixtures

- All of the light fixtures have retained their original light fixture bases; however, many of the glass globes are missing. The bases appear to be in good condition.
- There are original curtains and blinds in Bedroom D and original blinds in the first floor bathroom; however, the curtain and blinds are missing from the windows in the rest of the house. Some of the window frames have abandoned curtain hardware, but many are missing hardware.
- All of the exposed plumbing fixtures that remain in the home visually appear to be in good condition; however, the systems were not tested for functionality.
- Most of the metal vents in the home are blocked with dust. Some of the vents are also corroding (Figure 334).

Glass Porch Ceiling Tiles

- The ceiling tiles of the glass porch are typically in good condition.

Wood Wall Assembly Components

- The wood rafters and roof decking are typically in good condition.

Masonry and Mortar

- Bondline failure was observed in the glass porch at both interfaces between the original brick facade and the brick wall of the glass porch (Figure 335).

Figure 294. Water infiltration in the basement during an active rain event.

Figure 295. Damp area below window sill and at interface with floor slab several days after a rain event.

Figure 296. Soft, wet mortar on basement walls.

Figure 297. Missing and deteriorated plaster in Bedroom C revealing soft stud framing members.

Figure 298. Staining and peeling of wallpaper on ceiling due to water damage in dining room.

Figure 299. Potential microbial growth at ceiling due to water infiltration in dining room.

Figure 300. Extensive water staining at plaster, wallpaper and wood floors at north wall in Bedroom A.

Figure 301. CMU chimney wall and layers of plaster at water damage in Bedroom A.

Figure 302. High moisture content detected by the moisture meter (300 out of 300).

Figure 303. Soft stained wood in attic at southwest corner of house.

Figure 304. Water staining at plaster and wallpaper in southwest corner of Bedroom C.

Figure 305. Water staining at acoustic ceiling tiles in glass porch.

Figure 306. Streaking on brick in glass porch.

Figure 307. Moisture stains on ceiling tiles in center of glass porch.

Figure 308. Stained wallpaper as evidence of water infiltration in the main stairwell between the first floor and the second floor.

Figure 309. Pipe that penetrates roof above main staircase. This is a potential cause of water infiltration at this location.

Figure 310. Streaked surface staining and missing wallpaper (living room).

Figure 311. South wall of Bedroom B. Note typical discoloration of wallpaper. The door to the hallway is located on the left.

Figure 312. Typical peeling wallpaper on ceiling.

Figure 313. Typical peeling and blistering paint on walls.

Figure 314. Potential microbial growth on surface of wood paneling in living room.

Figure 315. Typical potential microbial growth on baseboard.

Figure 316. Potential microbial growth on plaster ceiling in basement.

Figure 317. Hole in plaster ceiling of basement from detached ductwork anchorage.

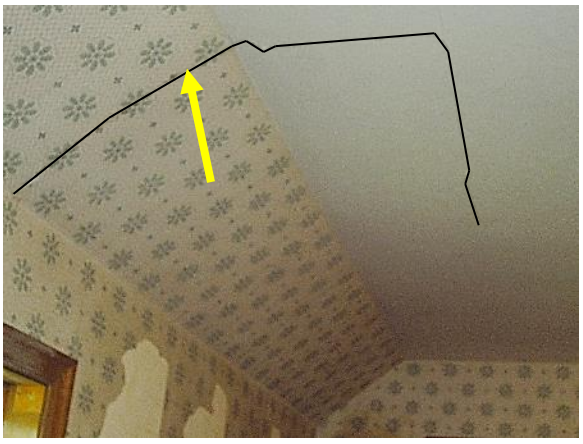

Figure 318. Cracked plaster in Bedroom A. Crack traced for clarity.

Figure 319. Horizontal crack through plaster in second floor hallway. Crack traced for clarity.

Figure 320. Dark surface staining and peeling/missing wallpaper and plaster around missing vent in Bedroom D.

Figure 321. Paint scraped at cabinets in kitchen.

Figure 322. Cracked window casing in Bedroom B.

Figure 323. Scraped baseboard and wallpaper in Bedroom C.

Figure 324. Color disparity between wood at center of room and wood at perimeter of room/hallway.

Figure 325. Dark marks on wood floor (Bedroom B).

Figure 326. Water stain on wood floor in Bedroom C, not related to locations of exterior water infiltration.

Figure 327. Cracked linoleum in the kitchen.

Figure 328. Cracked and blistered linoleum in Bathroom A.

Figure 329. Subflooring under debonded carpet in Bathroom B.

Figure 330. Cracked brick pavers around aluminum frame in glass porch.

Figure 331. Loose brick paver in glass porch.

Figure 332. Missing mortar between brick pavers in glass porch.

Figure 333. Chip at bottom of door to Bathroom B.

Figure 334. Typical blocked and corroded vent register.

Figure 335. Bondline failure at interface between original brick facade and glass porch addition. Crack traced for clarity.

Recommendations

Priority Recommendations

Based on the condition assessment performed as part of the Historic Structure Report, the following prioritization is recommended for work on the Margaret White house. Repairs related to safety issues should be completed first. Work related to exterior envelope should follow to prevent water infiltration and deterioration of building envelope materials and to address conditions that may lead to continued deterioration and loss of historic fabric. Consultation with an industrial hygienist may be warranted to review the extent of microbial growth, its likely source, and best practices for treatment and removal. In order, priority recommendations for the house include:

- To address the basement water infiltration:
  - Replace missing or damaged gutters and downspouts, and ensure they are draining properly into the subgrade storm water drain leaders to direct bulk water away from the foundation walls. Note that in order to replace hanging gutters in kind, new strap hangers must be installed and secured to the roof rafters beneath the slate shingle roofing such that localized slate shingle removal and reinstallation is necessary.
  - Remove built-up debris against basement windows, and ensure drains in window wells are working properly. Maintain the window wells to prevent the drains from becoming obstructed.
  - Determine if a sump pump or other drainage system is present in the basement. If present, perform remedial work as required to ensure the system is functioning as designed.
  - Remove up to two inches deep of deteriorated mortar at CMU and brick joints in basement and replace with a mortar strength similar to the original design intent, such as a Type N Portland Cement mortar (masonry cement is not recommended). Pack open voids in the wall assembly with mortar and repoint deteriorated or open mortar joints.
  - Monitor the basement for continued water infiltration; if significant water infiltration still occurs after completing the recommendations listed above, the following options may be considered:
    - OPTION A: Install a waterproofing membrane at the exterior facing side of the foundation walls. This option will require excavation of the soil around the perimeter of the foundation wall, cleaning the masonry from latent dirt and application of a membrane. This is the most disruptive and costly option, and it does not address water infiltration coming through the east foundation wall that is below the living room.
    - OPTION B: Install a French drain at the exterior of the foundation wall. This option will require excavation around the perimeter of the foundation wall.
- To address the roof water infiltration:
  - Replace copper valley flashings, chimney cricket and upslope flashings and intersection flashing between the west wing ridge and the center core eave. Replace the two-piece vent pipe penetration flashings with one-piece lead flashings. Localized slate shingle removal and reinstallation/replacement is necessary to fully access the copper flashings for replacement. Provide waterproof underlayment at these locations integrated with the existing roofing felt underlayment in addition to the copper flashing.
- Replace broken glazing lites for windows and doors. Ensure all windows are fully closed and locked to minimize the potential of water infiltration into the interior.

In addition to the specific repairs recommended, cyclical maintenance tasks such as inspection of mortar at brick, painting wood elements, clearing gutters and other ongoing maintenance tasks must be continually implemented to avoid damage to the historic site and building fabric and to reduce the need for large-scale repair projects in the future.

Exterior Long-Term Recommendations

WJE recommends the following specific repair and maintenance tasks be completed as part of the long term maintenance plan for the exterior of the house. All cleaning products should be selected based on field trials, with preference given to the gentlest means of cleaning that is effective in removing deleterious materials while protecting the finishes.

Masonry

- Replace severely cracked brick units in kind. Remove incipient spalls and unsound material. Minor spalls and chips can be left in place.
- Prepare and repoint cracked or open mortar joints in the brick masonry at both the house and the greenhouse wall. The mortar composition, color and profile should match the existing mortar. Note that discrete areas of the greenhouse wall may be unstable due to open mortar joints. Reset loose brick units as required to stabilize the wall.
- Investigate area of cracked mortar along second floor line on south facade to determine the condition of the embedded steel. If the steel is intact, remove surface corrosion and treat the steel with a corrosion inhibiting coating. Based on the investigation, additional repairs may be recommended, which may include replacement of the steel if significant section loss is observed.
- The exterior brick and stone pavers should be cleaned to remove efflorescence, organic growth, metallic staining, residual sealant and general soiling. No cleaning products containing strong acids (e.g., hydrofluoric or hydrochloric acid) should be used on the exterior masonry at any time, as these acids are harmful to persons, animals, the environment, and can cause irreversible damage and staining of the masonry.
- Remove abandoned fasteners and anchors, and replace the brick or mortar at the penetration location.
- Remove the existing coating from the surface of the brick in the window wells. Do not apply a new coating material.

Wood

- All exterior wood elements should be cleaned and repainted on a cyclical basis. In this climate, maintenance cycles for residential grade coatings on wood are typically between 7 and 10 years and depend heavily on the substrate's preparation, exposure and bond between the new coating and existing elements.
- Remove existing paint and repaint wood trim at eaves. Replace deteriorated wood trim where required. Some deteriorated wood may be repaired through a partial dutchman approach rather than full replacement.
- Remove all loose, soft and deteriorated wood at the glass porch soffit and replace in kind.
- Replace areas of torn aluminum bird screen at glass porch soffit in kind.
- Remove loose paint at front entryway and glass porch soffit until sound coating substrate is found. Feather the edges of the surrounding paint and allow wood to fully dry. Prime and repaint.
- Patch holes in the wood posts at the front entryway with an epoxy wood filler.

Fiber-Cement Siding

- The fiber-cement siding should be cleaned to remove organic growth and general soiling. If the manufacturer is determined, follow the manufacturer's typical cleaning recommendations. No cleaning products containing strong acids (e.g., hydrofluoric or hydrochloric acid) should be used on the exterior siding at any time, as such acids are harmful to persons, animals, and the environment and can cause damage and staining of the coating on the siding.

Roof

- Slate roof repairs: Please note that the following list of isolated slate roof repairs do not necessitate complete removal and replacement of the installed slate roofing to extend the roof useful lifespan twenty years or more (with annual maintenance), but it may be more economical and expedient to replace the slate roofing in total.
    - Remove and reinstall the surface-sealed strip saddle ridge slates set with new adhesive or flashing cement in accordance with industry standards.
    - Replace the small slate shingle roofing and copper flashings at the small secondary roof located on the east side of the north chimney. Integrate flashings into sloped chimney surface and counterflashing the flat seam copper roof below. Add copper rake edge flashing.
    - Re-secure loose slate and replace broken slate shingles in the roofing field. Utilize the nail-and-bid or slate hook method for securement of isolated replacement slate shingles; the sheet metal strap method utilized for recent repairs is not recommended due to the tendency for the strap to unfold in a relatively short period of time.
    - Re-install missing/failed snow guards when slate roof is next replaced in full. Installed snow guard type requires slate shingle removal for reinstallation.
- Replace the flat-lock soldered seam copper roof above the glass porch in kind, including the built-in gutter liner. The replacement roof should be carefully designed by a qualified roof consultant and installed by an experienced historic roofing contractor to accommodate thermal expansion/contraction of the sheet metal roofing and guttering, and include a waterproof underlayment membrane.
    - OPTION A: Alternately, the effective lifespan of the installed copper roof covering may be extended by application of a reinforced roof coating, targeted treatment of the seams, or re-covering the roof with an adhered membrane, though these repair options are not historically-sensitive and do not provide the longevity of a properly installed soldered flat seam copper roof.

Chimneys

- Perform limited repointing to repair cracked or eroded mortar joints at north and south chimneys as noted in the Masonry recommendations above.

Windows

- Restore the wood window assemblies, and ensure the window sashes can freely operate and fully sit in the sash channel. Note that exterior storm windows and screens will need to be temporarily removed to perform this recommendation.
    - Clean all surfaces (interior and exterior) with a mild detergent and warm water to remove general soiling, spider webs, minor biological growth, etc.
    - Remove the existing paint from all exterior surfaces of the window frames and sashes. Paint removal from interior surfaces may also be required to allow for operation of the window sash. Perform testing to confirm whether or not lead based paint is present on the windows.
    - After paint removal, inspect all wood surfaces, including sashes, frames, casing and trim, to determine if repairs are necessary. Wood may require consolidation if found to be soft or separating. Areas of rotten wood may be repaired through a partial dutchman approach rather than full replacement. Patch holes from removed hardware as necessary.
    - Inspect all ropes, pulleys, sash locks and other operating mechanisms to permit for full and unhindered operation, cleaning and replacing components where needed. Sash channels (jambs, head and sills) may also need to be cleaned to ensure the sashes are fully sitting, which may necessitate the sashes to be removed to allow full access.
    - Replace deteriorated or missing glazing putty in kind.
    - After completion of all repairs, apply new exterior grade paint to all *exterior* surfaces of the window frames and sashes. Match original paint color as close as possible. If paint is removed from the *interior* surfaces, apply new interior paint as necessary.
    - Remove the existing exterior perimeter sealant. Install new backer rod and non-staining silicone joint sealant at the interface between the wood window assembly and the surrounding brick.

  - Reinstall the missing shutter on the south facade (currently located in the north window well). If the shutter is damaged beyond repair, install a new shutter to match the existing shutters in kind.
  - Reinstall the cleaned storm windows and screens if desired; annual cleaning between the storm windows and the original windows is recommended.
- Restore the metal window assemblies in the basement window wells and ensure the window sashes can freely operate and fully sit in the glazing pocket.
  - Clean all surfaces (interior and exterior) with a mild detergent and warm water to remove general soiling, spider webs, minor biological growth, etc.
  - Remove debris from window wells and ensure drains in window wells are working properly. The wells should be cleared semi-annually to prevent accumulation of debris against the windows.
  - Remove the existing paint from all exterior surfaces of the window frames and sashes. Paint removal from interior surfaces may also be required to allow for operation of the window sash. Perform testing to confirm whether or not lead based paint is present on the windows.
  - After paint removal, remove all corrosion by-product and inspect all metal surfaces, including sashes, frames, casing and trim, to determine if repairs are necessary. Replacement of severely corroded elements may be necessary. Replace or patch materials in kind.
  - Replace deteriorated or missing glazing putty in kind.
  - Replace all weatherstripping in kind.
  - After completion of all repairs, apply new exterior paint to all *exterior* surfaces of the window frames and sashes. Match original paint color as close as possible. If paint is removed from the *interior* surfaces, apply new interior paint as necessary.
  - Remove the existing exterior perimeter sealant. Install new backer rod and non-staining silicone joint sealant at the interface between the metal window assembly and the surrounding brick.
- Restore the aluminum-framed IGU assemblies at the glass porch.
  - Remove the existing exterior perimeter sealant. Install new backer rod and non-staining silicone joint sealant at the interface between the storefront window assembly and the surrounding substrates.
  - Remove exterior sealant from the interface between the IGUs and the surrounding aluminum framing. Install a fillet bead of structural grade silicone sealant with appropriate backing material around the perimeter of the IGUs.
  - Replace the corroding ferrous fasteners in the aluminum framing with zinc plated steel fasteners.
  - Clean the assemblies to remove general soiling and surface oxidation.
- Restore the vinyl attic windows at the gable ends.
  - Remove the existing exterior perimeter sealant. Install new backer rod and non-staining silicone joint sealant at the interface between the vinyl window assemblies and the surrounding siding.
  - Clean all surfaces (interior and exterior) with a mild detergent and warm water to remove general soiling, spider webs, minor biological growth, etc.

Doors

- Remove loose paint until sound coating substrate is found. Feather the edges of the surrounding paint and allow wood to fully dry. Perform testing to confirm whether or not lead based paint is present on the windows.
- Replace deteriorated or missing glazing putty.
- Clean all glass with mild soap and warm water.
- Repair areas of separation between ribs, rails, stiles and lower wood panels.
- Remove unoriginal hardware from frames and patch holes as necessary.
- Clean all original hardware with mild soap and warm water and reinstall.
- After completion of all repairs, apply new exterior paint to all *exterior* surfaces of the doors. Match original paint color as close as possible. If paint is removed from the *interior* surfaces, apply new interior paint as necessary.

Light Fixtures
- Replace missing glass globe on front porch ceiling light fixture.
- Clean all light fixtures with a damp cloth.
- Replace burned-out light bulbs with new bulbs.

Future Research
- Perform materials studies to guide future repair and maintenance work, including analysis of CMU, brick and mortar.
- Perform paint analysis at wood and metal exterior elements to determine original paint colors.

Interior Long Term Recommendations
WJE recommends the following specific repair and maintenance tasks be completed as part of the long term maintenance plan for the interior of the house.

Plaster
- Repair cracked or missing plaster in place by filling cracks or damaged areas with compatible new material. Remove water damaged plaster until sound material is found, and replace in kind.
- Clean plaster ceiling in basement to remove microbial growth. If the plaster is soft or otherwise deteriorated, replace in kind. Patch or replace plaster ceiling in the basement where there are holes.
- After the prioritized roof flashing repairs are performed, monitor interior areas with existing water damage (particularly Bedroom C, first floor foyer closet, second floor closet, dining room and Bedroom A) to ensure the repairs addressed the source of the water infiltration.

Finishes
- Remove all wallpaper. Paint walls and ceilings or install new wallpaper to represent the typical interior finishes of the late 1930s.
    - OPTION A: After consultation with an industrial hygienist, consider cleaning, removing and preserving portions of the wallpaper as archival samples to represent the original design intent of the room.
- Remove loose paint until sound coating substrate is found. Feather the edges of the surrounding paint. Prime and repaint. Match original paint color as close as possible.
- Replace stained or broken ceiling tiles in glass porch. Perform testing to confirm whether or not hazardous materials are present in the assembly.
- Clean all wood and metal cabinets, staircases and ornamental wood throughout house. Repair, repaint, or refinish as necessary.

Floors
- Clean and refinish wood floor throughout the home.
- Replace cracked or missing linoleum tiles in the kitchen and Bathroom A with similar materials and pattern to match the existing. Remove the carpet in Bathroom B. Replace with linoleum floors that are similar to the other linoleum floors.
- Replace loose or missing brick pavers in the glass porch and repoint areas of deteriorated or missing mortar joints.

Doors
- Clean and repaint or refinish all doors. Repair wood at joinery and areas of minor damage where needed.
- Re-install the swing door between the kitchen and the dining room. Repair hinges if required to make the door fully operational.
- Evaluate the original French doors found in the basement to determine if they are salvageable. If salvageable, restore and reinstall the original doors at the east doorway between the living room and the glass porch. If the original doors are not salvageable, replace with similar doors.

Fixtures

- Clean all light fixtures and replace missing glass shades and globes in kind using existing pieces as examples.
- Install new blinds to match the existing blinds (still present in Bedroom D) at all window assemblies.

Wood Wall Assembly Components

- Replace the wood lintel above the west basement window. Match the existing in size. Use a wood species that will perform well when exposed to moisture, such as redwood or cedar.
- Replace the rotten wood stud framing members at Bedroom C and in the southwest corner of the attic above Bedroom C. Use similar wood species and installation techniques as existing members. Partial dutchman repairs may be feasible in lieu of full member replacement depending on the orientation and size of the repair.

Masonry and Mortar

- After the prioritized repairs are performed, monitor the basement regularly, particularly after rain events, to ensure the repairs addressed the source of the water infiltration.
- Clean the CMU in the basement and the brick in the glass porch at areas of staining. No cleaning products containing strong acids (e.g., hydrofluoric or hydrochloric acid) should be used on the masonry at any time, as such acids are harmful to persons, animals, and the environment, and can cause damage and staining of the masonry.
- Remove white coating at CMU in basement.

Miscellaneous Building Systems

- Engage a professional mechanical, electrical, and plumbing (MEP) engineer to review the following:
    - The existing heating, ventilating and air-conditioning (HVAC) system to determine the appropriate maintenance or repair recommendations to return the interior of the home to appropriate temperature and relative humidity levels. This includes review of the duct that leads from the basement to Bedroom D where the significant staining and deterioration of interior finishes was observed surrounding the vent. Maintenance or repair recommendations for the metal registers should also be included.
    - The existing plumbing system to determine the appropriate maintenance or repair recommendations to return the plumbing system to a safe and functional state.
    - The existing electrical system to determine the appropriate maintenance or repair recommendations to return the electrical system to a safe and functional state.
- Ensure the insulation observed at the perimeter of the attic and storage room floors is continuous below the floor boards.

Future Research

- Perform paint analysis at painted interior finishes (kitchen and bathroom walls, chair rails, baseboards, doors, etc.), to determine original paint colors.

Barn

Character-Defining Features

The historic nature of significant buildings and structures is defined by their character, which is embodied in their identifying physical features. Character-defining features can include the shape of a building; its materials, craftsmanship, interior spaces, and features and the different components of its surroundings.[109] Based upon observations onsite, WJE has identified the following character-defining characteristics:

- Board and batten wood walls
- Fieldstone foundations
- Gable roof
- Six lite wood awning windows
- Double sliding wood barn door
- Decorative eagle and arrow weather vane
- Large meadow adjacent to barn
- Exposed hand hewn beams and posts
- Exposed wood pole rafters.

Exterior Evaluation

The circa 1876 English bank barn is located south of the home (Figure 336). Bank barns were typically built on hillsides such that two levels of the barn could be accessed from ground level. The main level of a bank barn was typically a three -bay threshing barn and the basement level was often used to house animals. At the White property, the basement level is accessible from the south side and the main level is accessible from the north side (Figure 337). A path leads down the hill along the west gable end from the main level to the basement level.

The site plan from the 1938 architectural drawings indicates that a straw shed at the center of the south side that was removed (see Appendix A for the 1938 site plan and see Figure 9 for a historic photograph of the straw shed). Based on the historic photograph, the straw shed was raised on timber posts at the basement level and clad in typical wood planks to match the rest of the barn. A door was present on the south end of the straw shed and a cupola with louvers was present at the center of the ridge along the main roof. These features confirm that prior to the Whites' ownership of the barn the structure's use was primarily agricultural in alignment with typical English bank barns in the late 1800s and early 1900s as described above.

Walls and Foundation

The exterior of the barn is primarily made of a board and batten wood planks (Figure 338). The boards are approximately 12 inches wide and the battens are approximately 1-3/4 inches wide. The wood is typically exposed, but remnants of white coating were observed. A red color can be seen at the top of the boards under the eaves, where weathering and sun exposure has had less of an impact (Figure 339). This may be an indication that the wood was previously stained. Some of the missing knots and other miscellaneous holes in the walls have been patched with copper sheet metal, including a large area at the base of the north side (Figure 340). There is no sign of the removed straw shed roofline in the field of the board and batten siding on the south side.

Three tie-rods were observed extending through the tops of the walls from the north side to the south side. The tie-rods are comprised of steel plates on the exterior with threaded rods and nuts that penetrate the north and south walls (Figure 341). Metal chains and turnbuckles connect the threaded rods between the north and south walls.

[109] Lee H. Nelson, FAIA, *Preservation Brief 17: Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character* (Washington, D.C.: National Park Service, Technical Preservation Services, 1988).

The foundations of the barn are made of fieldstone set in a tan-colored mortar (Figure 342). This stone was reportedly quarried on site. An outcropping of matching stone was found on the property in the gardens north of the house, however, it is unclear if the stone is natural to the site or if it is a "discard" pile following completion of the barn foundation (Figure 343).

Several vintages of mortar were observed in between the stone units, particularly at the east and west ends, including multiple iterations of what appear to be "face-pointing"[110] (Figure 344). Based on the historic photographs, the south basement level was originally open to the exterior with timber posts supporting the main level above (Figure 9). Since the time of the historic photograph (c. 1940), the south basement wall has been infilled with two areas of board and batten wood planks, hinged double doors at the center, and stone columns in between the doors and the infill areas (Figure 337). The joints at these columns appear to have been "face-pointed" with a dark gray mortar (Figure 345).

Windows

All of the windows are currently covered by exterior plywood sheets, so the exterior finishes could not be confirmed nor could the windows be operated (Figure 346). There are seven windows on the main level, all of which are six lite awning windows that are hinged at the top and operate towards the exterior. Two windows are located on the north side, two on the west end and three on the south side. Five of the windows all have similar components and interior finishes, including stained wood, profiled muntins, metal pulls at the bottom rail and metal hinges on the stiles (Figure 347, Figure 348, and Figure 349). The center and west windows on the south wall vary from the typical windows. These windows have rectangular muntins, are painted white and have handles on the stiles (Figure 350). These two window openings were not present in a historic photograph of the south wall (c. 1940), indicating the White family added them during their ownership of the barn. The windows are held in place by metal hooks at the bottom. All seven windows have a metal screen on the interior.

There are four windows in the basement; two are located on the east wall and two are on the west wall. All of the windows are matching six lite fixed windows that are painted white (Figure 351). The window stiles, rails and muntins have rectangular profiles.

Doors

The entrance to the main level is composed of large double sliding barn doors located the north side (Figure 352). These doors are comprised of vertical wood boards that are fastened to horizontal boards at the top and bottom. The doors each have a metal handle and a padlock currently connecting the doors (Figure 353). There is a sliding metal deadbolt lock on the bottom interior of the east door (Figure 354). The doors slide along metal wheels in a track at the top of the door.

The entrance to the basement level is located on the south side. This entrance is composed of hinged double doors that open to the exterior (Figure 355). The doors are comprised of vertical boards connected by horizontal and diagonal wood bracing on the interior surface. Each door has three black metal hinges that are triangular in shape and have decorative features (Figure 356). The doors are held shut by a metal padlock in the center (Figure 357). The door and its accessories appear to be contemporary replacements as the wood, hinges and screws are in very good condition. On either side of the hinged double doors are two (2) openings that have been closed with vertically oriented board-and-batten wood planks (Figure 358). These sections appear to have been replaced at the same time frame as the double doors.

[110] "Face-pointing" is the process of applying mortar to the surface of the existing joint mortar and packing any existing voids in the surface of the mortar in lieu of repointing the joint. Repointing the joint is the process of removing the existing mortar to a consistent depth of approximately 3/4 inch or until sound mortar is found and installing new mortar. Mass masonry walls, such as the stone foundation walls at the barn, rely on water resistance from tight bond between the mortar and the masonry and fully compacted mortar joints. "Face-pointing" has a tendency to fail prematurely as the new mortar typically does not have adequate surface area to bond to the existing mortar and proper precautions in order to ensure adequate moisture curing of the mortar are typically not completed with this type of installation.

Roof

The barn features a 7:12 pitch gable roof with gable ends on the east and west ends. The current roof covering is three tab asphaltic composition shingles surfaced with gray-colored granules (Figure 359). Each shingle tab is 11-3/4 inches wide with a 1/4 inch gap between shingles and installed with a 5 inch exposure. The shingles are installed in a non-vented saddle ridge configuration. The roof eave overhangs the walls below approximately 1 foot and is comprised of rafter tails, supplemental dimension lumber and wood fascia. No gutters are currently installed, nor is there evidence of removed gutters.

A cast metal weather vane is located at the center of the roof ridge (Figure 360). The weather vane design is comprised of an arrow topped by an eagle. It does not rotate and currently points east. It is unclear if the weather vane was originally intended to freely rotate or if it was installed as a fixed decoration. The Whites removed the cupola and installed the weather vane during their ownership of the barn.

Light Fixtures

There is one (1) security light fixture located on the west end of the barn (Figure 361). It has a black plastic base with a yellow-tinted plastic cover over the bulb. It is screwed into the boards on the side of the barn.

Figure 336. View of barn north side.

Figure 337. View of barn south side. Note the board and batten infill panels (yellow arrows) and stone columns on either side of the hinged double doors (blue arrow) at the basement level.

Figure 338. Typical faded wood color on exterior of barn. Remains of white coating can be seen.

Figure 339. "Red" wood seen under eaves, indicating that the barn may have been stained red in the past.

Figure 340. Copper sheet metal located on bottom of north side.

Figure 341. Typical tie-rod metal plate, threaded rod and nut.

Figure 342. Typical fieldstone with tan mortar used for barn foundations.

Figure 343. Outcropping of stone that matches the barn foundations.

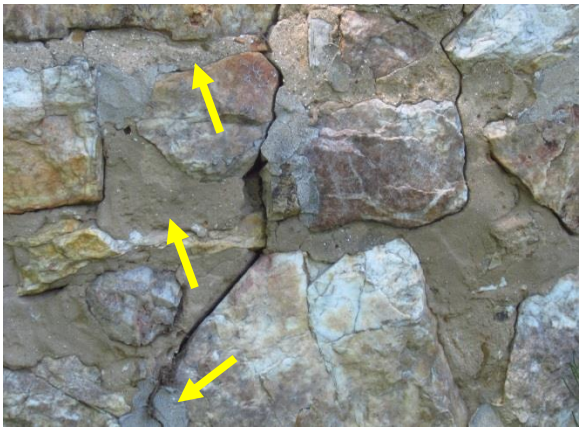

Figure 344. Typical multiple vintages of mortar on west and east foundation walls.

Figure 345. Dark gray mortar on south side of the barn.

Figure 346. Typical white painted plywood covering awning windows.

Figure 347. Typical main level barn awning window, viewed from the interior.

Figure 348. Metal pull located on interior of bottom rail at typical main level barn windows.

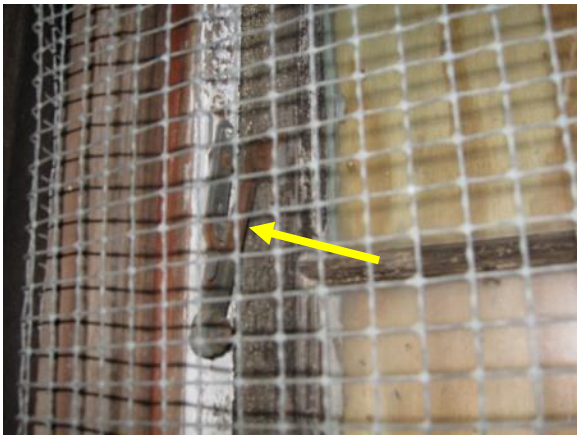

Figure 349. Metal hinges located on frame and stile of typical main level barn windows.

Figure 350. Center window on south wall of barn.

Figure 351. Typical fixed six lite window located in basement of barn.

Figure 352. Sliding double barn doors on north side.

Figure 353. Silver metal handles and padlock at center of sliding barn doors on north side.

Figure 354. Metal sliding lock on east sliding barn door.

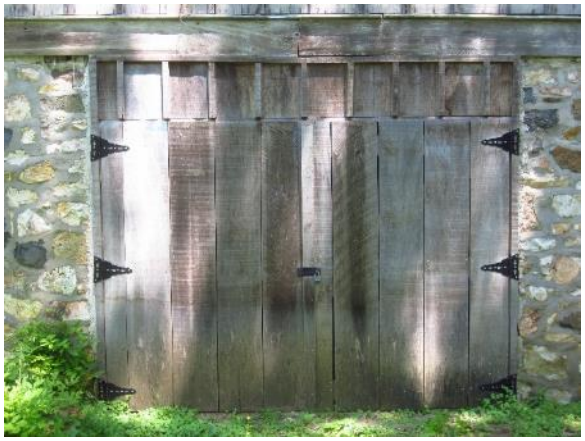

Figure 355. Hinged double doors on south side.

Figure 356. Detail view of metal hinges on south side.

Figure 357. Padlock on basement door on south side of barn.

Figure 358. Opening on left side of south barn door that has been infilled with wood.

Figure 359. View of barn roof, comprised of asphalt shingles.

Figure 360. Metal weather vane on ridge of roof.

Figure 361. Plastic security light fixture on west end of barn.

Exterior Condition Assessment

Stone and Mortar

- A portion of the fieldstone foundation is displaced horizontally by approximately 1 inch and vertically by approximately 1/4 inch at the northeast corner of the barn (Figure 362 and Figure 363). The mortar is cracked or missing between the two sides of the crack. Several factors may have contributed to the observed displacement including, but not limited to, differential settlement of the soil below the foundation wall or differential erosion of the soil below the foundation wall. Since the initial displacement and subsequent cracking of the joint mortar occurred, bulk water from natural rain events has been able to flow through the cracks, continually eroding the joint mortar and leading to increased amounts of bulk water infiltration in the basement level. No significant displacement or other related distress were observed in the wood floor or barn structure above.
- Large areas of cracked and missing mortar between fieldstones were observed on the east and west ends through all vintages of mortar (Figure 364 and Figure 365). The "face-pointing" mortar is typically thin, cracked and debonded with small holes on the east and west ends of the barn (Figure 366 and Figure 367).
- The mortar is generally in fair condition on the south side (Figure 368). For this reason, as well as the distinctly darker color of the mortar in comparison to the mortar elsewhere in the foundation walls, this mortar was likely installed more recently than the other vintages of mortar.

Wood

- The wood battens and boards are typically in fair condition.
- Typical coating deterioration such as flaking and cracking was observed on both the sides and the ends of the barn (Figure 369).
- Several missing or broken battens were observed on both the sides and the ends of the barn (Figure 370). Several battens are partially detached from the barn (Figure 371).
- Multiple holes and cracks in the wood were observed on both the sides and the ends of the barn (Figure 372 and Figure 373). One hole was previously repaired with a wood dutchman (Figure 374). Several holes were previously repaired with copper sheet metal (Figure 375). At one location replacement wood was fastened to the interior to patch the hole (Figure 376).
- Numerous hooks and wires are fastened into the wood boards on the west end and south side (Figure 377).
- Vegetation was observed on the wood on the east end and north side, extending under the roof. At the time of our survey the vegetation appeared to be dead (Figure 378).

Metal

- The tie-rods appear to have been installed recently and are in good condition.
- Surface corrosion was typically observed at nail heads in the wood boards, but no substantial section loss was observed (Figure 379).

Windows

- The windows are in fair to poor condition.
- The entire sash of the main level west window on the south wall is disassembled. Several of the components are stacked in between the plywood on the exterior of the barn and the interior screen (Figure 380). It appears as though some of the components are missing or misplaced.
- There is separation between the bottom rail and stile at several windows on the main level (Figure 381).
- Missing or broken glass was observed at several windows located on both levels.
- Missing hinges were observed at isolated locations on the main level.
- Isolated locations of missing wood were observed at the windows on the west wall, including one in the left stile of the southern window and one in the bottom rail of the northern window. These locations are at the bottom of the sashes and are likely due to previous moisture damage, as soft and stained wood was observed surrounding the areas of missing wood. This damage may have occurred prior to installation of the exterior-mounted plywood coverings.

- Approximately 1 inch gaps were observed between the window frames and fieldstone in the basement, indicating that the perimeter of the windows is not sealed to the surrounding foundation wall (Figure 382).

Doors

- The double sliding barn doors on the main level are in fair condition. They are operable, but move with some difficulty.
  - Surface corrosion was observed on the metal door tracks and door hardware (Figure 383).
  - Typical coating deterioration, such as cracking and peeling and vegetation was observed (Figure 384 and Figure 385).
- The hinged double doors located at the basement level are in very good condition with slight discoloration and fading of the wood observed.

Roof

- The asphalt shingle roof is in fair condition consistent with 10 years of in-situ service and a low-middle grade composition shingle.
- Minor sagging was observed along the south side of the roof.
- Several torn shingles were observed at the west end of the roof ridge (Figure 386).
- Multiple replacement wood deck planks were observed underneath the west rake overhang (Figure 387).
- Deteriorated and missing wood was observed along the south eave and east rake overhangs of the barn (Figure 388 and Figure 389).

Light Fixtures

- The light fixture located on the west end appears to be in fair condition; the plastic is discolored and likely brittle from exterior exposure. The fixture was not tested for functionality.

Figure 362. Displaced stone foundation and cracked mortar on north side.

Figure 363. Displaced stone foundation on north side.

Figure 364. Multiple cracks and missing mortar in mortar of stone foundation at east end.

Figure 365. Missing mortar on west end.

Figure 366. Typical debonded and cracked mortar of foundation walls.

Figure 367. Typical debonded and missing mortar of foundation walls.

Figure 368. Mortar in fair condition on south side.

Figure 369. Typical deteriorated coating on exterior of barn.

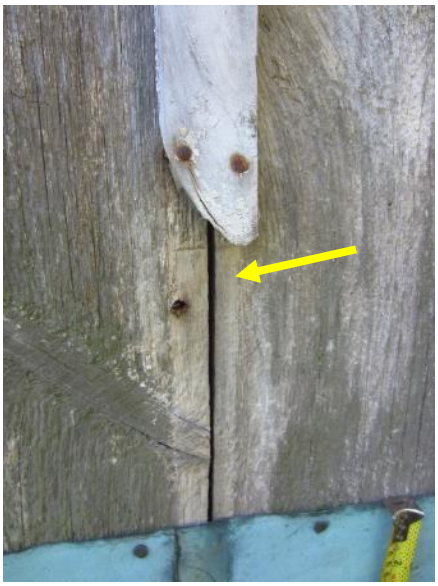

Figure 370. Missing wood batten.

Figure 371. Partially detached batten.

Figure 372. Split batten on south side.

Figure 373. Hole in side of barn on south side.

Figure 374. Existing wood dutchman on south side.

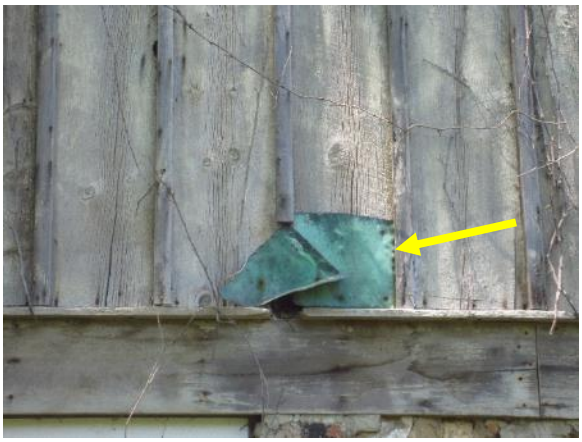

Figure 375. Typical copper sheet metal patch.

Figure 376. Wood plank attached to interior to cover hole on south side.

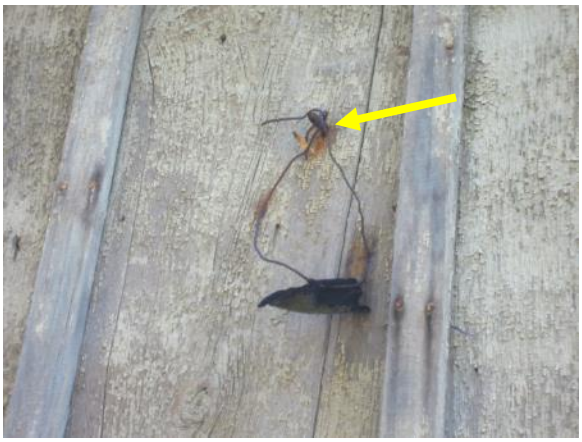

Figure 377. Typical metal hooks in wood boards.

Figure 378. Vegetation growing from under roof on north side.

Figure 379. Typical corroding fasteners in wood.

Figure 380. Missing window sash with several window components stacked between plywood and screen.

Figure 381. Typical separation between rail and stile at interior window. Note staining.

Figure 382. Void between window frame and stone and gap between stone and ceiling.

Figure 383. Rusted sliding door tracks and hardware

Figure 384. Typical coating deterioration of sliding door.

Figure 385. Vegetation growing on bottom of sliding door.

Figure 386. Missing shingles along ridge of barn at west gable end.

Figure 387. Replacement roof deck plank on west rake overhang.

Figure 388. Missing wood along south eave.

Figure 389. Missing fascia board along south eave.

Interior Evaluation

The interior of the barn is comprised of two levels: the main level and the basement level. The main level is accessed by the sliding barn doors on the north side. The basement cannot be accessed through the main level and must be entered through an exterior door on the south side. The White family modified the main level into a play space and turned the basement level into a garage. The wood floor of the main level was installed in 1939 along with the swing and basketball hoop.[111]

Main Level

The main level of the barn is comprised of three open bays to create one large room. All structural components are made of wood unless otherwise noted. The floor planks are approximately 2-1/2 inches wide oriented north-south. The walls are the interior face of the wood board cladding (Figure 390). The ceiling is unfinished allowing the structure of the gable roof to be exposed. The rafters support the plank decking and meet at the ridge of the roof (Figure 391). No continuous ridge beam is present; however, a partial ridge beam was observed at the center of the roof. The rafters sit on a hand hewn plate beams at the top of the north and south walls. Three tie rods composed of metal chains and turnbuckles connect the plate beams, serving as supplemental tie beams (Figure 392). Hand hewn braces are attached diagonally to intermediate posts and beams (Figure 393). There are four tie beams, two of which are located on the ends of the barn and two of which divide the barn into three bays. These tie beams attach to side posts and a center post (Figure 394). On the east side of the barn, the center post is missing, but the previous attachment location can be seen (Figure 395). The beams, posts and braces are typically connected in a mortise and tenon manner with wood treenails (Figure 396). Additional beams sit on top of the tie beams on the west side (Figure 397). Several wood planks rest on top of these beams. These beams and planks may have been added to repurpose the upper half of the main level into a loft space or may be remnants of a loft level that existed when the White family acquired the barn. Miscellaneous metal bolts or nails were observed in the beams, posts and braces (Figure 398). These were likely used to hang various tools, equipment, or toys.

A wood work table sits in the southwest corner (Figure 399). Additionally, a swing and basketball hoop are installed on the west half of the barn (Figure 400 and Figure 401). Several house storm windows and a screen door were stored in the northwest corner of the barn at the time of our survey.

There are four light fixtures inside the main level. Three are identical bare bulbs covered in wire screen with white bases located on the east, west and south walls of the barn (Figure 402). The fourth is a hanging fluorescent light fixture in the center of the south wall, below one of the wall fixtures (Figure 403). There are several light switches spread throughout the barn, with wires that connect the switches to the light fixtures.

Basement Level

The basement of the barn is the same size in plan as the main level of the barn. The interior surface of the basement walls are the same fieldstone observed at the exterior and the floor is concrete (Figure 404). The site plan from the 1938 architectural drawings shows a hatched area in the north side of the foundation with a note that reads “Close Opening with Stone - Fill Area” (see Appendix A). A distinct rectangular shape was observed at the interior surface of the foundation wall, confirming this note (Figure 405). The plaster ceilings typically hide the floor structure of the level above (Figure 406); however, hand hewn floor beams, supplemented with sawn lumber beams were observed at a hole in the ceiling along the north wall. Additional sawn lumber boards were then nailed perpendicular to the floor beams to serve as furring for the plaster ceiling.

The ceiling assembly is similar to that of the interior walls in the house. It is comprised of a cementitious wall board that serves as the back-up material. The boards are encased in brown paper and nailed to the

[111] Douglas White (son of J.C. and Margaret White) discussion with author, June 2, 2016.

sawn lumber furring above. A second layer of encased wall board is installed over the first. A plaster brown coat is applied directly to the second layer of wall board. The surface of the brown coat was coated white.

Two stone columns are spaced evenly in the basement and support the floor above (Figure 407). The column joints were previously "face-pointed" with a mortar that matches the "face-pointed" mortar on the south side.

There are two fluorescent light fixtures that provide light to the basement (Figure 408). These are located in the middle of the ceiling, oriented east-west and take two fluorescent rods each.

Figure 390. Interior view of south barn wall with exposed heavy timber framing.

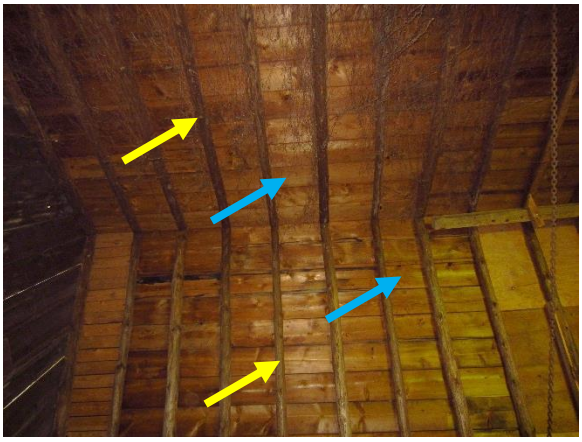

Figure 391. Interior view of barn roof structure. Note the wood rafters (yellow arrows) and wood sheathing (blue arrows). Note there is no continuous ridge beam.

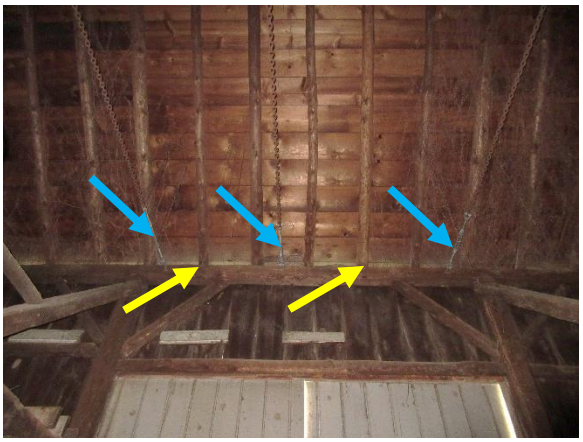

Figure 392. Interior view of north side of barn. Note the connection of the roof rafters to the plate beams (yellow arrows) and the turnbuckles serving as tie beams (blue arrows).

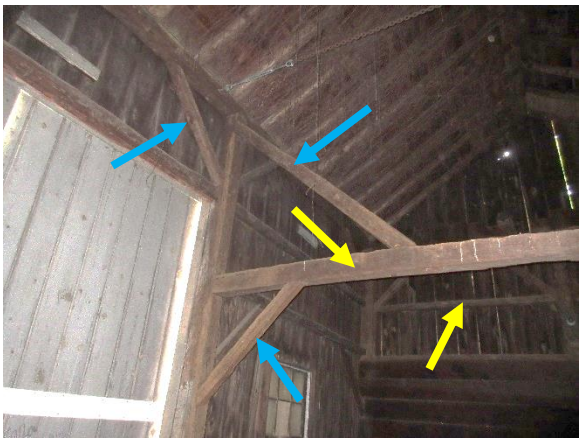

Figure 393. Interior view of tie beams (yellow arrows) and braces (blue arrows) at eastern half of barn.

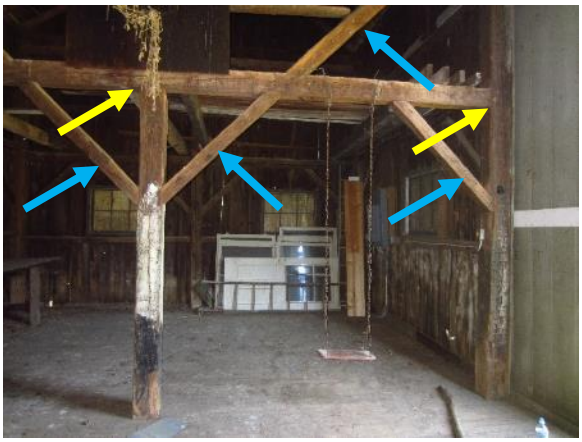

Figure 394. View of west half of barn. Note the center and side posts that support the tie beam (yellow arrows). All diagonal members are braces (blue arrows).

Figure 395. Slot for previous supporting center post on east side of barn. Note the wood dowel that is remains from the connection.

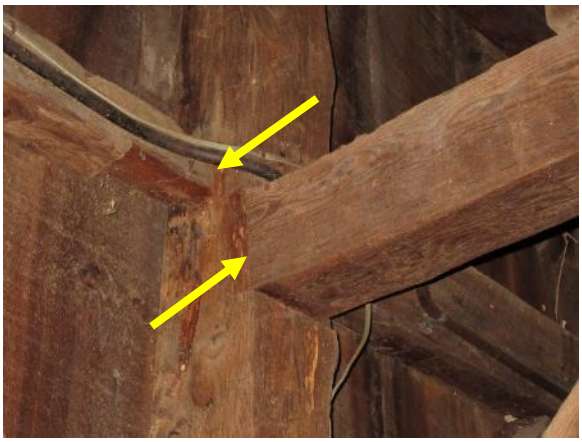

Figure 396. Typical mortise and tenon connection of beams to posts.

Figure 397. View of western portion of barn, showing the miscellaneous wood beams that sit on top of the tie beams.

Figure 398. Miscellaneous metal nail extending from typical roughhewn brace.

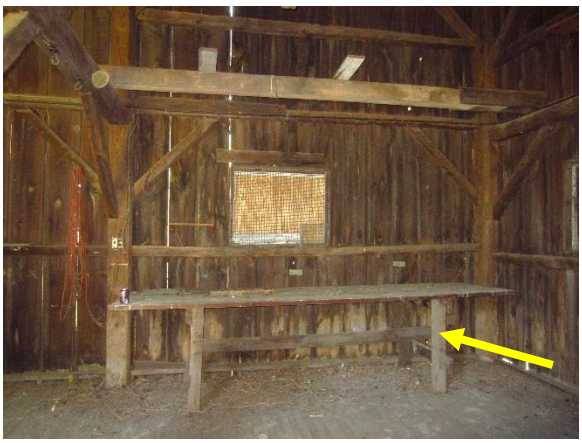

Figure 399. Work table located in southwest corner of main level.

Figure 400. Wood swing with metal chains suspended from tie beam on west half of barn.

Figure 401. Basketball hoop installed over center post on west half of barn.

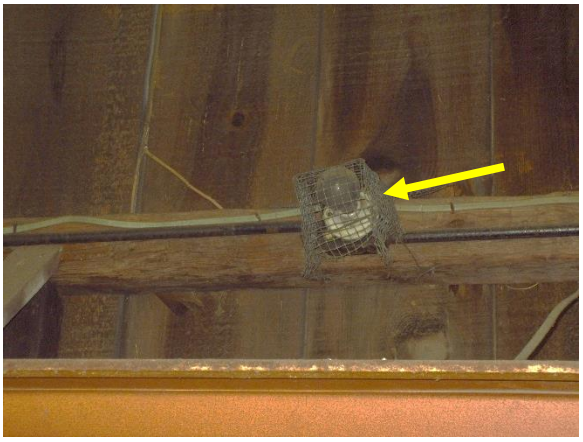

Figure 402. Typical main level barn light fixture.

Figure 403. Hanging fluorescent light fixture in center of south wall.

Figure 404. Typical fieldstone foundation walls and concrete floor in barn basement.

Figure 405. A rectangular opening can be seen in fieldstone wall at the northwest corner of the basement interior wall.

Figure 406. Hole in plaster ceiling of barn basement. The floor boards can be seen through the hole, as well as additional sawn lumber boards used as furring for the plaster.

Figure 407. Stone column in basement. Repointing mortar and stone appear to match the south basement wall.

Figure 408. Typical fluorescent lights located in basement of barn.

Interior Condition Assessment

Interior Damage due to Water Infiltration

Each of these specific locations of water infiltration is related to a deficiency in the exterior envelope which is described below. Two areas of *significant* water infiltration and subsequent deterioration of the wall assembly and/or interior finishes were observed.

- **Fieldstone Foundation Walls -**
  - WJE was on site during a natural rain event and observed significant standing water in the basement level along the north and west foundation walls (Figure 409). Moisture staining remained present on the interior surface of the walls during our survey on a dry day as well (three days following a rain even) (Figure 410). Moisture staining was also observed along the full perimeter of the concrete floor slab (Figure 411).
  - The mortar on the east, west and north walls is typically cracked and debonded with pin holes. In some locations, the mortar was sandy and easily broke apart (Figure 412). Multiple cracks were observed through the mortar. For example, in the northeast corner of the basement, on the north wall, the vertical and horizontal displacement observed at the exterior is also visible at the interior (Figure 413).
  - The more prevalent mortar deterioration at the east, west and north walls is likely due to the fact that these surfaces are partially below grade, exposing them to hydrostatic pressure when water accumulates in the soil against the exterior of the wall. Additionally, the large areas of missing mortar and displaced units at the exterior surface of the wall create open pathways for rainwater to flow into the wall.
- **Plaster Ceiling Below North Entrance -**
  - A large hole was observed in the plaster ceiling of the basement at the center of the north wall (Figure 414). Various pieces of broken plaster and cementitious wall board are scattered on the basement floor below the hole. Surface corrosion was observed on the nails that previously held the wall board in place, which is indicative of moisture exposure (Figure 415). A piece of painted plywood is fastened into the floor joists in the center of the hole as a potential previous repair effort.

The following observations are typical material conditions, excluding the specific areas of observed water infiltration listed above:

Stone and Mortar

- The "face-pointing" applied to the surface of the joints at the stone columns and interior surface of the foundation walls is poorly tooled and extends over the surface of the stone units significantly (Figure 416).
- The mortar is in fair condition at the interior columns and the south foundation wall.
- The fieldstone units themselves are in good condition.

Plaster

- The plaster ceiling in the basement is generally in good condition with a minor discoloration pattern on the surface (Figure 417). Several holes in the plaster were observed adjacent to the light fixtures to allow for electrical wiring to past through the ceiling (Figure 418).

Wood

- The beams, posts and braces appear to be in good condition. A few of the members have been sistered.
- The center post between the center and east is missing.
- The wood floor of the main level of the barn is in good condition with localized moisture staining.

Roof

- Several pole rafters have been sistered with dimension lumber on the south half of the roof, including one pole rafter that had failed (Figure 419).
- A partial ridge beam has been added at the center of the roof (Figure 420).

- Multiple wood deck planks were replaced on the south half of the roof (Figure 421).
- Significant vegetation was observed on the north half of the roof (Figure 422).

Light Fixtures

- The light fixture bases are in fair condition; however, the bulbs are missing and the electrical system was not tested for functionality.

Figure 409. Standing water in the basement of the barn at the northwest corner during a rain event.

Figure 410. Moisture staining on stone foundation walls in basement.

Figure 411. Moisture staining of concrete basement floors. Note plaster remnants on floor.

Figure 412. Typical debonded and weak mortar on stone foundation walls in basement.

Figure 413. Displaced stone foundation walls and cracked mortar in northeast corner of basement.

Figure 414. Hole in basement ceiling at north wall.

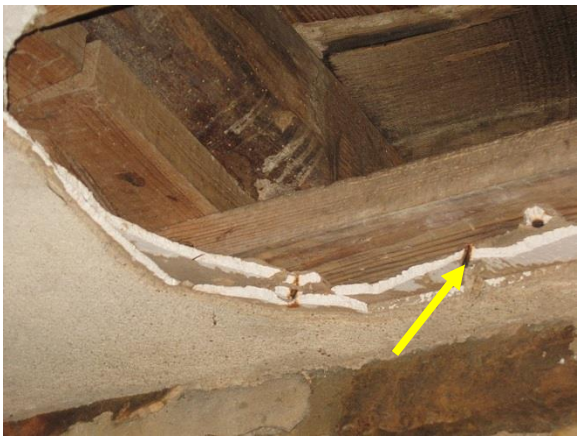

Figure 415. Hole in plaster ceiling at north wall.

Figure 416. Typical debonded and missing mortar at interior surface of foundation walls.

Figure 417. View of plaster ceiling in basement. Note the minor staining on the surface.

Figure 418. Hole in basement ceiling near east wall.

Figure 419. Sistered rafter on southern roof face.

Figure 420. Partial ridge beam nailed in place.

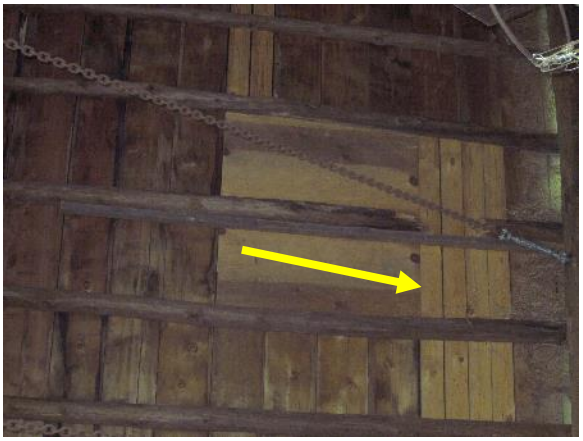

Figure 421. Replacement wood deck planks on southern roof.

Figure 422. Vegetation on northern roof interior.

Recommendations

Priority Recommendations

Based on the condition assessment performed as part of the Historic Structure Report, the following prioritization is recommended for work on the Margaret White barn. Repairs related to the safety issues should be completed first. Work related to exterior envelope should follow to prevent water infiltration and deterioration of building envelope materials and to address conditions that may lead to continued deterioration and loss of historic fabric. In order, priority recommendations for the barn include:

- Remove thin, loose and deteriorated mortar until sound mortar is reached from the exterior and interior surfaces of the fieldstone foundation walls. There may be locations between individual stone units where mortar is deteriorated or missing a significant depth into the wall. Using a more fluid mortar mix to fill these voids may be important to the long term stability and water resistance of the fieldstone foundation wall. Remove mortar in limited areas at a time (exterior only or interior only) and repoint prior to addressing adjacent areas to prevent the wall from becoming unstable.
- Install new gutters and downspouts at the barn roof and ensure they are draining properly into the subgrade stormwater drain leaders (if stormwater drain leaders not present, install new splash blocks) to direct bulk water away from the fieldstone foundation walls. Note that in order to install new hanging gutters new strap hangers must be installed and secured to the roof rafters beneath the shingle roofing such that localized shingle removal and reinstallation is necessary.
- Remove soil in front of north sliding doors to reveal interface between the wood floor at the main level and the fieldstone foundation wall below. Repair foundation wall if needed and install metal flashing over interface to protect this interface from groundwater and run-off water.
- Install crack monitors at the northeast corner of the foundation wall following completion of the repointing work to periodically monitor this area for continued movement. If additional movement is observed, engage a professional structural engineer to evaluate.

In addition to the specific repairs recommended, cyclical maintenance tasks such as inspection for water infiltration, roof repairs, painting wood elements and other ongoing maintenance tasks must be continually implemented to avoid damage to the historic site and building fabric and to reduce the need for large-scale repair projects in the future.

Exterior Long-Term Recommendations

WJE recommends the following specific repair and maintenance tasks be completed as part of the long term maintenance plan for the exterior of the barn.

Stone and Mortar

- If bulk water infiltration in the basement persists after performing the prioritized repointing recommended above, consider the following options:
    - OPTION A: Install a trench drain at the exterior side of the foundation wall. Confirm availability of drain to be directed to an appropriate outlet.
    - OPTION B: Excavate the soil at the perimeter of the barn foundation walls. Remove mortar to a depth of 3/4 inches or until sound mortar is reached. Pack open voids in the wall assembly with mortar and repoint deteriorated or open mortar joints. Apply a waterproofing membrane to the below-grade exterior surfaces of the foundation wall.

Windows

- Review the condition of the disassembled window sash components on the main level south side. If salvageable, reuse the components to reconstruct the sash. Replace missing or severely damaged components in kind.
- Remove the exterior plywood. Clean and cut all windows free to operate and fully sit in the sash channel. Inspect all hinges, sash locks and other operating mechanisms to permit for full and unhindered operation, replacing components in kind where needed. Sash channels (jambs, head and sills) may need to be cleaned to ensure the sashes are fully sitting, which may necessitate the sashes to be removed to allow full access.
- Areas of rotten wood may be repaired through a partial dutchman approach rather than full replacement. Patch holes as necessary.
- Inspect and re-engage areas of separation between ribs, rails and stiles where needed.
- Replace all cracked or missing glass lites in kind.
- Replace deteriorated or missing glazing putty in kind.
- After completion of all repairs, apply new exterior grade paint to all exterior surfaces of the window frames and sashes. Match original paint color as close as possible. If paint is removed from the interior surfaces, apply new interior paint as necessary.
- Remove the existing exterior perimeter sealant (if present). Install new backer rod and non-staining silicone joint sealant at the interface between the wood window assembly and the surrounding wood or stone.

Doors

- Remove deteriorated coating, clean and repaint doors.
- Remove surface corrosion from sliding barn door tracks and lubricate system such that the sliding barn doors operate smoothly. Remove existing paint and coat with a protective coating.

Wood

- Remove vegetation and abandoned wire penetrations from wood surfaces.
- All exterior wood surfaces should be cleaned and recoated on a cyclical basis. In this climate, maintenance cycles for residential grade coatings on wood are typically between 7 and 10 years and depend heavily on the substrate's preparation, exposure and bond between the new coating and existing elements. Remove the existing coatings from all exterior surfaces. Perform testing to confirm presence of lead based paint.
- Perform partial or full wood dutchman repairs where there are holes in the cladding. Use a wood species that is similar to the existing wood.

Metal

- Replace any corroded fasteners with copper or galvanized steel fasteners.

Roof

- Replace damaged shingles at the west end of the ridge.
- Prepare for roof covering replacement in approximately 10 years. Consider installing a historically sensitive roofing material in lieu of the contemporary asphalt shingles currently installed.

Future Research

- Perform materials studies to guide future repair and maintenance work, including analysis of wood, stone and mortar.
- Perform paint analysis at wood and metal exterior elements to determine original paint colors.

Interior Long Term Recommendations

WJE recommends the following specific repair and maintenance tasks be completed as part of the long term maintenance plan for the interior of the barn.

Plaster

- After addressing the water infiltration issues per the prioritized recommendations, patch or replace plaster ceiling in the basement where holes are present.

Stone and Mortar

- See Prioritized Recommendations above.

Wood

- Replace missing center post and braces on east side of barn in kind.
- Engage a professional engineer to provide a designed repair for the failed pole rafter on the south side of the roof; the installed supplemental dimension lumber is not an engineered solution and may be related to the visual sag in the roof surface.

SIGNIFICANCE AND INTEGRITY

National Register Significance Evaluation

The National Register of Historic Places is the official list of the nation's historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate and protect America's historic and archeological resources.[112]

The significance evaluation identifies the important historical associations of the property and comments on its architectural, archeological and social value as they relate to the National Register of Historic Places. A property's significance is tied to a discrete period of time in which its important contributions were made and to relevant national, state and local historic contexts.

Significance Criteria

In order for a property to be eligible for inclusion in the National Register of Historic Places, it must possess significance under one of four criteria. The Criteria for Evaluation for listing in the National Register of Historic Places state:

> The quality of significance in American history, architecture, archeology, engineering and culture is present in districts, sites, buildings, objects that possess integrity of location, design, setting, materials, workmanship, feeling, association, and:
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. That are associated with the lives of persons significant in our past; or
>
> C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

[112] National Park Service, "National Register of Historic Places" available at http://www.nps.gov/nr/ (accessed January 29, 2015.)

D. That have yielded, or may be likely to yield, information important in prehistory or history.[113]

Criteria Considerations

Ordinarily cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

a. A religious property deriving primary significance from architectural or artistic distinction or historical importance; or

b. A building or structure removed from its original location but which is primarily significant for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

c. A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building associated with his or her productive life; or

d. A cemetery that derives its primary importance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

e. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan and when no other building or structure with the same association has survived; or

f. A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

g. A property achieving significance within the past 50 years if it is of exceptional importance.[114]

The John C. and Margaret K. White property appears eligible for listing in the National Register of Historic Places at the local level under Criterion C in the areas of Architecture and Landscape Architecture for the house, barn and gardens.

- The house is an example of asymmetrical Colonial Revival architecture modified with a mid-century modern style glass porch that merges two architectural styles within one home. The asymmetric Colonial Revival style was common in the late 1800s and regained popularity with less elaborate detailing in the 1930s. The red brick facades, shutters, multi-pane double hung windows, accentuated front entrance and black slate intersecting gable roof are all are consistent with this architecture style.
- The barn, although slightly modified by the White family, is an example of an English bank barn and provides documentation of the agricultural life within the northern Virginia area in the late 1800s to early 1900s. The main level is a typical three-bay threshing barn and the straw shed and cupola previously attached to the south side of the barn confirm the original use of the barn to be storage of hay or straw and housing for animals.

[113] *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (Washington, D.C.: Department of the Interior, 1997).
[114] *Code of Federal Regulations, Title 36, Part 60,* "The National Register Criteria for Evaluation."

- The gardens are comprised of an important collection of ornamental tree and shrub species, arranged into designed borders, rambles and outdoor rooms. Although not designed by a professional, the gardens nonetheless constitute an impressive feat of design and horticultural proficiency and are a legacy appreciated by the community as a whole.

Period of Significance

The period of significance for the property extends between circa 1876, when the barn was completed, through 1967, which constitutes the 50-year age consideration for listing in the National Register of Historic Places.[115]

Assessment of Integrity

Assessment of integrity is based on an evaluation of the existence and condition of the physical features which date to a property's period of significance, taking into consideration the degree to which the individual qualities of integrity are present. The seven aspects of integrity as defined in the National Register Criteria for Evaluation are location, design, setting, materials, workmanship, feeling and association. As noted in *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*:

> *Location is the place where the historic property was constructed or the place where the historic event occurred. . . . Design is the combination of elements that create the form, plan, space, structure, and style of a property. . . . Setting is the physical environment of a historic property. . . . Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. . . . Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. . . . Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. . . . Association is the direct link between an important historic event or person and a historic property.*[116]

To have integrity, the property must retain the essential physical features that enable the property to convey its historical significance. In essence, the essential physical features are those features that define both why a property is significant (National Register criteria) and when it was significant (period of significance). The *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* defines integrity as "the ability of a property to convey its significance."[117]

The historic integrity of the Margaret White house and barn has been assessed as a property in total, including the landscape onsite.

Integrity of Location. The Margaret White property retains a high degree of location as the site extents have remained consistent and the house and barn stationary, remaining a sentinel in the continually changing and evolving surrounds of the area.

Integrity of Design. The Margaret White house retains a medium to high degree of design as both the interior and exterior designs have not been largely altered since its construction. While a glass porch was added to the home in 1958 by the White family, the addition falls within the period of significance and was an important part of the Whites' lives in the home and has such gained historic significance itself. The main impact to this integrity is the replacement of the wood siding, wood shutters and attic windows with contemporary materials that do not match the original design of the home. Additionally, the original gutters have been removed from the majority of the home. The dates of these alterations are unknown; however, the aesthetics of the home were not significantly impacted by these alterations. The original interior finishes

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[115] Fairfax County Park Authority, Master Plan, 6.
[116] *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (Washington, D.C.: Government Printing Office, 1997), 44–45.
[117] Ibid.

including, but not limited to, wood floors, baseboards, chair rails, crown moldings and fireplace, largely remain intact but have diminished due to deterioration and damage as described herein.

The barn retains a medium degree of design. The cupola and the straw shed present at the time the Whites purchased the property were removed in the early 1940s when the Whites converted the barn into a play space and garage. Two (2) windows were also added to the south side of the barn. These alterations fall within the period of significance for the property and reflect how the Whites used the barn during their residence. However, the exact alterations of the barn are unknown and additional changes may have been made after the period of significance, such as the modern asphalt shingle roof.

Integrity of Setting. The Margaret White property retains a medium degree of setting as much of the property obtained by the Whites in 1939 has been preserved. However, the property surrounding the home has been developed into residential neighborhoods that have eliminated the once open fields and woodlands that surrounded the home. The trees John and Margaret White planted around the perimeter of the property to provide privacy from the surrounding developments are still in place and contribute to the setting.

Integrity of Materials and Workmanship. The Margaret White house exterior retains a medium degree of materials and workmanship, which are diminished only by the replacement of the wood siding, wood shutters and attic windows that introduced non-original materials and contemporary workmanship. The dates of these alterations are unknown. The interior of the house retains a high degree of materials and workmanship, as many of the original interior finishes, the custom cabinets and fireplace, light fixtures and plumbing fixtures remain unchanged.

The barn retains a medium to high degree of materials and workmanship as very little changes have occurred at this structure since the initial removal of the cupola and the straw shed by the White family in the early 1940s. A modern asphalt shingle roof was added to the barn, but the time of this renovation is unknown.

Integrity of Feeling. The Margaret White property retains a high degree of feeling as the structures are largely isolated from the residential neighborhoods that surround the property. A ring of trees acts as a sight and sound buffer that creates a feeling of rural area even though the once expansive fields and woodlands no longer exist in the adjacent neighborhoods. The open field to the east of the house allows for unhindered views across the meadow to the tree line along the east property line.

Integrity of Association. The Margaret White property retains a high degree of association to the White family and how the buildings were used historically by the family. By maintaining the Whites' gardens and developing the property into a horticultural park, the physical memory of the family's interests and activities remains.

TREATMENT AND USE

Requirements for Treatment and Use

The treatment and use for the John C. and Margaret K. White house and barn should be considered within the context of relevant legal mandates, policy directives and treatment guidelines for historic structures. The house and barn should be understood for their historic significance and preserved for the enjoyment of present and future generations.

Laws, Regulations, Codes, Functional Requirements, and Treatment Guidelines

Treatment of the building and site are to be guided by the following:

- Virginia Department of Historic Resources
- Secretary of Interior's Standards for the Treatment of Historic Properties
- Americans with Disabilities Act (ADA)
- *International Building Code* (IBC), 2012
- *International Existing Building Code* (IEBC), 2012
- National Park Service Treatment Preservation Briefs
  - Preservation Brief #1 "Cleaning and Water-Repellent Treatment for Historic Masonry Buildings"
  - Preservation Brief #2 "Repointing Mortar Joints in Historic Masonry Buildings"
  - Preservation Brief #3 "Improving Energy Efficiency in Historic Buildings"
  - Preservation Brief #4 "Roofing for Historic Buildings"
  - Preservation Brief #6 "Dangers of Abrasive Cleaning to Historic Buildings"
  - Preservation Brief #8 "Aluminum and Vinyl Siding on Historic Buildings: The Appropriateness of Substitute Materials for Resurfacing Historic Wood Frame Buildings"
  - Preservation Brief #9 "The Repair of Historic Wood Windows"
  - Preservation Brief #10 "Exterior Paint Problems on Historic Woodwork"
  - Preservation Brief #16 "The Use of Substitute Materials on Historic Building Exteriors"
  - Preservation Brief #20 "The Preservation of Historic Barns"
  - Preservation Brief #21 "Repairing Historic Flat Plaster - Walls and Ceilings"
  - Preservation Brief #24 "Heating, Ventilating, and Cooling Historic Buildings: Problems and Recommended Approaches"
  - Preservation Brief #28 "Painting Historic Interiors"
  - Preservation Brief #29 "The Repair, Replacement, and Maintenance of Historic Slate Roofs"
  - Preservation Brief #32 "Making Historic Properties Accessible"
  - Preservation Brief #37 "Appropriate Methods of Reducing Lead-Paint Hazards in Historic Housing"
  - Preservation Brief #39 "Holding the Line: Controlling Unwanted Moisture in Historic Buildings"
  - Preservation Brief #45 "Preserving Historic Wood Porches"
  - Preservation Brief #47 "Maintaining the Exterior of Small and Medium Size Historic Buildings"

In response to these laws and regulations, threats to life safety, if present, should be addressed in the repair of the buildings. No conditions representing an imminent hazard to life safety were identified during this study. In the 2012 edition of the Virginia Uniform Statewide Building Code (USBC) Part II, based on the International Existing Building Code (IEBC), Section 408.1–Historic Buildings, states:

> *Historic Buildings. The provisions of this code relating to the construction, repair, alteration, addition, restoration and movement of structures, and change of occupancy shall not be mandatory for historic buildings where such buildings are judged by the building official to not constitute a distinct life safety hazard.*

Since the Margaret White house and barn are historic structures, alternatives to full prescriptive legislative and code compliance should be considered where such compliance would compromise the integrity of the character-defining features of the buildings.

Installation of new systems to provide universal accessibility for the public; improve and provide more sustainable mechanical, electrical and plumbing systems; and modifications to meet code requirements should be designed taking into consideration the goal of retaining original historic materials and features wherever possible. Incorporation of new amenities that would require significant alterations to the building and could diminish its integrity as an historic resource should be avoided. Significant changes to the exterior of the building, such as the addition of new window and door openings or new porches or canopies, should also be avoided.

Alternatives for Treatment and Use

The U.S. National Park Service has developed definitions for the four major treatments that may be applied to historic structures: preservation, rehabilitation, restoration, and reconstruction. The four definitions are as follows:

> ***Preservation*** is defined as the act or process of applying measures necessary to sustain the existing form, integrity and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.
>
> ***Rehabilitation*** is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.
>
> ***Restoration*** is defined as the act or process of accurately depicting the form, features and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.
>
> ***Reconstruction*** is defined as the act or process of depicting, by means of new construction, the form, features and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.[118]

Of the four treatment approaches, ***rehabilitation***, which involves making possible a compatible use through repair, alterations, or additions, is most appropriate approach for the house and ***preservation*** for the barn. These treatment approaches would allow for the repairs necessary to stabilize and preserve the buildings, while also permitting modifications to be made to accommodate the proposed change in use.

Alterations and additions have been made to the building to meet code and updated mechanical and plumbing needs. With any change in building use, it is anticipated that additional alterations will be required to meet functional requirements and improve energy efficiency.

Many of the distinctive materials and features of the buildings are essentially intact and in spite of some additions and alterations, the house and barn both retain a relatively high degree of historic integrity. Retention of original materials and character-defining features during rehabilitation work at the house and preservation work at the barn is practical and appropriate and will also assist in the interpretation of the site's history.

Guidelines for Treatment

House

Guidelines and requirements for treatment have been defined based on the preservation objectives and requirements for treatment and use outlined above. All treatment guidelines and recommendations for the house were developed in accordance with the Secretary of Interior's Standards for ***Rehabilitation***.

[118] Secretary of the Interior's Standards for the Treatment of Historic Properties.

The Secretary of the Interior's Standards for ***Rehabilitation*** are as follows:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired. [119]

Barn

Guidelines and requirements for treatment have been defined based on the preservation objectives and requirements for treatment and use outlined above. All treatment guidelines and recommendations for the barn were developed in accordance with the Secretary of Interior's Standards for ***Preservation***.

The Secretary of the Interior's Standards for ***Preservation*** are as follows:

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces and spatial relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.
2. The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place and use. Work needed to stabilize, consolidate and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection and properly documented for future research.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property will be preserved.

[119] Secretary of the Interior's Standards for the Treatment of Historic Properties.

6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color and texture.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

The basic guidelines for work on the house and barn and the immediate setting are as follows:

- Undertake all work in compliance with the Secretary of the Interior's Standards for Rehabilitation or Preservation, as described above.
- Retain the character of the historic site by protecting the individual building and significant site features.
- Ensure that proposed new elements or construction are compatible with the historic character of the building and site.
- Protect adjacent natural resources during construction activities.
- Document through detailed as-built drawings, photographs and written narrative all changes and treatments to the historic site and buildings. Maintain records of treatments and preserve documentation according to professional archival standards.
- Retain features and materials at both the exterior and interior of the buildings that date from the period of significance to the greatest extent possible.
- Incorporate sustainable design principles in all future projects that respect the preservation principles listed above.

Cost Estimates

The cost estimates included in Appendix B have been broken out for each separate building and are grouped into exterior and interior scope. They are a direct correlation to the items noted in the Interior and Exterior Assessments and Recommendations sections of this report. These items address deterioration and deficiencies noted as part of our on-site survey of the existing building components, finishes and site evaluation. The overall project costs are heavily dependent upon the selected use and how any interior and exterior changes are designed.

The projections are based upon the assumption that the work will be undertaken in cost effective parcels where a contractor/laborer will be able to absorb overhead, access and equipment/tool costs across several similar items. The restoration of a historic building should be undertaken with pre-qualified contractors who have experience in the implementation of the recommended scope of work. This includes a mason for most exterior work and specialized carpenter for most interior changes. The extent of renovations to accommodate the new function will dictate the magnitude and type of interior finishes that are impacted.

This cost estimate includes restoration of existing elements only and does not include mechanical, electrical, plumbing, and comfort upgrades (such as bathroom renovations).

GLOSSARY

American Running Bond - See Common Bond.

Baseboards - Decorative trim material, such as wood, that is carved into profiles. Baseboards provide protection to walls from kicks or scuffs, ornamentation around the base of a room and conceal the joint between the floor and vertical wall surfaces. Baseboard was historically constructed of multiple pieces, by each design and assembled onsite.

Chair Rail - Decorative trim material, such as wood, that is carved into profiles to provide protection to the walls from chairs as well as ornamentation around the perimeter of a room. Chair rail was historically constructed of multiple pieces, by each design and assembled onsite.

Common Bond - A pattern of placing bricks where the brick are set in a stretcher orientation with a course of header brick set typically every fifth or sixth course, variants from this can occur, to engage to the adjacent wythe of brick.

Corrosion - Corrosion is a significant factor in building deterioration. Corrosion is an electrochemical process in which the base material oxidizes when exposed to both oxygen and water. In the case of steel, the by-product of the oxidation process is iron oxide, commonly referred to as rust. The iron oxide occupies a significantly larger volume (approximately 6 times or more) than the original base material itself. When the corroding steel element is constrained, such as in reinforced concrete or embedded anchorage elements in masonry, the growing volume of corrosion by-products has insufficient space into which it can expand and therefore exerts pressure on the adjacent material, ultimately resulting in fracture when the resulting stresses caused by the corrosion by-products exceed the strength of the concrete or masonry material. Older buildings utilized iron or mild steel which are susceptible to corrosion if a conductor (often water/moisture) precipitates ironic flow between metal pieces or sections of metal. A corrosion cell consists of the cathode, the anode and the conductor between the two. Galvanic corrosion is a result of ferrous metals in contact with or near other metals and in the presence of an electrolyte and moisture.

Dutchman - A repair method performed in construction and ornamentation materials such as masonry and wood where a damaged substrate is cleaned and squared until sound material is achieved creating a pocket. In kind material (the dutchman) is then used to infill this void and finished to match the profile, finish and texture of the surrounding material.

Glazing Putty - Typically an oil-based material that is used to secure glass lites in a window frame and provide a water tight barrier by inducing a slope away from the glass to promote water shedding.

Header Brick - Brick that is laid perpendicular to the plane of the wall with the short side visible.

Jambs - The vertical elements that form the sides of a window, door, or opening.

Lifting Chain or Rope - Operating mechanisms for windows that are located along the jambs of a single or double hung window. The lifting chains or rope allow the lower sash of the window to operate. The lifting chain or rope is typically threaded through a pulley and accompanied by a counter weight that is internal to the window frame that promotes easier lifting and leveling of the sash.

Mortise - The cavity created in the face of a timber framing member to receive the tenon of another intersecting member. Once the tenon and mortise have been fitted to ensure a proper fit, at least one hole will be drilled in the exterior faces of the mortise to receive the wooden dowel intended to ensure connectivity between the mortise and tenon.

Muntins - Window elements that horizontally and vertically divide each individual glazing lite.

Running Bond - A pattern of placing bricks where the bricks are set in a stretcher orientation and the brick between each course are offset by 1/2 of a brick.

Segmental Arch - A pattern of placing bricks where the bricks are set in a vertical orientation above a window opening such that the base of the bricks form an arch above the opening.

Spalling - Loss of unstable building material that leaves a void.

Stretcher Brick - Brick that is laid parallel to the plane of the wall with the long side visible.

Tenon - The tongue created in the face of a timber framing member and intended to be housed within the mortise of the intersecting timber framing member. Like the mortise, at least one hole will be drilled through the long faces of the tenon to receive the wooden dowel of the mortise and tenon connection.

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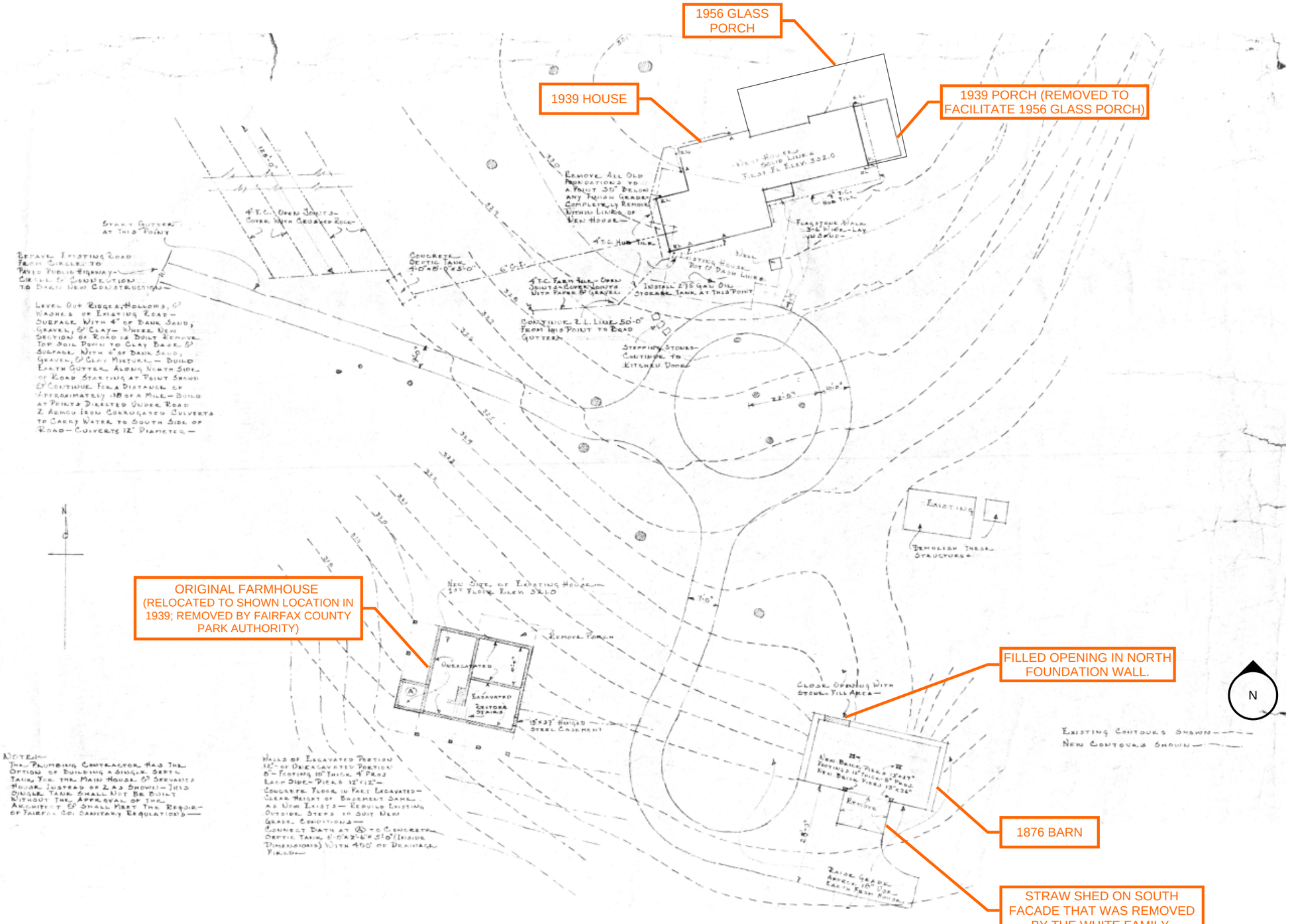
Fairfax County Public Library, Virginia Room.

APPENDICES

APPENDIX A - NOTATED 1938 & 1958 PLANS AND ELEVATIONS

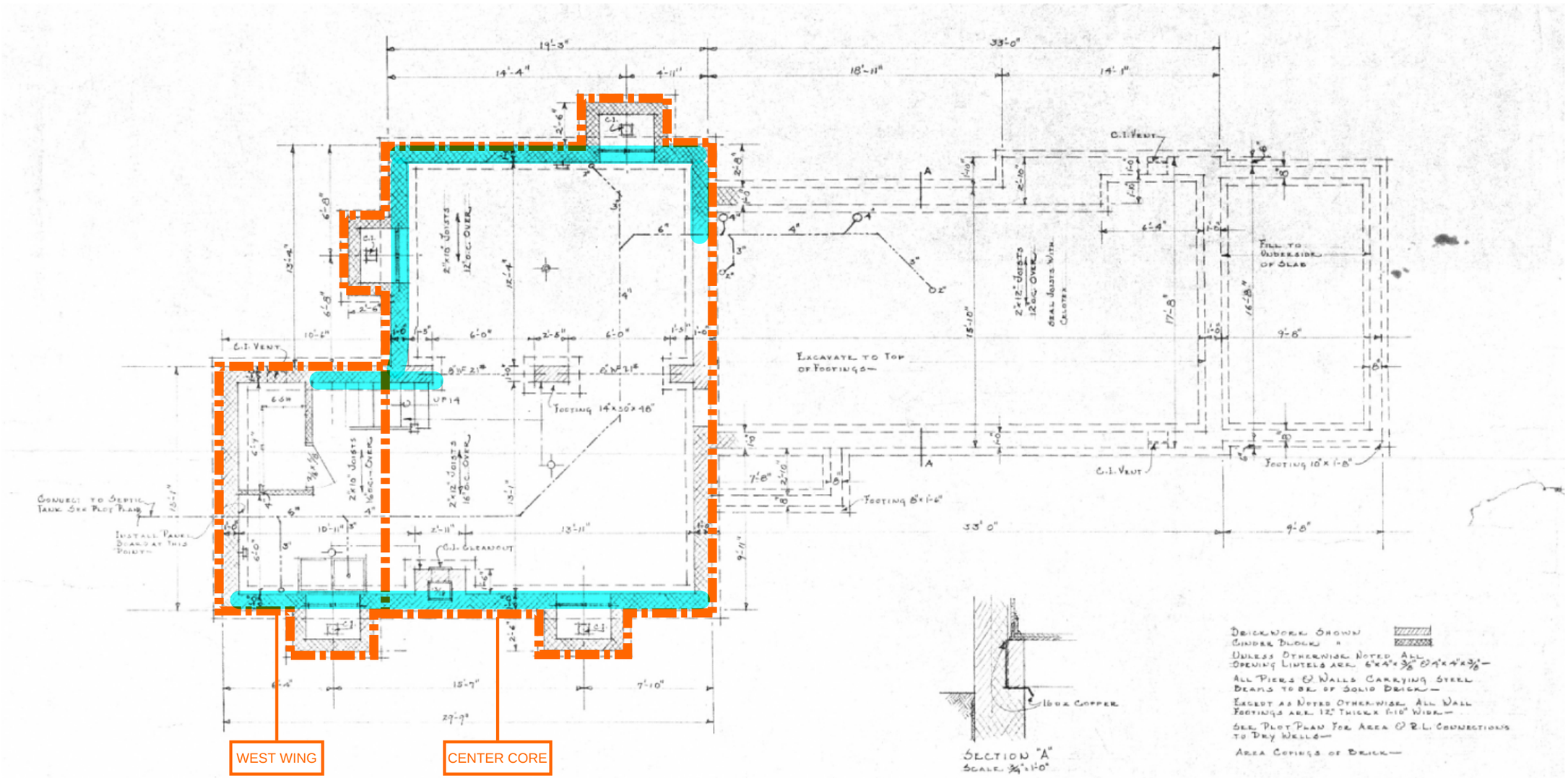
WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS Wiss, Janney, Elstner Associates, Inc.	Project: MARGARET WHITE HOUSE	Project No: 2015.3162.6	Title: APPENDIX A - PLOT PLAN	Sheet: 1



WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS Wiss, Janney, Elstner Associates, Inc.	Project: MARGARET WHITE HOUSE	Project No: 2015.3162.6	Title: APPENDIX A - ARCHITECTURAL BASEMENT PLAN	Sheet: 2

PLAN LEGEND:

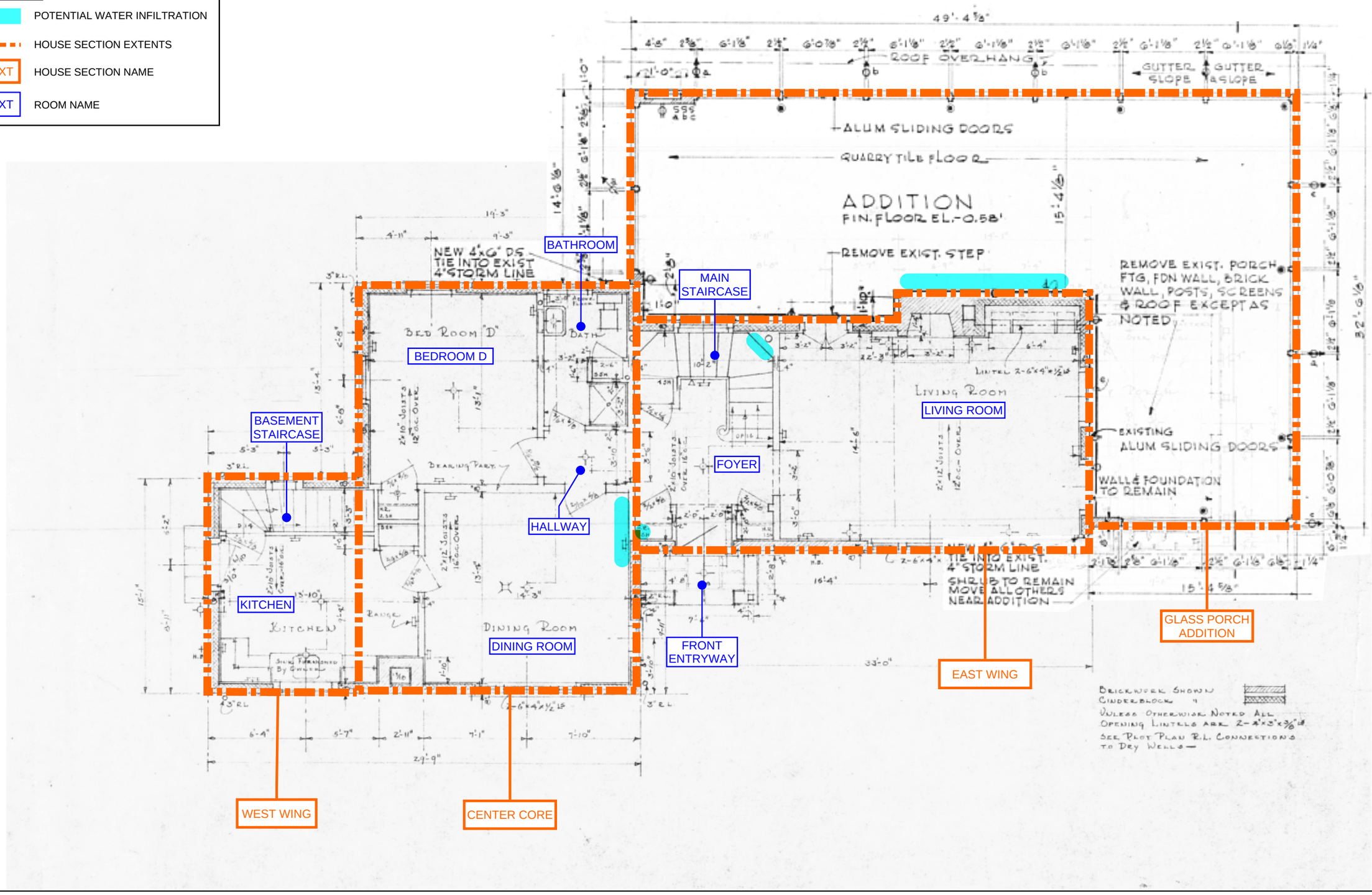
- POTENTIAL WATER INFILTRATION
- HOUSE SECTION EXTENTS
- TEXT — HOUSE SECTION NAME
- TEXT — ROOM NAME



WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS Wiss, Janney, Elstner Associates, Inc.	Project: MARGARET WHITE HOUSE	Project No: 2015.3162.6	Title: APPENDIX A - ARCHITECTURAL FIRST FLOOR PLAN	Sheet: 3

PLAN LEGEND:

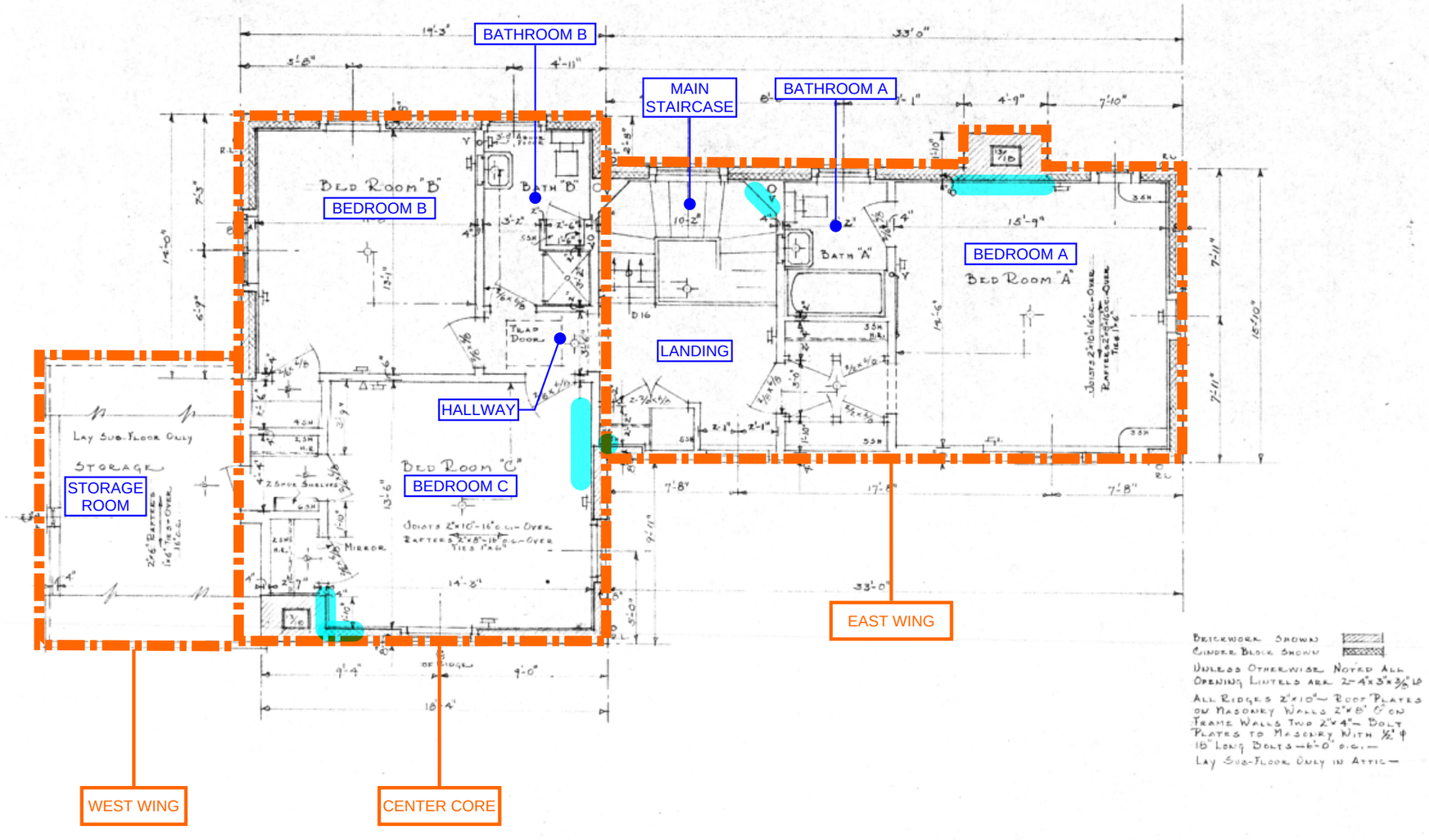
- POTENTIAL WATER INFILTRATION
- HOUSE SECTION EXTENTS
- TEXT — HOUSE SECTION NAME
- TEXT — ROOM NAME



WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS Wiss, Janney, Elstner Associates, Inc.	Project: MARGARET WHITE HOUSE	Project No: 2015.3162.6	Title: APPENDIX A - ARCHITECTURAL SECOND FLOOR PLAN	Sheet: 4

PLAN LEGEND:

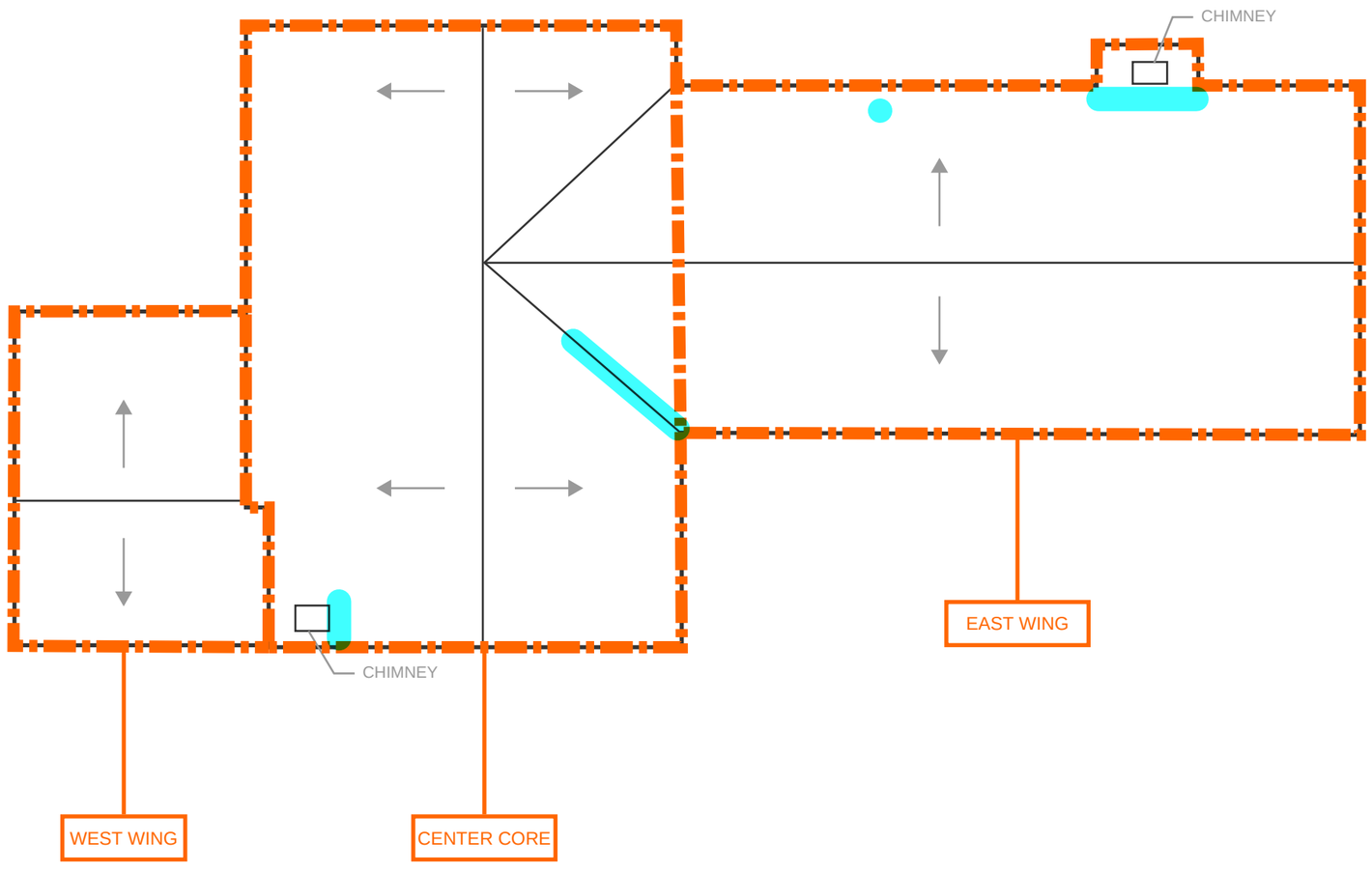
- POTENTIAL WATER INFILTRATION
- HOUSE SECTION EXTENTS
- TEXT — HOUSE SECTION NAME
- TEXT — ROOM NAME



WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS Wiss, Janney, Elstner Associates, Inc.	Project: MARGARET WHITE HOUSE	Project No: 2015.3162.6	Title: APPENDIX A - ARCHITECTURAL ROOF PLAN	Sheet: 5

PLAN LEGEND:

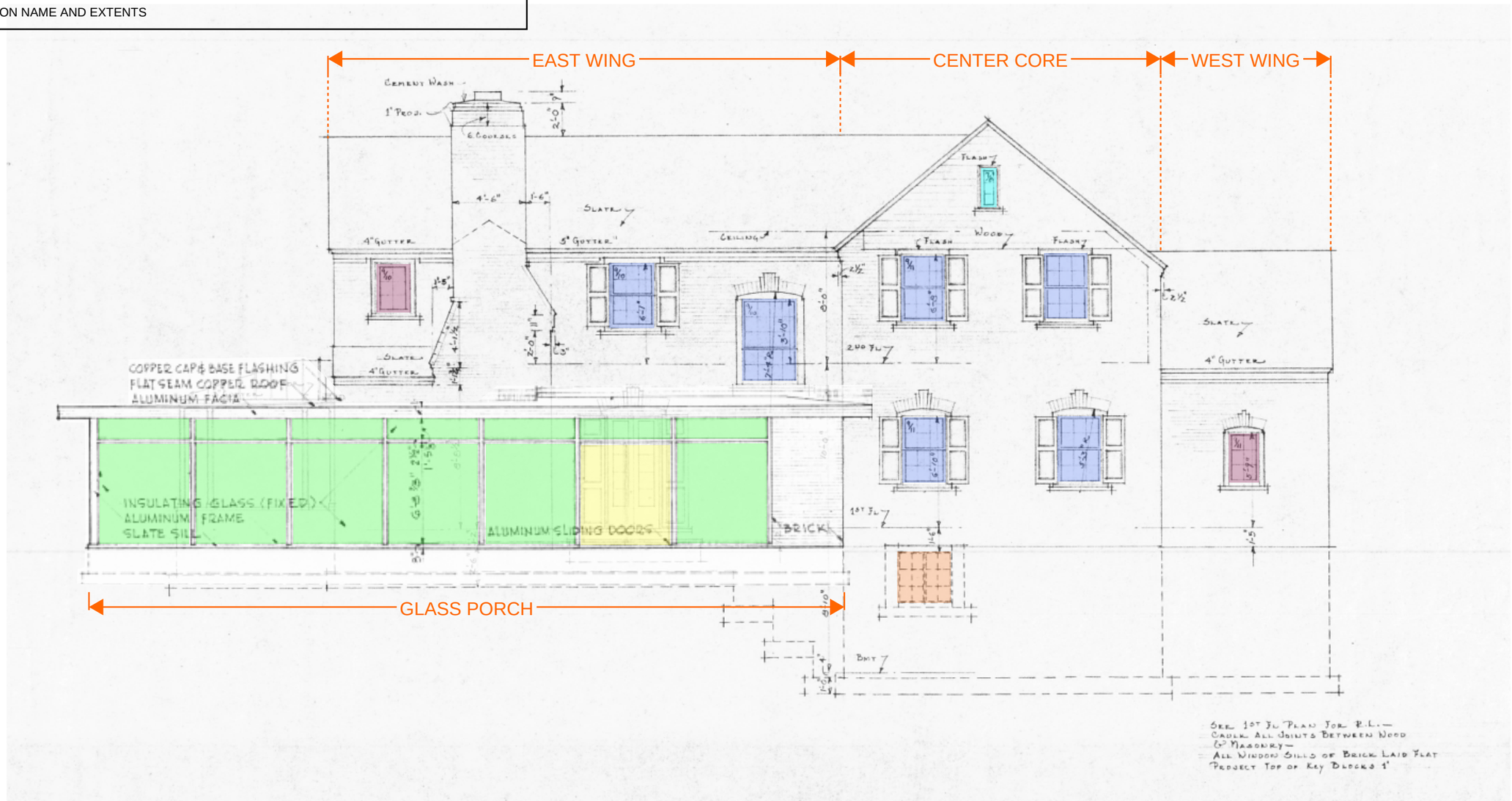
- POTENTIAL WATER INFILTRATION
- HOUSE SECTION EXTENTS
- TEXT — HOUSE SECTION NAME
- TEXT — ROOM NAME



WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS Wiss, Janney, Elstner Associates, Inc.	Project: MARGARET WHITE HOUSE	Project No: 2015.3162.6	Title: APPENDIX A - NORTH ELEVATION	Sheet: 6

ELEVATION LEGEND:

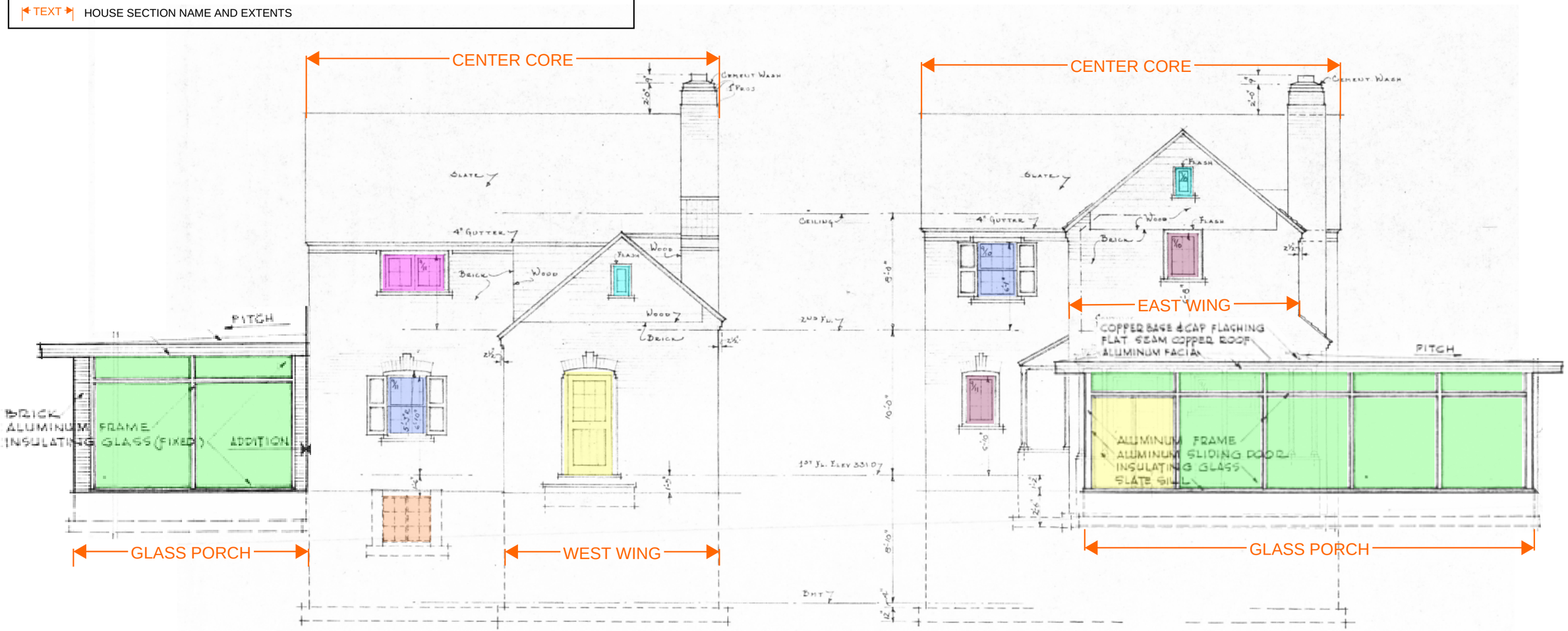
- ALUMINUM-FRAMED STOREFRONT WINDOW
- ENTRANCE
- PAIRED METAL CASEMENT WINDOW
- PAIRED WOOD CASEMENT WINDOW
- TEXT — HOUSE SECTION NAME AND EXTENTS
- SINGLE WOOD CASEMENT WINDOW
- SINGLE VINYL CASEMENT WINDOW
- DOUBLE HUNG WOOD WINDOW



WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS Wiss, Janney, Elstner Associates, Inc.	Project: MARGARET WHITE HOUSE	Project No: 2015.3162.6	Title: APPENDIX A - EAST & WEST ELEVATIONS	Sheet: 7

ELEVATION LEGEND:

- ALUMINUM-FRAMED STOREFRONT WINDOW
- ENTRANCE
- PAIRED METAL CASEMENT WINDOW
- PAIRED WOOD CASEMENT WINDOW
- TEXT — HOUSE SECTION NAME AND EXTENTS
- SINGLE WOOD CASEMENT WINDOW
- SINGLE VINYL CASEMENT WINDOW
- DOUBLE HUNG WOOD WINDOW



WEST ELEVATION

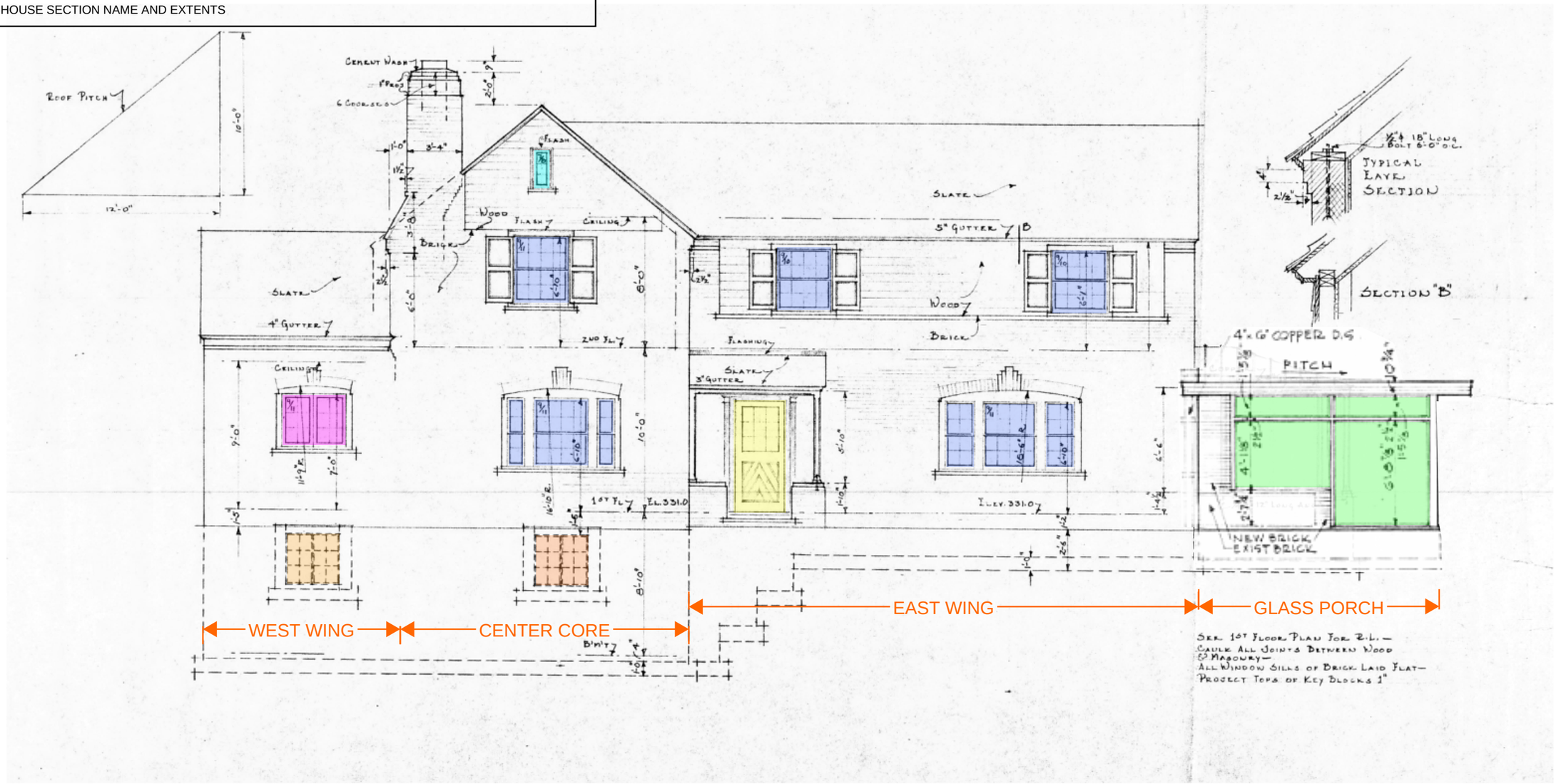
EAST ELEVATION

SEE 1ST FLOOR PLAN FOR R.L.—
CAULK ALL JOINTS BETWEEN WOOD & MASONRY—
ALL WINDOW SILLS OF BRICK LAID FLAT—
PROJECT TOPS OF KEY BRICKS 1"

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS Wiss, Janney, Elstner Associates, Inc.	Project: MARGARET WHITE HOUSE	Project No: 2015.3162.6	Title: APPENDIX A - SOUTH ELEVATION	Sheet: 8

ELEVATION LEGEND:

- ALUMINUM-FRAMED STOREFRONT WINDOW
- ENTRANCE
- PAIRED METAL CASEMENT WINDOW
- PAIRED WOOD CASEMENT WINDOW
- TEXT — HOUSE SECTION NAME AND EXTENTS
- SINGLE WOOD CASEMENT WINDOW
- SINGLE VINYL CASEMENT WINDOW
- DOUBLE HUNG WOOD WINDOW



SEE 1ST FLOOR PLAN FOR R.L.—
CAULK ALL JOINTS BETWEEN WOOD & MASONRY—
ALL WINDOW SILLS OF BRICK LAID FLAT—
PROJECT TOPS OF KEY BLOCKS 1"

APPENDIX B - COST ESTIMATE

Margaret White Hosue and Barn
RECOMMENDATIONS COSTS SUMMARY

BUILDING	ESTIMATE TOTAL	GENERAL CONDITIONS 15%	CONTINGENCY 20%	DESIGN ALLOWANCE 12%	GRAND TOTAL	TOTAL SQUARE FEET	COST/FT2
House	$374,216.10	$56,132.42	$93,554.03	$44,905.93	**$568,808.47**	**2320**	**$245.18**
Barn	$192,502.50	$28,875.38	$48,125.63	$23,100.30	**$292,603.80**	**1463**	**$200.00**
TOTAL FOR BOTH BUILDINGS	$566,718.60	$85,007.79	$141,679.65	$68,006.23	**$861,412.27**	**3783**	**$227.71**

Note: The projections are based upon the assumption that the work will be undertaken in cost effective parcels where a contractor/laborer will be able to absorb overhead, access, and equipment/tool costs across several similar items. This cost estimate includes restoration of existing elements only and does not include mechanical, plumbing, and comfort upgrades (such as bathroom renovations). Mechanical, lighting, HVAC, plumbing, and reconfiguration upgrades are significant costs.

Margaret White House and Barn
House

	Recommendation	Quantity	Unit	Unit Price	Cost	Comments
	Water Infiltration					
Basement	Replace missing or damaged gutters and downspouts, and ensure they are draining properly into the subgrade storm water drain leaders to direct bulk water away from the foundation walls. Note that in order to replace hanging gutters in kind, new strap hangers must be installed and secured to the roof rafters beneath the slate shingle roofing such that localized slate shingle removal and reinstallation is necessary.	275	lf	$30.00	$8,250	
	Remove built-up debris against basement windows, and ensure drains in window wells are working properly. Maintain the window wells to prevent the drains from becoming obstructed.	4	ea	$150.00	$600	
	Determine if a sump pump or other drainage system is present in the basement and that it is able to properly evacuate water build up. If present, perform remedial work as required to ensure the system is functioning as designed.	8	hr	$169.00	$1,352	
	Remove up to 2 inches deep of deteriorated mortar at CMU and brick joints in basement and replace with a mortar strength similar to the original design intent, such as a Type N Portland Cement mortar (masonry cement is not recommended). Pack open voids in the wall assembly with mortar and repoint deteriorated or open mortar joints.	1,100	sf	$30.00	$33,000	
	Monitor the basement for continued water infiltration; if significant water infiltration still occurs after completing the recommendations listed above, the following options may be considered:	--	--	--	--	See options below.
	OPTION A - Install a waterproofing membrane at the exterior facing side of the foundation walls. This option will require excavation of the soil around the perimeter of the foundation wall, cleaning the masonry from latent dirt, and application of a membrane. This is the most disruptive and costly option, and it does not address water infiltration coming through the east foundation wall that is below the living room.	1,100	sf	$55.00	$60,500	
	OPTION B - Install a French drain at the exterior of the foundation wall. This option will require excavation around the perimeter of the foundation wall.	140	lf	$35.00	$4,900	This value assumes that excavation is completed under Option A. It is unclear if water tables and drainage patterns support this additional intervention.

Margaret White House and Barn
House

	Recommendation	Quantity	Unit	Unit Price	Cost	Comments
Roof	Replace copper valley flashings, chimney cricket and upslope flashings, and intersection flashing between the west wing ridge and the center core eave. Replace the two-piece vent pipe penetration flashings with one-piece lead flashings. Localized slate shingle removal and reinstallation/replacement is necessary to fully access the copper flashings for replacement. Provide waterproof underlayment at these locations integrated with the existing roofing felt underlayment in addition to the copper flashing.	160	sf	$50.00	$8,000	
Windows	Replace broken glazing lites for windows and doors. Ensure all windows are fully closed and locked to minimize the potential of water infiltration into the interior.	5	ea	$110.00	$550	
	Exterior					
Masonry	Replace severely cracked brick units in kind. Remove incipient spalls and unsound material. Minor spalls and chips can be left in place.	15	units	$35.00	$525	
	Prepare and repoint cracked or open mortar joints in the brick masonry at both the house and the greenhouse wall.	100	lf	$15.00	$1,500	
	Investigate area of cracked mortar along second floor line on south facade to determine the condition of the embedded steel. If the steel is intact, remove surface corrosion and treat the steel with a corrosion inhibiting coating. Based on the investigation, additional repairs may be recommended, which may include replacement of the steel if significant section loss is observed (not included in the cost estimate shown).	12	hr	$169.00	$2,028	
	The exterior stone pavers and brick facades should be cleaned to remove efflorescence, organic growth, metallic staining, residual sealant, and general soiling.	2,250	sf	$2.00	$4,500	
	Remove abandoned fasteners and anchors, and replace the brick or mortar at the penetration location.	10	units	$35.00	$350	
	Remove the existing coating from the surface of the brick in the window wells. Do not apply a new coating material.	125	sf	$7.00	$875	

Margaret White House and Barn
House

	Recommendation	Quantity	Unit	Unit Price	Cost	Comments
Wood	Remove existing paint and repaint wood trim at eaves. Replace deteriorated wood trim where required. Some deteriorated wood may be repaired through a partial dutchman approach rather than full replacement.	240	sf	$25.00	$6,000	
	Remove all loose, soft, and deteriorated wood at the glass porch soffit and replace in kind.	20	sf	$23.00	$460	10% of plywood soffit
	Replace areas of torn aluminum bird screen at glass porch soffit in kind.	10	sf	$10.00	$100	
	Remove loose paint at front entryway and glass porch soffit until sound coating substrate is found. Feather the edges of the surrounding paint and allow wood to fully dry. Prime and repaint.	235	sf	$3.00	$705	
	Patch holes in the wood posts at the front entryway with an epoxy wood filler.	1	sf	$27.50	$28	
Fiber-Cement Siding	The fiber-cement siding should be cleaned to remove organic growth and general soiling. If the manufacturer is determined, follow the manufacturer's typical cleaning recommendations.	380	sf	$2.00	$760	

Margaret White House and Barn
House

	Recommendation	Quantity	Unit	Unit Price	Cost	Comments
Roof	Slate roof repairs: Please note that the following list of isolated slate roof repairs do not necessitate complete removal and replacement of the installed slate roofing to extend the roof useful lifespan 20-years or more (with annual maintenance), but it may be more economical and expedient to replace the slate roofing in total.	--	--	--	--	See recommendations below.
	Remove and reinstall the surface-sealed strip saddle ridge slates set with new adhesive or flashing cement in accordance with industry standards.	180	sf	$50.00	$9,000	
	Replace the small slate shingle roofing and copper flashings at the small secondary roof located on the east side of the north chimney. Integrate flashings into sloped chimney surface and counterflashing the flat seam copper roof below. Add copper rake edge flashing.	20	sf	$50.00	$1,000	
	Re-secure loose slate and replace broken slate shingles in the roofing field. Utilize the nail-and-bid or slate hook method for securement of isolated replacement slate shingles; the sheet metal strap method utilized for recent repairs is not recommended due to the tendency for the strap to unfold in a relatively short period of time.	50	shingle	$27.00	$1,350	
	Re-install missing/failed snow guards when slate roof is next replaced in full. Installed snow guard type requires slate shingle removal for reinstallation.	190	unit	$16.00	$3,043	
	Replace the flat-lock soldered seam copper roof above the glass porch in kind, including the built-in gutter liner. The replacement roof should be carefully designed by a qualified roof consultant and installed by an experienced historic roofing contractor to accommodate thermal expansion/contraction of the sheet metal roofing and guttering, and include a waterproof underlayment membrane.	1,625	sf	$20.00	$32,500	
	OPTION A - The effective lifespan of the installed copper roof covering may be extended by application of a reinforced roof coating, targeted treatment of the seams or re-covering the roof with an adhered membrane.	1,625	sf	$7.50	$12,188	

Margaret White House and Barn
House

	Recommendation	Quantity	Unit	Unit Price	Cost	Comments
Chimneys	Perform limited repointing to repair cracked or eroded mortar joints at north and south chimneys as noted in the Masonry recommendations above.	290	sf	$15.00	$4,350	
Windows	Restore the wood window assemblies, and ensure the window sashes can freely operate and fully sit in the sash channel. This includes cleaning, glazing putty repair/replacement, minor wood repairs, weatherstripping replacement, and repainting. Note that exterior storm windows and screens will need to be temporarily removed to perform this recommendation.	24	ea	$3,200.00	$76,800	
	Remove the existing exterior perimeter sealant at the wood windows. Install new backer rod and non-staining silicone joint sealant at the interface between the wood window assembly and the surrounding brick.	330	lf	$10.00	$3,300	
	Reinstall the missing shutter on the south facade (currently located in the north window well). If the shutter is damaged beyond repair, install a new shutter to match the existing shutters in kind.	1	ea	$50.00	$50	
	Reinstall the cleaned storm windows and screens if desired; annual cleaning between the storm windows and the original windows is recommended.	10	ea	$30.00	$300	
	Restore the metal window assemblies in the basement window wells, and ensure the window sashes can freely operate and fully sit in the glazing pocket. This includes cleaning, glazing putty repair/replacement, minor metal repairs, weatherstripping replacement and repainting.	4	ea	$1,500.00	$6,000	
	Remove the existing exterior perimeter sealant at the metal windows. Install new backer rod and non-staining silicone joint sealant at the interface between the metal window assembly and the surrounding brick.	65	lf	$10.00	$650	
	Remove debris from window wells and ensure drains in window wells are working properly semi-annually to prevent accumulation of debris against the windows.	4	ea	$50.00	$200	
	Remove the existing exterior perimeter sealant at the aluminum-framed IGUs. Install new backer rod and non-staining silicone joint sealant at the interface between the storefront window assembly and the surrounding substrates.	255	lf	$10.00	$2,550	

Margaret White House and Barn
House

	Recommendation	Quantity	Unit	Unit Price	Cost	Comments
	Remove exterior sealant from the interface between the IGUs and the surrounding aluminum framing. Install a fillet bead of structural grade silicone sealant with appropriate backing material around the perimeter of the IGUs.	645	lf	$10.00	$6,450	
	Replace the corroding ferrous fasteners in the aluminum framing with zinc plated steel fasteners.	75	ea	$15.00	$1,125	
	Clean the IGU assemblies to remove general soiling and surface oxidation.	825	sf	$1.75	$1,444	
	Clean the replacement attic windows at the gable ends to remove general soiling.	4	ea	$30.00	$120	
	Remove the existing exterior perimeter sealant at the vinyl attic windows. Install new backer rod and non-staining silicone joint sealant at the interface between the vinyl window assembly and the surrounding siding.	35	lf	$10.00	$350	
Doors	Restore the exterior wood door assemblies, and ensure the door sashes can freely operate and lock. This includes general cleaning of all components, glazing putty repair/replacement, minor wood repairs, weatherstripping replacement, and repainting.	2	ea	$3,200.00	$6,400	
Light Fixt	Replace missing glass globe on front porch ceiling light fixture.	1	ea	$200.00	$200	
	Clean all light fixtures with a damp cloth.	10	ea	$50.00	$500	
	Replace burned-out light bulbs with new bulbs.	10	ea	$15.00	$150	
Future Resc	Perform analysis of CMU.	2	ea	$1,200.00	$2,400	
	Perform analysis of brick.	2	ea	$1,200.00	$2,400	
	Perform analysis of mortar.	2	ea	$2,850.00	$5,700	
	Perform painted finishes analysis (chromochonology).	3	ea	$800.00	$2,400	

Margaret White House and Barn
House

	Recommendation	Quantity	Unit	Unit Price	Cost	Comments
	Interior					
Plaster	Repair cracked or missing plaster in place by filling cracks or damaged areas with compatible new material. Remove water damaged plaster until sound material is found, and replace in kind.	500	sf	$42.00	$21,000	
	Clean plaster ceiling in basement to remove microbial growth. If the plaster is soft or otherwise deteriorated, replace in kind. Patch or replace plaster ceiling in the basement where there are holes.	645	sf	$4.25	$2,741	
	After the prioritized roof flashing repairs are performed, monitor interior areas with existing water damage (particularly Bedroom C, first floor foyer closet, second floor closet, dining room, and Bedroom A) to ensure the repairs addressed the source of the water infiltration.	4	hr	$169.00	$676	
Finishes	Remove all wallpaper. Paint walls and ceilings or install new wallpaper to represent the typical interior finishes of the late 1930s.	5,350	sf	$7.00	$37,450	
	OPTION A - After consultation with an industrial hygienist, consider cleaning, removing, and preserving portions of the wallpaper as archival samples to represent the original design intent of the room.	7	ea	$200.00	$1,400	
	Remove loose paint from walls and ceilings until sound coating substrate is found. Sand and feather the edges of the surrounding paint. Prime and repaint. Match original paint color as close as possible.	1,025	sf	$3.50	$3,588	
	Replace stained or broken ceiling tiles in glass enclosed porch. Perform testing to confirm whether or not hazardous materials are present in the assembly.	175	sf	$5.00	$875	
	Clean all wood and metal cabinets, staircases, and ornamental wood throughout house. Repair, repaint, or refinish as necessary.	1	lump sum	$3,000.00	$3,000	
Floors	Clean and refinish wood floor throughout the home.	1,750	sf	$12.00	$21,000	
	Replace cracked or missing linoleum tiles in the kitchen and Bathroom A with similar materials and pattern to match the existing.	45	sf	$8.00	$360	
	Remove the carpet in Bathroom B. Replace with linoleum floors that are similar to the other linoleum floors.	50	sf	$7.00	$350	
	Replace loose or missing brick pavers in the glass porch and repoint areas of deteriorated or missing mortar joints.	10	unit	$12.50	$125	

Margaret White House and Barn
House

	Recommendation	Quantity	Unit	Unit Price	Cost	Comments
Doors	Clean and repaint or refinish all doors. Repair wood at joinery and areas of minor damage where needed.	26	ea	$245.00	$6,370	
	Re-install the swing door between the kitchen and the dining room. Repair hinges if required to make the door fully operational.	1	ea	$100.00	$100	
	Evaluate the original French doors found in the basement to determine if they are salvageable. If salvageable, restore and reinstall the original doors at the east doorway between the living room and the glass porch. If the original doors are not salvageable, replace with similar doors.	1	ea	$500.00	$500	
Fixtures	Clean all light fixtures and replace missing glass shades and globes in kind using existing pieces as examples.	31	ea	$200.00	$6,200	
	Install new blinds to match the existing blinds (still present in Bedroom D) at all window assemblies.	23	ea	$80.00	$1,840	
Wood Wall Assembly	Replace the wood lintel above the west basement window. Match the existing in size. Use a wood species that will perform well when exposed to moisture, such as redwood or cedar.	1	ea	$350.00	$350	
	Replace the rotten wood stud framing members at Bedroom C and in the southwest corner of the attic above Bedroom C. Use similar wood species and installation techniques as existing members. Partial dutchman repairs may be feasible in lieu of full member replacement depending on the orientation and size of the repair.	175	lf	$27.50	$4,813	
Masonry & Mortar	After the prioritized repairs are performed, monitor the basement regularly, particularly after rain events, to ensure the repairs addressed the source of the water infiltration.	4	hr	$169.00	$676	
	Clean the CMU in the basement and the brick in the glass porch at areas of staining. No cleaning products containing strong acids (e.g., hydrofluoric or hydrochloric acid) should be used on the masonry at any time, as such acids are harmful to persons, animals, and the environment, and can cause damage and staining of the masonry.	1,300	sf	$1.75	$2,275	
	Remove white coating at CMU in basement.	1,300	sf	$7.00	$9,100	

Margaret White House and Barn
House

	Recommendation	Quantity	Unit	Unit Price	Cost	Comments
Misc. Building Systems	Engage a professional mechanical, electrical, and plumbing (MEP) engineer to review the following: -The existing heating, ventilating, and air-conditioning (HVAC) system to determine the appropriate maintenance or repair recommendations to return the interior of the home to appropriate temperature and relative humidity levels. This includes review of the duct that leads from the basement to Bedroom D where the significant staining and deterioration of interior finishes was observed surrounding the vent. Maintenance or repair recommendations for the metal registers should also be included. -The existing plumbing system to determine the appropriate maintenance or repair recommendations to return the plumbing system to a safe and functional state. -The existing electrical system to determine the appropriate maintenance or repair recommendations to return the electrical system to a safe and functional state.	1	ls	$1,500.00	$1,500	
	Ensure the insulation observed at the perimeter of the attic and storage room floors is continuous below the floor boards.	6	hr	$169.00	$1,014	
Future Research	Perform paint analysis at painted interior finishes (kitchen and bathroom walls, chair rails, baseboards, doors, etc.), to determine original paint colors.	10	ea	$800.00	$8,000	

Summary Total (excluding Options) **$374,216**

Margaret White House and Barn

Barn

	Recommendations	Quantity	Unit	Unit Price	Cost	Comments
	Water Infiltration					
Basement	Remove thin, loose, and deteriorated mortar until sound mortar is reached from the exterior and interior surfaces of the fieldstone foundation walls. There may be locations between individual stone units where mortar is deteriorated or missing a significant depth into the wall. Using a more fluid mortar mix to fill these voids may be important to the long term stability and water resistance of the fieldstone foundation wall. Remove mortar in limited areas at a time (exterior only or interior only) and repoint prior to addressing adjacent areas to prevent the wall from becoming unstable.	1,250	sf	$30.00	$37,500	
	Install new gutters and downspouts at the barn roof, and ensure they are draining properly into the subgrade stormwater drain leaders (if stormwater drain leaders not present, install new splash blocks) to direct bulk water away from the fieldstone foundation walls. Note that in order to install new hanging gutters new strap hangers must be installed and secured to the roof rafters beneath the shingle roofing such that localized shingle removal and reinstallation is necessary.	145	lf	$30.00	$4,350	
	Remove soil in front of north sliding doors to reveal interface between the wood floor at the main level and the fieldstone foundation wall below. Install metal flashing over interface to protect this interface from groundwater and run-off water. Repair foundation wall if needed (foundation wall repairs not included in unit price).	5	cy	$150.00	$750	
	Install crack monitors at the northeast corner of the foundation wall following completion of the repointing work to periodically monitor this area for continued movement. If additional movement is observed, engage a professional structural engineer to evaluate.	5	ea	$50.00	$250	

Margaret White House and Barn
Barn

	Recommendations	Quantity	Unit	Unit Price	Cost	Comments
	Exterior					
Masonry	If bulk water infiltration in the basement persists after performing the prioritized repointing recommended above, consider the following options:	--	--	--	--	See options below.
	OPTION A - Install a trench drain at the exterior side of the foundation wall. Confirm availability of drain to be directed to an apporpriate outlet.	90	lf	$75.00	$6,750	
	OPTION B - Excavate the soil at the perimeter of the barn foundation walls. Remove mortar to a depth of 3/4 inches or until sound mortar is reached. Pack open voids in the wall assembly with mortar and repoint deteriorated or open mortar joints. Apply a waterproofing membrane to the below-grade exterior surfaces of the foundation wall.	1	lump sum	$24,300.00	$24,300	
Windows	Review the condition of the disassembled window sash components on the main level south side. If salvageable, reuse the components to reconstruct the sash. Replace missing or severely damaged components in kind	1	ea	$3,200.00	$3,200	
	Remove the exterior plywood. Restore the wood window assemblies, and ensure the window sashes can freely operate and fully sit in the sash channel. This includes cleaning, glazing putty repair/replacement, minor wood repairs, weatherstripping replacement, and repainting. Inspect all hinges, sash locks, and other operating mechanisms to permit for full and unhindered operation, replacing components in kind where needed.	10	ea	$3,200.00	$32,000	
	Replace all cracked or missing glass lites in kind.	6	ea	$110.00	$660	
	Remove the existing exterior perimeter sealant (if present). Install new backer rod and non-staining silicone joint sealant at the interface between the wood window assembly and the surrounding wood or stone.	155	lf	$10.00	$1,550	

Margaret White House and Barn

Barn

	Recommendations	Quantity	Unit	Unit Price	Cost	Comments
Doors	Remove deteriorated coating, clean, and repaint doors.	410	sf	$4.50	$1,845	
	Remove surface corrosion from sliding barn door tracks and lubricate system such that the sliding barn doors operate smoothly. Remove existing paint and coat with a protective coating.	1	lump sum	$750.00	$750	
Wood	Remove vegetation and abandoned wire penetrations from wood surfaces.	1	lump sum	$750.00	$750	
	All exterior wood surfaces should be cleaned and recoated on a cyclical basis. Remove the existing coatings from all exterior surfaces and repaint. Perform testing to confirm presence of lead based paint.	1925	sf	$4.50	$8,663	
	Perform partial or full wood dutchman repairs where there are holes in the cladding. Use a wood species that is similar to the existing wood.	20	sf	$25.00	$500	
Metal	Replace any corroded fasteners with copper or galvanized steel fasteners.	1	lump sum	$200.00	$200	
Roof	Replace damaged shingles at the west end of the ridge.	10	sf	$50.00	$500	
	Prepare for roof covering replacement in approximately 10 years. Consider installing a historically sensitive roofing material in lieu of the contemporary asphalt shingles currently installed.	980	sf	$50.00	$49,000	
Future Rese	Perform analysis of wood.	2	ea	$375.00	$750	
	Perform analysis of stone.	2	ea	$1,200.00	$2,400	
	Perform analysis of mortar.	2	ea	$2,850.00	$5,700	
	Perform painted finishes analysis (chromochonology).	2	ea	$800.00	$1,600	
	Interior					
Plaster	Patch or replace plaster ceiling in the basement where holes are present.	80	sf	$42.00	$3,360	
Wod	Replace missing center post and braces on east side of barn in kind.	30	lf	$88.00	$2,640	
	Engage a professional engineer to provide a designed repair for the failed pole rafter on the south side of the roof; the installed supplemental dimension lumber is not an engineered solution and may be related to the visual sag in the roof surface.	15	hr	$169.00	$2,535	

Summary Total **$192,503**