



HISTORIC STRUCTURE REPORT

CHARLES E. ARNOLD HOUSE (HS-20)

Lincoln Home National Historic Site
Springfield, Illinois

August, 1994

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Historic Structure Report

CHARLES E. ARNOLD HOUSE (HS-20)
LINCOLN HOME NATIONAL HISTORIC SITE
SPRINGFIELD, ILLINOIS

by:

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Springfield, Illinois 62701

for:

Office of Planning & Resource Preservation
Division of Cultural Resources Management
National Park Service
United States Department of the Interior
Omaha, Nebraska

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8 Aug 1994
Date

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8/10/94
Date

TABLE OF CONTENTS

Illustrations	ix
List of Drawings	xii

Division I - Introduction

National Park Service Administrative Section	1.1
Identification	1.1
Historic Structure Name	1.1
Historic Structure Number	1.1
Historic Structure Location	1.1
Street Address	1.1
Legal Property Description	1.1
Management Category	1.2
Proposed Treatment and Use of Structure	1.2
Package 184-Stabilize/Restore Arnold House	1.2
Justification for Proposed Treatment and Use	1.3
Historical Base Map (November 1969)	1.4
Master Plan-Lincoln Home N.H.S. (February 1970)	1.4
Legislative Origins	1.9
Enabling Legislation (85 Stat. 347)	1.9
Interpretive Propsectus (October 1976)	1.10
National Register Nomination	1.10
Cultural Resources Management Plan (1981)	1.11
Resources Management Plan (1982)	1.11
Statements for Management-Lincoln Home N.H.S.	1.12
Statement for Management-Lincoln Home (1983)	1.12
Recommended Changes in Proposed Treatment/Use	1.13
Treatment/Use Recommendations	1.13
Documentation Recommendations	1.14
Introduction	1.15
Document Organization	1.16
Project Team Members	1.19
Acknowledgements	1.20
Introduction Endnotes	1.21

Division II - Historical Documentation

Events	2.1
Pascal & Salome Enos, 1823 - 1825	2.1
Elijah & Malinda Iles, 1825 - 1837	2.1

John B. Weber, Daniel E. & Jacob Ruckel, 1837 - 1839	2.3
Francis & Mary Springer, 1839 - 1849	2.5
Charles E. Arnold, 1849 - 1878 & Charles D. Arnold, 1878 - 1892 . . .	2.7
Frank & Rebecca E. Cook, 1892 - 1922	2.11
Adele Darneille & Frank T. Davidson, 1922 - 1962	2.14
Hugh Garvey, 1962 - 1978	2.16
Chain of Title	2.17
Historical Document Description	2.19
Historical Illustrations	2.27
Historical Documentation Endnotes	2.48

Division III - Existing Conditions and Fabric Analysis

Introduction	3.1
Site Conditions	3.1
Site Fencing	3.3
Non-Extant Historic Barn	3.4
Privies and other Outbuildings	3.6
Porches and the Attached Shed	3.7
Foundation	3.8
Structural Systems	3.9
Roof Systems	3.16
Building Envelope	3.18
Exterior Doors	3.23
Windows	3.24
Fireplaces and Chimneys	3.26
Interior Stairs	3.28
Interior Doors	3.31
Interior Finishes	3.32
Plumbing Systems	3.37
Mechanical Systems	3.38
Electrical Systems	3.39
Communication Systems	3.39
Security Systems	3.39
Existing Condition Photographs	3.40
Existing Conditions and Fabric Analysis Endnotes	3.64

Division IV - Existing Conditions Drawings

Division V - Chronological History

Introduction	5.1
------------------------	-----

Division VI - Design Recommendations

Introduction	6.1
Implications of New Construction	6.3
Removal	6.4
Stabilization	6.5
Restoration	6.6
Reconstruction	6.6
Interior Rehabilitation	6.7
Archeological Remains	6.7
Site Conditions	6.9
Site Fencing	6.10
Historic Barn	6.10
Privies	6.13
Porches and the Attached Shed	6.13
Foundations	6.14
Structural Systems	6.14
Roof Systems	6.16
Building Envelope	6.17
Exterior Doors	6.18
Windows	6.18
Fireplaces and Chimneys	6.19
Exterior Stairs	6.20
Interior Stairs	6.20
Interior Doors	6.21
Interior Finishes	6.21
Plumbing Systems	6.23
Mechanical Systems	6.24
Electrical Systems	6.24
Communication and Security Systems	6.25
Fire Alarm and Suppression Systems	6.25
Recommendations for In Situ Architectural Displays	6.26

Division VII - Design Recommendation Drawings

Appendix A - Paint Analysis

Arbogast Report	A.1
Gilmore Report	A.65

Appendix B - Mortar and Plaster Analysis	B.1
--	-----

Appendix C - Structural Report	C.1
--	-----

Appendix D - Square Footage Calculations

Existing Usable Square Footage	D.1
Proposed Usable Square Footage	D.2

Appendix E - National Park Service Work on the House E.1
Appendix F - Preliminary Cost Projection F.1
Appendix G - Archeological Data
 Trip Report September 16, 1991 G.1
 Trip Report August 4, 1992
Appendix H - Site Survey H.1
Bibliography Bib.1

ILLUSTRATIONS

FIGURES

2.1	McManus' City of Springfield Map, 1854	2.27
2.2	Sides' City of Springfield Map, 1858	2.28
2.3	Ruger's Panoramic View of the City of Springfield, ca. 1867	2.29
2.4	Beck and Pauli's Panoramic View of the City of Springfield, ca. 1870	2.30
2.5	Koch's Panoramic View of the City of Springfield, 1873	2.31
2.6	Sanborn Map, City of Springfield, 1884	2.32
2.7	Sanborn Map, City of Springfield, 1890	2.32
2.8	Sanborn Map, City of Springfield, 1896	2.33
2.9	Sanborn Map, City of Springfield, 1917	2.33
2.10	Sanborn Map, City of Springfield, 1941	2.34
2.11	Sanborn Map, City of Springfield, 1952	2.34
2.12	August 8, 1860 Photograph (from the west/northwest)	2.35
2.13	April 1965 Photograph (from the northwest)	2.36
2.14	Ca. 1885 Photograph (from the northwest)	2.37
2.15	January 1, 1886 Rendering (from the northwest)	2.38
2.16	Ca. 1889 Photograph (from the northwest)	2.39
2.17	Ca. 1888-1895 Photograph (from the northwest)	2.40
2.18	Undated Photograph (from the northwest)	2.41
2.19	Undated Rendering (from the northwest)	2.42

2.20	Ca. 1895-1900 Photograph (from the northwest)	2.43
2.21	1916 Photograph (from the northwest)	2.44
2.22	Ca. 1920 Photograph (from the northwest)	2.45
2.23	Early 1970's Photograph (from the north)	2.46
2.24	Rebecca Cook House at 500 South Eighth Street (from the southwest)	2.47
3.1	North Elevation	3.46
3.2	East Elevation	3.47
3.3	South Elevation	3.48
3.4	West Elevation	3.49
3.5	Clapboard Siding Behind Brick Veneer	3.50
3.6	Eave Detail	3.50
3.7	Brick Belt Course	3.51
3.8	Foundation Wall and Brick Veneer	3.51
3.9	Chimney Foundation	3.52
3.10	Chimney Foundation	3.52
3.11	Basement Stair	3.53
3.12	Framing at Non-Extant Wall	3.53
3.13	Charred Framing	3.54
3.14	Altered Framing	3.54
3.15	Foundation Wall	3.55
3.16	Floor Framing	3.55

3.17	Original Corner Board	3.56
3.18	Original Corner Board	3.56
3.19	Corner Bracing	3.57
3.20	Hand-split Lath	3.57
3.21	Original Window Location	3.58
3.22	Original Stair Stringer	3.58
3.23	Hand-split Lath at Stair Soffit	3.59
3.24	Cut-out in Sheathing	3.59
3.25	Non-extant Historic Wall	3.60
3.26	Non-extant Historic Wall	3.60
3.27	Historic Top Plate	3.61
3.28	Ledger Board at Stair	3.61
3.29	Roof Framing at Non-Extant Chimney	3.62
3.30	Roof Framing	3.62
3.31	Roof and Gable Endwall Framing	3.63

TABLES

3.1	Chronology of the Floor Joist Framing	3.12
-----	---	------

LIST OF DRAWINGS

EXISTING CONDITIONS DRAWINGS - DIVISION IV

Title Sheet and Area Maps	1 of 27
Notes, Symbols and Abbreviations	2 of 27
Topographical Site Plan	3 of 27
Basement Floor Plan	4 of 27
Basement Reflected Ceiling Plan	5 of 27
First Floor Plan	6 of 27
First Floor Reflected Ceiling Plan	7 of 27
Second Floor Plan	8 of 27
Second Floor Reflected Ceiling Plan	9 of 27
Roof Plan	10 of 27
Foundation Dimensioned Plan	11 of 27
First Floor Framing Plan	12 of 27
Second Floor Framing Plan	13 of 27
Roof Framing Plan	14 of 27
Building Sections	15 of 27
Exterior Elevations	16 of 27
Exterior Elevations	17 of 27
Interior Elevations	18 of 27
Interior Elevations	19 of 27
Interior Elevations	20 of 27
Interior Elevations	21 of 27
Structural Framing Details	22 of 27
Building Details	23 of 27
Window Details	24 of 27
Door Details	25 of 27
Door and Window Schedules and Types	26 of 27
Room Finish/Materials Schedule	27 of 27

CHRONOLOGICAL HISTORY - DIVISION V

Title Sheet and Area Maps	1 of 8
Chronological History - ca 1840	2 of 8
Chronological History - ca 1841 - 1847	3 of 8
Chronological History - By 1854	4 of 8
Chronological History - By 1884	5 of 8
Chronological History - By 1896	6 of 8
Chronological History - By 1917	7 of 8
Chronological History - ca 1917 - 1992	8 of 8

DESIGN RECOMMENDATIONS DRAWINGS - DIVISION VII

Title Sheet and Area Maps	1 of 12
Site Plan	2 of 12
Basement Floor Plan	3 of 12
Basement Reflected Ceiling Plan	4 of 12
First Floor Plan	5 of 12
First Floor Reflected Ceiling Plan	6 of 12
Second Floor Plan	7 of 12
Second Floor Reflected Ceiling Plan	8 of 12
Roof Plan	9 of 12
Exterior Elevations	10 of 12
Exterior Elevations	11 of 12
Barn and Privy - Floor Plans and Elevations	12 of 12

**National Park Service Administrative Section
Introduction
Document Organization
Project Team Members
Acknowledgements
Introduction Endnotes**

INTRODUCTION

DIVISION I

NATIONAL PARK SERVICE ADMINISTRATIVE SECTION

The following administrative section was written by the staff of Lincoln Home National Historic Site. It is included here as received and has only been edited to match the pagination of other portions of the report.

IDENTIFICATION:

The historic Charles Arnold house can be identified as follows:

HISTORIC STRUCTURE NAME:	Charles Arnold House
HISTORIC STRUCTURE NUMBER:	Historic Structure No. 20(LIHO)
LIST OF CLASSIFIED STRUCTURES NUMBER:	LCS I.D. NO. 17004 ¹
NATIONAL REGISTER REFERENCE NUMBER:	71000076 ²
HISTORIC STRUCTURE LOCATION:	Lincoln Home National Historic Site
STREET ADDRESSES: ³	
Current Address:	810 East Jackson Street
Historic Address:	500 South Eighth Street Springfield, Illinois 62703

The Charles Arnold House is listed as a "Contributing Structure" in the Lincoln Home National Historic District, a designated historic area whose boundaries coincide with those of the Historic Zone within the National Historic Site.

LEGAL PROPERTY DESCRIPTION:

The four square block (12.28-acre) Lincoln Home National Historic Site lies almost entirely within the Northeast Quarter of the Southeast Quarter of the Northwest Quarter of Section 34, Township 16 North, Range 5 West of the Third Principal Meridian (i.e., NE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 34, T16N, R5W of 3PM).

The (0.1395-acre) parcel⁴ containing the Arnold House is legally described as Lot No. 1-Block 11 of Elijah Iles' (1836) Addition to the City of Springfield, Illinois; being a fractional part of the one sixty-fourth of Section 34 constituting the National Historic Site.

MANAGEMENT CATEGORY:

The Charles Arnold house (HS-20:LIHO) was designated a Management Category A (Must Be Preserved)⁵ historic structure in the National Park Service List of Classified Structures (LCS). The most recent revision of the LCS, approved June 29, 1988, lists the approved ultimate treatment of the Arnold House as, "Adaptive Restoration."^{6,7}

PROPOSED TREATMENT AND USE OF STRUCTURE:

PACKAGE 184—STABILIZE/RESTORE ARNOLD HOUSE:

The exterior treatment proposed for the structure has been identified as restoration to its historic appearance circa 1860 in the NPS Study/Development Package Proposal (10-238)-Package 184⁸ entitled, "Stabilize/Restore Dubois, Miller, Sprigg, Arnold," dated May 15, 1987.⁹ In this 10-238, it was noted:

In order to fulfill the Site's Master Plan, the Dubois, Miller, Sprigg and Arnold must be restored as accurately as possible to size and appearance of the Lincoln period. Without this restoration, the Lincoln Home visitor will not be provided with an accurate perception of the historic scene. In addition, the historical integrity of these structures will become irreversibly impaired.¹⁰

The interior treatment proposed for the structure has been identified as adaptive restoration in the Study/Development Package Proposal (10-238), numbered Package 294 but identified as "a component of Package 184":

If this work [i.e., restoration] is not performed, a valuable historic structure (Category A) will remain vacant and unused. This would represent an inefficient utilization of Government property and would also increase its deterioration. Completion of this project will serve to attract potential lessees/tenants/proposals for adaptive utilization through the Historic Leasing Program. This would fulfill the goals of the Site's Master Plan to restore the Arnold House as accurately as possible to its size and appearance during the Lincoln period. Restoration of the interior will also meet minimum life safety codes, making the structure safe.¹¹

Exterior restoration to its appearance circa 1860 and interior restoration for adaptive use are again reiterated as the two treatments proposed for the Arnold house.¹² As with all Site neighborhood structures, the Arnold house and its dependencies serve two functions. Its primary purpose is to help in recreating the historic neighborhood scene as the Lincolns knew it. To this end, the exterior of the house will be fully restored to its appearance circa 1860. Its significant site and landscape features will also be restored to that period. To complete the scene, architecturally compatible outbuildings representing those known to have existed historically on the property will be constructed.¹³

The purpose of constructing architecturally compatible outbuildings is threefold: first, restoration of the historic scene; second, visual and acoustical buffering of the core historic zone from surrounding modern intrusions; and third, to provide critically needed facilities for National Historic Site operations.

The interior of the restored Arnold house will be adaptively restored for use as a waiting area for visitors waiting to tour the Lincoln Home, and, as museum display space. The interior of the replacement barn will be used for storage of the Site's curatorial collection.

JUSTIFICATION FOR PROPOSED TREATMENT AND USE:

All subsequent management decisions regarding treatment of historic structures at Lincoln Home NHS ultimately derive from the park's enabling legislation and testimony at the Congressional hearings that led to its passage. However, that testimony and the legislation it produced were—themselves—informed by prior National Park Service investigation, analysis, and planning for the (then as yet only proposed) National Historic Site. These established National Park Service intentions for the Site that—in turn—constituted the basis for subsequent testimony under oath before Congress and its enacting of P.L. 92-127 establishing the Lincoln Home National Historic Site.

In keeping with National Park Service (NPS) Director George B. Hartzog's, (April 5, 1971) testimony before Congress,¹⁴ the interior of the structure has been designated for several adaptive reuses since 1971. Originally designated for use as National Park Service staff quarters, this historic structure was redesignated for interior adaptive rehabilitation as a visitor use and exhibit space. This succession of intended treatments and uses is documented in the following official records:

Historical Base Map (November 1969):

In his (November 1969) Historical Base Map documenting historical research of potentially-historic structures within the boundaries of the Proposed Lincoln Home National Historical Park, NPS historian Edwin C. Bearss specifically noted of the Arnold House:

To restore the historic scene at the intersection of Jackson and Eighth streets, the Arnold House should be reconstructed. At present, there are insufficient graphics to undertake such a reconstruction. It is believed that the preparation of a Historic Structures Report for the Arnold House will provide the necessary documentation to insure an accurate reconstruction. The photographs of the Arnold Barn, along with the floor plan found in the Sanborn Map - 1884 should provide sufficient data to reconstruct that structure.¹⁵

In recommending reconstruction to its 1860s appearance, Bearss was establishing a direction for treatment of historic structures at the (as of then only proposed) "National Historical Park," a direction that would later be echoed in the documented intentions of NPS Director Hartzog, the Secretary of the Interior, and Illinois Representative Paul Findley, in testimony before Congress. Although Bearss did not discuss the use of the historic Site structures, the Study Team—to which Bearss was an advisor—compiling the proposed Site's Master Plan, did make recommendations for proposed uses of these structures.

Master Plan-Lincoln Home N.H.S. (February 1970):

In this National Park Service-produced planning document¹⁶ (whose publication also predated creation of the National Historic Site), the second of eight recommendations for development of the Site states:

2. Recapture the historic scene in the immediate Home vicinity through restoration and partial reconstruction of period buildings and streets. Remove other buildings.¹⁷

The purpose of this proposed treatment was clearly stated:

The purpose [of the Lincoln Home National Historic Site] is to enable the visitor to understand the environment in which Abraham Lincoln was a part for the twenty-three years from the beginning of

law practice in Springfield to the Presidency, and the relevance of this to a deeper understanding of Lincoln in American heritage. The visitor should be led to appreciate that here, Lincoln lived as father, neighbor, and member of the community, while he continued to develop in response to the needs of the community and of the nation.¹⁸

Continuing, it was later noted in the Master Plan:

[...] To accomplish this, it is proposed that the area be treated as two zones:¹⁹

1. **Historic Preservation Zone:** Recapture of the historic scene between the two alleys will form the core. Restoration will be on two levels: faithful restoration and reconstruction, limited to the four corner properties on Eighth and Jackson Streets; and partial restoration and reconstruction in the remainder of the historic zone. This will include exterior restoration of existing "period" buildings, reconstruction of a number of barns and fences, and grounds restoration. Interior restoration may be done later by donated funds.²⁰

Treatments proposed for historic Site structures continued with a detailed description of the treatment structures within the Historic Preservation Zone are to receive.

Historic Preservation Zone:

Faithful Restoration: To recreate fully the historic scene of the Lincoln era, circa 1860, at the intersection of Eighth and Jackson, it will be necessary to relocate one structure (the Corneau House), and to reconstruct three houses and three barns. With the Home as the center, this degree of reconstruction will comprise the minimum perimeter of exact historic mood for the visitor's proper understanding of the times.

The great number of photographs made of the Lincoln Home and environs in the 1860's will provide the necessary documentation to assure accurate exterior reconstructions of the Burch, Co[a]rrigan, and Arnold houses, and the barns on the Co[a]rrigan, Corneau, and Arnold properties.

While the Home has been substantially restored, some changes, both in the building and the furnishings, will be needed to complete the restoration. For example, some furnishings in the Home belong in the law office, and vice versa. Cooperation with community groups will be needed to correct such discrepancies.

Partial Restoration: Around the core of complete restoration, a zone of partial restoration will complete the historic scene. Streets will be resurfaced to simulate historic materials; walks, fences, and curbs will be restored, and a number of sheds reconstructed. This will apply to the length of Eighth Street and the portion of Jackson Street between the alleys. While there is no evidence of street lighting during the historic period, indirect lighting must be provided for protection and safety.

Although the restoration outlined above comprises the immediate plan for recreation of the historic scene, other period structures should be retained to maintain the residential character. Buildings not required for park use could be restored through private capital. In return, a fifty-year lease for compatible use could be granted by the government. At such time as these structures come under National Park Service jurisdiction, and are thereby accessible, further study will determine what is needed in terms of exterior restoration and interior stabilization. As donated funds become available, interior restoration of existing "period" buildings on Eighth Street could be done.²¹

Thus, the proposed Site's Master Plan both followed and expanded on Bearss' initial recommendations for the treatment of the neighborhood's historic structures, prescribing treatment for both surviving and nonextant Lincoln-era buildings.

In the discussion entitled, "The Plan-Summary of Recommendations," the Master Plan addressed the issue of historic structure use several times:

1. Recognize and protect the Home area from incompatible development and use by early establishment as a National Historic Site.

3. Confine Eighth and Jackson Streets, within the area, to pedestrian use for safer and more satisfying visitor experience.

5. Create open spaces in the form of an imaginative urban park, for visitor and local use, dedicated to contemplation and passive recreation.

8. Manage the area as a vital part of the community by making certain facilities available, day or night, to compatible historical and cultural organizations for offices and meetings.²²

Of the eight "Recommendations" listed in the "Summary" of "The Plan," half were focused on the subject of "use."²³

Continuing to address the issue of future use of historic Site properties in its discussion of "Land Acquisition," also part of its outline of "The Plan," the Master Plan states:

The plan shows existing buildings to be retained, period structures to be reconstructed, and the remainder to be removed. Some will be retained for administrative, exhibit, and staff residence purposes. As part of a goal of suggesting a "living" quality, residential use of certain structures will be encouraged. These properties could be leased back, for a life estate or a period not exceeding 25 years, subject to the following conditions: (1) only compatible uses will be permitted, such as single-family residence, professional, or nonprofit societies, but no commercial use, (2) so long as the historic integrity of the exterior is maintained, the interior can be modified to suit current needs, and (3) occupants are responsible for any local or state taxes,²⁴ insurance, and maintenance of the buildings and grounds.²⁵

In its discussion entitled, "Structures for Park Use," "The Plan" portion of the Master Plan states:

Generally, park uses of existing and reconstructed buildings will include:

1. Headquarters building: for administrative, interpretive, and maintenance personnel, and for sup-

porting needs. One of the existing buildings will be rehabilitated for this purpose—probably the one on the northeast corner of Seventh and Edwards Streets.

2. Employee quarters: one existing or reconstructed building.

3. Group interpretive facilities and cooperative educational programs: one or two buildings, either existing or reconstructed.

4. Maintenance facilities, such as workshop and storage: some of the reconstructed period barns or sheds, with interior adapted, will be used.

Specific designation of buildings for these purposes can be made following acquisition and further research on the structures.

Additional visitor-use facilities will become available in the restored interiors of "period" houses when donated funds are realized.²⁶

Continuing to discuss future use of historic properties within the proposed Site, the Master Plan—in its section entitled "Environmental Planning"—states:

The community should be welcomed by the Service to use facilities within the park for nonprofit civic, cultural and historical functions, or for offices.²⁷

The Master Plan's discussion of use concludes in its "Management" section, as follows:

Administration: Overall administration will be provided from headquarters in one of the existing buildings in the park. [...]

Maintenance: Contractual services will be utilized wherever feasible for major operations. However, workshops and equipment storage facilities for routine maintenance will be provided at some of the reconstructed sheds. Maintenance of the grounds adjacent to residences will be encouraged by occupants who will remain in historic houses.²⁸

Thus, the Master Plan in contemplating a variety of future uses for Site historic structures (i.e., by park management and staff for administrative offices, interpre-

tive and maintenance facilities, and residences; by visitors for informational, interpretive and personal comfort purposes; and, by other entities for various appropriate public and private functions) specifically and explicitly included adaptive reuse as visitor/interpretive facilities in several discussions of it and related topics.

Legislative Origins:

Illinois Representative Paul Findley was visited by City of Springfield Historic Sites Commission Chairman Earl W. Henderson,²⁹ who proposed designation of the Lincoln Home as a National Historic Site. Congressman Findley readily accepted the idea. In his speech at the Abraham Lincoln Association banquet on February 12, 1969, Mr. Findley announced his intention to introduce a bill establishing the site. All 24 house members of the Illinois Congressional delegation agreed to co-sponsor the bill. Subsequently, on February 18, 1969, Findley introduced H.R. 9251 before the 91st Congress. Other bills were introduced in this session by Congressmen Springer, Moorehead, and Clausen,³⁰ and by Senators Dirksen, Percy, Allott and Hatfield.^{31,32}

Congressman Findley's bill was essentially similar to those introduced by others, and identical to that passed by Congress and signed into law by President Nixon as P.L. 92-127 (85 Stat. 347) on August 18, 1971.

Enabling Legislation (85 Stat. 347):

On August 18, 1971, President Richard M. Nixon arrived in Springfield, Illinois, to ceremonially sign Public Law 92-127 (84 Stat. 347), entitled "An Act to authorize the Secretary of the Interior to establish the Lincoln Home National Historic Site in the State of Illinois, and for other purposes." Nixon signed the bill while seated at the desk used by President-elect Lincoln to write part of his First Inaugural Address, in the Hall of the House of Representatives at Springfield's Old State House. In response to this federal legislation, the Illinois General Assembly passed Senate Bill No. 1420 transferring the Lincoln Home and its contents to the federal government. Governor Richard Ogilvie signed the bill on July 11, 1972. As directed by the law, Henry N. Barkhausen, Director of the State Department of Conservation, gave a quit-claim deed for the property to the federal government on October 2, 1972.³³

This enabling legislation, itself, did not address future treatment and use of the properties to be acquired by the federal government,³⁴ but National Park Service management and planning documents produced subsequently did.

Interpretive Prospectus (October 1976):

Little is discussed concerning use of the historic Site structures other than the Home, itself, in the Site's Interpretive Prospectus (IP), approved October 1976. In the few instances in which such use is discussed, the IP recommends adaptively reusing one of the historic buildings as a curatorial collections management and storage facility, and, adaptively reusing another to house the park library and historic photograph collection.³⁵ The IP further recommends that a third historic neighborhood house "...near the [Lincoln] home..." be adaptively restored as an interpretive staff center (including lounge, restroom, lunch, meeting, and training facilities).³⁶ In none of these instances, however, does the IP recommend specific structures for these purposes, nor does this document contemplate use of historic neighborhood structures for other than in-house NPS purposes or visitor services.

National Register Nomination:

Listed as Historic Structure No. 20 (i.e., HS-20) in the (revised) September 5, 1980 National Register of Historic Places Inventory-Nomination Form submitted by the National Park Service to the National Register, the Arnold House is identified as a 1½-story, wood frame structure, built between 1839 and 1840; one of the surviving, "Lincoln Period Historic Structures Located Within [the] District," being nominated.³⁷ The Nomination continued, discussing the use of neighborhood structures:

The other historic buildings within the district derive their principal significance from their association with Lincoln's life and their existence at the time of his residence in Springfield. The district is important in preserving the setting of the President's home.³⁸

Thus, the National Register Nomination only discussed the use of Site neighborhood structures in terms of the visual contribution these would make to the historic scene once their exteriors had been fully restored. The document did not discuss the uses to which the restored buildings' interiors might be put.

Cultural Resources Management Plan (1981):

The Site's earliest Cultural Resources Management Plan, approved by the Midwest Regional Director on May 14, 1981, in "Section III--Cultural Resources Management, Part D--Treatment of the Exterior of the Buildings in the Historic Zone," it was noted:

The exteriors of the historic structures will be returned, as nearly as documentation will permit, to their 1860 appearance. This is consistent with the approved Master Plan which recommends "exterior restoration of existing period buildings." Implementation will help to restore the historic scene and will also result in several of the structures being returned to a small, more energy efficient size.³⁹

In "Section III--Cultural Resources Management, Part A," of the CRMP, entitled, "Use of the Interior of the Buildings in the Historic Zone, Item 8," it was noted that, "The interiors of..." eleven (11) historic Site "...houses will be used as residences," the Charles Arnold House (HS-20) among them. While six of these eleven were specifically identified for use as staff quarters, the remaining five, "...would be suitable for leasing to the public." The Arnold House was included in the former category.⁴⁰

Resources Management Plan (1982):

The Site's Resources Management Plan and Environmental Assessment, approved in 1982, listed nine historic houses within the boundaries of the National Historic Site that would be rehabilitated.

The Master Plan (1970) has identified the above named houses⁴¹ to be adaptively rehabilitated. Specifically, they will be adapted for use as professional offices or low-key businesses. These structures will be leased under the provisions of the 1980 amendments to the National Historic Preservation Act. Because these decisions resulted from an Analysis of Alternatives and Environmental Assessment, additional alternatives will not be considered.⁴²

Thus, adaptive restoration of the interior of the Arnold house for lease as professional offices or low-key businesses has remained the approved ultimate treatment and use of this historic structure since 1982.

Statements for Management-Lincoln Home N.H.S.:

Statements for Management (SFM) of the Lincoln Home National Historic Site have been evolving documents that change to varying degrees with each subsequent revision,⁴³ reflecting changing circumstances at the Site. The most recently approved Statement for Management (SFM) of the Lincoln Home National Historic Site (i.e., that of 1993) also addressed the issue of treatment and use of historic structures and outbuildings.

Statement for Management-Lincoln Home (1993):

The (1993) Statement for Management-Lincoln Home NHS, approved July 29, 1993, presenting the most current park proposals for the treatment and use of the Arnold House, noted:

Two historic neighborhood houses—Corneau (HS-02) and Arnold (HS-20) are not in their historic locations and will be moved back to their original locations within the Site.⁴⁴

In this same discussion, it was later noted that the Arnold House is to be "restored and not reconstructed." Continuing that line of reasoning, it was further noted:

Most of the exteriors of these structures have undergone considerable alteration since 1860. In conformity with the Site's Master Plan, they will be restored or rehabilitated to a mid-19th century appearance.⁴⁵

Thus, exterior restoration or rehabilitation to their appearance circa 1860 remained management intended treatment for the park's historic structures, the Arnold House included.

The (1993) SFM also discussed the use of historic structures and outbuildings. In the discussion of the use of historic structures (i.e., houses other than the Lincoln Home), it was noted:

The interiors of these houses will be adapted for contemporary, compatible uses, including interpretation, park administrative offices, maintenance facilities, governmental offices, and part quarters.⁴⁶

Thus, the proposed use of the Arnold house for visitor use and interpretive displays is within the definition of contemporary, compatible uses for historic structures contemplated in the 1993 Statement for Management. In discussion of the use of historic outbuildings, it was noted:

Outbuildings for the other houses are either missing or inadequate and should be reconstructed as part of the overall restoration of each property.⁴⁷

Thus, the approved 1993 Statement for Management called for the reconstruction of appropriate outbuildings for all historic structures included within the boundaries of the Site, not just those at the Lincoln Home.

Of historic outbuildings, the 1993 Statement for Management merely notes:

Outbuildings for other houses are either missing or inadequate. Architecturally compatible outbuildings should be constructed as part of the overall restoration of each property.⁴⁸

The use of outbuildings associated with historic houses is to restore the historic scene of each property to the 1860 period. Their interior use is not discussed.

RECOMMENDED CHANGES IN PROPOSED TREATMENT/USE:

Since approval of the earlier planning documents, the only change in the proposed treatment has occurred as a result of the change in proposed use of the building from offices or quarters to a visitor use and museum display space. Other than this, no changes in the treatment of the structure proposed by previously approved official NPS planning and development documents are contemplated.

TREATMENT/USE RECOMMENDATIONS:

On the basis of National Park Service planning for the proposed Lincoln Home National Historic Park; on the basis of testimony before Congress by the Secretary of the Interior, the National Park Service Director, Illinois Representatives in Congress, and others; on the basis of P.L. 92-127 (entitled, "An Act to authorize the secretary of the Interior to establish the Lincoln Home National Historic Site in the State of Illinois, and for other purposes"); and, in accordance with subse-

quent National Park Service planning and management documents—including this document, it has been determined that:

- Nonhistoric additions to the Arnold House will be removed, and the house relocated to its historic location on the property;
- The exterior of the Arnold House will be fully restored to its historic appearance circa 1860/65;
- The interior of the Arnold House will be rehabilitated and adaptively reused as exhibit and visitor services space;
- Architecturally compatible outbuildings, appurtenances, and landscape features of the Arnold House property will be constructed; and,
- Historically compatible landscaping will be introduced.

This course of action is in keeping with the intent of Congress and the Lincoln Home National Historic Site's authorizing legislation, with National Park Service Management Guidelines and Cultural Resources Management Guidelines for historic preservation projects, as well as with the history of National Park Service planning for the Site generally, and, for the Arnold House and its property specifically.

DOCUMENTATION RECOMMENDATIONS:

Existing conditions drawings of the structure as originally acquired by the National Park Service in 1978 record the architectural features of the structure in measured drawings, included in this document. Upon approval by the Midwest Regional Director of the Historic Structure Report-Charles Arnold House (HS-20:LIHO) and the preliminary architectural designs included in that document, no further historical research will be required before proceeding to construction documents preparation.

Construction documents, consisting of architectural and engineering drawings and construction specifications will be needed in order to secure required approvals for the proposed exterior restoration and interior rehabilitation treatments. These will be produced by a private Architect & Engineering (A&E) firm under contract to the National Park Service. Other than these, no further historical or physical documentation is required.

For proposed treatments concerned with landscape features and plantings for the Charles Arnold property, additional planning and design is required. A compre-

hensive cultural landscape report and plan for the park, which will include consideration of the recommendations found in this report, will be the basis from which preliminary design and construction documents for landscaping features are developed.

INTRODUCTION

At the request of the National Park Service, Midwest Regional Office, Fischer-Wisnosky Architects has prepared this Historic Structure Report for the Charles E. Arnold House (HS-20) at the Lincoln Home National Historic Site in Springfield, Illinois.

The Lincoln Home National Historic Site was established for the purpose of preserving and interpreting the home of Abraham Lincoln. The Site's boundaries include the four city blocks surrounding the Lincoln Home. The houses preserved within these boundaries serve to recreate the neighborhood Abraham Lincoln left behind when he became President of the United States. The Arnold House is one of the fourteen houses preserved within the Site.

The purpose of this Historic Structure Report is to document the physical history and existing conditions of the Arnold House and two associated non-extant outbuildings. Preliminary designs for ultimate preservation/restoration, reconstruction, and adaptive rehabilitation are included.

The scope of work for this Historic Structure Report has included: review of existing documentation; historical research; historical documentation review; physical investigation of the building; documentation of existing conditions; a graphic chronology of the house and its associated non-extant outbuildings, based on historical documentation and physical investigations; evaluation of the architectural, mechanical, and electrical systems; and, review and analysis of the existing structural conditions. Also included as part of this report are paint and mortar

analysis studies, a site utility and topographical survey, asbestos report⁴⁹, and a limited preliminary archeological report. It is through the evaluation of the findings of these reports, supplementary reports, and the National Park Service's projected use of the building that design recommendation drawings and evaluations have been made and presented as part of this report.

During physical investigations, care was taken to leave as much original fabric undisturbed as possible. Small areas of historic plaster were removed at several locations so that structural framing conditions could be determined. Generally the hand-split lath was left in place. Other than these limited removals, only drywall, plywood, plaster or fibrous board, and other contemporary materials were disturbed.

The National Park Service's program for the building calls for the structure to be used by visitors to the Lincoln Home National Historic Site. The visitor's use of the building will be two-fold: first as a display space for exhibits telling the story of preservation and restoration activities at the Site, to include exposing portions of the walls of the house to display construction methods of the historic era, and second as a waiting/meeting area for visitors to the Lincoln Home. Although the second floor will be restored, it will not be accessible to visitors. The barn will be reconstructed to serve as curatorial storage while the privy will be reconstructed to restore the historic setting.

DOCUMENT ORGANIZATION

This Historic Structure Report is organized into seven divisions with eight appendix sections and a bibliography. The asbestos report, part of the contract scope of work, has been submitted separately from this report.

Division II, Historical Documentation, of this report is a written summary based on historical documentation of the structure's past, through manuscript research, maps, and a variety of other documentary records, including historical

photographs. Historical research and analysis are important in discovering and/or verifying significant events which may have influenced the history of the structure. It also includes a list of transactions which took place as the structure changed ownership.

Division III, Existing Conditions and Fabric Analysis, is organized into element group sections. Each section includes a discussion of the history and historical documentation of that particular element; a description of the existing element(s); and an assessment of the existing condition. This describes, in written form and photographs, the existing conditions found at the site between April 1992 and June 1992. It covers the architectural, structural, mechanical, electrical, and telecommunication systems as found at that time. Further, it describes features found in the structure at the site which help to document the structure's evolution to its present form.

Division IV contains the Existing Conditions Drawings graphically illustrating the existing form and condition of the structure.

Division V, Chronological History, includes drawings and notations which illustrate, within specific time frames, the physical changes that were made to the structure. Illustrations have been prepared, based on interpretation of the history of the structure, historic photographs, and physical evidence found during the existing conditions investigation. This Historic Structure Report considered not only the Arnold House, but also the associated non-extant outbuildings (particularly the barn and a privy) originally situated at the rear (or east) yard.

Division VI, Design Recommendations, of this report contains the written description of the construction systems and material needs required for stabilization, preservation, restoration, reconstruction, and interior rehabilitation of the structure. This division is organized into element group sections similar to Division III of this report.

Division VII graphically illustrates the Design Recommendations and notes the proposed design for the structure, based on the programmed future use.

The appendices contain the supplemental reports prepared in conjunction with the Historic Structure Report. Evaluation of these reports has been taken into consideration in the review of the history, existing conditions of the structure, and design recommendations presented in this report.

The Arnold House is considered a support/background building for the Lincoln Home. The primary purpose for restoring the Arnold House, its site, and associated features is to recreate the residential environment surrounding the Lincoln Home. The Lincoln Home National Historic Site has established a restoration date of 1860 for all buildings in the historic zone of the National Historic Site in order to recreate the neighborhood Lincoln knew during his final year in Springfield. Historical research and field investigation of the structure indicates that only the portions of the house under the gable roof (herein referred to as the "1840 cottage") remain intact from the house's circa 1860 appearance. The remainder of the existing house postdates the restoration date. The house, as seen in several historic photographs and in the 1854 and 1858 Springfield city maps, most clearly represents the form of the 1860 house. The house took this general form during the ownership of Rev. Francis Springer and remained largely unchanged during the Charles E. Arnold ownership until after 1880. This configuration has been used for the design development recommendations. Using historic photographic documentation and the remaining historic fabric itself, the house can be brought back to its 1860 configuration. The proposed programmed use of the structure can be accomplished with minimal intrusions to the 1860 form.

PROJECT TEAM MEMBERS

The following individuals and firms provided historic and technical information and documentation in the production of this report:

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ACKNOWLEDGEMENTS

We would like to express our appreciation to the following National Park Service staff, who helped in the development of this project:

Alan W. O'Bright (Midwest Regional Office)
Norman Hellmers (Lincoln Home National Historic Site)
Robert Dunham (Lincoln Home National Historic Site)
Vergil Noble (Midwest Archeological Center)

We would like to especially thank Lloyd Ostendorf for contributing a historical photograph from his personal collection.

INTRODUCTION ENDNOTES

1. "Charles Arnold House (HS-20:LIHO)," List of Classified Structures (Washington, D.C.: National Park Service-Park Historic Architecture Division, June 29, 1988), 244.
2. Ibid., 244. [NOTE: All historic structures within the boundaries of the Lincoln Home National Historic Site carry the same National Register identification number because all are included in a single district registry and, therefore, all are listed as structures contributing to the registered historic district.]
3. When moved to the rear half of its property and rotated 90° to the north circa 1900, the street address of the Charles Arnold house changed from its historic, 500 South Eighth Street, address to its current 810 East Jackson Street address. Thus, the structure has had two distinct addresses in its 150(+)-year history. When relocated back to its historic location by the National Park Service, the structure will again carry its historic, 500 South Eighth Street address.
4. Measuring 40-feet by 152-feet, Lot 1 contains 6,080 square feet, or 0.1395 of an acre, the latter equalling 43,560 square feet.
5. The Arnold House meets three of the five "Management Category A—Must Be Preserved" criteria for historic structures, including:
 - the structure's preservation is specifically legislated;
 - the structure is related to the park's legislated significance; and
 - the structure is less than nationally significant, but contributes to the park's national significance (Category of significance 1b).
6. "Charles Arnold House (HS-20:LIHO)," List of Classified Structures, 241.
7. Since completion and approval of (1988) NPS List of Classified Structures, National Park Service terminology has changed. What was then referred to as "adaptive restoration" is now officially referred to as "rehabilitation." Accordingly, except when the earlier term appears in a quotation or in direct reference to a quotation, the newer term—i.e., rehabilitation—will be substituted for the earlier term—i.e., adaptive restoration.
8. The SF 10-238 originally identified as Package 184 has subsequently been re-identified as Package 401. This is now the Package number for the approved and funded project.
9. James O'Toole, "Stabilize/Restore Dubois, Miller, Sprigg, Arnold," Study/Development Package Proposal (10-238)-Package 184 (Springfield, Illinois: Lincoln Home National Historic Site, June 15, 1987), 1-6.
10. Ibid., 1.
11. James O'Toole, "Restore Interior Arnold To Meet Life Safety Code," Study/Development Package Proposal (10-238)-Package 294 (Springfield, Illinois: Lincoln Home National Historic Site, June 15, 1987), 1.

12. The work included under this 10-238 included demolition of structural accretions postdating the 1860s, as well as foundation reconstruction, structural stabilization and restoration, plus the introduction of modern utilities and security systems (i.e., intrusion detection, fire detection and suppression, etc.) to restore the structure to its 1860 appearance and bring it into compliance with modern building codes.
13. Two outbuildings are known to have stood on the Arnold House parcel during the historic period: the Arnold Barn and a privy. Neither of these structures currently exist, and will have to be constructed from designs derived from period photographs and maps.
14. When asked, "Will the 18 buildings be continued as commercial properties," by Representative Philip E. Ruppe, Hartzog replied: "Well, they will be continued as residences. What we are interested in doing is restoring the exterior so that we preserve the environment of the site and the interior we can modify for office use or residential use or whatever is most appropriate and which would give us the best return in the area." [Hearings, 28.]
[NOTE: The "18 buildings" referred to by Representative Ruppe are the eighteen historic structures then known to have survived from the years of Lincoln's occupancy within the four square block boundaries of the proposed National Historic Site, the Arnold House among them.]
15. Edwin C. Bearss, "Charles Arnold House-Recommendations," Historical Base Map-Proposed Lincoln Home National Historical Park (Washington, D.C.: U.S. Department of the Interior-Division of History, Office of Archeology and Historic Preservation, November 30, 1969), 79.
16. The (1970) "Master Plan Study Team" consisted of four individuals, three of whom (team captain Meir Sofair, interpretive planner Nan V. Rickey, and landscape architect Peter Lederer) were from the Eastern Service Center. The fourth team member, Albert W. Banton, Jr.—then Superintendent of Lincoln Boyhood Home National Memorial—would shortly thereafter be appointed the first Superintendent of Springfield's newly established Lincoln Home National Historic Site.

Both Henry Judd and Edwin Bearss served as Advisors to the Master Plan Study Team, and, representatives of the Governor of Illinois, the Mayor of Springfield, and Congressman Findley were part of the Advisory Commission. [Master Plan, 45.]
17. Sofair, et al, "The Plan—Summary of Recommendations," Master Plan, 26.
18. Ibid.
19. The second zone identified in the Site's Master Plan was designated the "Development Zone," in which modern development for management purposes would be permitted.
20. Sofair, et al, "Preservation and Development, 1. Historic Preservation Zone," Master Plan, 29.
21. Ibid., 31.
22. Meir Sofair, et al, Master Plan-Lincoln Home National Historic Site (Washington, D.C.: National Park Service-Eastern Service Center, February 10, 1970), 26.
23. Of the other half, No. 2 addressed recapture of the historic scene by means of restoration and reconstruction of historic structures and streets, and, the removal of nonhistoric period buildings; No. 4 addressed construction of an appropriate visitor facility and parking; No. 6 discussed the proposed Site

interpretive program theme; and, No. 7 addressed Site involvement with the surrounding neighborhood and the community. [Sofair, et al, "Summary of Recommendations," Master Plan, 26.]

24. Sangamon County, the local jurisdiction having authority to tax real property in the City of Springfield, passed a resolution exempting all property within the boundaries of the Lincoln Home National Historic Site from local property taxes. In his statement to the House Subcommittee considering establishment of the Site, Chairman J.A. Davidson of the Sangamon County Board of Supervisors entered into the record the (March 9th, 1971) Resolution passed by the County Board, "[...] supporting the premise of the Lincoln Home area being made a National Historical Site and that the County of Sangamon would in no way attempt, or have cause, to be levied or collected taxes on said property after it becomes a part of a National Park System. ["Lincoln Home National Historic Site," Hearings (April 5, 1971), 61.]
25. Sofair, et al, "The Plan," Master Plan, 27.
26. Sofair, et al, "The Plan-Structures for Park Use," Master Plan, 34.
27. Sofair, et al, "Environmental Planning," Master Plan, 35.
28. Sofair, et al, "Management," Master Plan, 35.
29. Earl W. [aka. "Wally"] Henderson, in addition to being Chairman of Springfield's Historic Sites Commission—was also one of three principals in the Springfield architectural firm, Ferry & Henderson Architects, Inc., with whom the National Park Service later contracted for historical research and A&E design services for several historic and new Site structures, including the Lincoln Home itself and the (then) new Visitor Center building.
30. In addition to H.R. 9251 introduced by Representative Findley, Congressman Springer had introduced H.R. 457. Related bills H.R. 3117, H.R. 3118, H.R. 3119, and H.R. 3120 had also been introduced in the House of Representatives by other members of the Illinois delegation. ["Lincoln Home National Historic Site," Hearings (April 5, 1971), 1.]
31. Sofair, et al, "Background," Master Plan, 3.
32. The corresponding numbers of similar bills introduced in the U.S. Senate and the names of the Senators introducing and cosponsoring these remain unknown.
33. Wayne C. Temple, "Chapter XII—The House of Abraham After 1893," By Square and Compasses: The Building of Lincoln's Home and Its Saga. (Bloomington, Illinois: The Ashlar Press, 1984), 117.
34. Although the enabling legislation did not discuss treatment and use of historic Site structures, the legislative record of committee hearings and debates on the floors of both Congressional Houses conducted prior to enactment clearly reflect the recommendations of both Bearss' (1969) Historical Base Map and Sofair et al's (1970) Master Plan for the proposed national historic site.
35. Albert W. Banton, Jr., et al, Final Interpretive Prospectus-Lincoln Home National Historic Site. (Denver, Colorado: National Park Service-Denver Service Center, October 1976), 32.
36. *Ibid.*, 34.

37. Jill York, "Lincoln Home National Historic Site District Nomination," Item No. 7-Description, National Register of Historic Places Inventory-Nomination Form. (Omaha, Nebraska: National Park Service-Midwest Regional Office, September 5, 1980), 2.
38. Ortega, "Lincoln Home National Historic Site-Statement of Significance," National Register Nomination, 8.
39. Albert W. Banton, Jr., "Cultural Resources Management," Cultural Resources Management Plan (Springfield, Illinois; Lincoln Home National Historic Site, May 11, 1981), 13.
40. Ibid., 12.
41. The historic Lincoln Home NHS houses named included the Cook House (HS-19), Dean House (HS-13), Dubois House (HS-15), Miller House (HS-14), Morse House (HS-9), Sprigg House (HS-11), Arnold House (HS-20), Robinson House (HS-10), and Shutt House (HS-17). [Acting Superintendent Gary W. Easton, "PART III. CULTURAL RESOURCE PROJECT STATEMENTS: LIHO-C8-Adaptive Restoration of Historic Houses," Resources Management Plan and Environmental Assessment, (Springfield, Illinois; National Park Service-Lincoln Home National Historic Site, June 1, 1982), unpaginated.]
42. Acting Superintendent Gary W. Easton, "Part III. Cultural Resource Project Statements: LIHO-C8 - Adaptive Restoration of Historic Houses," Resources Management Plan and Environmental Assessment, (Springfield, Illinois; National Park Service-Lincoln Home National Historic Site, June 1, 1982), unpaginated.
43. Statements for Management-LIHO were most recently revised in 1985, 1988, and 1991.
44. "Historic Houses," Statement for Management, (Springfield, Illinois; National Park Service-Lincoln Home National Historic Site, July 29, 1993), 13.
45. Ibid., 14.
46. Ibid.
47. Ibid.
48. Ibid.
49. This report, entitled Inspection Report, Building Material Survey, Arnold House, Lincoln Home National Historic Site, Springfield, Illinois by F & F Consultants Inc. was submitted separately to the National Park Service.

Events
Chain of Title
Historical Documentation Description
Historical Illustrations
Historical Documentation Endnotes

HISTORICAL DOCUMENTATION

DIVISION II

EVENTS

Pascal & Salome Enos, 1823-1825

The first white private owner of the land on which the Arnold House now stands was Pascal Paoli Enos, who bought 160 acres from the U.S. Government in November 1823 (see Chain of Title, Transaction #1, Page 2.17.) Enos came to Springfield in September 1823, having been appointed receiver at the Springfield District land office, before the town was officially laid out. Pioneers Elijah Iles, John Taylor, Thomas Cox, and Enos each purchased a quarter section of land on which early Springfield (platted as Calhoun) was laid out. Enos speculated that his land would become more valuable as a town developed and citizens bought lots on which to build. Enos sold a part of his original land purchase to one of Calhoun/Springfield's other proprietors, Elijah Iles, in 1825 (Transaction #2).

Elijah & Malinda Iles, 1825-1837

Elijah Iles, the second private owner of the land on which the Arnold House is located, is among the most significant figures from Springfield's earliest days. Although Elijah Kelly and his family arrived in 1818 and settled in what would later become Springfield, it was the town promoters, land speculators, and real estate developers, arriving in the 1820s, who assured the city's permanence and success. Iles and Pascal Enos figured prominently in this latter category and, along with Thomas Cox and John Taylor, purchased the land which would become the city of Springfield. Iles came to Springfield from Kentucky with \$600 in 1821, before the government land office opened, and constructed a general store. With his store profits he "made it known that he intended to purchase the land on which his storehouse stood as a town site. He made it known also that if he

succeeded in buying the land, he would give each settler the lot on which his cabin stood. A town was in the making."¹ Iles succeeded in his purchase and laid out the town's first named streets: Jefferson, Washington, Adams, and Monroe. Through shrewd politicking and acting as a gracious host, he is credited with convincing County Commissioners to choose Springfield as the county seat in 1823 over two rival towns. Iles remained Springfield's leading booster, promoting commerce, building houses, and donating land for public projects, all with an eye toward safeguarding and improving the value of his real estate investments. He worked as diligently throughout the 1830s to see that the state capital was relocated from Vandalia to Springfield. That occurred in 1837, just as the country was experiencing a significant financial "panic." In response, Iles and numerous other citizens personally pledged to guarantee relocation costs for state offices. Soon after, Iles built the city's largest and most elaborate hotel to house and feed newly-arrived legislators, government officials, and their attendant favor-seekers. Iles became a millionaire in large part through purchasing and developing land in the growing state capital.

Iles purchased the particular 80 acres which now includes the Arnold House lot from Pascal P. and Salome Enos in September 1825 (Transaction #2). The acreage remained undeveloped until 1836 when he hired Deputy County Surveyor John B. Watson to lay out his Addition in the E 1/2 of the N.W. 1/4 of Section 34 Tp. 16 N., R 5 West, 3rd P.M.² It is likely Iles chose this time to subdivide this acreage because there was growing optimism among residents that Springfield would be selected to be the new state capital as it was in February 1837. The physical move of state offices from Vandalia occurred in 1839.

Iles began selling lots in his new Addition immediately, many to investors who speculated that real estate values would increase with the arrival of state

offices. Transaction #3 shows that in May 1837, Iles sold Lot 1 in Block 11 (the Arnold House location) and four other lots to three investors, John B. Weber (sometimes found as Webber) and brothers Daniel E. and Jacob Ruckel for \$300. On his own copy of the plat of subdivision for his Addition, Iles "later penned in the names of the persons to whom he had sold the various parcels. In this (circa 1838/39) hand-annotated copy, Iles identified "Weber (therein variantly spelled as Webber) & Ruckel" as the owners of Lot 1, Block 11 as of that year".³

John B. Weber, Daniel & Jacob Ruckel, 1837-1839

Daniel and Jacob Ruckel were born in New York City in 1811 and 1815, respectively. Daniel came to Springfield in the fall of 1836, followed by his brother in the spring of 1837. The brothers engaged in cabinet-making, including furniture and coffins. They moved to nearby Sangamo Town in 1840 (once a competitor to Springfield for county seat) and back to Springfield shortly after.⁴ Jacob quickly branched out into upholstering, window shades, and wallpaper sales. At his death in 1903, his obituary identified him as "probably the first dealer in wallpaper in Illinois."⁵ Daniel Ruckel died in 1854.

Less is known about John B. Weber, whose ownership from this time caused a blot on later title work. Although there are at least four John Webers found in mid-nineteenth century Sangamon County, it seems most likely that the Weber associated with the Arnold lot is the John B. Weber born in Shepherdstown, Virginia (now West Virginia) in 1810, who arrived in Springfield in April 1836. He began work in Springfield as a cabinet maker and National Park Service Historian Edwin C. Bearss notes he was soon in business with the Ruckel brothers as shown by the June 9, 1838, announcement in Springfield's Sangamo Journal that "the partnership of Weber, Ruckel & Co. had been dissolved by mutual consent. D. E. and J. Ruckel would settle all 'just claims' against the firm."⁶ Weber experienced some unfortunate circumstances before his death in

1889. He moved to present-day Riverton, Illinois, after the dissolution of the partnership where he lost his left hand in a buzz saw in 1841. It may have been a political friendship which, the following year, landed him a contract from the state legislature "to copy the land records of the state in numerical order, which kept him employed until 1849."⁷ A son, James W. was killed by bushwhackers while returning from Civil War service.⁸ Weber served as County Sheriff from 1854 until 1856 and settled finally in Pawnee, Illinois.

The circumstances surrounding the dissolution of Weber, Ruckel & Co., may explain why there is no record of Weber assigning his interest in the Arnold lot. While Weber's and the Ruckels' later biographies and obituaries carefully trace their various business ventures (those for the Ruckels even list some business partners), none ever mention a relationship between Weber and Ruckel. This indicates, possibly, that the partnership was dissolved with ill-feeling. The only record of the association is the 1838 newspaper notice previously mentioned where the Ruckels, not Weber, settled all "just claims". The three may have originally used business profits to invest in the Arnold and other lots and deeds to these may have been, willingly or unwillingly, surrendered by Weber to the Ruckels without official recording. This possibility seems even more likely as shown in Transaction #4 in the Chain of Title. Daniel and Jacob Ruckel received title to Lot 1, Block 11 (and other lands) which they clearly already owned by virtue of Transaction #2. Furthermore, the grantor is Marvellous Eastham, the Registrar of the Springfield land office, who obviously holds title only in this official capacity. Transaction #3 may be a legal function to give the Ruckels clear title.

The Ruckels sold Lot 1, Block 11 to Francis Springer less than three months later in November 1839 (Transaction #5). The value of Lot 1 had increased considerably during the slightly over two years since the Ruckels had purchased it.⁹ The average price per lot for the five lots (including Lot 1), which

had been purchased by Weber and the Ruckels was approximately \$60 each. Even adding slight value to Lot 1, with its generally more desirable corner location, this still shows a great increase of value with Springer paying \$210 in 1839. Similarly, the corner lot across Jackson Street where the Rev. Charles Dresser erected the Greek Revival style cottage, which would become the Lincoln Home, cost Dresser \$300. As we know that was a vacant lot, so it is probable Springer also purchased a vacant lot for his \$210. The rapid rise in land values is likely explained by the real estate speculation fever which accompanied the move of state offices from Vandalia to Springfield in 1839, as well as the general economic improvement after the "panic," which had possibly driven the lot's price down when Weber and the Ruckels purchased it in 1837.

Francis & Mary Springer, 1839-1949

Francis Springer's life has been documented in several county histories, his newspaper obituary, and histories of Springfield's Trinity Lutheran Church, Grace Lutheran Church, and Concordia College, with which he was associated.

Francis Springer was born March 19, 1810, at Roxbury in Franklin County, Pennsylvania. His parents were of German descent and in indigent circumstances; they died when Francis was five years old, leaving him and his sister, Elizabeth, orphaned. Prior to his death, Francis' father indentured him to James Shoaff, an innkeeper. Under the terms of the indenture, Shoaff was required to give the boy six months' education, but in fact allowed him twelve. At the age of fifteen he ran away in order that he might learn a trade and acquire additional education. He soon apprenticed himself to a chairmaker and made a specialty of chair, sign, and ornamental painting.¹⁰ It was at this time that he came under the personal influence of the Rev. Benjamin Kurtz, a Lutheran pastor in Hagerstown, Maryland. Young Springer was converted to Lutheranism and studied for the ministry at Hartwick Seminary in New York. He worked as a teacher and sign painter to

pay for his education. Ordained as a Lutheran minister on October 16, 1836, and married on April 11, 1837, he arrived in Springfield with his wife Mary (Kreigh or Kriegh) and two children in 1839.¹¹ Springer opened an English and Classical School where "patrons were assured that every, 'suitable exertion will be made to render it an efficient auxiliary in the cause of mental and moral improvement'".¹²

"Springer," recounts Bearss, "was successively in charge of the [Springfield] Mechanics' Union and then the 'academy'."¹³ In 1847, he became president of Hillsboro College in Montgomery County south of Springfield, where he moved with his family.

In the spring of 1852 Hillsboro College was moved to Springfield and renamed Illinois State University [and later Concordia Seminary]. Three years later, in 1855, Springer resigned as president. About this time vigorous efforts were being made to establish the Springfield City schools under the common school laws of Illinois. Reverend Springer became principal of the First Ward School, then school commissioner for Sangamon County, and finally superintendent of the city schools.¹⁴

Springer resigned as school Superintendent to join the Union Army in September 1861 as Chaplain of the 10th Illinois Cavalry, and after the war returned to a farm in Sangamon County. He moved next to a Montgomery County Church pastorate then returned, finally, to Springfield in 1881. He was active in the Masonic Lodge, Stephenson Chapter of the Grand Army of the Republic (which he helped found) and Knights Templar. In his last years, he became the subject of a kind of hero-worship as noted by the following:

Many times has his voice been heard in prayer in [G.A.R.] post, at the open graves, and in the memorial services in sermons as well, until the boys in blue think of him always lovingly as "Our Chaplain." None can mourn his loss more deeply than the men yet in the ranks.¹⁵

The Springers built, or possibly moved to the lot (see discussion in Division III), a small, story-and-one-half cottage on Lot 1, Block 11, probably in the spring of 1840. Springer had purchased the lot so late in 1839 that it is unlikely construction could have begun yet that year. The family is documented as living in the

house by 1841, for in that year the first worship services of Springfield's Evangelical Lutheran Congregation were held there as shown by a history of the Grace Evangelical Lutheran Church and reported by Bearss.¹⁶ This would make the structure at Eighth and Jackson Streets the oldest-known building in Springfield in which religious worship services were held. The Springer family occupied their cottage from circa 1840 until 1847 when they moved to Hillsboro where Springer became president of Hillsboro College. They almost certainly rented their Springfield house until December 1849 when they sold it to Charles Arnold for \$800 (Transaction #6).

Charles E. Arnold, 1849-1878 and Charles D. Arnold, 1878-1892

Two Charles Arnolds, the father Charles E. and son Charles D., owned the house successively from 1849 to 1892. It is by the name Charles E. Arnold that the house is officially designated by the National Park Service. This was done because the Arnold family were occupants of the house in 1860, the site's designated historic period. Although there is no way of knowing (city directories do not exist before 1855), the Arnolds may even have rented this cottage from the Springers from 1847-1849.

Charles E. Arnold was born in Great Barrington, Massachusetts, September 20, 1808¹⁷, and arrived in Springfield "in 1834 or '35"¹⁸ where he first worked as a carpenter. Arnold married Louisa Van Dyke in Sangamon County, Illinois, May 18, 1837.¹⁹ Louisa was born in New York City and met her future husband while on a visit to her married sister in Springfield.²⁰ The couple's first child, Charles Douglas (born 1839), is listed on the 1860 U.S. Census of Sangamon County, Illinois, as having been born in New York.²¹ Subsequent censuses confirm his place of birth. If this is correct, he may have been born while his mother was on a return visit to New York or the couple may have briefly located in New York State, returning to Sangamon County in time for the birth of their

next child, Alfred V., two years later. The remaining children, Ellen V., Rosa, and Elizabeth, were all born in Illinois.²²

By 1860 Arnold is shown on the census as a 52-year-old head-of-household in the occupation of miller, not carpenter. One biographical sketch explains that, although he did begin as a carpenter:

He gave it up on account of ill health and was afterward assistant under Postmaster Mitchell. He afterward occupied the position as salesman for Smith and Wickersham [grocers] and for Isaac A. Hawley. Mr. Arnold was also deputy assessor under Col. William F. Elkin, and was also sheriff of Sangamon County, for two terms about 1850. He also held the position of deputy registrar of the land office under Judge Zane, enrolling officer of the federal army during the war, and assisted in county and circuit clerk's office at various times. Mr Arnold retired active life in 1877.²³

Despite his various jobs, Charles Arnold must have still considered himself first as a carpenter, for the censuses of 1870 and 1880 identify him as such.²⁴

Bearss has given more complete information on his political career.

In June 1839, Arnold, although a Whig, was nominated by the Democrats for commission's clerk of Sangamon County. Arnold accepted the call, but was defeated in the August election by C. H. Matheny by a vote of 1,552 to 790. Undaunted by this defeat, Arnold ran for County Treasurer on the Whig ticket in August 1840. This time, he was successful, defeating C. M. Polk by 1,768 to 647. . . .In the August 1848 election, Charles Arnold defeated Thomas Long, the Democrat candidate...[and in 1852 voters] re-elected Arnold sheriff.²⁵

Although Arnold was involved in politics and belonged to the Whig Party like his famous neighbor, Abraham Lincoln, there is no documented connection of any importance between the two men.

Charles E. Arnold's second son, Alfred V., became a clerk and by the 1870s a letter carrier.²⁶ He married Mary E. Bateman November 26, 1862,²⁷ and lived for a time on Ninth Street in a house backing up on the alley behind his father's.²⁸ Alfred's wife died in February 1875²⁹ and the Springfield city directory of 1877 shows him as a widower with six children living in a house on West

Jefferson Street where he would spend the rest of his life.³⁰ Charles E. Arnold's three daughters all married by the 1870s and only the eldest child, Charles D., remained single.³¹ The family income may have been small as there was no live-in help shown on the 1870 census, a time of the ubiquitous "hired girl."

The Arnolds ". . . showed a remarkable aptitude for music," in fact Charles E. Arnold's eldest daughter,

. . . well known here some fifteen years ago as Mrs. E[lizabeth] V[an Dyke] Rink, but now Mrs. Gentile of Boston has a voice of unusual expression, sweetness and power, and was for many years, the leading lady vocalist at all musical entertainments in the city.³²

Charles E., also musically inclined, was, for several years ". . . a leader of the choir in the Second and Third Presbyterian churches and was also a member of the first band ever organized in this city."³³ Charles' sister, Miss Lucy Arnold, was "for fifty years . . . a teacher of music."³⁴

Charles E. and Louisa Arnold's first-born, Charles D., seems to have had a somewhat varied career. He never married and periodically returned to live at home. In the 1860 census, his occupation is listed as teacher.³⁵ By the later 1860s, Springfield directories list him as a "scribe" living at home (then #51 South Eighth Street).³⁶ Between 1869 and 1873, he is shown as an attorney with law offices on the east side of the Public Square. The census of 1870 also lists him as attorney. The 1873-74 city directory then finds Charles D. as "assistant, land office," and, in the 1874-75 city directory, he is once more a "scribe". He is subsequently listed as a Notary Public for Sangamon County, a bookkeeper and, by the early 1880s, is never again shown with an occupation. From the 1870s forward, his father is listed only sporadically and then always without an occupation. Whether this is due to the directory-canvasser's confusion over father and son with the same name, or that the elder Charles E. was not always living at home, is not known.

The relationship of Charles D. to his parents, and their relationship to each other, is also uncertain by the early 1880s. In 1878, Charles E. had allowed his real estate taxes to go unpaid and Lot 1 was sold for delinquent taxes. The property was purchased by Charles D. Arnold for \$84.27 (Transaction #7). Two years later, on the 1880 U.S. Census for Sangamon County, Illinois, 71-year-old Charles E. Arnold is shown as a carpenter and his 41-year-old son, Charles D., is listed as a clerk, but Mrs. Louisa Arnold has disappeared. The only other person in the household at the time is a servant, 39-year-old Amanda Davis. One clue to the circumstances can perhaps be read in an 1882-83 Springfield city directory which shows Charles (presumably Charles D.) residing at Eighth and Jackson Streets, and a Mrs. Charles Arnold, "widow," living at 230 West Jackson Street. Commonly in the nineteenth century, when divorce was a social stigma, couples would merely live apart with the wife sometimes taking the respectable title of widow, which may have been the case here. This theory is furthered by Charles E.'s obituary of 1888 which reports that Louisa "died in Quincy, Illinois, in March 1885, and her remains were brought to this city and interred in Oak Ridge Cemetery."³⁷ Oak Ridge internment records confirm the burial on March 17, 1885, but a search of Springfield newspapers around the time failed to produce an obituary notice. Furthermore, in August 1884 (Transaction #8) Charles E. Arnold (unmarried), gives a quit claim deed in the property (and other lands) to Charles D. Arnold for \$105. This was almost certainly the father (divorced or separated), giving up all claim to any ownership rights in the house at Eighth and Jackson Streets. This transaction may have taken place to clear any question of the validity of Charles D.'s title to show that Charles E. maintained no ownership interest. The 1884-85 Springfield city directory lists only one Charles, no middle initial, as "boarding" at 1122 North Fifth Street and, in 1886, boarding at the Jefferson House Hotel. In 1887-88, Charles (again no middle initial) boards at the "s.w. cor. of Jefferson and John," which is the home of Alfred V. Arnold, with

whom his father may have gone to live.³⁸ It is also very probable that Charles D. Arnold left town about this time, for, in his father's obituary of 1888, he is reported as living in Boston, but having returned for services.

Charles D. did return to Springfield for a few years after his father's death, as evidenced by Springfield city directories between 1889 and 1892 which show him as boarding with the John Roll family at 612 High Street (subsequently Douglas, then Lawrence Avenues). After 1892 his name again disappears from the city directories and perhaps had only been keeping a rented room with the Rolls for the part of the year he lived in Springfield.

The Arnold House was probably rented out by the Arnolds beginning about 1882. Lincolnphile Osborn Oldroyd rented and occupied the house in 1883.³⁹ The 1889-90 city directory (the first directory from which occupants may be determined by street address) lists Asbury H. Whipple living at 500 South Eighth Street.⁴⁰ By review of the previous year's city directory, Whipple is listed with the same address.⁴¹ The city directory of 1892-1893 shows J.C. Kelley (laborer) and John A. Kelly (carpenter) living at the Arnold House address.⁴²

In 1892, Charles D. sold the Arnold House to Rebecca Cook (Transaction #9) and had the deed for this transfer notarized by a notary public in Suffolk County, Massachusetts, indicating that he was probably permanently living there again. Nothing more is known of Charles D. Arnold until the Illinois State Journal reported that he shot and killed himself at his brother Alfred's Jefferson Street house at age 73 in September 1911.⁴³

Frank & Rebecca E. Cook, 1892-1922

Rebecca Ely Baird graduated from Springfield High School in 1870⁴⁴ and, two years later, married Hamilton Franklin Cook (Marriage License 5134), a widower with a six-year-old daughter, Leonora.⁴⁵ His first wife, Cinderella (sometimes Lucinda) died in 1868.⁴⁶ Frank Cook, as he was known, was the son

of Mrs. Sarah Cook, the widow of Springfield Mayor Eli Cook who once lived two doors south of the Arnold House at 508 South Eighth Street.⁴⁷

On March 18, 1892, twenty years after their marriage, Frank and Rebecca Cook purchased the cottage on Lot 1, Block 11 from Charles D. Arnold for \$1,750 (Transaction #9) and immediately took a mortgage for \$1,200 to pay for the property (Transaction #10). The census of 1860 shows Frank as a 23-year-old law student living with his mother, brother, and sisters. He seems never to have practiced law as city directories list him as a clerk, and indeed, his obituary says "a portion of Mr. Cook's life was spent in clerking in a store. He was afterwards employed as a traveling salesman and later embarked in business for himself."⁴⁸ In 1892, the year the Cooks moved into their Eighth Street home, Frank was appointed Justice of the Peace. The Cooks both undoubtedly knew that his health was precarious at best, for he died in early December 1894 and the Illinois State Journal noted "for the past three months he had been unable to attend to his duties because of heart trouble."⁴⁹ Cause of death on Oak Ridge Cemetery interment records shows "tobacco heart," indicating a probably long term condition related to smoking. Rebecca Cook had worked as a teacher as early as 1890,⁵⁰ perhaps to help support the family which consisted of her step-daughter, Leonora, and Rebecca and Frank's own son, Clifford Hamilton. She continued to work after her husband's death and set about to improve her real estate holdings. In July 1900, she borrowed \$600 against the property (Transaction #11). It is possible that this loan was used to construct a new foundation for the Arnold House and to relocate the house to the rear of the lot. She paid this in full by October and immediately borrowed \$5,000. This almost certainly was used to erect a new, large frame residence in place of the cottage at the front (Transaction #12). The 1902-03 Springfield city directory shows Rebecca and her step-daughter (who was then also teaching with her stepmother at nearby Lincoln School), as living at 500 South Eighth Street, and Rebecca's son, Clifford, occupy-

ing the rear cottage at 810 East Jackson Street. An address listing for 810 East Jackson Street had not appeared earlier in the city directories. In the 1902-03 Springfield city directory street listing section for 500 South Eighth Street (the new house), W. N. Corbett is shown as head of household, although Rebecca clearly owns the house.⁵¹ It is likely that she rented at least part of it, perhaps in order to help pay the mortgage. In the intervening years, until about 1912, city directories show various other individuals occupying 500 South Eighth Street as "heads of the household" with Rebecca and Leonora sometimes at the Eighth Street house and other times in the Arnold house (810 East Jackson Street) at the rear.⁵² After that time, Rebecca and Leonora are consistently listed as living at 500 South Eighth Street. Clifford Cook disappears from city directories after 1905. The widowed Rebecca and her unmarried step-daughter, Leonora, apparently created a comfortable, respectable life for themselves with their teaching salaries and rent from boarders. Rebecca paid off the remainder of her mortgage on October 30, 1900. She again mortgaged the property on October 30, 1907, for \$4,000 (Transactions #12 & 13).⁵³ The purpose of this mortgage is unknown, however it is possible that this money was used to make improvements to the Arnold House at 810 East Jackson Street.

In 1922, Rebecca and Leonora chose to sell the Eighth and Jackson streets property to Adele Darnielle Davis (Transaction #14). At this time, Rebecca Cook paid her attorneys to locate heirship of John B. Weber, who had owned the property in the 1830s and had never properly surrendered his claim to it. The Sangamon County Circuit Court found no heirs could be located and that as Rebecca Cook had "continuously and without interruption been in the actual, open, notorious, peaceable, adverse, hostile, continuous and exclusive possession" for more than 20 years, she was the "owner and seized in fee simple of said described real estate."⁵⁴ Both women's names then disappeared from Springfield

directories, presumably having left town. The next trace of them shows up when 93-year-old Rebecca and 71-year-old Leonora were buried at Oak Ridge Cemetery within a few days of one another in May 1944. A search of local newspapers revealed no obituary for either woman.

Adele Darnielle & Frank Davidson, 1922-1962

Adele Darnielle Davidson is recorded as purchasing Lot 1, Block 11, with its two houses from Rebecca E. Cook on October 21, 1922, for a price of \$10,500, as indicated by revenue stamps affixed to the deed (Transaction #14). Adele and her husband Frank T., obtained a mortgage of \$7,500 (Transaction #15).

Frank and Adele Davidson had the mortgage notarized by a Notary Public in New York State the month the house was purchased.⁵⁵ They do not appear in Springfield city directories until 1933, when they are shown as Frank T. and Delle D. Davis, proprietors of Davis-Darnell Theatrical Productions.⁵⁶ Davis is an obvious simplification of Davidson, and Darnell is similarly taken from Darnielle -- Mrs. Davidson's maiden name. The couple were likely traveling with their production company before returning to Springfield in the early years of the Great Depression. The Davises (Davidsons) perhaps purchased Rebecca Cook's house with the intention of making a permanent home for use on their visits to Springfield. Mrs. Davidson's mother, Emma Jane Darnielle, who formerly lived in a downtown apartment building, is listed as the resident of 500 South Eighth Street from 1923 through 1926. The Arnold House (810 East Jackson Street) in the rear shows only single family occupancy until 1926, when two families are listed. In July 1925, Adele Darnielle Davidson purchased the adjoining Lot #2 south of the Arnold House property (Transaction #16).

On October 18, 1927, the Davidsons paid off the balance of their \$7,500 mortgage. That same year they appear to have remodeled the larger house into nine units, which are shown in the 1927 city directory as the Darnielle Apartments

--taken from Mrs. Davidson's maiden name. The apartments were either "efficiency" units or merely sleeping rooms with shared bathrooms. Occupancy turnover was high as evidenced by the various city directory listings of the following 25 years, and included many single men and women.⁵⁷ It is less clear when the Arnold House at the rear of the lot (810 East Jackson Street) was divided into four units, but probably very close to the time the Davises (Davidsons) returned permanently to Springfield in the early 1930s. The Springfield city directory street address section for 1935 shows two individuals listed at 810 East Jackson Street, although they may have been occupying the same unit. A third listing was for David/Darnelle Productions. After this, 810 East Jackson Street shows only single-occupancy (including a family member, B. F. Darnielle, for a few years in the early 1930s) until 1936/37.⁵⁸ The 1936/37 Springfield city directory shows four separate "households," one of which is Davis/Darnelle Productions (note the spelling change from Darnell). The 1937 directory again shows only three listings, as does the 1938 city directory.⁵⁹ In 1939, 810 East Jackson Street shows Mr. and Mrs. Davis alone.⁶⁰ In 1940, four units again appear (identified for the first time as "A, B, C, and D") after which they continue to show up consistently. The Davises (Davidsons) may have remodeled the Arnold House at various times throughout the 1930s. The house possibly reached its present interior arrangement and exterior brick veneer around 1939, as indicated by the assigning of individual apartment designations ("A" etc.), though this is conjectural. The Davises (Davidsons) continue to occupy one of the four units at 810 East Jackson Street. Occasionally Frank T. Davis appears in city directories as a writer, but usually in other occupations, including manager of a local soft-drink bottling company. Eventually, Davis/Darnelle Productions disappear and Frank T. is shown as being in the real estate business. However, he never completely gave up on a career in entertainment, as we know from his obituary: "Although he had retired sometime ago from active stage and screen producing and directing, Mr.

Davis had continued until recently to write comedy sketches for television. He had more than 20 years experience in all-around theatrical activity and had produced plays on Broadway as well as working for such studios as Warner Brothers and Universal in Hollywood."⁶¹

Mrs. Adele Davis (Davidson) died, possibly while on vacation, in Galveston, Texas, on February 21, 1951.⁶² In 1949, perhaps as an estate-planning measure, they officially sold and repurchased their Eighth and Jackson Street property in a series of legal transactions designed to give them clear title as joint tenants with right of survivorship, not as tenants in common. The change allowed their property to pass to the surviving spouse upon either's death without going through probate court. Transactions 17-20 show title passing from Adele Davidson (original purchaser) and husband Frank T. to Joanne Stringfield, then to Harold O. Werner, and back to the Davidsons as joint tenants, all within a two week period in early 1949.

Hugh Garvey, 1963-1978

Frank T. Davis (Davidson) continued to occupy one unit in the Arnold House at 810 East Jackson Street after his wife's death until 1962, when he sold Lot 1, Block 11, to Hugh Garvey (Transaction #21). Garvey had begun the purchase of real estate in the Lincoln Home area in the 1950s, primarily because he was upset with the low-grade commercialism that was encroaching on the Lincoln Home.⁶³ Photographs of the area in the 1950s show at least one establishment selling cheap souvenirs and the presence of a soft drink machine outdoors. Garvey Enterprises developed two gift shops on Eighth Street and maintained the exterior of these properties. During the fifteen years Garvey owned the Arnold House, he continued to use it as a rental property. He was the last private owner before the property was acquired by the U. S. Government in 1978 (Transaction # 22).

CHAIN OF TITLE (Including Mortgage Deeds)

	<u>GRANTOR</u>	<u>GRANTEE</u>	<u>LOT NO.</u>	<u>AMT</u>	<u>DATE</u>
1	United States of America	P.P Enos	160 Acres	-	Nov. 7, 1823
2	P. Enos & Salome Enos	Elijah Iles	29 acres (and other land)	\$100	Sept. 2, 1825
3	Elijah & Malinda Iles	John B. Weber, Daniel & Jacob Ruckel	Lot 1 (& other lots)	\$300*	May 15, 1837
No record exists of John B. Weber's disposition of his deed. ⁶⁴					
4	Marvellous Eastham	Daniel & Jacob Ruckel, Jr.	Lot 1 (& other lots)	\$200	Aug. 16, 1839
5	Daniel & Catherine Ruckel & Jacob Ruckel Jr.	Francis Springer	Lot 1	\$210	Nov. 9, 1839
6	Francis & Mary Springer	Charles E. Arnold	Lot 1	\$800	Dec. 24, 1849
7	Louis H. Ticknor Co. Clerk (tax sale)	Charles D. Arnold	Lot 1	\$84.27	Sept. 20, 1878
8	Charles E. Arnold (Unmarried)	Charles D. Arnold**	Lot 1 (& other lots)	\$105*	Aug 1, 1884
9	Charles D. Arnold	Rebecca Cook	Lot 1	\$1,750	Mar. 18, 1892
10	Rebecca E. & H. F. Cook (Mortgage) Paid off Mar. 28, 1898	Samuel D. Scholes	Lot 1	\$1,200	Mar. 18, 1892
11	Rebecca E. Cook (Mortgage) Paid off Oct. 30, 1900	Benjamin Knudson	Lot 1	\$600	July 26, 1900
12	Rebecca E. Cook (Mortgage) Paid off Mar. 10, 1903	Henry Davis	Lot 1	\$5,000	Oct. 30, 1900
13	Rebecca E. Cook (Mortgage) Paid off May 2, 1916	Ernest Hoover	Lot 1	\$4,000	Oct. 30, 1907

14	Rebecca E. Cook	Adele Darnielle Davidson	Lot 1	\$1	Oct. 21, 1922 (Revenue stamps indicate \$10,500)
15	Adele Darnielle Davidson & Frank T. Davidson (Mortgage) Paid off Oct 18, 1927)	Security Improvement & Loan Association	Lot 1	\$7,500	Oct. 14, 1922
16	Horace C. Irwin	Adele Irene Davidson	Lot 2	\$1	July 7, 1925 (Revenue stamps indicate \$2,500)
17	Adele Davidson & Frank T. Davidson	Joanne Stringfield	Lots 1 & 2	\$10	Jan. 22, 1949
18	Joanne Stringfield	Adele Davidson & Frank T. Davidson (Joint tenants)	Lots 1 & 2	\$10	Feb. 7, 1949
19	Adele D. Davidson Frank T. Davidson	Harold Werner	Lots 1 & 2	\$10	Feb. 7, 1949
20	Harold O. Werner (Bachelor)	Adele D. Davidson Frank T. Davidson (Joint tenants)	Lots 1 & 2	\$10	Feb. 7, 1949
21	Frank T. Davidson	Hugh Garvey	Lots 1 & 2	\$90,000	1963***
22	Hugh Garvey Deed 801286	United States of America	Lots 1 & 2 & other lots	\$170,500	Feb. 7, 1978***

* For entire purchase. No indication of amount paid for Lot 1.

** Quit claim deed indicating Charles E. Arnold no longer claims any ownership in the property.

*** This deed was not located at office of Sangamon County Recorder of Deeds. Cost data provided by Lincoln Home National Historic Site.

HISTORICAL DOCUMENTATION DESCRIPTION

The earliest known documentation of the Arnold House is an 1854 map of the City of Springfield by City Surveyor M. McManus. This map (Figure 2.1) shows a J-shaped structure on Lot 1, Block 11 of Elijah Iles' Addition. The plan is formed with a long rectangle running parallel to Jackson Street, a more narrow south projecting ell at the east end, terminating with a shorter rectangle parallel to the first.⁶⁵ The long rectangular portions of the house are most likely the 1840 cottage with the one-story east addition and part of the attached shed addition seen in an 1885 photograph (Figure 2.14). The south ell is likely an extension of the attached shed at the east, while the terminating projection is a separate outbuilding (possibly a summer kitchen or wash house). (This terminating projection is also seen on the 1884 and 1890 Sanborn Maps.) Further, this map also shows a rectangular structure, probably the barn, at the northeast corner of the lot. An 1858 map of Springfield by City Engineer William Sides (Figure 2.2) indicates a configuration identical to that seen on McManus' 1854 map.⁶⁶ A legend note on both maps indicates that the house was privately owned and was wood frame construction.

The 1854 and 1858 maps are the only documentary evidence which indicates this J-shaped plan. All of the later sources, including panoramic (or bird's-eye) views and maps, indicate a rectangular plan (some Sanborn maps have an outbuilding at the immediate southeast corner of the house). The reasons for the discrepancies are uncertain. It has been the experience at the Site that the maps have been proven more accurate than the panoramic views since a great deal of artistic liberties appear to have been taken with the panoramic drawings. Whatever the case, no existing physical evidence, including archeological, has been found to substantiate the J-shaped plan. Photographic evidence (Figure 2.2) verifies the existence of a barn at the northeast corner of the property as early as 1860.⁶⁷

The 1867 panoramic view of the City of Springfield by A. Ruger (Figure 2.3) shows a tall, rectangular, gable-roofed structure toward the west end of the property with a shorter gable-roofed rectangle at the east end. The east rectangle is shown with two apparent windows on the east elevation. There is a separate rectangular gable-roofed structure, probably the barn, shown at the rear of the property.⁶⁸ A similar panorama published by Beck and Pauli (Figure 2.4), circa 1870, indicates no change from Ruger's view.⁶⁹

The Bird's-Eye-View of Springfield, Illinois, produced by Augustus Koch in 1873 (Figure 2.5) clearly indicates an addition to the Arnold House not seen in the two previous panoramas. A narrow shed-roofed enclosure is shown running the length of the east elevation of the house, a feature also seen in Figures 2.14 - 2.18. There is a possible second addition extending from the southeast corner of the story-and-a-half portion of the house; however, it is not entirely clear that this addition is on the Arnold House. The fenestration of the north elevation of the house is shown in this panorama.⁷⁰

Taken together, these panoramic views generally substantiate the massing, proportions, and limits of the Arnold House evidenced elsewhere. These views do not, however, give any indication of the south ell or the terminating ell seen on the 1854 and 1858 maps.

The 1884 Sanborn map (Figure 2.6) clearly indicates the story-and-a-half portion (the 1840 cottage) of the house which is flanked on the east and south by one-story additions. The rectangular addition directly to the east of the main cottage is obviously the single-story east addition indicated on the 1854 and 1858 city maps, and all of the panoramic views. By 1884, a one-story addition (or additions) had been made to the south side of the house, and there is an open side-walled addition indicated at the east end extending the full width of the house.⁷¹ A photograph (Figure 2.14) circa 1885 shows a door at the north endwall of a shed-roofed addition at the east end of the house (at the same

location as the open addition seen on the 1884 Sanborn map.)⁷² This door may indicate that the shed-roofed addition was enclosed; however, this may have been only a door acting as a gate to the rear yard and not necessarily indicating an enclosed space; thus, confirming the open attached shed. The Sanborn map also shows a separate adjacent one-story building at the south end of the east attached shed. This structure is probably the same outbuilding indicated on the 1854 and 1858 city maps. The barn, depicted as more square than was shown on the earlier city maps, is indicated to be two stories. All of the structures on this property are indicated as having wood shingle roofs.⁷³

The only change seen on the 1890 Sanborn map is a one-story barn rather than the two-stories previously noted. The barn was most likely always one-story, but probably had a loft and its height may have suggested to the map surveyor that it had two stories.⁷⁴

The 1896 Sanborn indicates several changes to the house as well as several changes to the site. The one-and-a-half story portion of the house is no longer indicated and the entire house is shown to be one story. (It is doubtful that the house was not still one-and-a-half stories.) The open attached shed is indicated as having been largely closed-in by this time, with only the southern-most end remaining open. Several new porches are shown at the south side of the house. The small adjacent outbuilding previously shown at the southeast corner of the house is no longer shown; however, there is a similarly sized structure shown at the southeast corner of the property. The two structures are probably one and the same, relocated on the site by 1896. The barn previously indicated at the northeast corner of the lot is no longer shown.⁷⁵

There are several discrepancies between the 1884, 1890, and 1896 Sanborn maps. The 1884 map indicates that there had been significant additions to the south side of the house all of which are shown as enclosed space. (The 1890 map shows a similarly enclosed configuration.) The 1896 map indicates, probably more

correctly, a porch at the southwest corner of the house with another porch shown in the middle of the south side additions. It is doubtful that the enclosed spaces indicated in 1884 were changed to porches by 1896. More likely, these locations were always porches. Sometime between 1890 and 1896, the outbuilding previously shown at the south side of the house was apparently relocated to the southeast corner of the property, while the barn in the northeast corner of the lot was demolished or otherwise removed. These maps also show the relationship of the building to the property lines and adjacent properties. Comparison of the building set-back indicated for the house at 508 South Eighth Street (the Sarah Cook House), coupled with its present set-back on the lot, and the set-back indicated for the Arnold House, suggests that the Arnold House originally sat back approximately 16'-0" from the west property line. The house probably remained in the 1896 configuration until 1900, when the house was relocated on the site.

The 1917 Sanborn map (Figure 2.9) indicates that the house and the site had undergone significant changes. By this time, portions of the previous house had been relocated to the rear of the site. These portions had been rotated ninety degrees so that what had faced west was now facing north. A larger structure is indicated at the front of the site, and the address of the Arnold House had changed from 500 South Eighth Street to 810 East Jackson Street. The house is shown as an L-shaped structure with a porch in the void formed at the crossing. A short ell with a large porch is shown at the southeast corner of the house. The outbuilding at the southeast corner of the lot is shown larger than it appeared in 1896, suggesting that this structure had been enlarged, the previous structure had been razed and a new larger structure built in its place, or even that two cartographers may have drawn it differently. Again, the house is incorrectly listed as being entirely one-story. The roof is indicated as being mostly wood shingles with a composition roof at the east porch and at the outbuilding.⁷⁶

The 1941 Sanborn (Figure 2.10) indicates that the house had been enlarged with an addition to the east side of the house. The east porch had been removed, as had the outbuilding at the southeast corner of the lot. The house is indicated as having been turned into a duplex with the addresses of 810 and 812 East Jackson Street. This map indicates that the house had been enlarged so that it is shown extending into adjacent Lot 2, which since 1925 had been owned by the Davises (Davidsons), owners of Lot 1. The house is shown as having a composition roof.⁷⁷ The 1952 Sanborn (Figure 2.11) indicates no changes from the 1941 map.⁷⁸ Both maps fail to indicate a 5'-6"± addition to the west end of the house which had most likely been done by this time. The apparent inaccuracies might be the fault of the Sanborn cartographer.

There are several photographs documenting the structures on this lot prior to, as well as since, the house was relocated.

Two photographs show the character of the barn at the northeast corner of the property. In the first photograph (Figure 2.12), dating from August 8, 1860, the barn is clearly shown to have vertical batten-and-board siding and a gabled roof. There is also a small window seen centered on the north elevation.⁷⁹ The second photograph (Figure 2.13), dating from April 1865, clearly shows the south half of the east elevation of the barn at the rear of the property, with its gabled endwalls facing east and west. This photograph also shows a second small outbuilding (most likely a privy) with gabled endwalls facing north and south. Centered on its west elevation is a door with a small, window-like opening. This view also clearly indicates a white vertical board fence at the north property line with a fairly consistent height and size.⁸⁰

One photograph (Figure 2.20) gives some idea of the character of the outbuilding seen at the southeast corner of the lot on the 1896 Sanborn map. This outbuilding is shown to have a gable roof, with the ends facing north and

south, and vertical batten-and-board siding. The south end of this structure abuts a significantly larger, brick outbuilding which sets on the adjacent property.⁸¹

Six photographs and renderings show the character of the north elevation of the Arnold House prior to 1900. The first photograph (Figure 2.14), circa 1885, shows the east portion of the 1840 cottage and the east additions to the house. The east one-story addition has a gabled roof with a slope apparently more shallow than the roof of the 1840 cottage. Both roofs are wood-shingled. The roof at the one-story addition has an eave flush with the wall face, while the 1840 cottage has a small overhanging eave, probably less than 12". A gutter is seen at each eave with the upper gutter dumping into the lower through a downspout at the intersection of one-story addition to the 1840 cottage. There is a second downspout at the far east corner of the one-story addition. The house has clapboard siding with a corner board at the junction of the 1840 cottage with the one-story addition suggesting that the latter was an addition to the former. Three windows with closed shutters are seen at the one-story addition. A door, also with a closed shutter, is seen near the east end of the 1840 cottage. There is a stair, with four treads and no landing at this door. This top tread is level with the bottom of the lowest siding board giving some indication of the height of the siding above grade. The east attached shed has a steeply sloped shed roof which suggests either a low ceiling, or more likely a floor that is significantly lower than the floors at interior spaces. At the north endwall of the shed there is a door or gate.⁸² The next example (Figure 2.15) is a drawing obviously derived from the previous photograph. Although this rendering erroneously shows two windows to the west of the door at the 1840 cottage, it generally conforms to Figure 2.14.⁸³ The third photograph (Figure 2.16) dates from 1889 and shows the Arnold House to the right side of the photograph. This photograph shows most of the north elevation of the 1840 cottage and all of the north elevation of the one-story addition. This photograph generally confirms what has been seen on previous

photographs; however, some new information can be gleaned from this photograph. The shutter at the door, open in this photograph, is seen to be in two leaves. Despite the open shutter, no detail at the door is discernable. A small white speck seen near the door's east jamb is apparently a porcelain door knob. This photograph also shows that there are three clapboards above the windows at the one-story addition. New features seen here include a single window, with closed shutters, located west of the door of the 1840 cottage. A chimney is also seen in this photograph; however, no detail is discernable in this view.⁸⁴

The next photograph (Figure 2.17 is a view similar to that of Figure 2.16). This view basically confirms what is noted on the previous photographs. This photograph indicates a slight profile near the top of the chimney, however, this is not clearly seen.⁸⁵

The fifth photograph (Figure 2.18) shows only portions of the east, one-story addition to the Arnold House. This view serves to confirm what has previously been seen of this addition to the 1840 cottage.⁸⁶

Figure 2.19 is a post card rendering of the Lincoln Home with the Arnold House seen to the right-hand side of this view. Despite some obvious perspective problems, the rendering confirms the character of the house seen in previous photographs.⁸⁷

Two photographs show the house following its relocation to the rear of the site. The first photograph (Figure 2.21) dating from 1916, shows the northwest corner of the house. The photograph supports the plan seen in 1917 Sanborn map. The porch and the house from the east end to the location of the arrow on the photograph, indicate the limits of the house which was rotated and relocated on the site in 1900. The other portions of the house were probably built with lumber salvaged from the demolished portions of the previous house. The photo shows the roof dormers and dormer windows which had been added to the 1840 cottage. These features were probably added when the house was relocated. The

west windows indicate 6/6 sashes, while the north windows are 1/1 sashes. There is also a basement window seen in the photograph. (This opening is still found in the current basement; however, the sash is gone.) Although the character of the porch is evident in this photograph, it postdates the 1860 era and likely dates to circa 1884. The front entry door is seen at the porch. This photograph also provides evidence of the clapboard siding. To the right of the arrow on the photo and at the north elevation the siding exposure is narrow, while to the left of the siding exposure is greater. The roof is seen to be shingled and gutters are evident at the eaves of the one-story portions of the house.⁸⁸

The second photograph (Figure 2.22), taken from further away and dating to circa 1920, shows a wider, albeit similar, view of the house. In this photograph the chimney stack is seen but no detail is discernable. A chimney stack not previously seen is also evident; however, it is not clear if this is part of the Arnold House or a neighboring house.⁸⁹ Also in this photograph, some character of the roof at the south addition to the house is seen. It, too, was built using salvaged lumber.

HISTORICAL ILLUSTRATIONS

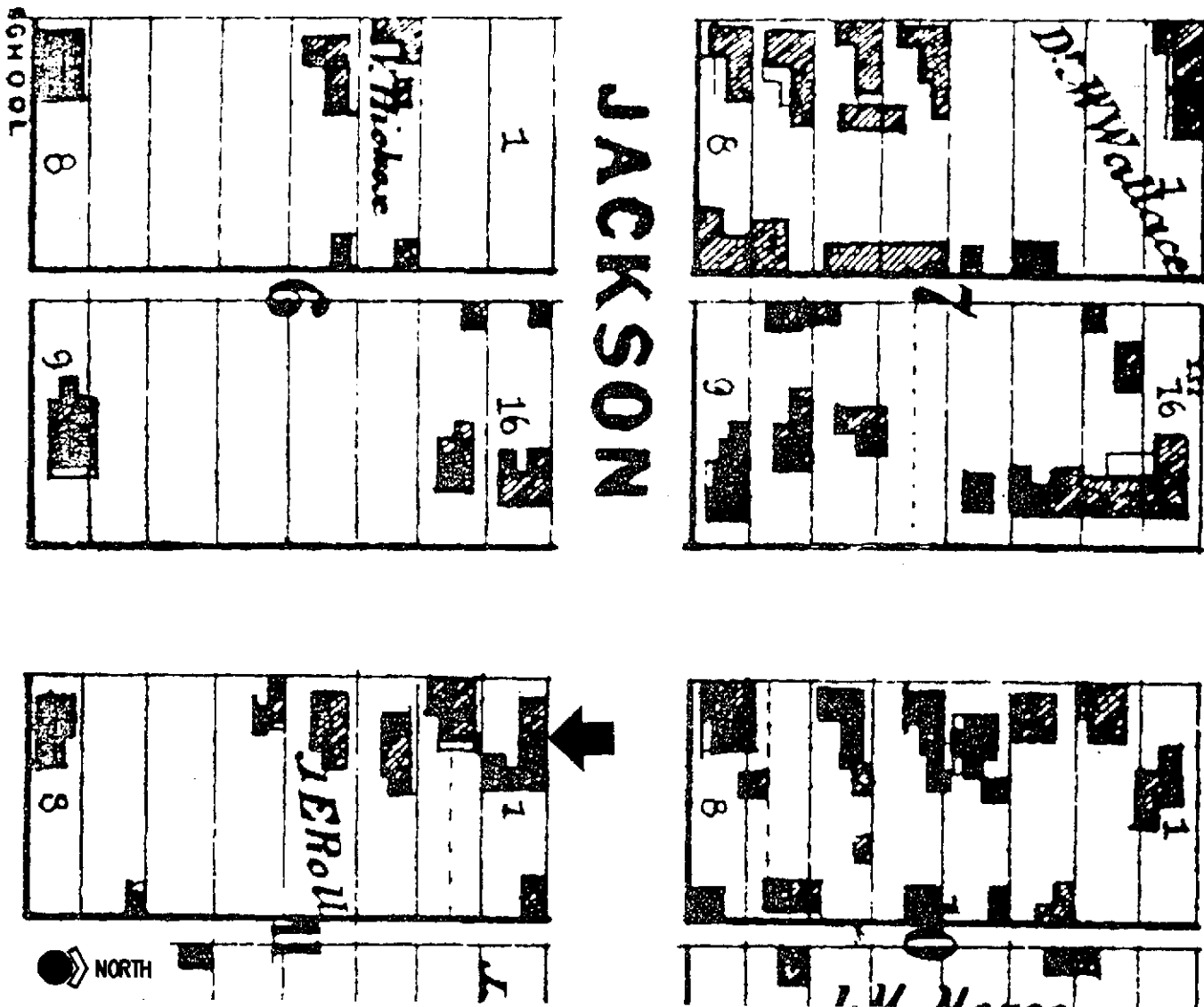


FIGURE 2.1: McMANUS' CITY OF SPRINGFIELD MAP, 1854
 City of Springfield, Sangamon County, Illinois. (Drawn by Springfield City Surveyor, M. McManus.) New York City: Hart & Mapother, 1854.

Courtesy of Illinois State Historical Library, Springfield, Illinois.

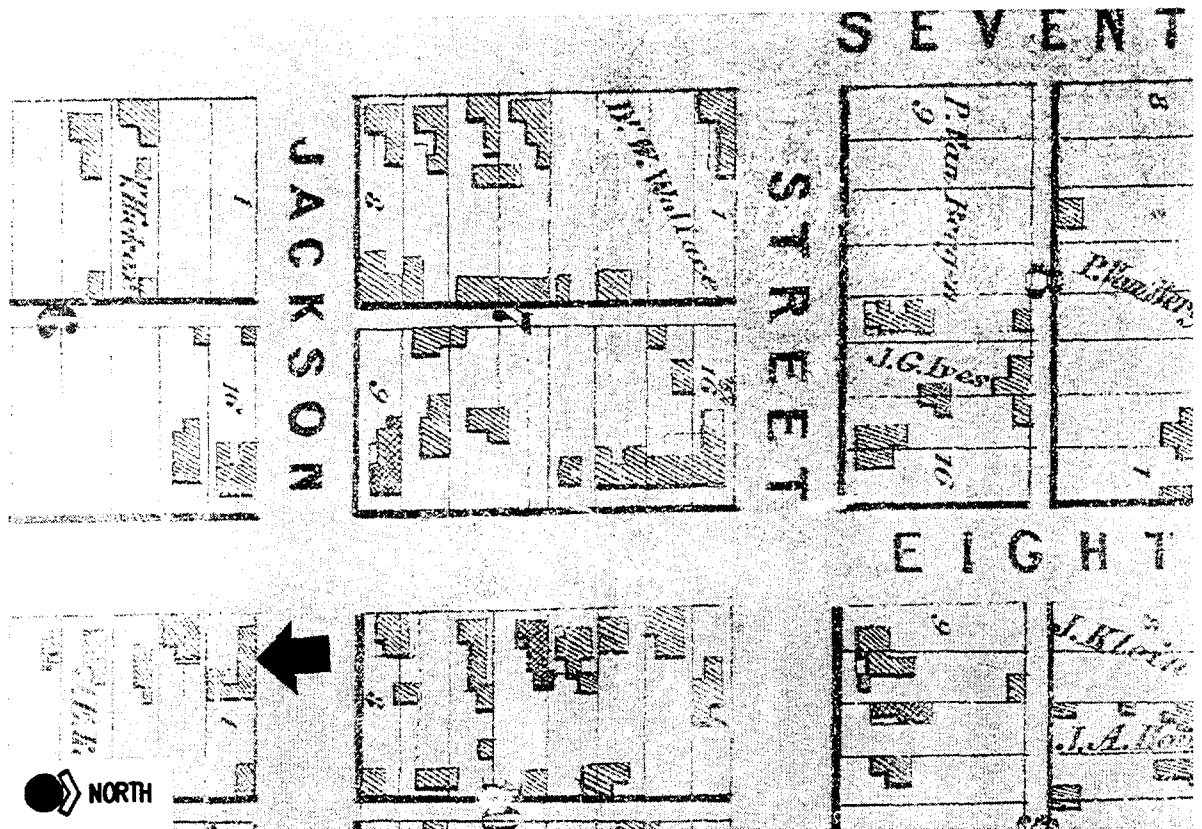


FIGURE 2.2: SIDES' CITY OF SPRINGFIELD MAP, 1858
City of Springfield, Sangamon County, Illinois. Springfield, Illinois. By William Sides.
 Philadelphia: R. L. Barnes, 1858.

Courtesy of Illinois State Historical Library, Springfield, Illinois.

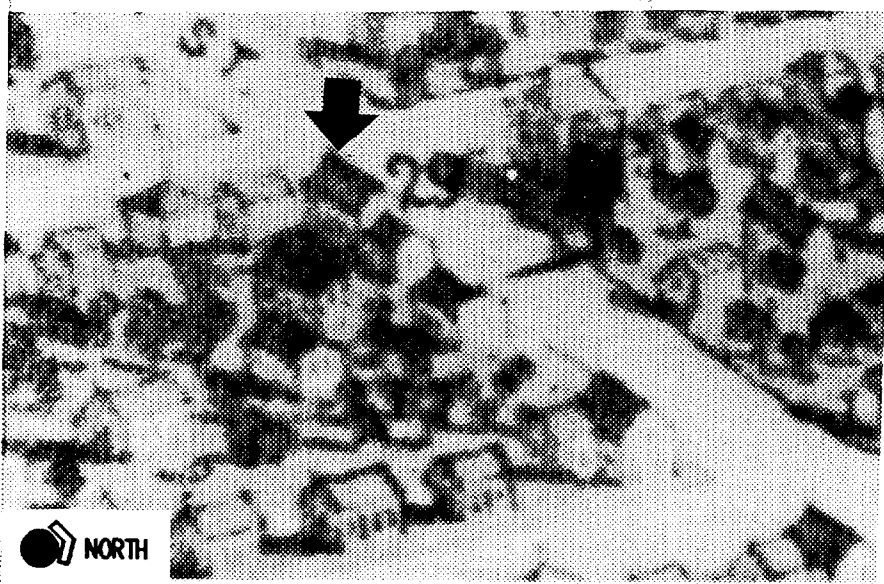


FIGURE 2.3: RUGER'S PANORAMIC VIEW OF THE CITY OF SPRINGFIELD, 1867
A. Ruger, artist. Springfield, Illinois: Drawn from Nature by A. Ruger. Chicago: n.p., 1867.

Courtesy of Illinois State Historical Library, Springfield, Illinois.

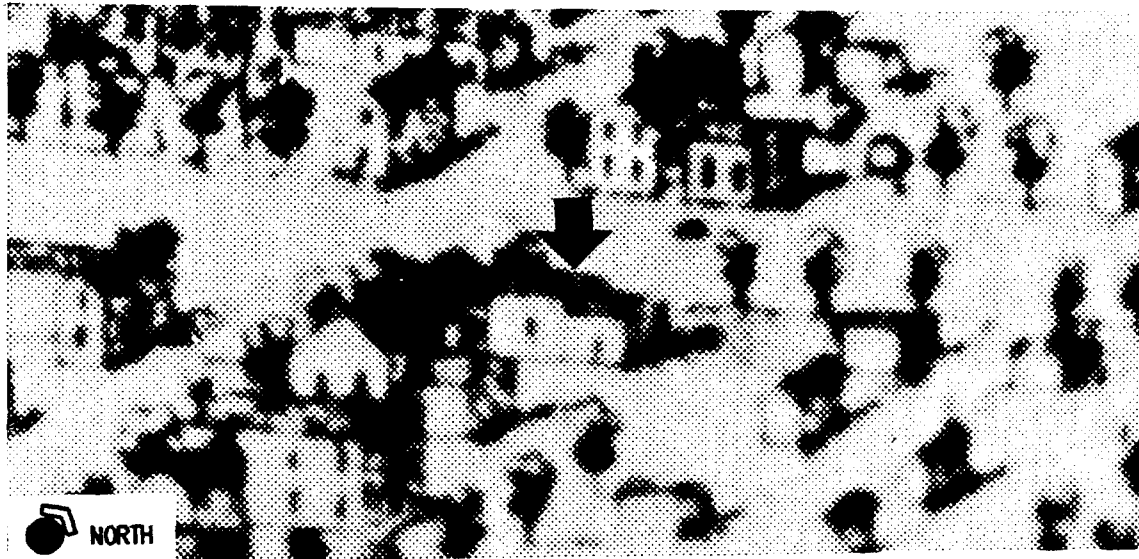
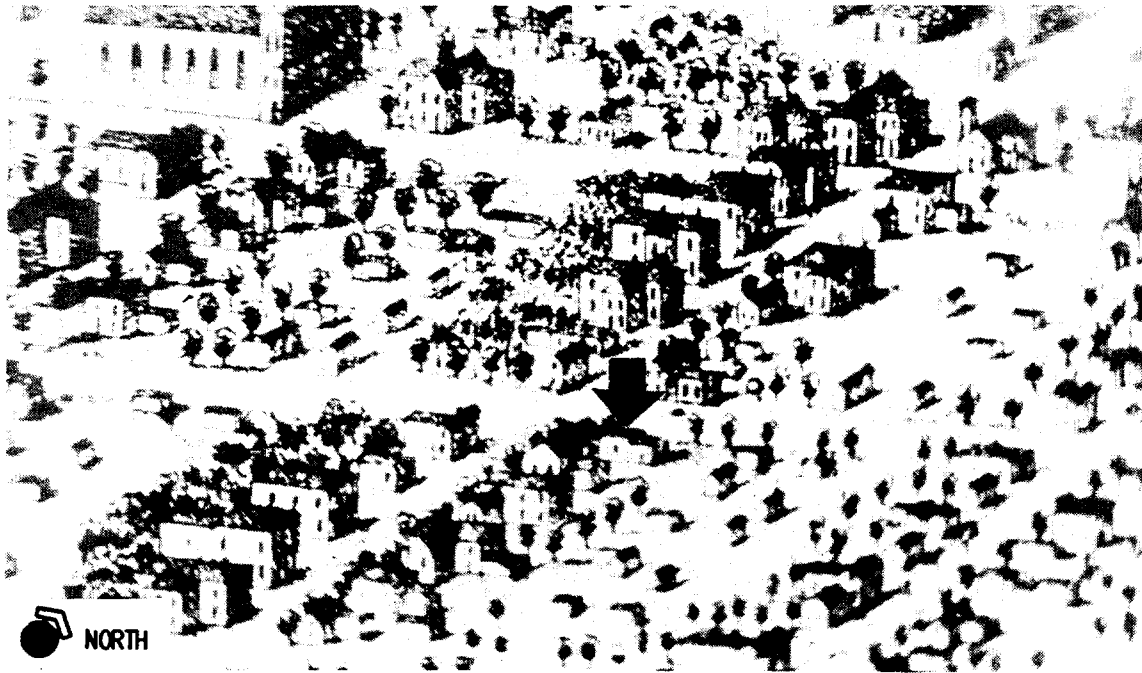


FIGURE 2.4: BECK AND PAULI'S PANORAMIC VIEW OF THE CITY OF SPRINGFIELD, circa 1870
Beck and Pauli, artists. Map of Springfield. Milwaukee: A. C. Geiseler & Co., n.d. (circa 1870).

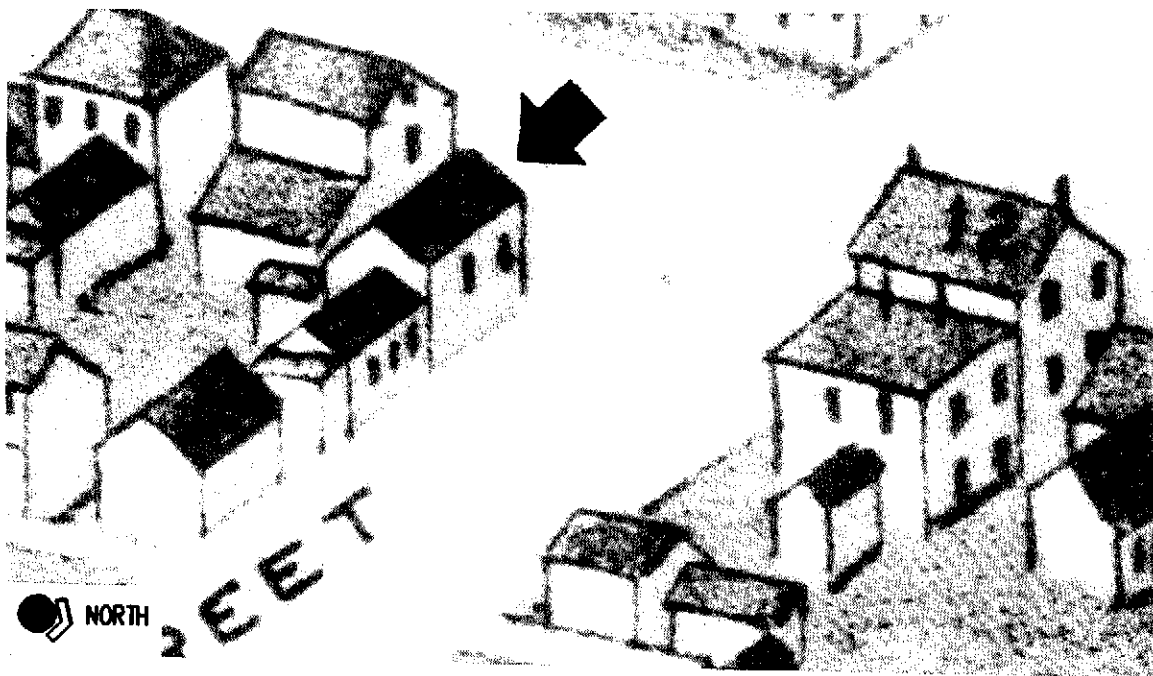


FIGURE 2.5: KOCH'S PANORAMIC VIEW OF THE CITY OF SPRINGFIELD, 1873
Augustus Koch, artist. Birds' Eye View of Springfield, Illinois. St. Louis, Missouri: n.p., 1873.

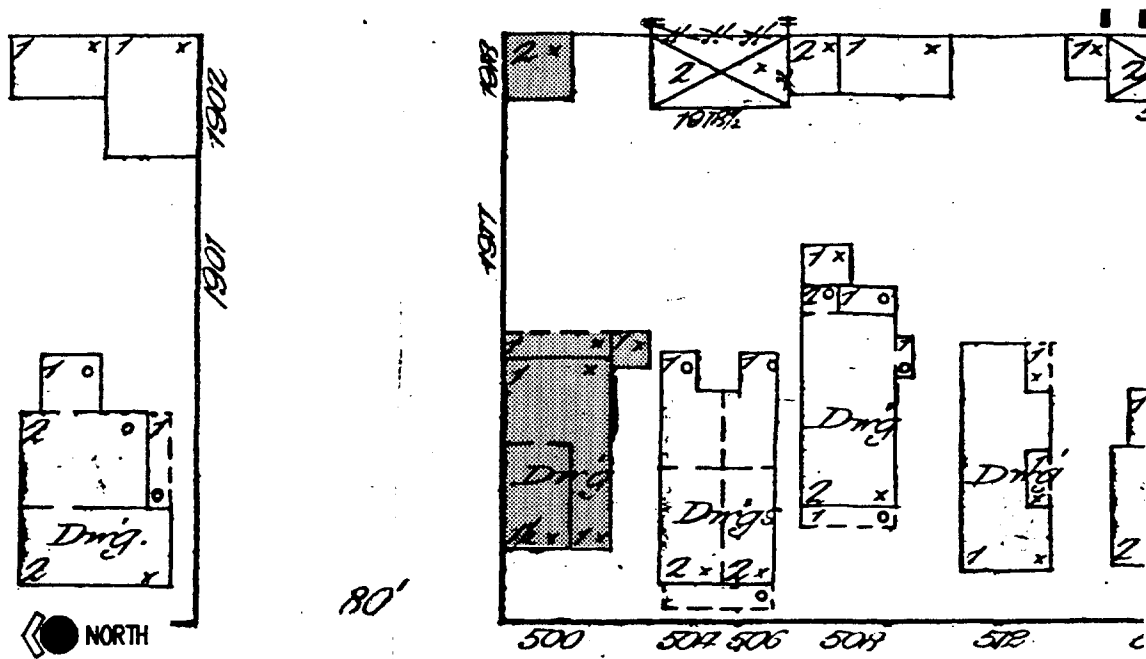


FIGURE 2.6: SANBORN MAP, CITY OF SPRINGFIELD, 1884
 "Springfield, Illinois." New York: Sanborn Map & Publishing Co., 1884.

Courtesy of Lincoln Library - Sangamon Valley Collection, Springfield, Illinois.

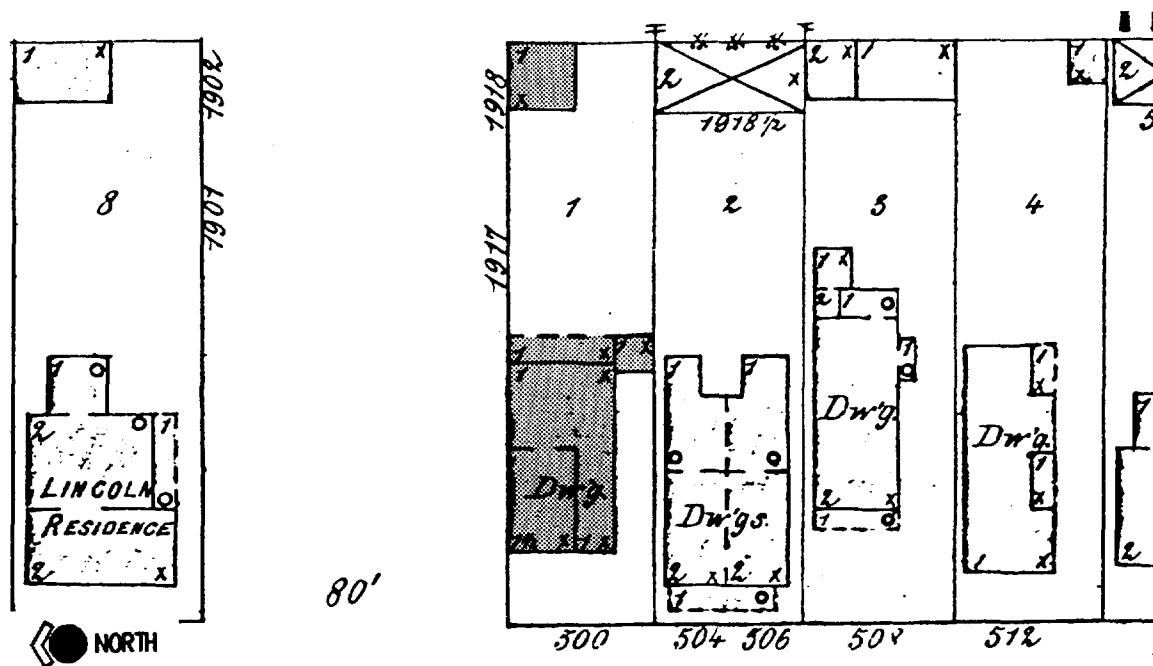
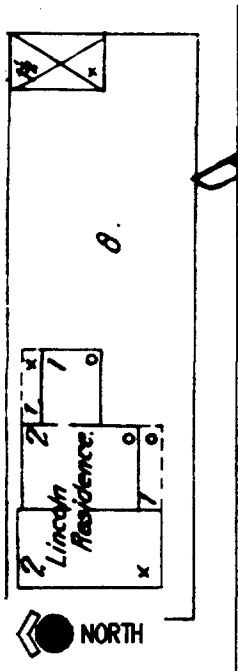


FIGURE 2.7: SANBORN MAP, CITY OF SPRINGFIELD, 1890
 "Springfield, Illinois." New York: Sanborn-Perris Map & Publishing Co., February 1890.

Courtesy of Lincoln Library - Sangamon Valley Collection, Springfield, Illinois.



E. JACKSON

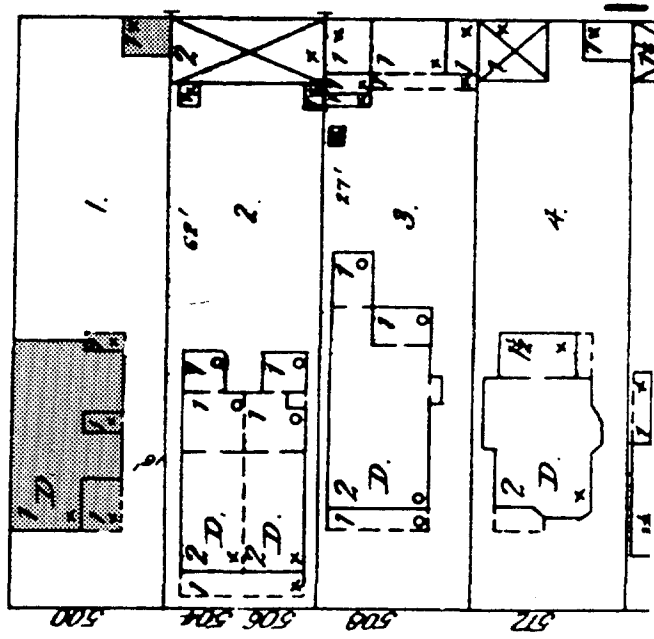


FIGURE 2.8: SANBORN MAP, CITY OF SPRINGFIELD, 1896
 "Springfield, Illinois." New York: Sanborn Map & Publishing Co., 1896.

Courtesy of Lincoln Library - Sangamon Valley Collection, Springfield, Illinois.

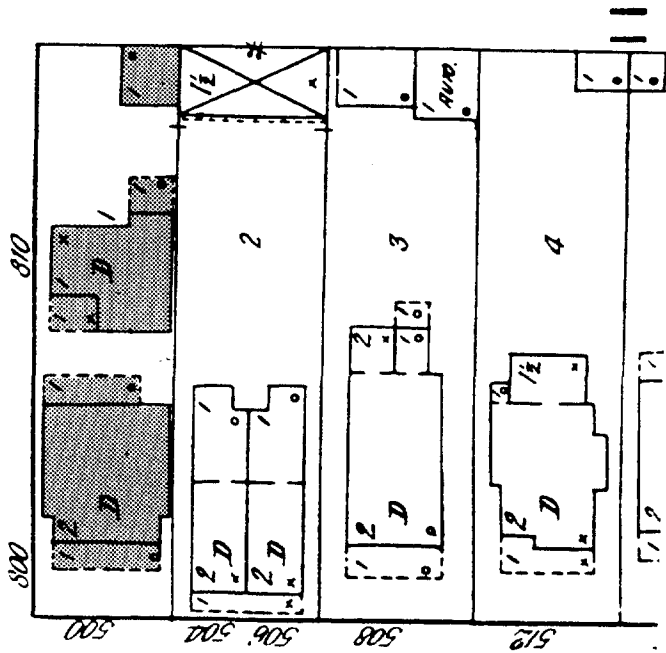
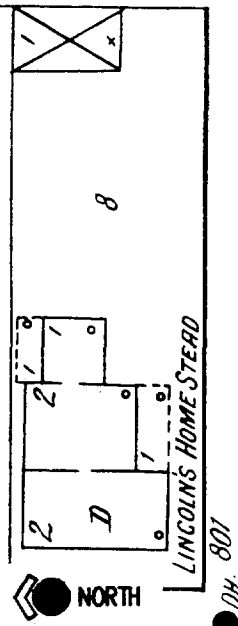


FIGURE 2.9: SANBORN MAP, CITY OF SPRINGFIELD, 1917
 "Springfield, Illinois." New York: Sanborn Map & Publishing Co., 1917.

Courtesy of Lincoln Library - Sangamon Valley Collection, Illinois.

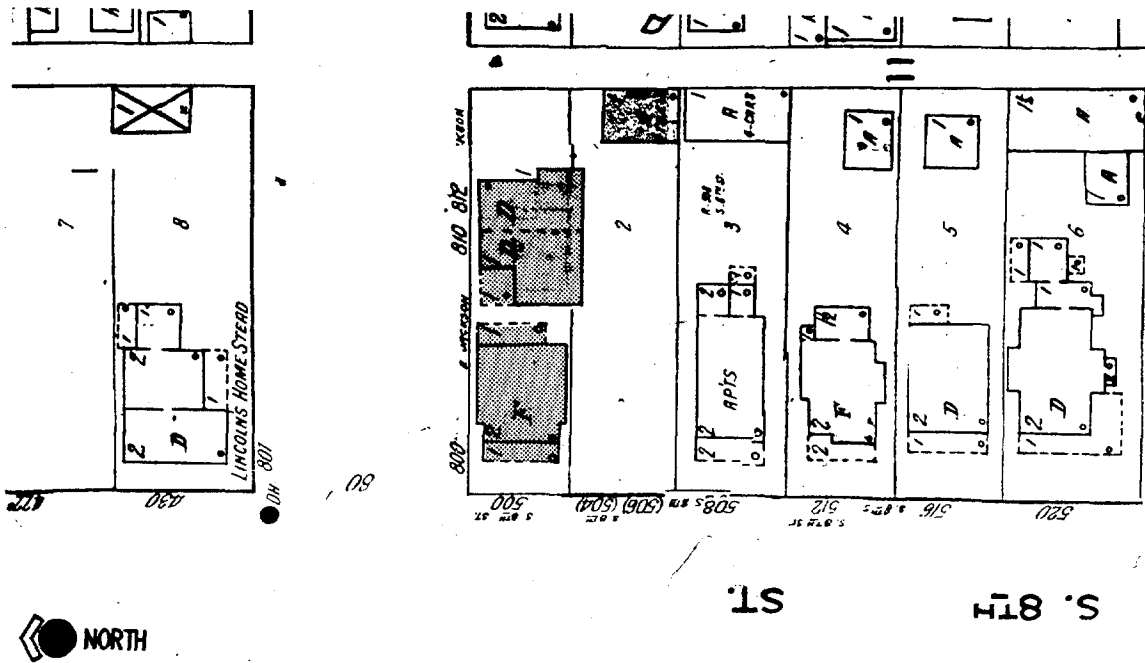


FIGURE 2.10: SANBORN MAP, CITY OF SPRINGFIELD, 1941
 "Springfield, Illinois." New York: Sanborn Map & Publishing Co., 1941.

Courtesy of Lincoln Library - Sangamon Valley Collection, Springfield, Illinois.

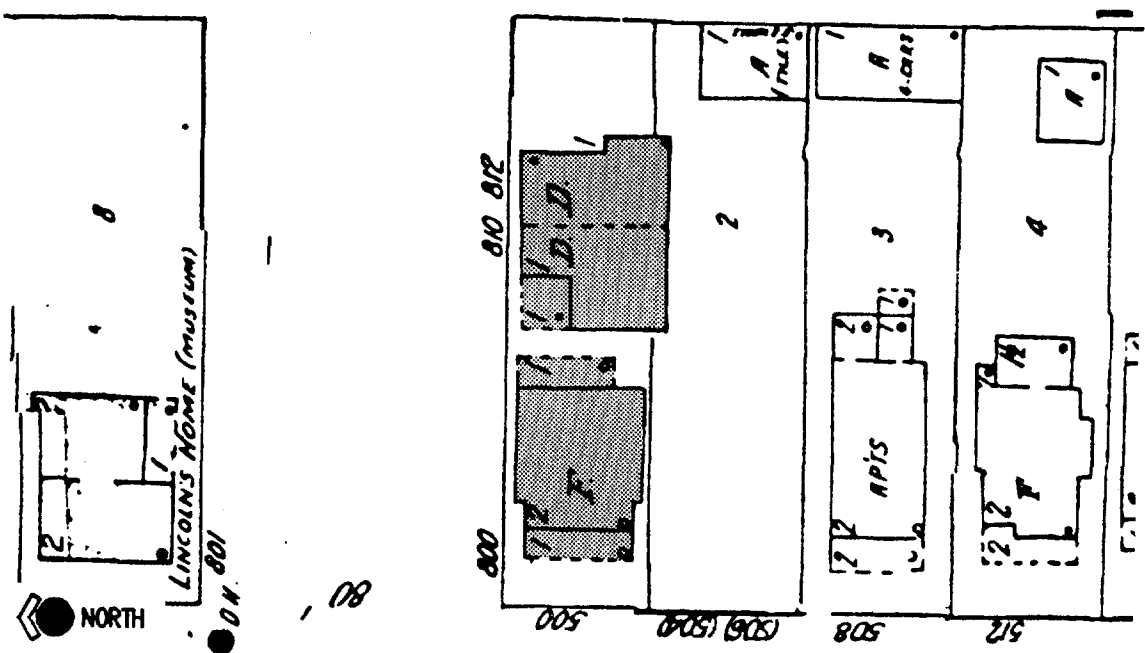


FIGURE 2.11: SANBORN MAP, CITY OF SPRINGFIELD, 1952
 "Springfield, Illinois." New York City: Sanborn Map & Publishing Co., 1952.

Courtesy of Lincoln Library - Sangamon Valley Collection, Springfield, Illinois.

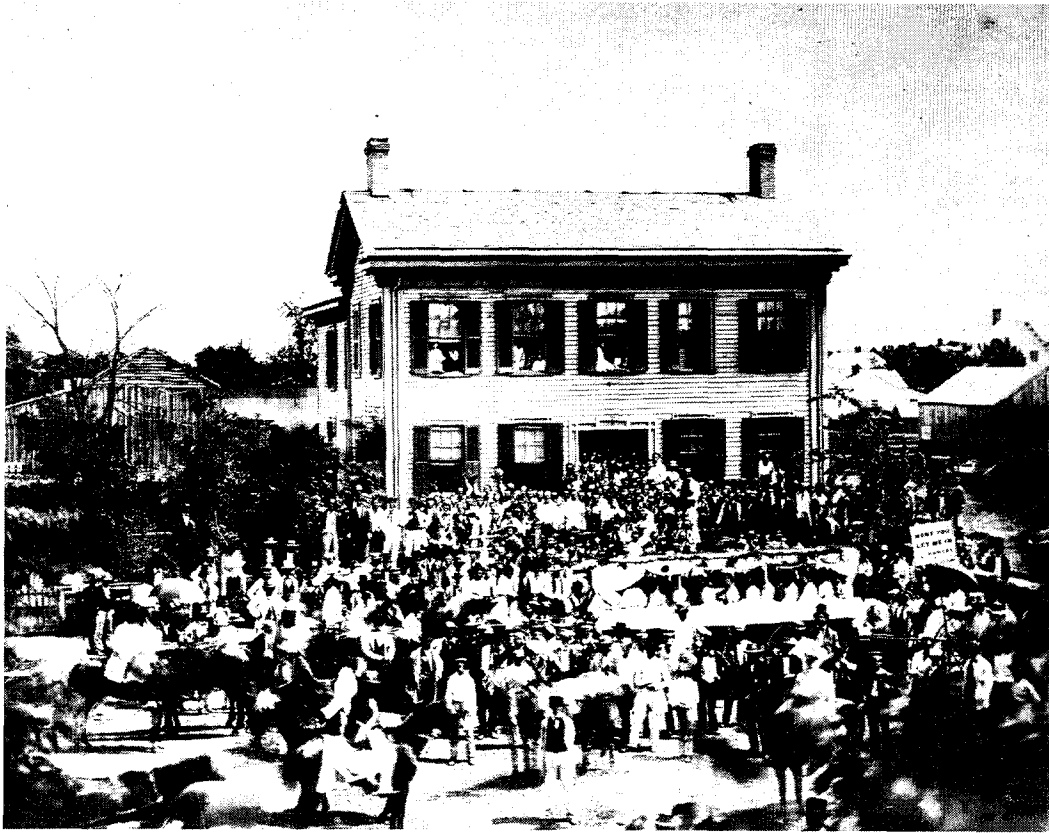


FIGURE 2.12: AUGUST 8, 1860 PHOTOGRAPH (FROM THE WEST/NORTHWEST)

In this photograph of a Republican rally at Lincoln's Home celebrating his presidential nomination, the Arnold House barn is seen at the far right-hand side of the photograph. At the bottom is an enlarged portion of this photo at the barn. Note the vertical batten and board siding, the pitched roof, and four-pane window on the north face.

Courtesy of the Illinois State Historical Library, Springfield, Illinois.

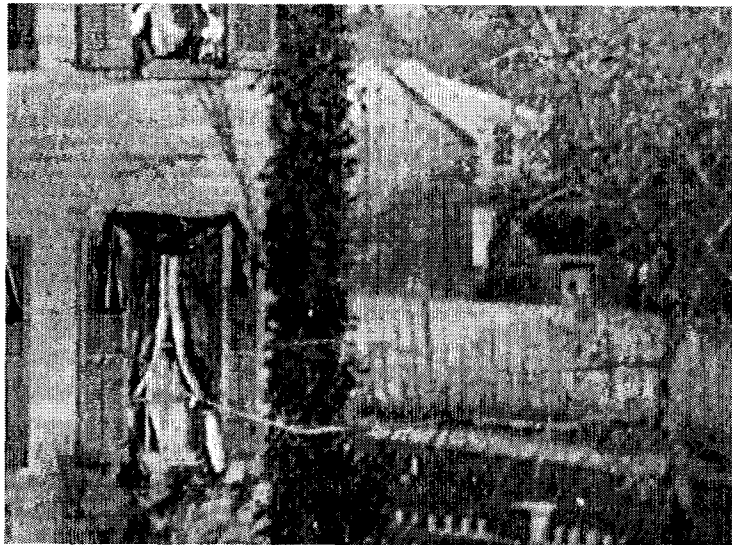
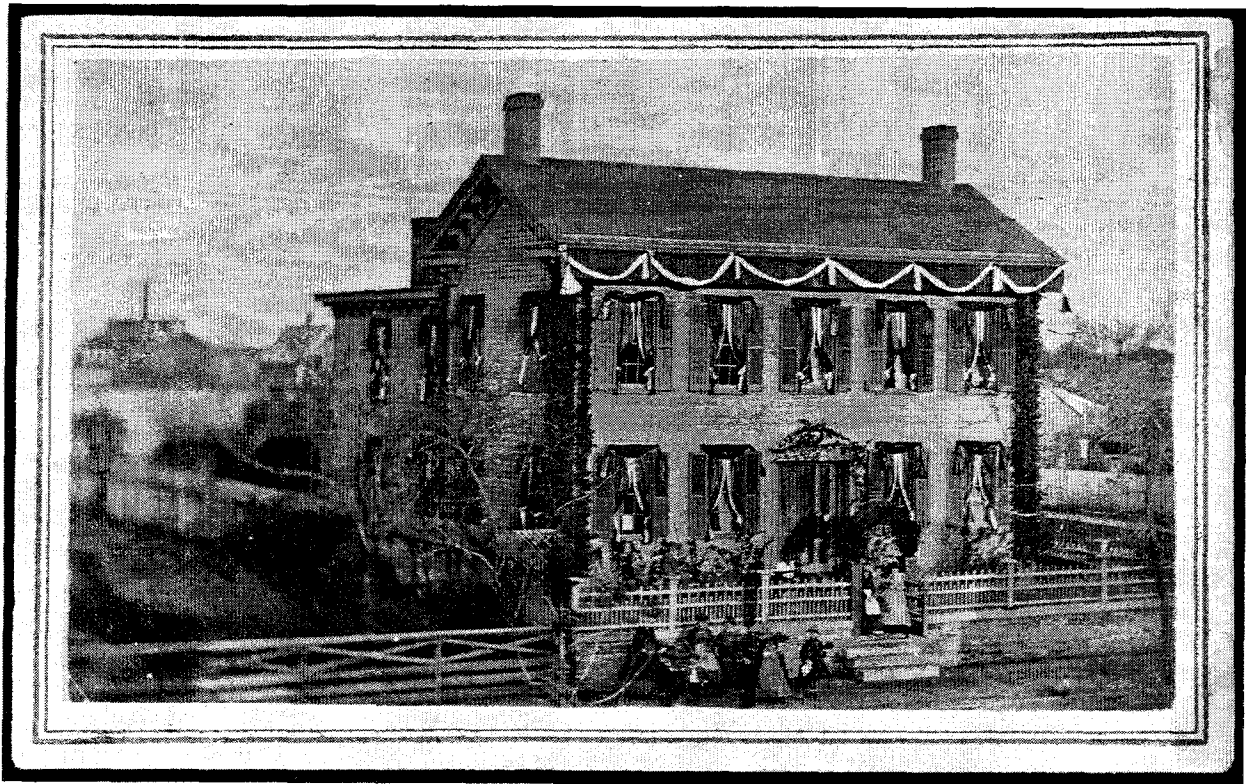


FIGURE 2.13: APRIL 1865 PHOTOGRAPH (FROM THE NORTHWEST)

This photograph shows the Lincoln Home draped in memorial bunting. The Arnold House east yard is seen at the right hand side of the photograph. Note the partial view of the west elevation of the Arnold House barn, the white vertical board fence, and the small building (probably the privy) near the southwest corner of the barn. At the bottom is an enlarged portion of this photo of the barn and privy.

Courtesy of the Lincoln Museum, Ft. Wayne, Indiana.

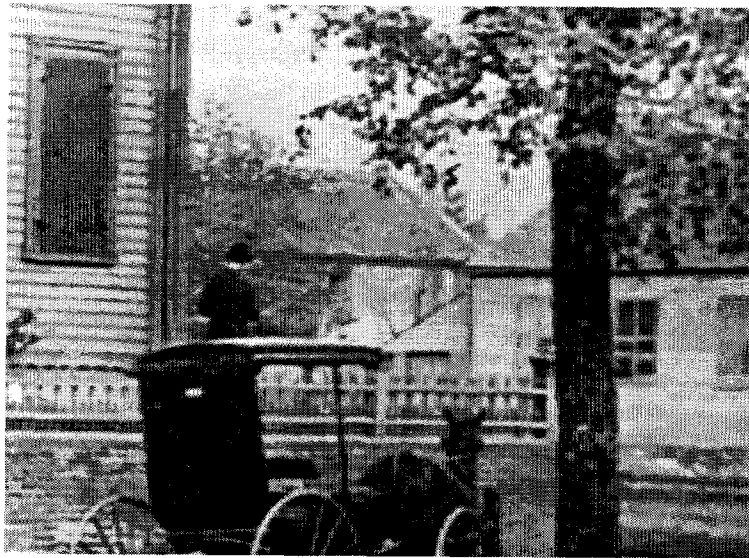
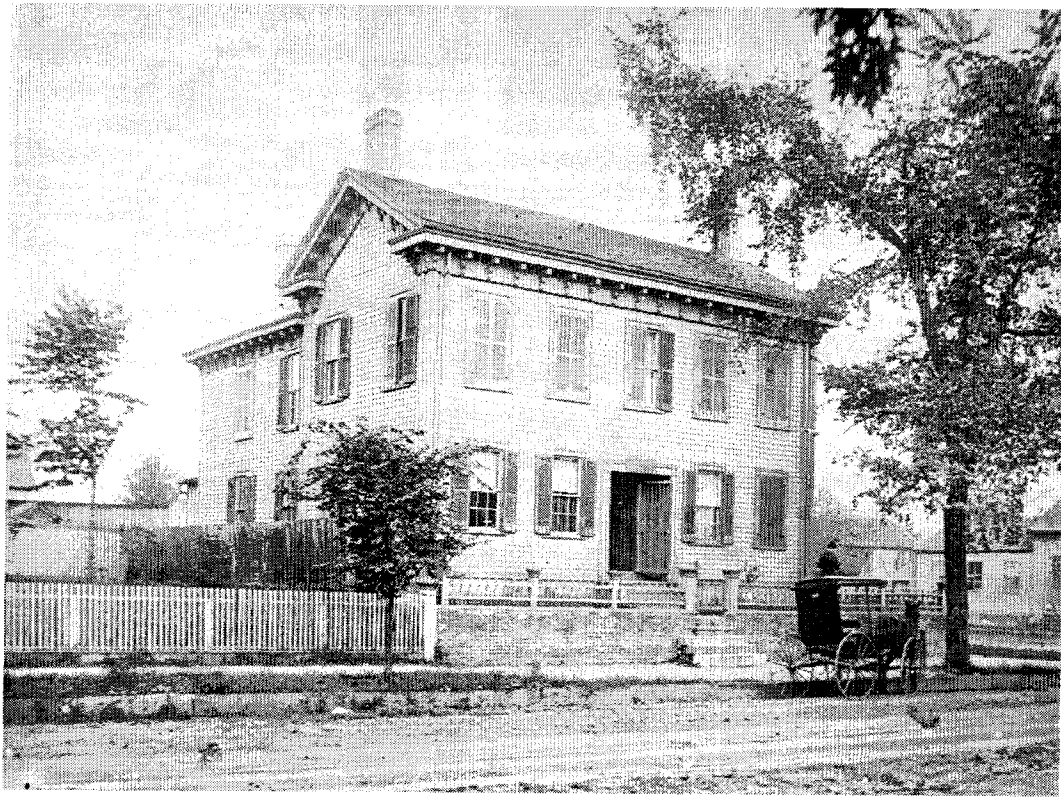


FIGURE 2.14: Circa 1885 PHOTOGRAPH (FROM THE NORTHWEST)
A large portion of the north elevation of the Arnold House is seen at the right-hand side of this Lincoln Home photograph. At the bottom is an enlarged portion of this photo of the Arnold House. Note the two different roof lines with similar pitches, the fenestration configuration (with the shutters closed), the four steps leading to the shuttered door, and attached shed at the east end of the house.

Courtesy of the Illinois State Historical Library, Springfield, Illinois.

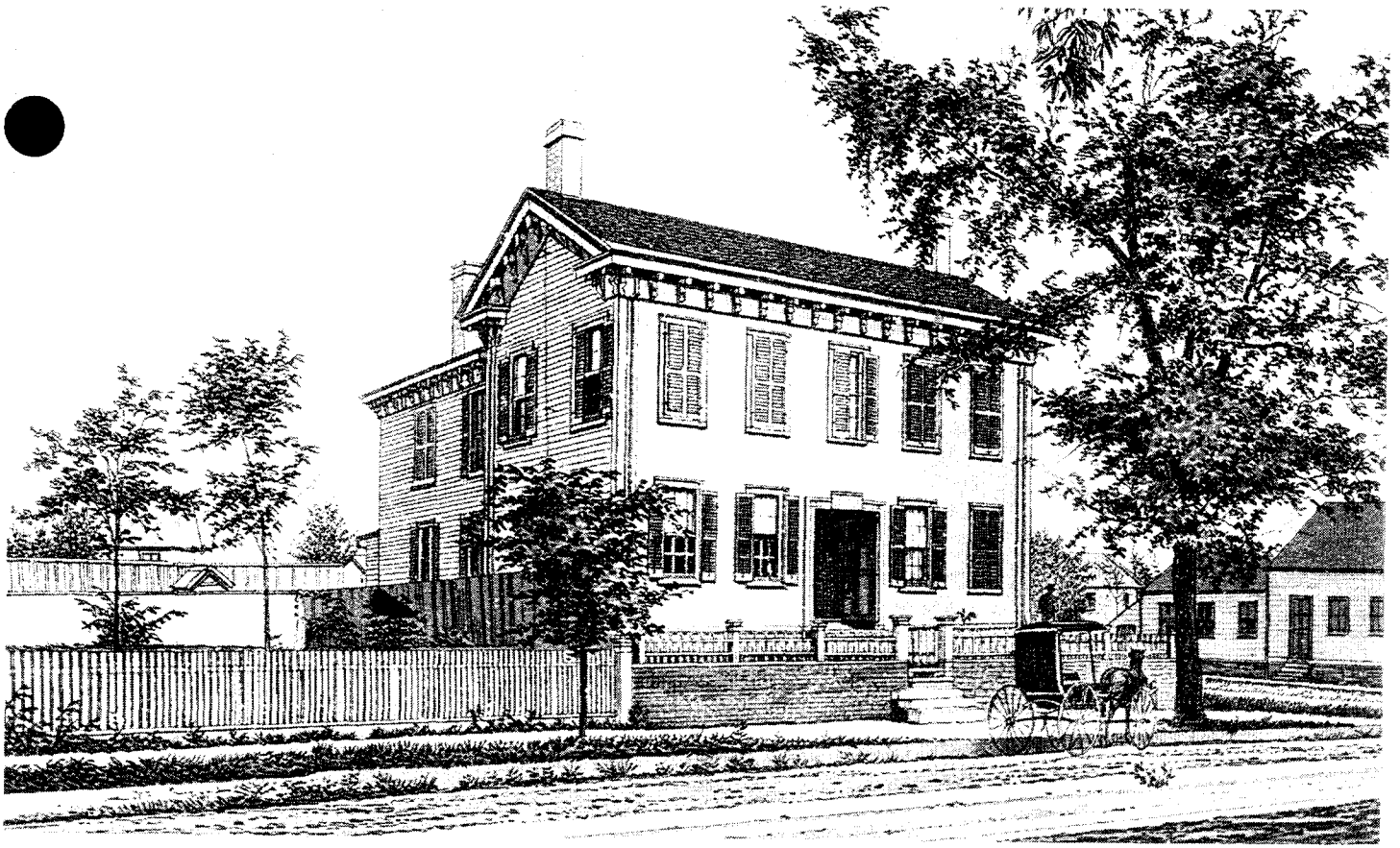


FIGURE 2.15: JANUARY 1, 1886 RENDERING (FROM THE NORTHWEST)
This rendering of the Lincoln Home is from a New Years greeting card published by the Illinois Watch Company dated January 1, 1886. The rendering was probably derived from the similar previous photograph (Figure 14.)

Courtesy of the Illinois State Historical Library, Springfield, Illinois.

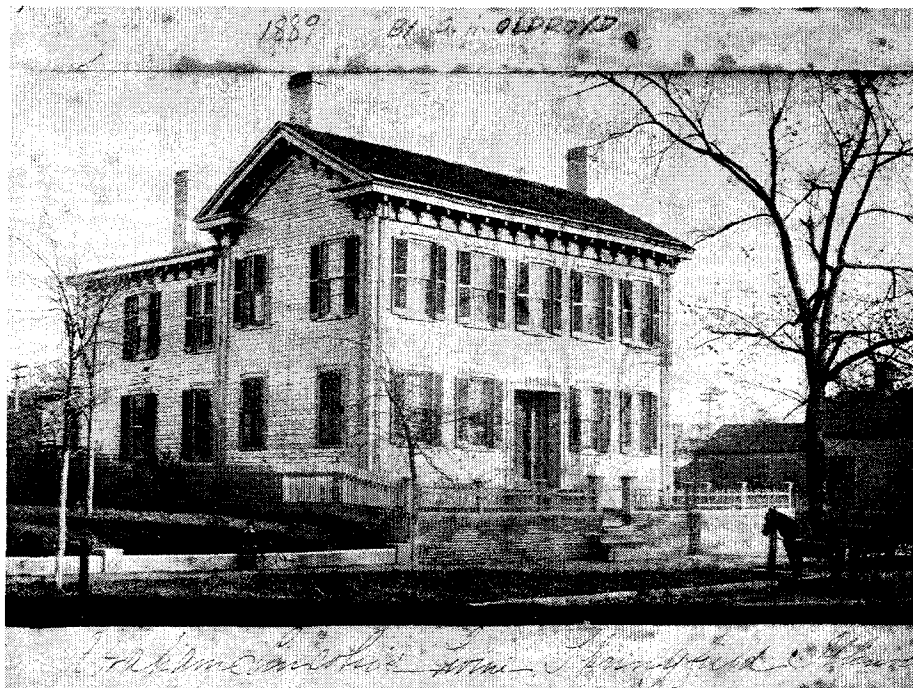


FIGURE 2.16: Circa 1889 PHOTOGRAPH (FROM THE NORTHWEST)

This photograph shows most of the east addition and a large portion of the story-and-a-half portion of the Arnold house. A profile at the chimney profile above the roof is evident but not clearly seen in this view. At the bottom is an enlarged portion of this photograph of the Arnold House.

Courtesy of Lloyd Ostendorf, Dayton, Ohio.

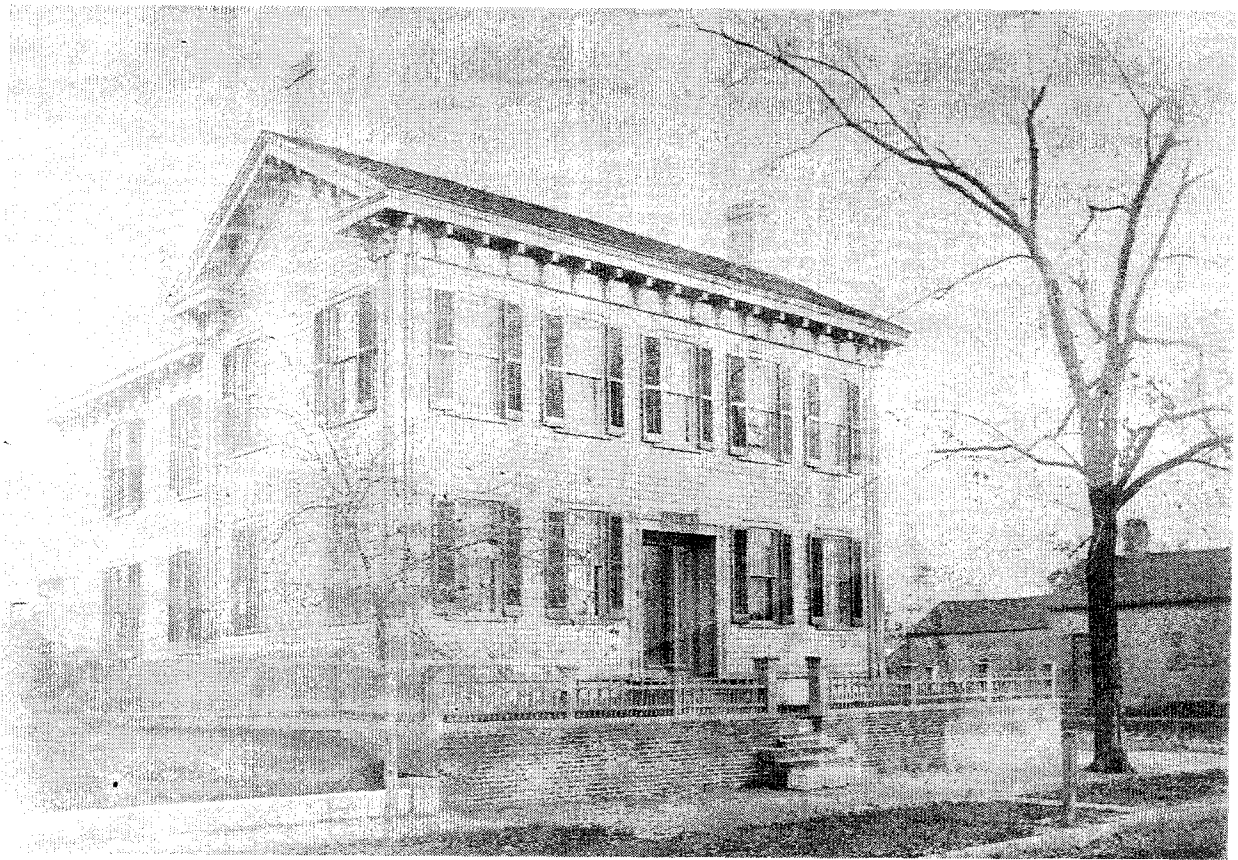


FIGURE 2.17: Circa 1888-1895 PHOTOGRAPH (FROM THE NORTHWEST)
This photograph shows most of the north elevation of the Arnold House prior to its relocation on the site. At the bottom is an enlarged portion of this photograph of the Arnold House. Note the open leaf of the door shutter and the white porcelain door knob.

Courtesy of the Lownik Library, Illinois Benedictine College, Lisle, Illinois.

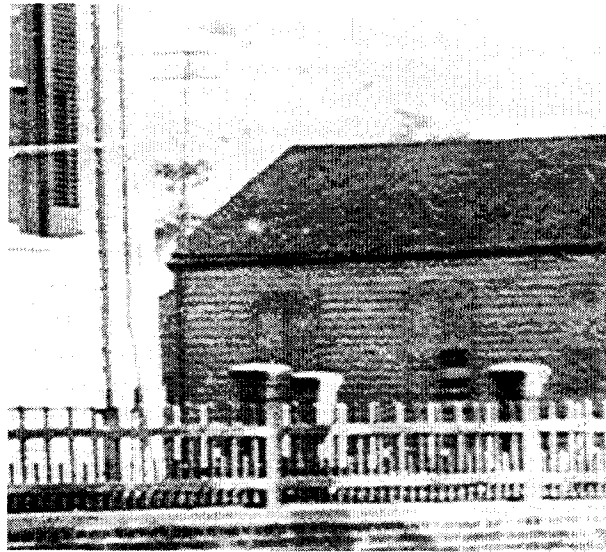
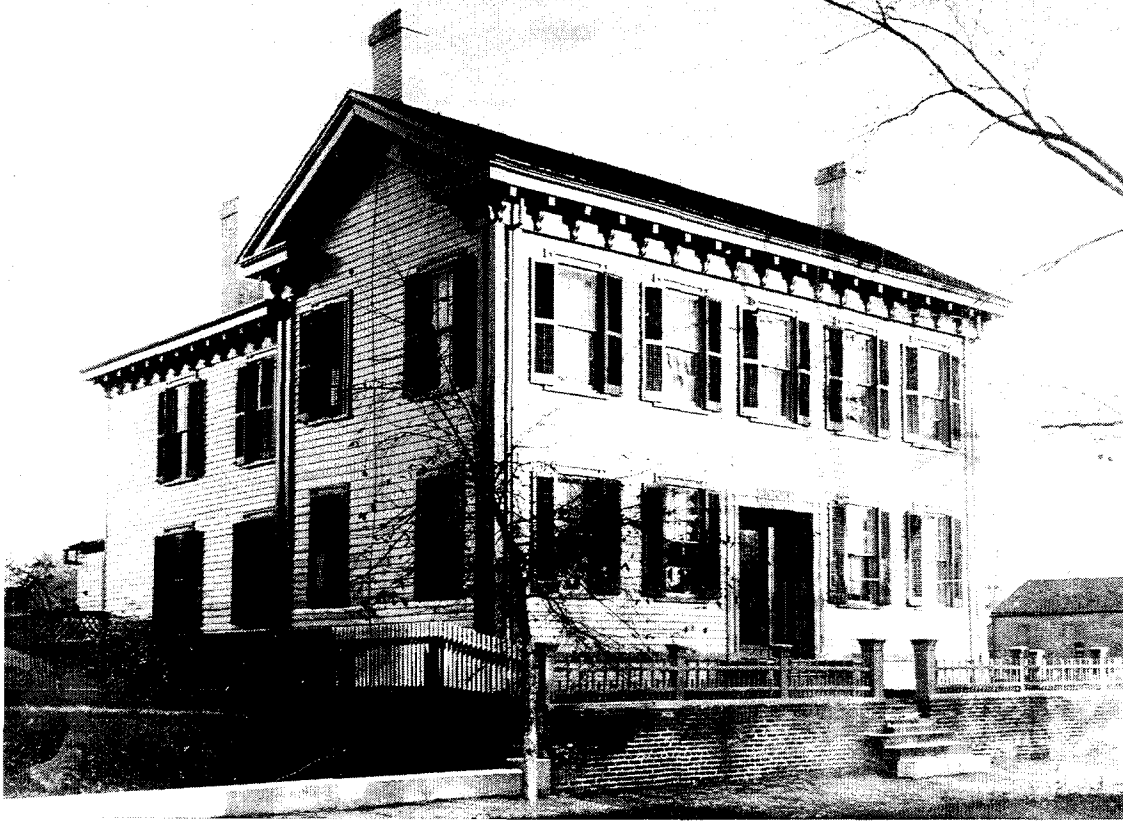
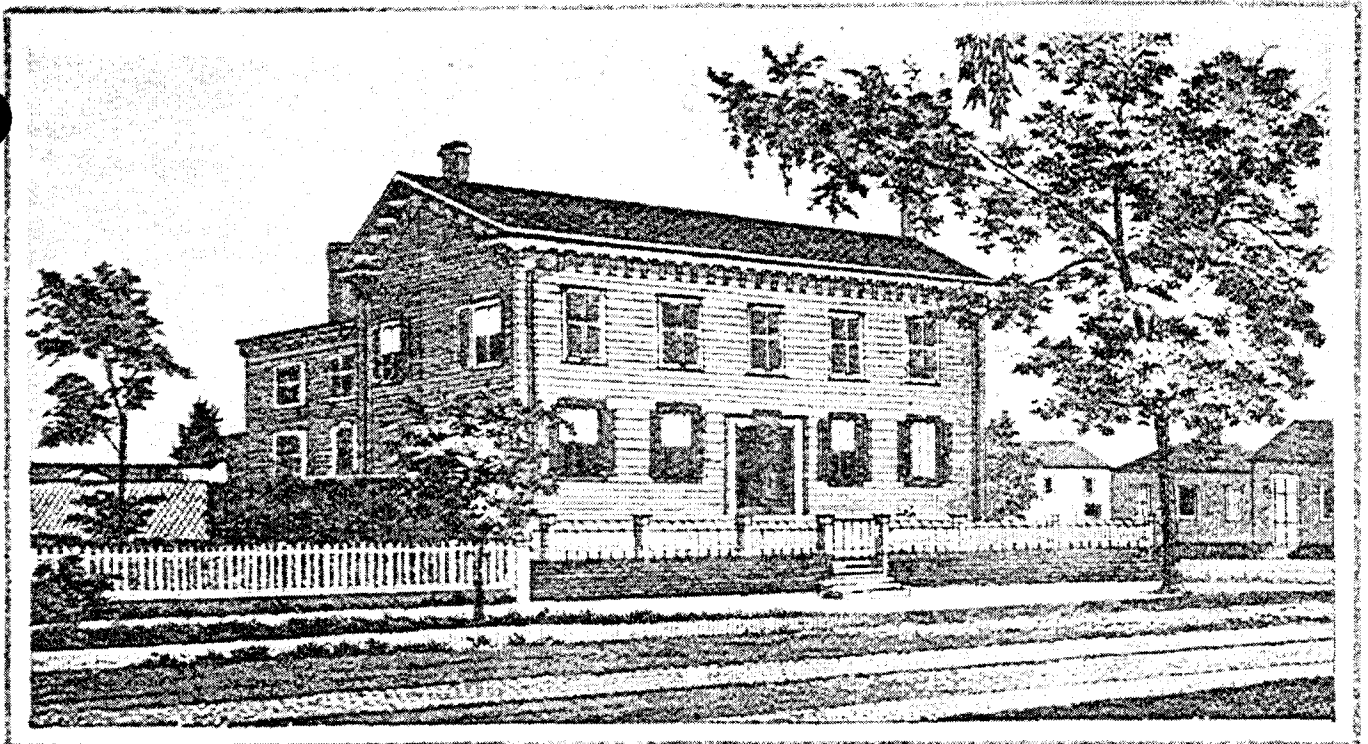


FIGURE 2.18: UNDATED PHOTOGRAPH (FROM THE NORTHWEST)
This photograph shows most of the early east addition to the Arnold House.

Courtesy of the Illinois State Historical Library.



LINCOLN'S RESIDENCE.



FIGURE 2.19: UNDATED RENDERING (FROM THE NORTHWEST)

Despite obvious perspective problems, this postcard rendering gives some evidence of the Arnold House character prior to 1900. At the bottom is an enlarged portion of this view of the Arnold House.

Courtesy of the Illinois State Historical Library, Springfield, Illinois.

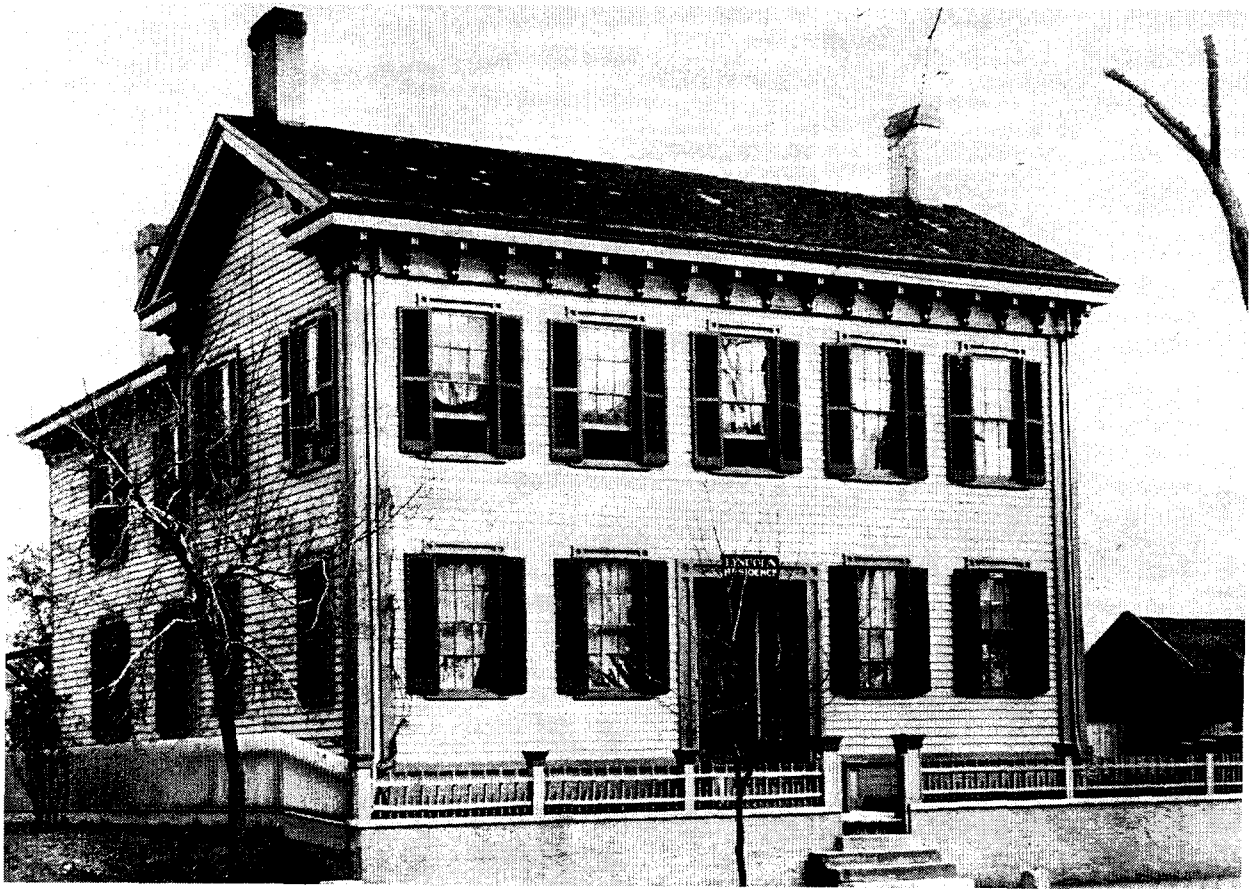


FIGURE 2.20: Circa 1895-1900 PHOTOGRAPH (FROM THE NORTHWEST)
In this photograph of the Lincoln Home, the east yard of the Arnold House can be seen at the right-hand side. At the bottom is an enlarged section of this photograph.

Courtesy of the Illinois State Historical Library, Springfield, Illinois.

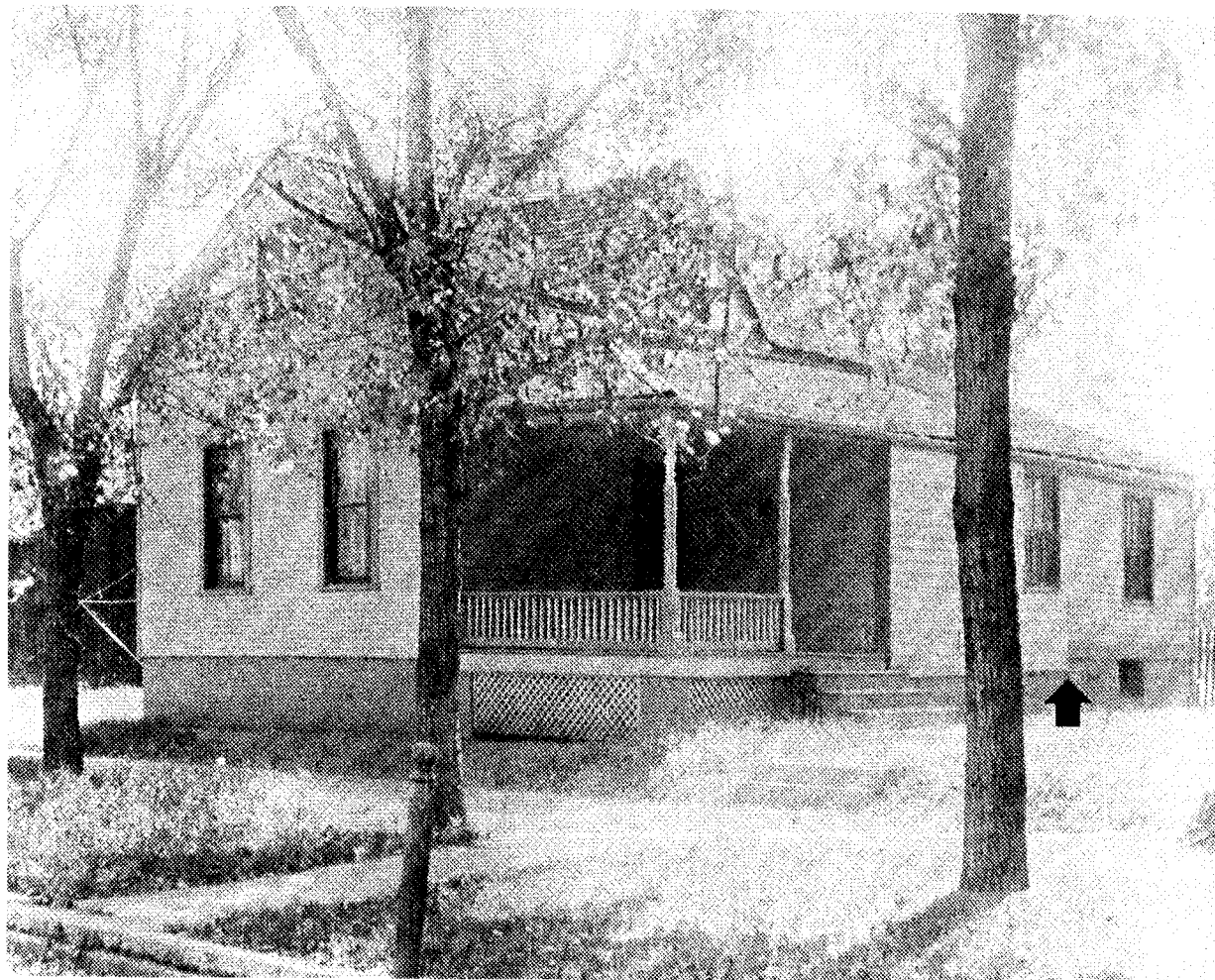


FIGURE 2.21: 1916 PHOTOGRAPH (FROM THE NORTHWEST)

This photograph of the Arnold House shows the house after it was relocated toward the rear of the lot. The house, relocated in 1900, was turned ninety degrees so that what is the north elevation in this view was the west elevation previously. The limits of the house seen here to the change in the siding height (see arrow) at the west elevation, represent the portions of the house that was relocated intact. The remaining portions seen in this photo were constructed using salvaged lumber. This salvaged lumber may have been from the additions to the original house at the previous location. Note added dormer and dormer windows.

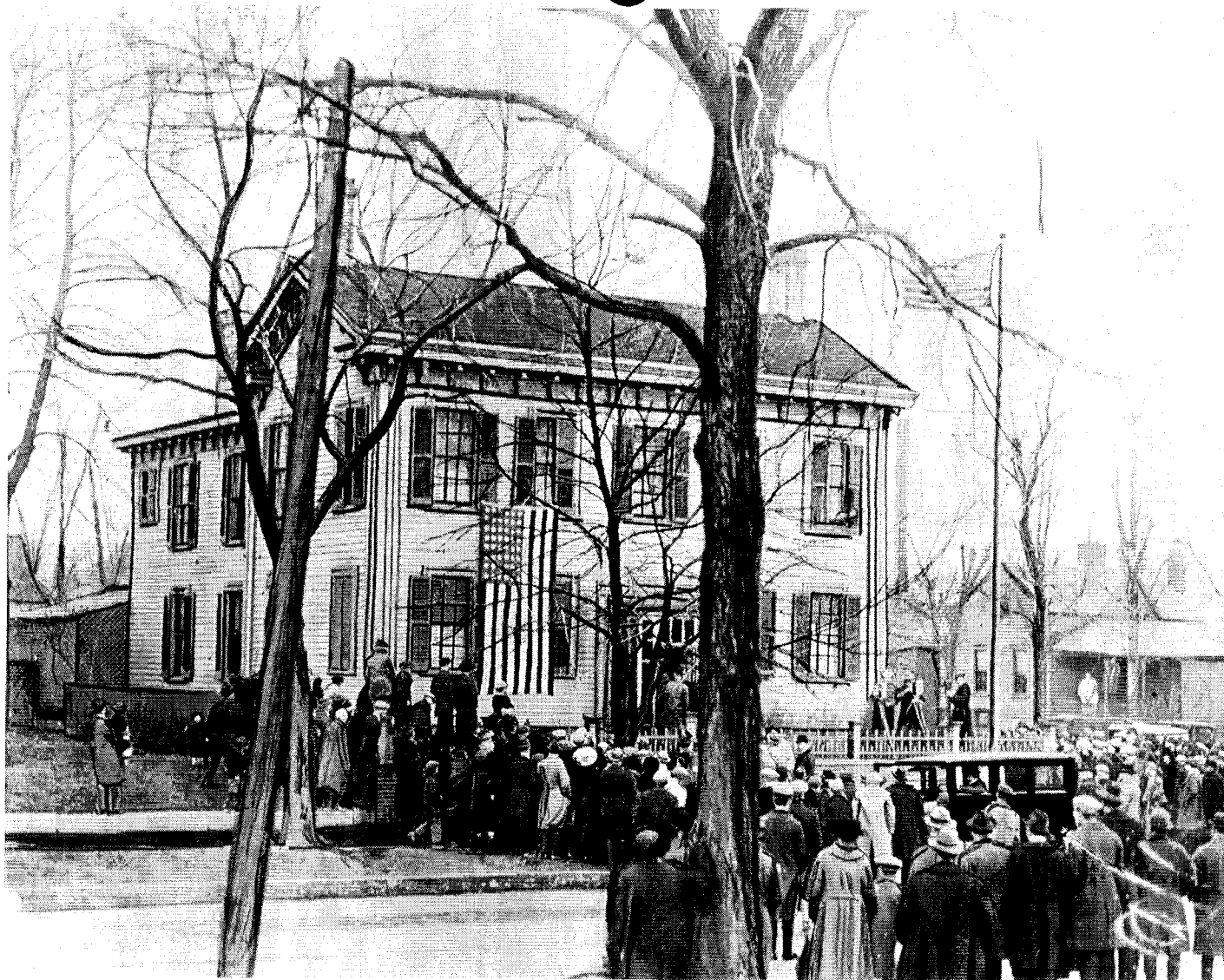


FIGURE 2.22: Circa 1920 PHOTOGRAPH (FROM THE NORTHWEST)
The Arnold House is seen at the right-hand side of the photograph.

Courtesy of the Illinois State Historical Library, Springfield, Illinois.



FIGURE 2.23 EARLY 1970's PHOTOGRAPH (FROM THE NORTH)
This photograph of the Arnold House was taken after the Lincoln Home National Historic Site was authorized. Note the close proximity of the Rebecca Cook House at 500 South Eighth Street.

Courtesy of Lincoln Home National Historic Site, Springfield, Illinois.



FIGURE 2.24 REBECCA COOK HOUSE AT 500 SOUTH EIGHTH STREET (FROM THE SOUTHWEST)
This photograph of the Rebecca Cook House (circa 1900) was taken after the Lincoln Home National Historic Site was authorized. This house was demolished by the National Park Service after 1978.

Courtesy of Lincoln Home National Historic Site, Springfield, Illinois.

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49. Ibid.
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87. Rendering, Undated, (Library Collection, Illinois State Historical Library).
88. Photograph, 1916, (Grace Lutheran Church).
89. Photograph, circa 1920, Lincoln Home, Springfield Post-1905. (Library Collection, Illinois State Historical Library).

Introduction
Site Conditions
Site Fencing
Non-Extant Historic Barn
Privies and Other Outbuildings
Porches and the Attached Shed
Foundation
Structural Systems
Roof Systems
Building Envelope
Exterior Doors
Windows
Fireplaces and Chimneys
Interior Stairs
Interior Doors
Interior Finishes
Plumbing Systems
Mechanical Systems
Electrical Systems
Communication Systems
Security Systems
Existing Conditions Photographs
Existing Conditions and Fabric Analysis Endnotes

EXISTING CONDITIONS AND FABRIC ANALYSIS

DIVISION III

EXISTING CONDITIONS AND FABRIC ANALYSIS

INTRODUCTION

The Arnold House, as it stands today, is a piecemeal collection of parts representing numerous additions constructed since the 1840s. The house, a single family residence from 1840 until the early twentieth century (when boarders began to appear listed at this residence),¹ was relocated from the front of the site to the rear of the site in 1900. By 1940 the house was converted into four apartments (sometime later a fifth apartment was added), undergoing an extensive remodeling which included: enlarging and reconfiguring the floor plans; near-complete replacement of interior finishes; installation of new doors, windows and trim; new mechanical systems; and installation of a brick veneer. Today, the house stands little changed from this remodeling. Although relatively few areas of historic finishes remain in place, the structure itself is in relatively good condition. A variety of methods were used to study this house, each with its own successes and shortcomings. One method which was not that successful was historic photograph scanning. The primary reasons for this method's poor results were a lack of clear photographs with sharp crisp edges, a lack of complete dimensional understanding of any element seen in the historic photographs, and an incomplete understanding of the exact location of the house on the property.

SITE CONDITIONS

The Arnold House was originally located at 500 South Eighth Street on Lot 1, Block 11 of the Iles Addition to the City of Springfield, Sangamon County, Illinois. The north facade of the house sat on the property line, while the west facade sat 16'-0"± from the west property line.² The house underwent

several additions to the south and east sides until 1900, when portions of the house were lifted, rotated clockwise 90 degrees, and relocated toward the rear of the site. A second house was built at the front of the site and given the address 500 South Eighth Street (see Figure 2.24). The second house was demolished by the National Park Service in 1978. Today, the Arnold House is within the boundary of the Lincoln Home National Historic Site.

Little evidence is available to suggest the topography of the lot prior to the twentieth century. It is possible that the site has been filled with soil from basement excavations, but it is unlikely that this specifically impacted the site grade. Historic photographs, coupled with field investigations, suggest that the first floor elevation was approximately 2'-8" above the north grade. This is suggested by the number of steps leading to the front door, the relation of the top tread to the siding, and the known construction of the house. Today, the lot is generally flat, slightly dropping off at the north property line. The existing first floor is 3'-0" ± above the current grade.

The lot is generally level throughout the site and immediate area, with a gentle slope toward Eighth Street, and a slightly steeper slope at the west end of the property towards East Jackson Street. The lot is well drained by the site slope. Slight valleys have formed at the roof drip line, but the drainage has not undermined the existing foundations.

There is little evidence of the early vegetation on the site. Two twentieth century photographs indicate at least three trees stood in the curb yard along Jackson Street. These trees appear to be similarly located to the present trees and these may, in fact, be one and the same (see Figures 2.21 and 2.22). Two major trees currently exist on the site: one mulberry to the immediate east of the house near the southeast corner, and a Chinese elm at the alley near the southeast corner of the lot. According to Robert R. Harvey's 1982 report, the Chinese elm is in fair condition, but, it is a non-historic species, while the historically

appropriate mulberry is in poor condition.³ There are several unidentified shrubs to the east of the house along the boardwalk and north fence. There is also a shrub at the immediate west of the west porch. The site is flanked on the curb yards by numerous trees which vary in type. Harvey's report lists all but one of these trees as historically appropriate to the neighborhood.⁴

Historic photographs indicate a closed-riser, four-tread wood stair at the north door of the 1840 cottage (see Figure 2.14). This stair apparently ends immediately south of the wood boardwalk parallel to Jackson Street. There is no other evidence of the earliest paving (walks, drives, etc.) on the lot. The earliest evidence is a twentieth century photograph showing a concrete walk and two steps leading up to the wood stair at the west porch. This walk abuts the street sidewalk and continues again north of the sidewalk to the curb at Jackson Street (see Figure 2.21).

Presently, there are boardwalks at the east and west sides of the house and these were installed at the same time as other boardwalks throughout the park. These boardwalks are in poor condition. The boardwalks running parallel to Eighth and Jackson streets were replaced in 1992.

The lot, almost certainly, would have had a well and/or cistern; however, there is no readily visible evidence of either. Archeological investigations suggest a possible cistern location near the northwest corner of the house under the boardwalk at the west porch.⁵

SITE FENCING

Although nothing remains of the historic fences, photographs provide some limited evidence of these fences. One photograph shows portions of the fence, at the north property line, extending between the barn and the house. This fence is a tall, simple, white, vertical board fence. The vertical boards are set close together and, despite some apparently leaning boards, the fence appears to be in

good condition (see Figure 2.13). Although it is not confirmed in this photograph, it seems likely that, if one side of the rear yard were fenced, the entire rear yard would have been fenced.

The present fences are two types. The north and west fence is a low (2'-6"±) square picket and rail fence. The west fence sets on the property line; however, the north fence sets approximately 3'-0" north of the property line. There is a section of vertical board fence (4'-0"± tall) at the western end of the south property line. The remainder of the property is not fenced. The existing fences are in fair condition.

NON-EXTANT HISTORIC BARN

Evidence of the historic barn is found only in photographs, historic maps, and archeological survey reports. Historic maps indicate a barn once stood in the extreme northeast corner of the lot at the property lines. Early city maps and panoramic views show a rectangular barn (the length extended along the east/west axis) with a gable roof (see Figures 2.1 through 2.5). Later, Sanborn maps show a square structure at the northeast corner of the lot. This structure is indicated to have one, and sometimes two stories. Most likely, it was one story with a loft (see Figures 2.6 and 2.7). Historic photographs (see Figures 2.12 and 2.13) show a structure in a similar location with similar proportions to that indicated on the Sanborn maps. Analysis of these photographs provides a significant amount of information regarding the character of this gable roofed structure. The obvious vertical lines on the wall surfaces indicate that the barn had board and batten siding with approximately 24 boards on the north elevation. There are approximately 22 boards on the west elevation, 8 or 9 boards south of the peak (see Figure 2.13) and approximately 13 or 14 boards north of the peak (see Figure 2.12). The siding boards are approximately 8" wide on these elevations. This difference in the number of boards on either side of the peak suggests that the

peak is off-center. Graphic analysis has determined that the roof peak sat approximately 7'-0" north of the south face of the barn and had a 6-in-12 roof slope. The off-center roof suggests that the barn may have originally been narrower than that seen in the photographs. It is possible that an addition was made to the north side of the building and as a result, the north roof plane was extended over that addition maintaining the roof slope; however, this is only conjecture. There are four small holes seen in the siding near the eave at the peak of the gable end. There is also a small square window slightly off-center on the north elevation of the barn. The north elevation is approximately five-and-a-half times as tall (from the eave to the bottom of the siding) as the vertical dimension of this window. This window is approximately as wide as two siding boards. It is possible that there was a similarly located window on the south wall; however, there is no visual evidence of this condition. Figure 2.13 seems to indicate a door at the south side of the west wall of this barn. Two heavy vertical lines (one slightly offset from the roof peak and one to the south of that, approximately two siding boards from the south end) and a change in the shading of the wall surface on the photograph creating a horizontal line, hint at a possible door from the east yard into the barn. It is likely that there was a carriage door at the alley-side of this barn; however, this is not seen in any documentation.

Archeological investigations in the northeast corner of the lot did yield some useful information about the original barn location. Archeologist Vergil E. Noble and his staff uncovered a remnant of a brick pier footing and a wood sill located approximately seven meters south from the existing north fence (approximately six meters south of the property line) and two meters west of the alley.⁶ If the barn sat directly on the property line historically, and this is in fact a sill from the barn, then the barn would be approximately 18'-0" wide at the west and east ends.

The ground at the alley has apparently not been disturbed and further archeological investigations might yield additional evidence of the barn's actual footprint.

PRIVIES AND OTHER OUTBUILDINGS

Only one photograph provides any visual evidence of the privies associated with the Arnold House. The privy seen is a small, slightly rectangular structure with a gable roof. There is a small door centered on the west elevation, with a small window-like opening. The privy sets off of the southwest corner of the barn and the gable ends face north and south (see Figure 2.3).

Archeological investigations revealed evidence of two privy pits. The first pit was located three meters directly east of the present northeast porch near the location where the west facade of the barn would have been. Its proximity to the barn location suggests that this pit may pre-date the barn's construction. The second pit was located at the alley immediately south of the revealed barn sill and pier footing.⁷ Neither location matches what is seen in the photograph.

The only other outbuilding associated with the Arnold lot is the outbuilding at the south end of the attached shed indicated on the 1854 (Figure 1.2) and 1858 (Figure 2.2) City of Springfield maps and the 1884 (Figure 2.5) and 1890 (Figure 2.6) Sanborn maps. This outbuilding was probably a summer kitchen or wash-house. The 1896 Sanborn map (Figure 2.7), apparently shows this building relocated to the southwest corner of the lot. This outbuilding is shown with vertical batten-and-board siding in Figure 2.20. By 1917 the barn was significantly enlarged (see Figure 2.8) and, by 1940, this outbuilding had been removed from the site. Limited archeological investigations revealed no evidence of this outbuilding.

PORCHES AND THE ATTACHED SHED

The earliest evidence of the attached shed is seen on the 1854 and 1858 City of Springfield maps and the Koch panorama (see Figures 2.1, 2.2, and 2.5). It is not clear that what is being seen is an attached shed until the historic photographs and the Sanborn maps are considered. Photographs indicate a steep roof line (lower than the adjacent roof) and a door or gate at the north endwall of a shed-roofed addition. The Sanborn maps indicate that this addition was open at the east elevation until 1896 (see Figures 2.5 - 2.7). This feature no longer exists, and was probably demolished when the house was relocated on site in 1900.

The earliest evidence of porches on the house is on the 1896 Sanborn map; however, as discussed in the *Historical Documentation Section*, these porches likely existed as early as 1884. Two porches are indicated: one at the southwest corner of the house, and the second in the middle of the south elevation (see Figure 2.8). The porch at the southwest corner was apparently rotated and relocated with the 1840 cottage in 1900. This porch is seen in two twentieth century photographs, as well as the later Sanborn maps (see Figure 2.9 - 2.11, 2.21, and 2.22). This porch, the present west porch, stands today; however, its wood railing and column were replaced with brick when the exterior was veneered. This porch is in fair condition.

There is another porch seen at the southeast corner of the house on the 1917 Sanborn map (see Figure 2.9). This porch was probably demolished when additions were made to the east side of the house in circa 1940. No evidence remains of this porch.

With the exception of the west porch, all of the present porches date to the twentieth century. These porches were probably constructed at the entrances to the apartments created by the circa 1940 renovations. The south porch is a reconstruction done by the park's staff in 1988, and is in good condition. The east porch, on the other hand, is in poor condition since some of the floor boards are

springy, probably due to water damage as a result of poor drainage. The north-east porch is in poor condition.

FOUNDATION

Nineteenth-century photographic evidence suggests that the top of the brick foundation walls were 2'-0" above the grade at the north elevation of the Arnold House (see Figure 2.14). Apparently, only photographic evidence indicates the earliest foundations associated with the house. Archeological investigations throughout the area where the house originally stood located no nineteenth century foundations.⁸

All of the present foundation walls are brick and date to, or post-date, the 1900 relocation of the house. The earliest foundation walls are at the fireplace, at the west porch, at Rooms 001, 002, 004, and 005, and at the northern-most portions of Stair S2. Analysis of mortar samples taken in those areas (no sample was taken at Stair S2) found these mortars were all similar. Although not sampled, the mortar at portions of Stair S2 appears to be similar to that which was tested and likely dates to the same construction period. There is a chimney and wall foundation, previously removed to the floor, which dates to the earliest existing foundations. This is verified by the mortar analysis.⁹ More recent foundations are found at Rooms 004A, 003, 007, and 008, the remaining three porches, and at the southern-most portions of Stair S2. These foundations adjoin the previously existing foundations with butt-joints, which suggests that they are additions. This is substantiated by evidence in the Sanborn maps.

The foundation-bearing walls are two wythes of brick with a 9"± thickness; however, the walls are thicker where the late face brick has been added. The bottoms at two of the foundation walls have been exposed at the north and west walls of Room 001. These walls are 48" and 42", respectively, from the bottom of the sill beam to the bottom of the wall. There is no evidence of any footings at

the base of these walls (see Figure 3.15). The north wall of Room 002 has been purposely demolished to allow for some twentieth century structural reinforcement added to the floor above. The west end of the north wall of Room 005 and the center portion of the north wall of Room 001 show obvious evidence of large patches made at the walls, probably following a failure of the wall.

Despite the age of the foundation walls, they are in generally fair condition. Although there are no cracks in the walls, there are substantial areas of deterioration in the mortar joints. The entire upper half of the south wall of Room 005 has a noticeable outward bow. There is one small hole in the foundation wall beyond which soil is seen and there is some limited vegetation growth in this hole. However, this hole does not appear to be undermining the wall. The whitewash is flaking off the exterior and crawl space foundation walls, while adhering to the interior walls, suggesting that there is some moisture migration through the existing walls.

STRUCTURAL SYSTEMS

There are no historic photographs of the structural systems; however, the house's construction can be understood by studying the existing conditions of the house. The walls of the 1840 cottage (the story-and-a-half portion of the house), the oldest remaining, are a combination of braced framing and balloon framing. Braced framing construction is seen in the timber corner post, the intermediate timber post in the sidewalls, the heavy timber sills with mortises for the studs, and the nearly square diagonal bracing at the post. Balloon-framed construction is evident by the load-bearing studs (although these are fairly heavy for balloon framing) rising the full height of the walls, the ledger board notched into the studs at the second floor joist framing, and the 1" thick exterior sheathing. This mix of framing types is likely a consequence of the experience of the carpenter and the

change from the general use of braced framing to the use of balloon framing which occurred around this time.

There is no evidence of the framing at the east addition and the attached shed seen in Figures 2.14 - 2.19. It is likely that the east addition was braced frame construction; however, this is only speculation. Since it is seen to be open at the east end on the 1884 Sanborn map (see Figure 2.6), it seems probable that a post and beam system was used to construct the attached shed.

The construction of the nineteenth century additions at the south side of the house are not seen in period photographs; however, early twentieth century photographs (see Figures 2.21 and 2.22) apparently show surviving portions of these additions after they were relocated on-site. These additions were likely brace-framed or platform-framed; however, this is conjectural. The floor framing at the southwest porch (pre-1900) apparently still exists under the present west porch. It is not clear if the porch posts seen in the photographs are original to the porch or a later addition. The post-1900 south addition is constructed with salvaged lumber which may have come from the pre-1900 east or south additions made to the house. Among the salvaged lumber are sill beams, floor and ceiling joists, and studs. The circa 1940 renovations were constructed using a variety of platform framing techniques.

There are several areas of salvaged lumber used throughout the house as blocking for nailers, and even structural members. Some of the salvaged lumber, mostly blocking and nailers, is charred, indicating that the building from which this lumber came had burned. One floor joist at Room 105 has evidence of charring. The charring mark pattern indicates that this joist had previously been installed with the current bottom facing up and, further, these marks indicate that other joists had, at one time, framed into this member (see Figure 3.13). It is also possible that this framing was salvaged from portions of the Arnold House which were not relocated on site in 1900. It is possible that a fire in the eastern-most

portions of the pre-1900 Arnold House precipitated the demolition of these additions and prompted the relocation of the house.

The walls at the 1840 cottage consist of original studs that are generally $2\frac{3}{4}$ " x 4" at 16" o.c.; however, the stud spacing varies from 12" to 21" o.c., while the stud width varies from $2\frac{1}{2}$ " to 3". These studs are mortised into an ax-hewn $9\frac{1}{4}$ " x 11" sill beam which surrounds the perimeter of the 1840 cottage. Several studs from different periods are used as blocking in these walls. One inch thick wide-board oak sheathing surrounds the present north and south sides, and half the east sides of the 1840 cottage. The sheathing has been removed at the present west wall. A continuous 1" x 5" ledger board is let into the sidewall studs 7'-8½" above the top of the sill beam. The sidewalls are capped off with a 3" x $3\frac{3}{4}$ " top plate.

There are $3\frac{3}{4}$ " ± x $7\frac{1}{2}$ " ± timber posts at the corners and in the sidewalls, approximately 13'-8" south of the present north wall. The corner post at the southwest corner has been partially shaved back to provide a smooth wall surface at Stair S1, while the intermediate post at the east wall has been removed to approximately 7'-0" above the floor. These posts are diagonally braced with $2\frac{3}{4}$ " ± x 4" ± braces which are tenoned into mortises in the posts and secured with the trenails (see Figure 3.19). Originally, each corner post was braced with two diagonal members travelling in the walls, while the intermediate posts were supported by two diagonal members at either side of the post. With the exception of the braces travelling north from the present south end corner post, this diagonal framing still exists, in some form, at the corners. The intermediate post at the west wall has only a remnant portion of the south diagonal brace remaining. The corner posts (see Figure 3.27), and possibly the intermediate posts, are apparently tenoned into mortises in the top plate and secured with trenails. The walls at the existing one-story additions are constructed of a variety of platform framing techniques.

The floors in the crawl spaces are earthen. The floors in Basements 002 and 005 and in Stair S2 are concrete and basically level.

The floor joists vary widely in size with dimensional lumber in the oldest portion of the structure and nominal lumber in the areas of the later additions.

Table 3.1 indicates a size breakdown for the joists and their approximate chronological order.

TABLE 3.1 CHRONOLOGY OF THE FLOOR JOIST FRAMING

ROOM NUMBER & NAME	SIZE OF JOIST		CHRONOLOGICAL ORDER
	WIDTH	DEPTH	
101, 101A, 101B, 101C, 101D and 101E	Varies 1¾" to 2½"	Varies 6¾" to 10"	1840*
102, 102A, 102B, 102C, and Portions of Stair S1	Varies 2" to 2¼"	Varies 7" to 8"	1840
104 (excluding west 5'-6") 104A & Portions of Stair S1	2" (nom.)	8" (nom.)	1884**
104 West 5'-6" 104 & 105	2" (nom.)	8" (nom.)	circa 1940
105 (excluding west 5'-6") 106, 106A and west ell of 107B	Varies 2" to 2¾"	Varies 9" to 11"	1900***
107, 107A, 107B, and 107C	2" (nom.)	8" (nom.)	circa 1940
108, 108A, and 108B	2" (nom.)	8" (nom.)	circa 1940
201, 202, 202A, 202B, 202C, 202D & 202E	2" ±	9½" ±	1840****

* Twentieth-century lumber has been installed to enclose the former chimney/hearth and the former interior basement access opening.

** The limits of this portion of the house are seen on the 1884 Sanborn; however, this portion of the house has since been rebuilt with twentieth-century, nominally-sized lumber.

*** Built with salvaged lumber possibly from the pre-1900 Arnold House.

**** These floors have been supplemented with twentieth-century nominal framing.

As part of this report, wood samples were taken from the house and its structure. Laboratory testing of the samples revealed the use of sycamore (*Platanus* sp.) as the wood type for the first floor joists and roof rafters in the 1840 cottage.¹⁰ The use of sycamore seen here is unique within the park. It is possible that sycamore, a fairly dense

and heavy wood, was used in this region; however, there is no known documentation of other examples.

The ends of the first floor joists in the 1840 cottage are pocketed into the perimeter sill beam. The span of these joists is divided in half by two steel beams end-butted to each other. These steel beams rest on round steel columns, the north foundation wall, and the surviving portions of the chimney foundation. The steel beams are late additions which apparently replaced an earlier wood beam evidenced by notches in the bottom of the existing joists. Several joist ends near the chimney foundation have been cut back and now rest atop round steel columns. There are a series of original headers framing the opening for a non-extant chimney/hearth opening. Twentieth-century framing has been used to infill the chimney/hearth and basement access openings.

The joists at Rooms 105, 106, and 106A are divided into two bays of joists. The ends of both bays are pocketed into sill beams, $6\frac{5}{8}$ " x $8\frac{3}{4}$ " and $6\frac{1}{4}$ " x $7\frac{1}{2}$ " at the east and west ends, respectively. The south wall sill beam is $7\frac{3}{4}$ " x 6". Where the two bays meet, the joists are notched into a double $1\frac{3}{4}$ " x $11\frac{1}{2}$ " header supported on a steel column at mid-span. Each bay has the same joist spacing, $25\frac{1}{2}$ " \pm , and bear side-by-side at the double header.

The joists at Rooms 108, 108A, and 108B bear on a built-up ledger adjacent to the west foundation wall and on a box sill at the east foundation wall. There are similar bearing conditions at Rooms 104, 104A, and the west 5'-6" \pm of Room 105 (see Figure 3.16). The joists at Room 107, 107A, 107B, and 107C rest on a box sill at the south foundation wall while, at the north end, these joists rest on a box sill at the foundation wall and on a double header set atop a mid-span brick pier.

Cross-bridging exists only at the newest floor framing; however, the short spans at Rooms 104, 104A, and the west of 5'-6" of Room 105 do not have cross-bridging. The evidence of a historic wood beam at mid-span of the 1840 cottage

might explain the lack of cross-bridging in this area, since the wood beam would have reduced the span, bracing the joists and eliminating the need for cross-bridging. The lack of cross bridging at Rooms 105, 106, and 106A is inexplicable; however, none appears to have been installed at this area since the house was relocated.

The sub-floor at the first floor of the 1840 cottage is 1" x 5½" red oak boards.¹¹ The framed openings have been infilled with 1" x 3¼" boards. The sub-floors at Rooms 104, 104A, the west 5'-6" of Room 105, 107, 107A, 107B, 108, 108A, and 108B consist of 2 x 10 nominal boards. At Room 105, the sub-flooring consists of 1" x 3¼" boards. All the first-floor floors appear level despite some areas which have been significantly built-up.

The second-floor joists, identified as white oak, rest on the ledger board.¹² Physical evidence seen in the field suggests the joists are nailed to the balloon-framed studs; however, this has only been visually confirmed at one joist. There are some serious structural integrity concerns in the framed opening at the location of a former chimney and second floor hearth. One full-span joist, into which two headers frame, has been notched out to a depth of 2½" for approximately 4'-6". This framing was probably part of a second floor hearth framing. The brick chimney stack may have had a shelf upon which this notched area rested. There are slight notches, or saddles, in the ledger along the west wall of Hall 202A at Stair S1, indicating that the second floor framing once spanned the existing stair opening. The sub-floor at Room 201 is 7⁄8" x 5³⁄₈" boards, while the sub-floor at the south end of the second floor is ¾" x 5¼" boards dating from the twentieth century. The floors at the second floor have an approximately 10 percent slope from the high point at the east to the low point at the west.

Many of the individual components of the structural system are in generally good condition; however, the system itself can only be considered in poor condition. The notched ends of the joists at the perimeter sill beams is the primary

reason for the low live load capacities calculated for the structural systems. A few horizontal splits were observed emanating from the notches at some joist ends. These splits, a common phenomenon in joists notched in this manner, are caused by the stress riser condition created at the corner of the notch. The existing first floor structure system at the 1840 cottage has been calculated to have a 12psf allowable live load.¹³

Although the second-floor joists have a greater live load capacity, calculated to be 24 psf,¹⁴ failure of the nails which tie the joists to the balloon-framed stud have apparently allowed the sidewalls to bow out at their centers. Consequently, the roof rafters have been allowed to spread, causing a sag in the roof ridge. Also at the second floor, the poor framing conditions at the chimney/hearth opening have left this area of the structure extremely vulnerable to failure.

Alterations to, and removal of, the diagonal bracing has weakened the lateral stability of the house in general and has contributed to the structure's generally poor condition. The sheathing which has been removed from the present west wall of the 1840 cottage has altered and weakened the balloon-framed studs at this sidewall.

The existing structural system has some indications of insect and water damage. Portions of the sill beams at the southeast corner of Room 005 near Door 005A sounded hollow when tapped, and when probed, had evidence of termite or carpenter ant damage. There is extensive bore beetle damage in the sill beam at Room 002, near Window 002A, and in the western half of the north sill beam at Crawlspace 001. There is also evidence of water damage at the west end of the partial sill beam at the south wall of Room 005. This area of damage is near the location of the south porch and is probably caused by poor drainage at the south porch or adjacent door sill. Most likely the damaged areas noted do not define the extent of insect and water damage in the house; however, they do

serve notice of the possible discovery of more damaged areas as Title III services are undertaken.

ROOF SYSTEMS

Historic photographs, maintenance documentation, and the physical conditions of the roof of the 1840 cottage indicate that this was always a gable-ended roof, originally finished with wood shingles. The original shingles were 7¼" and wider, 16" in length, and laid-up with a 5" exposure to the weather.¹⁵ The original sycamore roof rafters and original wide sheathing boards still remain in place (see Figure 3.30). The use of sycamore for structural framing is apparently unique in the park and probably fairly uncommon in the city. Nineteenth-century photographs indicate a wood-shingled gable roof over the east addition, with a shed-roofed structure backed up to this addition (the attached shed). The roof material at the attached shed is not known, but was probably wood shingles. Figures 2.14 and 2.16 provide evidence of the early roof drainage system of the house. The gutter seen at the north eave of the 1840 cottage empties into another gutter at the eave of the lower, one-story, east addition roof. These finally drain out through a downspout at the northeast corner seen here. These gutters appear to be hung on the eaves with metal straps (see Figure 2.16). It seems likely then that the gutters and downspouts were also metal.

The conditions and history of the roof at the nineteenth-century additions to the south side of the house are not clearly understood; however, early twentieth-century photographs (see Figures 2.21 and 2.22) may provide some evidence of these roofs. Since the current west porch and portions of the house immediately adjacent to the house were apparently relocated with the 1840 cottage in 1900, it is likely that the wood-shingled, hipped-shed roof seen here represents the roof configuration of those additions. Half-round, metal gutters are seen in these photograph at the eaves of the porch and the one-story portions of the west

elevation. Figures 2.21 and 2.22 also provide the first visual evidence of the roof dormers which were likely added to the house when it was relocated on-site.

These twentieth-century photographs also provide some evidence of the roof construction at the south additions made to the house after its relocation in 1900. (These additions correspond to the foundation walls at Room 005.) This wood-shingled roof, apparently a gable with the peaks travelling north and south, has the same slope as the one-story additions in the foreground of these photographs.

The roof slope of the one-story addition was likely flattened as part of the circa 1940 renovations. A roll-type composition roof was apparently installed over the flat portions of the roof. Also at this time, it is likely that the wood shingles on the roof of the 1840 cottage were covered with three-tab asphalt shingles. Sometime later a rolled-roof and a second layer of three-tab shingles were used to finish the roof. Finally, in 1984/1985, the Park maintenance staff removed the existing roofing and installed new mineral-composition rolled roofing. As part of this work, the roof deck at the roof dormers was also replaced.¹⁶ Today the roof remains little changed from its circa 1940 appearance.

The roof structure of the 1840 cottage consisted of $3'' \pm \times 3\frac{5}{8}'' \pm$ rafters at 1'-5" o.c. with $1'' \times 5'' \pm$ collar ties 2'-9" below the ridge line. There is no ridge board. The rafters are birds-mouth notched to rest on the $3'' \times 3\frac{3}{4}''$ top plate at the side walls. The force transferred through the roof rafters has pushed the walls outward, causing a sag at the center of the roof ridge. Contributing to the sag is the apparent failure of mechanical connections between the second floor joist and the balloon-framed wall studs. The roof has been calculated to have only an 18 psf bearing capacity.¹⁷ The original wide-board sheathing is still largely in place; however, the National Park Service installed a plywood sheathing over the original boards in 1984. The condition of the roof dormer construction is unknown;

however, the Site's maintenance staff did replace the board sheathing with plywood in 1984-85.

The flat-roof portions of the house are constructed with a mix of nineteenth and twentieth century lumber. The age and birds-mouth notched ends of some of the rafters and joists suggests that this lumber was salvaged from other roofs; perhaps from the earlier pitch-roofed additions made to the house and seen in the historic photographs. The flat roof joists appear to be structurally sound; however, the deck has numerous sags and there are several areas on the roof where water stands. The roof over the south end of Room 108 has severely damaged decks and a serious leakage problem.

Although the roof at the 1840 cottage is well-drained and has no apparent water damage, it can only be classified as being in poor condition due to the sag at the ridge and the associated problems. This roof is very serviceable and can be repaired. The flat roof at the one-story additions to the house are also in poor condition; however, this condition is of little consequence since these roofs do not date to the historic period, and thus will not remain in place.

BUILDING ENVELOPE

As would be expected, the house was finished with clapboard siding when it was first constructed. Although the indistinct nineteenth-century photographs provide only limited indications of the original clapboard siding, physical evidence discovered during the field investigations provide a wealth of information, some of it rather peculiar. Selective removals of portions of the twentieth-century brick veneer on the north facade revealed the nineteenth-century clapboard siding behind (see Figure 5.4). This siding has a $3" \pm$ exposure to the weather and is installed over a 1" thick wide-board sheathing. Wide-board sheathing at the west wall of Room 108 (formerly the exterior north facing wall of the 1840 cottage) has evidence of a cut nail pattern with $3" \pm$ between each horizontal line of nail holes.

This condition is evidence of the siding's attachment to the sheathing, which suggests the nineteenth century siding at this wall had a 3"± exposure to the weather. Existing nineteenth century siding and a cornerboard (see Figure 3.17) at the face of the north sill beam at Room 005 (formerly the east elevation of the 1840 cottage) provide limited evidence of a 4¼"± siding exposure. Above, at the 1" thick wide-board sheathing in the south wall of Room 105 (see Figure 3.18), evidence of a cut nail pattern also indicates a 4¼"± siding exposure to the weather. An early corner board is also seen in this area, and faint paint marks on this corner board remnant indicate a 4¼"± siding exposure.

These two different siding exposures on the house are curious but not inexplicable. It seems possible that the public street elevations at the west (currently north) and the north (currently east) may have had an original 3" siding exposure while the east alley elevation (currently south) had a 4¼"± exposure. This apparent mixing of siding exposures may have been done for practical reasons. Reverend Springer may have anticipated that he would make an addition to the east end of the house and did not wish to spend extra money to install siding at the east elevation to match, knowing it would be removed. Another possible explanation, based purely on economics, may have been that since this side was not a public street elevation, the thought was to save some money by using a wider siding exposure on the non-public elevations.

The 1840 cottage was apparently originally sheathed with 1" thick wide-boards over the entire exterior before the siding was installed. Photographic evidence from the nineteenth century provides no clear evidence of the building's eaves and soffits. Gutters seen in these photographs suggest that there would have likely been an eave fascia at the rafter ends; however, this is not a given.

Analysis of the existing nineteenth-century envelope found the paint on these surfaces to be oil-based. In some instances the paint exhibited a wide range

of shades as a result of weathering and, in these cases, a middle color was used for matching.

The corner board and siding which remains at Rooms 105 and 005 have very few paint layers, none of which match what is found on the other nineteenth century features. The earliest layer at this corner board and siding was a gray (Munsell 5Y 7/1). The corner board had a second yellow (Munsell 2.5Y 8/6) layer over this gray layer.¹⁸ It may be that these features were first painted with the base color of gray and the yellow paint was then applied at the trim and corner boards (and probably at the windows, doors, and door trim). The earliest paint layer found on original siding behind the brick at the north elevation (originally the west elevation) is an off-white (Munsell 2.5Y 8.5/2). In one instance, this paint is applied over a gray layer (Munsell 5Y 4.1). This same gray paint was seen in the first layer in the sample taken from the window frame at Window 101B, an apparently original frame.¹⁹ It is possible that the field of siding was painted off-white and trimmed with gray at the doors, windows, and corner boards. An apparent two-color paint scheme is seen in nineteenth century photographs. These photographs suggest that the gutters and downspouts were probably painted the same color as the trim (see Figures 2.14, 2.16, and 2.17).

Nineteenth-century photographs provide evidence of the earliest envelope of the one-story east addition; however, what can be seen in the photographs is very limited. There are apparently three siding boards above the head trim of the windows. Several boards can be counted in Figure 2.18, but the lack of clarity in the photograph does not allow this siding to be compared with any building feature.

The original siding and sheathing was apparently removed as additions were made to the south side of the house. The house continued to be clapboard-sided until well into the twentieth century. Twentieth-century photographs (see Figures 2.21 and 2.22) indicate a variety of siding exposures and conditions.

These photographs show the north elevation (formerly the west elevation) with its nineteenth century siding. The west elevation (formerly the south elevation of the house) seen in these photographs indicates the clapboard siding at the portions of the house moved in 1900. It is not entirely clear why this siding has a wider exposure; however, it may be a condition of the later date of these additions, their original non-public exposure, or a lack of concern about whether the siding matched that installed elsewhere on the house.

By circa 1940, the house was added to and renovated. As part of this work, some of the original house envelope was removed (as original exterior walls became interior walls), and the first floor of the house was veneered in brick to the eave. New siding on furring strips was added over the original siding at the north gable to bring this face more in line with the new brick at the first floor. It is likely that the eaves and soffits were also replaced at this time. Also at this time, the east and west eave soffits at the north half of the 1840 cottage were blocked-out and filled in for approximately 7" from the original wall face. These block-outs were sided and had corner posts installed at the north gable end. Apparently, these eaves were blocked out for aesthetic reasons in order to align the upper portions of the house above the flat roof line with the areas below, which had been widened by the added brick veneer. New siding was apparently added at the south gable.

Today, the house stands little changed from the last round of renovations in circa 1940. The face brick envelope is a scored brick laid up in a common bond with a brick soldier belt course (see Figure 3.7). The brick is in fair condition with few settlement cracks; however, several areas of mortar are extremely fragile and many mortar joints have begun to dissolve away. This face brick apparently sits on a sub-grade brick ledge bearing directly on the soil, presumably 36" or more below grade. There is a layer of sheathing, or siding over sheathing, behind the brick.

All of the currently-exposed wood envelope is in fair condition with only a few areas of deterioration noticed (see Figure 3.6). This damage appears to almost always have been caused by water. Several pieces of wood trim have been patched or replaced. The gabled ends, dormers, and walls above the flat roof are wood sided. The siding exposure varies from 9"± at the south gable to 4"± at the dormers and 8"± at the north gable. The wood attic vent louver has recently been installed by National Park Service staff in the south gable and the east dormer. The siding on the north gable is furred out from the original siding behind. Paint analysis suggests that none of the presently visible wood envelope is original. Although loose-fill insulation was discovered in some exterior walls, the extent of insulation is not known.

The original building envelope behind the twentieth-century siding and brick veneer appears to be in good condition; however, only limited investigation of these areas was possible during this phase of work. The serviceability of these areas will need to be fully evaluated once these areas are completely exposed. It is possible that if full-scale removals are undertaken, an almost complete nineteenth century facade will be found at the present north elevation. Although some areas of the original wall sheathing have been removed, that which still exists is in good condition and is serviceable.

The National Park Service undertook a paint analysis of the Arnold House in 1986 with the aid of Andrea Gilmore, an architectural conservator with the North Atlantic Regional Office of the National Park Service. This study documents the paint color in Munsell codes (and Benjamin Moore color codes) at the original layer of paint found at fifteen locations on the house. This study indicates the siding was painted cream (Munsell 2.5Y 9/2) and the fascia light tan (Munsell 10YR 8/4).²⁰ This study is not very useful since it did not elaborate on the location of the samples and fails to provide a chronological sequence of paint layers. Further, this study only considered painted surfaces now exposed and did

not provide samples from any historic surfaces. The eave trim, second floor siding, and fascia were painted by the National Park Service in 1986. The house presently has Gilmore's two-color paint scheme consisting of a light yellow on the siding and a tan on the trim.

EXTERIOR DOORS

There is only limited evidence of the early exterior doors on the Arnold House. Historic photographs indicate the location of two exterior doors which date to the historic period.

Figures 2.14 through 2.17 indicate the location of the north door at the 1840 cottage. This door is located approximately 2'-10" from the east end of this portion of the house, and is approximately 2'-10" ± wide by 7'-0" ± tall. Field investigations did not yield any physical evidence of the door location. The character of the door itself is not clearly seen in any of the historic photographs; however, there is some vague indication of panels near the bottom of the door. A small white speck at the east side of the door seen in Figures 2.16 and 2.17 appears to be a white porcelain door knob. The door is also shown to have a two-leaf shutter. Each shutter leaf appears to have two intermediate rails dividing it into three panels of louvers.

Portions of a second door are visible in the period photographs (see Figure 2.14 through 2.17) at the north endwall of the attached shed. This door is centered on the endwall and is about as wide as the previously discussed door. The height and character of this door are not discernable in this photograph.

Figure 2.21 shows a door at the west elevation of the west porch in 1916. The photograph does not show the door clearly enough to discern the character. The door seen in this photograph is apparently in the same location as existing Door 101A. Paint analysis indicates the existing door frame is from the twentieth century.²¹

The exterior wood doors which remain on the house are all glazed and date to the twentieth century. Three of the doors (106A, 107A, and 108A) have a single pane of glass above wood panels. The date of these doors is not known. The two remaining exterior doors, both at the west porch, consist of wood mullions dividing the glass into a multi-paned, craftsman-style pattern. These doors probably date to the circa 1940 renovations.

The conditions of the doors vary with their exposure to the elements and the general quality of their construction. The doors at the west porch, which are heavy, well-constructed, and protected from the elements, are in good condition. The other doors are poorly constructed, directly exposed to the elements, and are therefore in only fair condition. Door 108 is in poor condition.

WINDOWS

There is a significant amount of photographic evidence and some physical evidence of the window locations at the original north elevation. Twentieth-century photographs indicate the windows at the original south (now west-facing) and west (now north-facing) elevations.

The panoramic views of the city provide the earliest evidence of the windows on the house. These views do indicate some fenestration of the walls; however, the accuracy of these views is questionable. Ruger's view (see Figure 2.3) seems to indicate two windows on the east elevation of the east addition to the 1840 cottage. The Beck and Pauli panorama (see Figure 2.4) shows a window centered on the south wall of the 1840 cottage. The Koch panorama (see Figure 2.5), the most accurate of the three, shows three windows on the north elevation of the one-story addition and two windows at the 1840 cottage; however, the eastern-most fenestration (shown as a window by Koch) should be indicated as a door.

Figures 2.14 - 2.18 show the window locations at the north elevation. These photographs indicate one window (Figure 2.15 erroneously indicates two windows) west of the door on the 1840 cottage, and three equally-spaced windows at the one-story addition. All of these photographs show the windows with the shutters closed. Each two-leaf shutter has a single intermediate rail dividing it into an upper and lower panel of slats. The window sashes are not visible in any of the nineteenth-century photographs. The exterior trim of these windows is not entirely clear, but it appears to be only simple trim boards and a sill. The window heads are slightly lower on the east elevation than they are on the 1840 cottage.

Physical investigations indicate the window seen in the photographs of the 1840 cottage was likely $2'-8" \pm \times 4'-6\frac{1}{2}" \pm$. This size is arrived at by comparing the rough opening size (see Figure 3.21) found in the exterior wall sheathing (near Door 108E) with details of period windows in other Site houses. Historic photographs indicate that the windows on the north elevation are all approximately the same size.

Early twentieth-century photographs (see Figures 2.21 and 2.22) provide good evidence of the windows at the present west and north elevations of the house. It is not certain if the windows, or the window locations, seen at the west wall in these photographs pre-date 1900, when the house was relocated. It is possible that the northern-most window dates to the south side additions, which appear on the 1884 Sanborn map (see Figure 2.6). This window has 6/6 sashes, simple board trim, and no shutters. There is also a basement window on the west elevation seen in this photograph. The windows at this west elevation, and any evidence of them, are now gone since the 5'-6" addition was made to this side of the house in circa 1940. The windows seen in these photographs of the north elevation are single-pane sashes with a simple board trim and no shutters. These windows are existing windows 101A and 101B. The window sashes date to the twentieth century; however, paint analysis suggests that the frame at Window

101B is likely original²². If the frame at Window 101B is original, it seems likely that the frame at Window 101A is also original. Windows at the second floor are largely obscured by the trees in the foreground of these photographs, and very little is discernable about their character. The second-floor windows seen here are likely the same as they appear today.

Physical evidence suggests the location of a window at the present west wall (formerly south wall of the 1840 cottage) of Room 101; however, this window or its location, is not seen in any other historic document. It is possible that this window was the one indicated on the Beck and Pauli circa 1870 panorama (see Figure 2.4). A stud cut out of this wall, and the height and width of the apparent rough opening provided, match almost exactly the rough opening at the known original window location found at what is now Door 108E. The sheathing at this wall has been removed and is not available to confirm a window opening at this wall.

All of the remaining windows which were not discussed, and their associated casing trim and frame, obviously date to the twentieth century. These windows are the same age as the majority of the interior doors and were part of the circa 1940 renovations. These windows have double-hung, single-pane sashes without shutters, and most are inoperable. Several windows have exterior wood louvers placed over the lower sash.

The windows, though none are historic, are in fair condition and all are serviceable. The window frames at Windows 101A and 101B are in fair condition and can easily be repaired.

FIREPLACES AND CHIMNEYS

Although it is now gone, the brick chimney stack associated with the 1840 cottage fireplace is well-documented in both historic photographs and in the building's structural framing. The earliest evidence of this chimney is seen in

Figures 2.16 and 2.17. The chimney is seen on the north roof slope, extending approximately 3'-0" above the roof ridge line. (This dimension is arrived by considering the photographic evidence coupled with the known dimensions from what presently exists.) The photographs indicate some type of profile near the top of the chimney stack; however, its character is not discernable. In a later photograph (see Figure 2.22), a similarly-located chimney stack is seen.

Physical evidence indicates that the foundation for the chimney stack was approximately 3'-4" x 5'-0". The size of the framed opening of the first floor coupled with the chimney foundation width suggests that a chimney mass of approximately 3'-4" x 4'-10" may have risen the full height of the first floor. Apparently, there was an ash pit on the east side of the firebox, since the chimney foundation is hollow at the base on this half (see Figure 3.10). The length of the framed opening at the first floor foundation suggests that there may have been two hearths at the first floor, one on either side of the chimney. The east hearth would have served a probable kitchen, while the west hearth would have served a large front (or west) room for family activities.

There is also evidence suggesting that a free-standing cast iron heating stove once stood in the east one-story addition to the original 1840 cottage. A 10" diameter, rough-cut hole in the wall sheathing, found behind the plaster in Room 106A at what is now the south wall (the east wall prior to 1900) of the 1840 cottage, was probably the passage for a heating stove smoke pipe (see Figure 3.24). This pipe would have probably vented through the brick chimney.

At the second floor framing, there is strong evidence that a hearth at one time stood at the west side of the chimney prior to 1900. There is a 4'-6" square opening framed into the floor joists in what is now Room 202C and the southernmost portions of Room 201. When considered with the location of the framed opening in the roof at the former chimney passage, the chimney stack location is determined to be near the extreme east end of the framed opening. In the

framed opening west of the chimney stack where a hearth would have been, there are several wide, 1" thick wood planks set near the bottom of the floor joists. These boards span approximately 2'-3", back to the location of the chimney stack rising from the first floor to the ceiling. The ends of the boards at the chimney stack probably rested on a brick shelf at the stack. These boards seem to have been the base upon which a hearth was probably constructed. Currently, these boards are covered with a thick (in some cases several inches thick) pile of ashes.

The framed opening at the roof (see Figure 3.29), when considered with the east limits of the chimney opening at the second floor framing, indicates that the maximum size of the chimney stack through the roof would have been 2'-0" (at the present east and west) x 1'-4" (at the present north and south).

There is some evidence of a second, twentieth-century chimney stack associated with the Arnold House. A twentieth-century photograph (see Figure 2.22) shows a tall, thin chimney located south of the previously discussed chimney. Physical evidence of this chimney stack was found in the floor of Basement 005 (see Figure 3.9). The foundation remnant indicates the chimney size to have been 1'-10" x 1'-6". Today, all that exists of these two chimney stacks are remnants of the foundations which postdate 1900. Both of these foundations are in poor condition.

INTERIOR STAIRS

The history of the interior stairs of the Arnold House can only be understood from the physical conditions investigations. The earliest stair in the Arnold House was probably a ladder, rather than a stair. Slight indentations forming joists saddles in the ledger board at two of the studs adjacent to the existing stair opening suggests that the floor joists continued across the stairwell at one time (see Figure 3.28). This indicates the second floor was accessible only by a ladder, probably located in the area of the existing upper landing. It is not clear how

long this ladder remained in place; however, it was certainly gone by about 1850 or earlier.

A stair was built in the Arnold House by about 1850. The hand-split lath at the soffit of the existing stair suggests that at least the upper portion of this stair pre-dates 1850.²³ The existing stair flight, from the top of the wider section to the upper landing and the remaining two-step flight to the second-floor landing, is part of the earliest stair built in the house. Unlike the existing stair winder, the nineteenth century stair would have had a winder which turned back into the house (into Room 102) toward present Door 102A. The bottom step of this stair would have fallen approximately 2'-6" short of this door. The stair probably remained in its original configuration until, as part of the circa 1940 renovations, the lower portion of the stair was changed to its present configuration.

There is evidence of a basement access stair after the house was relocated in 1900. A paint outline on the west wall of Room 002 (see Figure 3.11) indicates a steep stair to the basement. Although it is not entirely clear, this stair probably had ten treads and eleven risers. The shadow outline in the paint on the basement wall indicates risers and treads about 8" each. To install this stair, a floor opening had to be framed in, which required that three floor joists be severed and the ends removed. Pockets in the sill beam indicate that the joists at this framed opening originally continued to the sill beam at the wall adjacent to the stair (see Figure 3.14). It is not known if this location for an interior basement access pre-dates 1900.

As previously stated, some areas of early plaster over hand-split lath remain at the stair soffit (see Figure 3.23). This lime-based, hair-reinforced plaster pre-dates the 1850's. The yellowish color of the sand in the plaster also indicates a pre-1870's date.²⁴ This makes the plaster found at the landing soffit among the oldest plaster remaining in the house. This plaster is in good condition with the exception of a few areas where it has loosened from the lath. Paint

analysis found the earliest layer over this plasters to be wallpaper which Arbogast suggests "may well be the original finish of the wall surfaces."²⁵ There are also some areas of later plaster patches at the stair soffit. These patched areas are primarily located at the historic wall which has been removed.

Portions of the existing stair framing dates to the earliest stair construction. Two $\frac{3}{4}$ " x 12" stringers remaining from the original stair construction have been exposed at the sloped ceiling above the water closet in Room 101E (see Figure 3.22). These stringers are in good condition; however, the stair's original structural configuration has been altered, probably as part of the circa 1940's renovations. A small remnant of the original stringer at the end of the present west stringer suggests the beginning of framing for a winder. The current east stringer frames into a $2\frac{3}{4}$ " x $4\frac{1}{2}$ " post under the landing while the current west stringer frames onto the side of $1\frac{3}{4}$ " x $3\frac{1}{2}$ " post and is apparently nailed to the wall. The contemporary treads and risers (probably dating to the circa 1940 renovations) installed at the original stringers, as well as the landing and two final steps to the second floor from the upper landing, maintain their original tread size and slightly-varying riser heights. The treads are $9" \pm$; however, the risers vary from $8\frac{1}{4}"$ to $8\frac{1}{2}"$ below the upper landing and $8"$ to $7"$ at the final steps to the second floor. There is a contemporary low guard rail at this second floor stairwell opening.

Field investigations at the stair revealed a $1" \times 6\frac{1}{4}" \pm$ vertical-beaded board wall hidden behind the twentieth-century finishes. This board wall extends from the north face of stud at the north wall of Closet 101F, south to the beginning of the existing (and location of the original) stair winder. This beaded-board wall, which rises from the floor and continues to $1\frac{1}{2}"$ above the top of the tread nosing, was topped off with a rounded $\frac{5}{8}" \times 1"$ cap. The back side of these boards was the finish surface for the space created under the stair. There is a painted finish over the boards on the room side, which has been overlaid with wallpaper. The stair side of these boards is finished with a red varnish. Wallpaper applied over

the under-stair side of these boards is probably the original finish.²⁶ The present west wall under the stair is finished with horizontal boards butt-jointed to each other over an earlier plaster finish surface.

The stair is in good condition, although its structural integrity is somewhat questionable. Since a significant amount of the historic stair remains intact, it can readily be reconfigured to its original character.

INTERIOR DOORS

Despite the variety of doors in the house, little is known of the character of any doors prior to the circa 1940 renovations. The oldest remaining evidence of an early first-floor door is in the frame of Door 102A. Paint analysis of this door frame and the existing north casing indicates these features date to the historic period.²⁷ This door opening was probably installed when the east addition was made to the 1840 cottage. Filled hinge mortises in the door frame indicate that the original door swung into Room 102A from the jamb opposite the existing swing. The original door was probably removed as part of the circa 1940 renovations, while the door frame and trim were reused in place with a new casing trim applied at the south side. The trim at the north side of the door is a simple board with a bead molding cut in at the inside of the trim. The oldest layers of paint on this trim were similar to other early painted finishes found elsewhere in the house.²⁸

At a circa 1840 wall on the second floor, near the top of the stair, there is a line in the early plaster indicating the former edge of a door casing (see Figure 3.25). Further, there are two almost-parallel cracks, approximately 5" apart, at the ceiling running in the same direction as, and in the same plane as, the early wall. These plaster cracks are apparently at the edges of a plaster patch. The opposite end of this apparent door opening has been lost to later renovation work. The clearly vertical line of the early plaster, coupled with the patch in the ceiling,

suggests an early door location probably dating to the original construction of the 1840 cottage.

All of the doors which remain and most of the casing, except that previously discussed, appear to date sometime after the historic period, mostly to the circa 1940 renovations. These doors and casing are largely finished with a dark varnish. The casing is a simple board with a simple outer molding. The doors have a large single panel with some raised moldings in the panel field. There are a variety of multi-paneled doors which, with their casings, are painted. Some of the door frames have indications of two sets of hinges. The doors, casing, and hardware, with few exceptions, are in good working conditions.

INTERIOR FINISHES

Upon initial investigation of the house, it appeared that only very limited areas of the original finishes remained intact; however, as selective demolition began, more areas of original plaster or original lath were discovered under twentieth century finishes. Numerous areas of these twentieth century finishes were removed to do physical investigations. As a last resort, and only when it was necessary to view certain building features, there was some limited removal of the earliest plaster finishes.

Although there is no historical documentation of interior finishes, field examination and analysis of the house reveal a great deal about the history of the finishes. As might be expected, the earliest finishes were largely plaster over a hand-split hickory lath, a clue for pre-1850 construction in Springfield. An area of hand-split lath at the east wall of Room 104A (see Figure 3.20) suggests the location of a pre-1850 addition to the house. There is no definitive documentary evidence of a structure at this portion of the house until the 1884 Sanborn map. The Koch panorama, Figure 2.5, may show an ell at this location, but the drawing is not entirely clear as to the location of the feature in question. This use of

hand-split lath is puzzling, since any known addition to this area of the house postdates 1858, which may mean that this wall finish postdates the widespread use of hand-split lath in Springfield. Other explanations include: the possibility that the 1840 cottage was moved to the site (not built on-site) without an addition that may have once existed on this side of the house; the possibility that the cartographer made mistakes when drawing the maps; or, the possibility that the lath was reused from somewhere else or from a private stockpile. There was an area of vertical beaded-board wall surface on the first floor noted at the stair.

With the exception of the limited evidence of early baseboards, there was apparently no wood trim in the house. The earliest wood baseboards are seen under Stair S1 on the first floor, and behind the plywood knee walls at the second floor. The baseboard at the first floor was 6" tall and had a bead molding cut at the top of the trim. The baseboard at the second floor was a simple board with a height which varied depending upon the space in which it was located. Neither base appears to have had a shoe molding originally.

Physical evidence suggests that the 1" x 5¼" red oak subfloor at the first floor was the finish floor during the nineteenth century and probably into the early twentieth century. At the second floor, the 7/8" x 5¾" existing subfloor is painted and was probably the nineteenth-century finish floor. The existing finish floors were probably installed as part of the circa 1940 renovations.

There is little apparent evidence of the early floor plan of the house; however, it is probable that the plan was very simple, much as the house itself was. Remnants of an early wall, and patches or changes in the plaster finishes, suggest that there was originally a wall running across the house between the two intermediate posts in the sidewalls of the 1840 cottage. All of these pieces of evidence align with one another, and there is even a corresponding break in the subfloor at the first floor which can be viewed from the basement (see Figure 3.12). This wall was located approximately 15'-4" from the finish face of the

present north wall. Remnants of this same wall at the second floor (see Figure 3.26) indicate that this original wall was balloon-framed from the first floor joists to the rafters and collar ties at the roof. Portion of this wall remain today as part of the end-wall of the stair adjacent to the upper landing and the final two steps to the second floor (see Figure 3.23). During the nineteenth century and into the early twentieth century, this wall would have framed into the sides of the chimney.

Paint analysis of the house helped to determine the original interior finishes of the house. The earliest wall finishes were either calcimine paint or wallpaper. Calcimine paint appeared in only one sample, while wallpaper finishes were found throughout on the original plaster finishes. The calcimine paint was found in the crawl space under Stair S1, on a wall surface which pre-dates the construction of the stair.²⁹ This wall surface would have been within the room created by the non-extant nineteenth-century wall previously discussed. Since no other original wall surfaces in this area either exist, were exposed, or were sampled as part of this study, it is possible that this room, or at least this wall, may have always had a calcimine paint finish.

Paint samples of interior wood features helped to determine the earliest paint scheme for these features. All of the wood features were painted with oil-based paints. Paint analysis at the original first-floor flooring was not possible since this floor is presently covered by a maple floor which was to remain in place. However, samples taken at the original second floor finished floor revealed a bright tan layer (Munsell 2.5Y 5/6). This was a common floor color during the nineteenth century.³⁰ The early baseboards were also sampled. In Room 201, grey (Munsell 5Y 3/1) was the original baseboard color, while in Room 204 (at the historic interior wall previously discussed), the original baseboard color was found to be mauve (Munsell 7.5R 6/4). This mauve layer, probably considerably more intensely red when first applied, was also found at the baseboard in Room 201 over the earliest grey layer.³¹ Paint samples made at the first floor original

baseboard were inconclusive.³² Paint analysis at the first floor on the nineteenth century casing at Door 102A found some indication of possible oak graining, which was not uncommon during the historic period.³³ Field investigations at the vertical beaded boards at Stair S1 indicated an original paint finish with a relatively early wallpaper finish over that. At the stair side, this feature is finished in a dark red varnish.

Today, many of the early finishes have been covered by, or more likely replaced with, twentieth-century finishes. These finishes include: portland cement plaster over sawn lath, plywood, plaster over fibrous board, gypsum drywall, and wood strip flooring. Original plaster areas which remained have been refinished numerous times and, in some cases, patched with later materials. The current finishes include paint, wallpaper, and ceramic tile (in Room 106A).

The earliest plaster was found only in the walls and ceilings of the 1840 cottage and include: portions of the north wall of Room 101; portions of the west wall of Bathroom 101E; the south wall and ceiling of Closet 102; the north half of the ceiling of Bathroom 101C; the ceiling of Closet 101B; the stair soffit in Bathroom 101E; the ceiling in Room 102A; the original knee walls and ceilings of Room 201; the south wall of the bookcase alcoves in Room 201; the north and west walls of Stair S1; the north, east, and south walls of Room 202E; and the south wall of Bathroom 202. This early plaster has an abundance of cow or horse hair binder and is supported on hand-split hickory lath. The hand-split lath is found in a few locations without plaster in the walls and ceilings of the 1840 cottage and include the north wall of Closet 101A behind the twentieth century built-in cabinet and the east wall of Hall 104A. With one possible exception, the exposed hickory lath appears to be in its original location. It appears that the second floor still retains most of its original hand-split lath whether the plaster is original or late.

A portland cement plaster is found in many locations of the 1840 cottage, often as a patch material, including: the ceiling in Room 101D; the stair soffit sidewall and north six inches of the stair soffit of Bathroom 101E; the south one-third of the ceiling in Bathroom 101C; large portions of the second floor ceiling; and the south wall of Stair S1. This plaster is usually supported on later saw-cut lath; however, it is sometimes supported on the original hand-split hickory lath, particularly at the second floor. The plaster is also found supported on a fiber-board, primarily in the twentieth-century portions of the house.

The change in the plaster type at the ceiling in Bathroom 101C occurs at a joist which is dove-tailed to the intermediate $3\frac{3}{4}$ " x $7\frac{1}{2}$ " wall post in the east wall. The change in the plaster type of the sidewall and stair soffit in Bathroom 101E corresponds to the location of the original wall, which has been cut off at the bottom of the stair soffit. The cut-off wall aligns with the intermediate $3\frac{1}{2}$ " x $6\frac{1}{2}$ " wall post in the west wall. The original wall remnants at the stair landing soffit also aligns with the north wall of Hall 202A at Stair S1 and the north wall of Closet 202E.

Most walls on the second floor, with the exception of the perimeter walls and the remnants of the original wall previously discussed, are finished with either wood panel, plywood, or drywall. Plywood knee-walls, built out from the west and east walls (except at the stair), are set approximately 1'-4" in from the historic plaster walls behind. There is an obviously late plaster finish on the dormer side-walls in Room 201.

There is a variety of floor types and finishes. Most of the first floor finishes within the 1840 cottage are $3\frac{1}{4}$ " wide maple over a 1" x $5\frac{1}{4}$ " red oak subfloor (the original finished floor). Although this floor is the finished floor in Rooms 101 and 101D, it is probably acting as an underlayment for the linoleum, tile, and wood strip floors in the other rooms of this portion of the house. With the exception of Rooms 104 and 105, which have been stripped back to the

subfloors, the floors throughout the remainder of the house are $\frac{3}{8}$ " oak strip flooring. In the kitchens and bathrooms, the strip floor is covered by vinyl sheet goods or tile. The subfloor boards have been infilled at the framed chimney openings. A large area of the second floor subfloor has been replaced at the west end with nominal lumber.

The condition of the finishes vary throughout the house. Some areas are in poor condition due to water damage while other areas remain in good condition. A lack of maintenance has caused some deterioration of some twentieth-century finishes in limited areas. Some of the nineteenth-century plaster ceiling at the second floor has pulled away from the lath; however, the rest of the original finishes are in good condition. The remaining wallpaper finishes on the walls and ceilings throughout are in poor condition due to numerous paint finishes applied over these surfaces.

As part of this report, asbestos sampling was undertaken in the house. These samples were made entirely at the house's interior. Of the eighteen areas sampled, only five were determined to contain asbestos. These materials were either linoleum, 9" x 9" floor tile, or floor tile mastic.³⁴ These areas of asbestos will need to be removed before any construction work can be undertaken. The asbestos report submitted by F & F Consultants Incorporated has been submitted separately to the National Park Service.

PLUMBING SYSTEMS

There is no evidence of any early plumbing in the house. Presently, there are five full bathrooms in the house at Rooms 101C, 101E, 102B, 106A, and 202. There is only limited evidence of any historic kitchens (pre-dating 1900) in the house. The earliest kitchen is indicated by the non-extant fireplace hearths adjacent to the location of the chimney stack. There are no apparent plumbing

indications of early kitchens. Presently there are five kitchens in the house at Rooms 101D, 106, 107B, 108A, and 202A.

The existing soil pipes, all of which are cast iron, flow to a central soil and vent stack. The water pipes are a combination of lead and galvanized steel with some copper. There is a gas meter to the south of the house near the west end of the south porch. Service to the house is presently shut off at the meter. All of the plumbing had been disconnected by the time the field investigation began.

Despite the haphazard design of the plumbing systems, they appear to be in usable condition; however, it is likely that the lack of recent use has caused many unseen problems. Further, the systems do not meet current plumbing codes. Accordingly, the condition of these systems can only be classified as poor.

MECHANICAL SYSTEMS

The earliest heating in the 1840 cottage was provided by the non-extant fireplace, while the east addition was probably heated by a free-standing cast iron heating stove. The house was heated by the municipal steam heating system from 1900 (perhaps earlier) until 1954, when the city stopped providing municipal steam in this neighborhood. Currently, there is a natural gas-fired boiler with a two-pipe distribution system in the house. An inspection of the boiler's identification plate by the National Park Service revealed that it was manufactured by the Bastian-Morley Company, of LaPorte, Indiana. The identification number - B54-1062N4 - reveals that it was manufactured in 1954. The boiler was fired with 300 MBH of natural gas. Radiators remain in Rooms 101, 101C, 102A, 104A, 105, 106, 107, 108, and 201. There are a few metal ducts and vents located at the bathrooms, probably acting as some type of bathroom venting device. The existing mechanical systems are disconnected and in poor condition.

ELECTRICAL SYSTEM

Electrical service is currently provided by buried cable in conduit laid in 1991. Prior to this, electricity was provided by aerial lines. The main panel box is located on the south wall of Basement 005.

There is a great variety of wiring types in the house. Knob-and-tube type wiring was found in the attic and first floor ceiling. Flexible conduit and conventional wiring were found in various areas. There are a variety of receptacle types, switches, and end switches. Only a few light fixtures remain in the house and these are in the Craftsman Style, probably dating to the circa 1940 renovations.

Electrical service to the house is currently limited to one active receptacle in the basement to reduce the chance of fire. The fire detection system is switched on at the main breaker panel box. The existing electrical system does not meet electrical codes and is in poor condition.

COMMUNICATION SYSTEM

Before the present service, telephone service in the house was through an aerial cable strung from the alley to the south side of the house, west of the bay window. Presently, the house is serviced by an underground 25-pair cable entering the house near the exterior basement access hatch. The present phone service only serves the fire detection system. The National Park Service had used several different phone lines serving the fire detection system that have mysteriously quit working, and, in turn, the service had to be switched repeatedly to a new cable. Several phone jacks were found in the house; however, no instruments were found.

SECURITY SYSTEMS

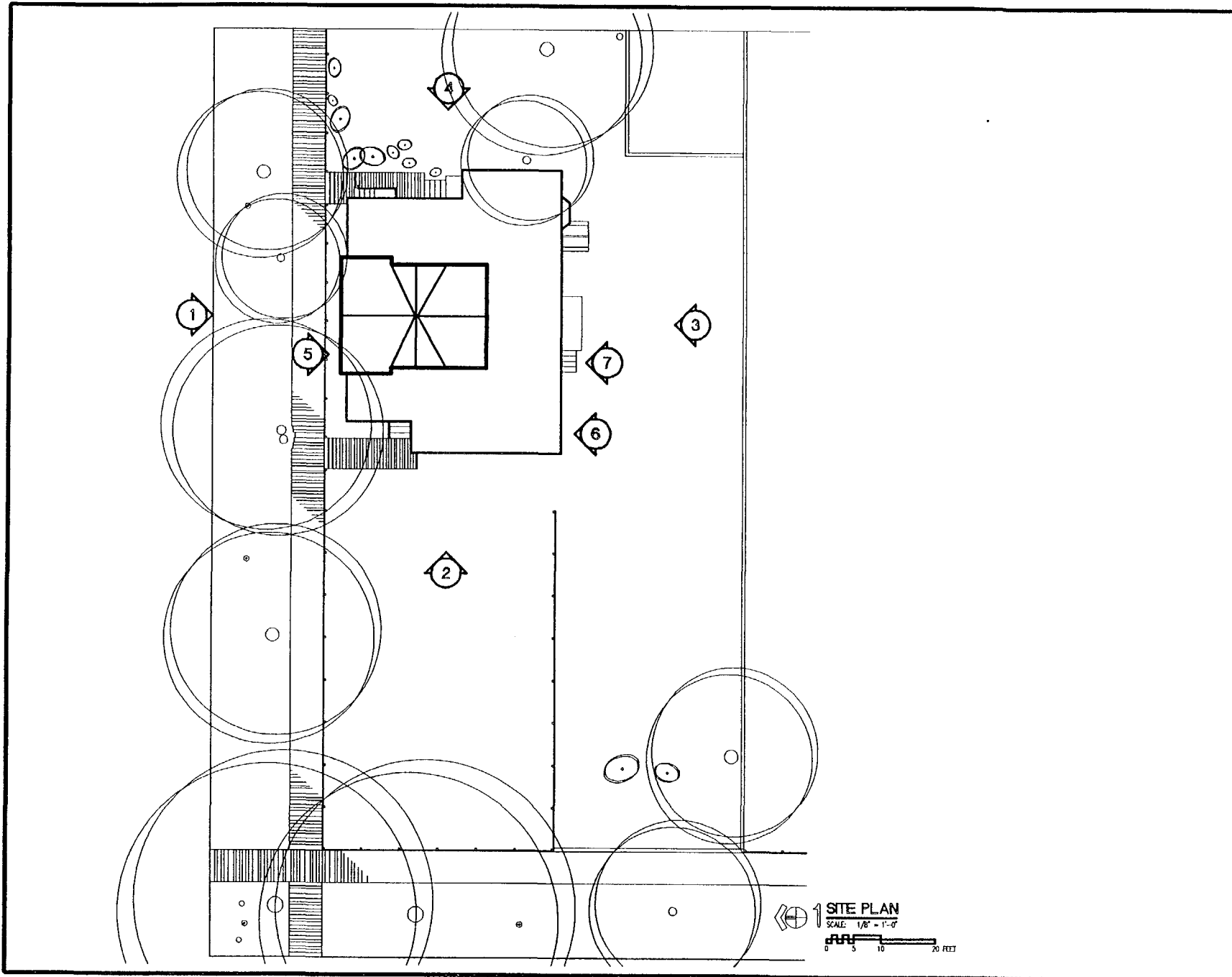
A fire detection and alarm system was installed by the National Park Service. The main panel is located on the north wall of Stair S2 and is hooked


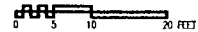
directly into the electrical and telecommunications systems. Heat detectors are situated throughout the structure, roughly one for each major room, including the attic. Cables are surface-mounted and exposed.

There is presently no intrusion detection system in the Arnold House.

EXISTING CONDITIONS PHOTOGRAPHS

The Existing Conditions Photographs are preceded by key drawings illustrating the view locations.




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


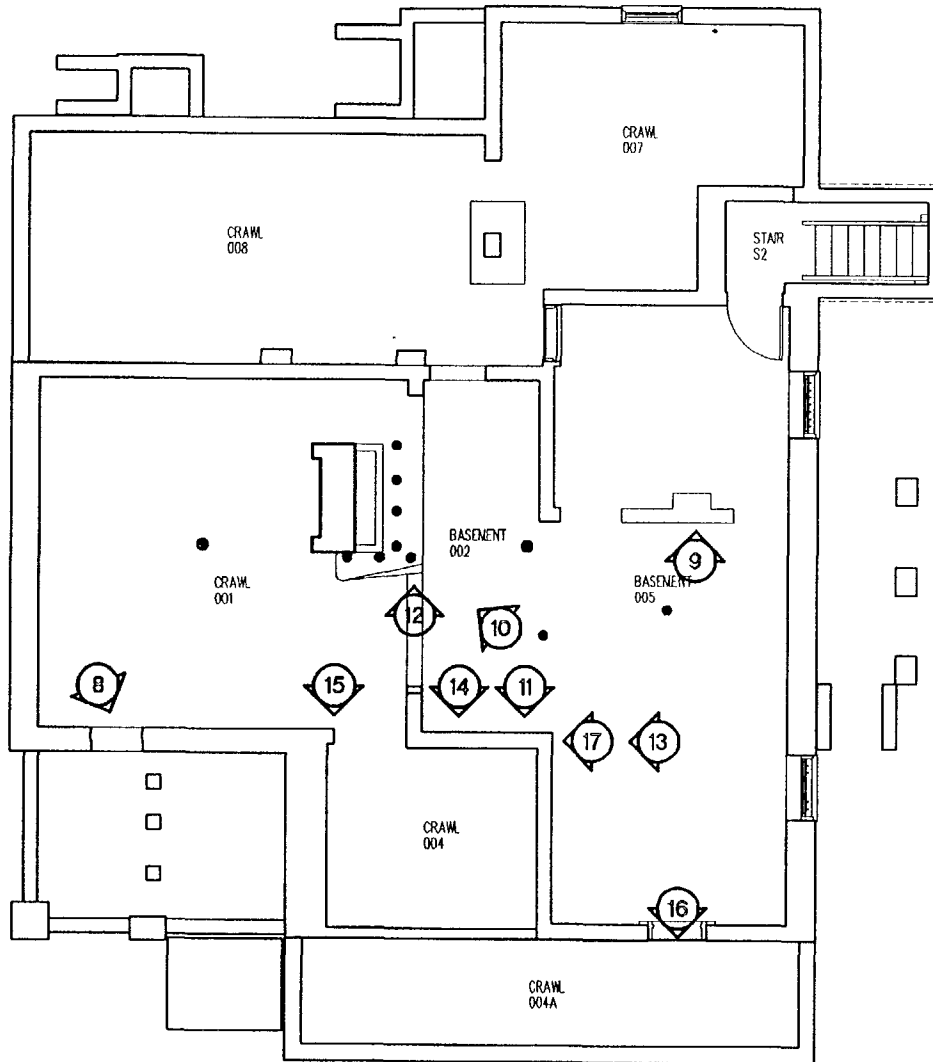
SYMBOLS LEGEND


 PHOTOGRAPH NUMBER AND VIEW

TITLE:	SITE PLAN	PROJECT NO.	9208.00
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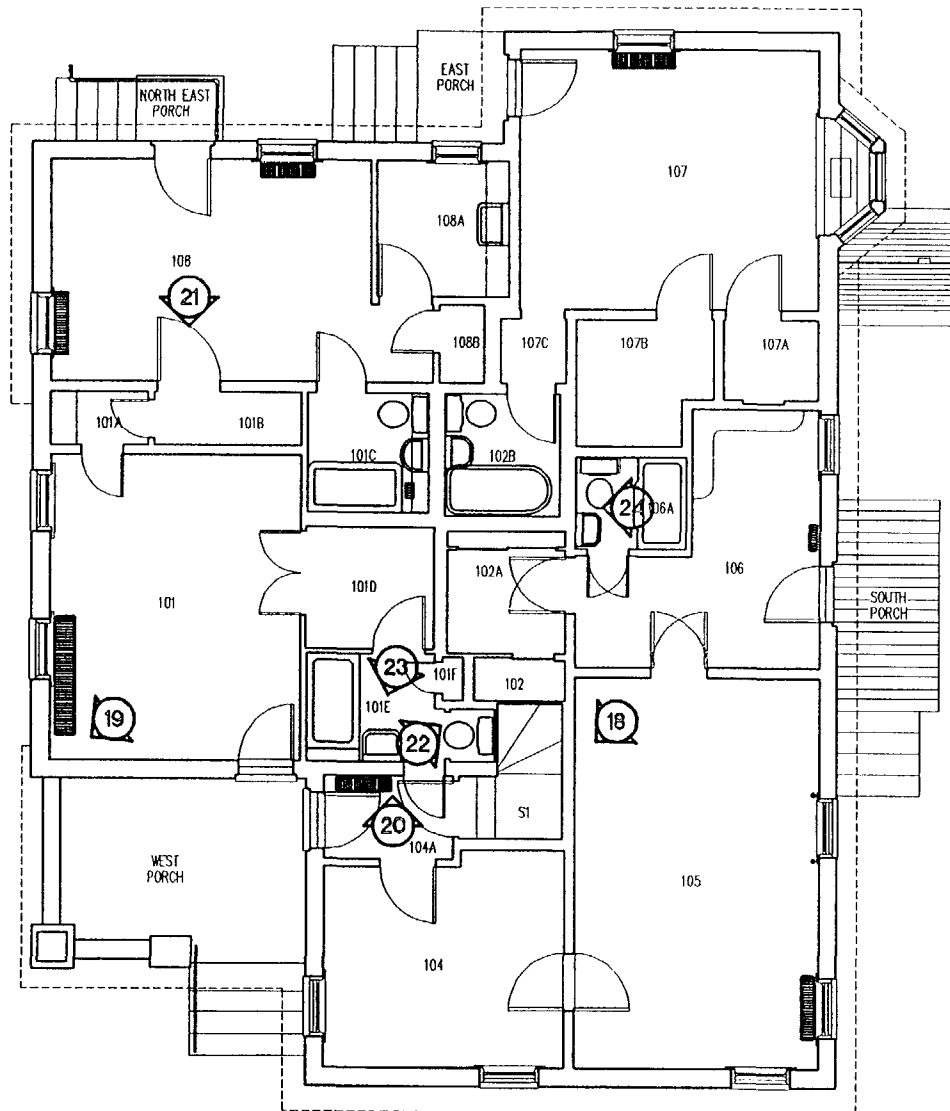
PHOTO KEY
ARNOLD HOUSE
 (HS-20)
 LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS
 FISCHER-WISNOSKY ARCHITECTS INC.

REVISED	PREPARED	DRAWING NO.	449
DATE	BY	DESIGNED	8003X
		DRAWN	
		CHECKED	SHEET 1
BY: EVAGIOW	DATE	OF	5




BASEMENT FLOOR PLAN


TITLE: BASEMENT FLOOR PLAN		PROJECT NO. 920800	
PHOTO KEY			
ARNOLD HOUSE (HS-20)			
LINCOLN HOME #118 SPRINGFIELD, ILLINOIS			
FISCHER-MSNOSKY ARCHITECTS INC.			
REVISED	INITIAL	FIELD MEASURED	DRAWING NO.
DATE		DESIGNED	449
		DRAWN	BOOKS
		CHECKED	SHEET
		DATE	2
BY: ERM/2001		DATE	OF 5

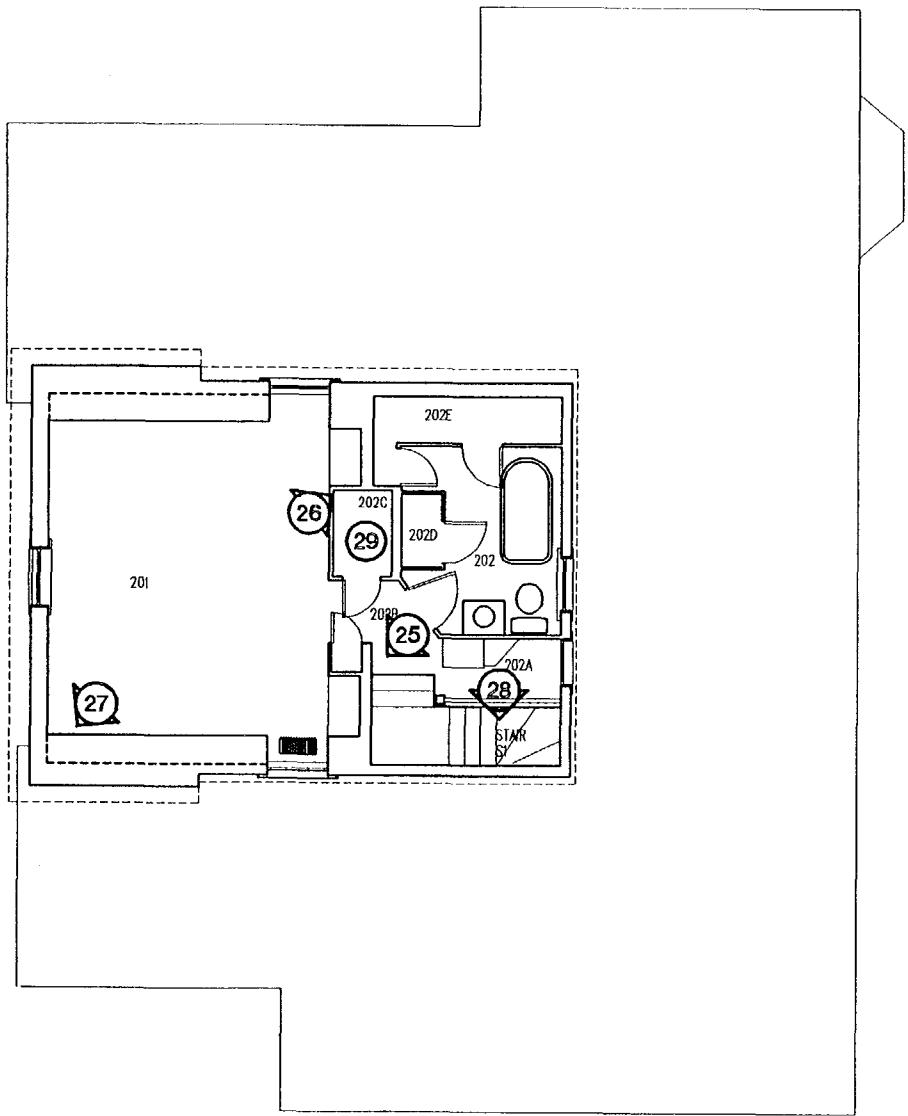



FIRST FLOOR PLAN

 0 5 10 FEET

TITLE: FIRST FLOOR PLAN		PROJECT NO. 9208.00
PHOTO KEY		
ARNOLD HOUSE (HS-20)		
LINCOLN HOME N.H.S. SPRINGFIELD, ILLINOIS		
FISCHER-WISNOSKY ARCHITECTS INC.		
REVISED	FIELD MEASURED	DRAWING NO. 449
DATE	INITIAL	BOOK
	DESIGNED	
	DRAWN	
	CHECKED	SHEET 3
DATE	DATE	OF 5

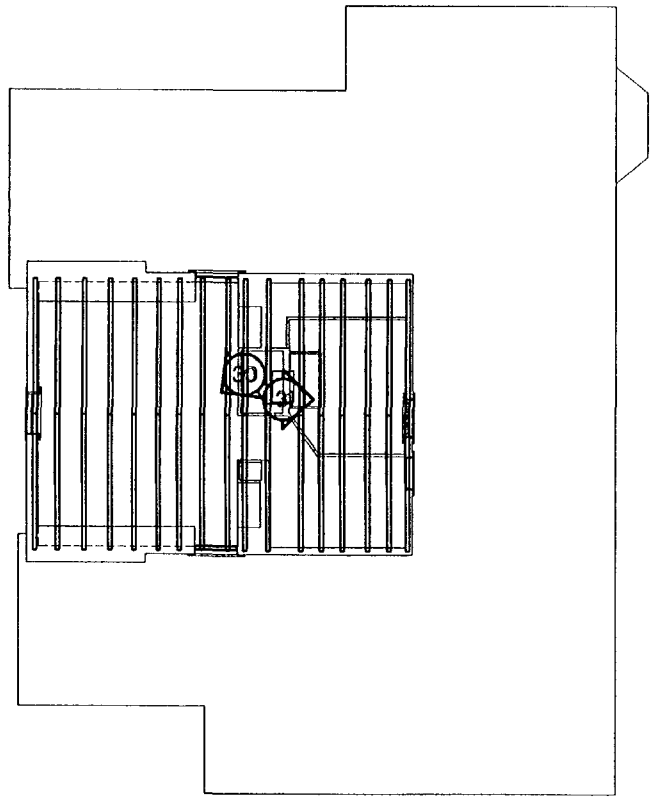
DATE: 04/20/57




SECOND FLOOR PLAN


TITLE: SECOND FLOOR PLAN		PROJECT NO. 9208.00	
PHOTO KEY			
ARNOLD HOUSE (HS-20) LINCOLN HOME N.H.S. SPRINGFIELD, ILLINOIS FISCHER-WISNOSKY ARCHITECTS INC.			
REVISED	FIELD MEASURED	DRAWING NO. 449	
DATE	INITIAL	DESIGNED	BOOKS
		DRAWN	
		CHECKED	SHEET 4
BY: EMAY	DATE	OF	5

NOTES




ROOF FRAMING PLAN
 SCALE: 1/4" = 1'-0"


TITLE:	PROJECT NO.
ROOF FRAMING PLAN	9208.00

PHOTO KEY

ARNOLD HOUSE
(HS-20)

LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED		FIELD MEASURED	DRAWING NO.
DATE	INITIAL		
		DESIGNED	449
		DRAWN	80042
		CHECKED	SHEET 5
		DATE	OF 5

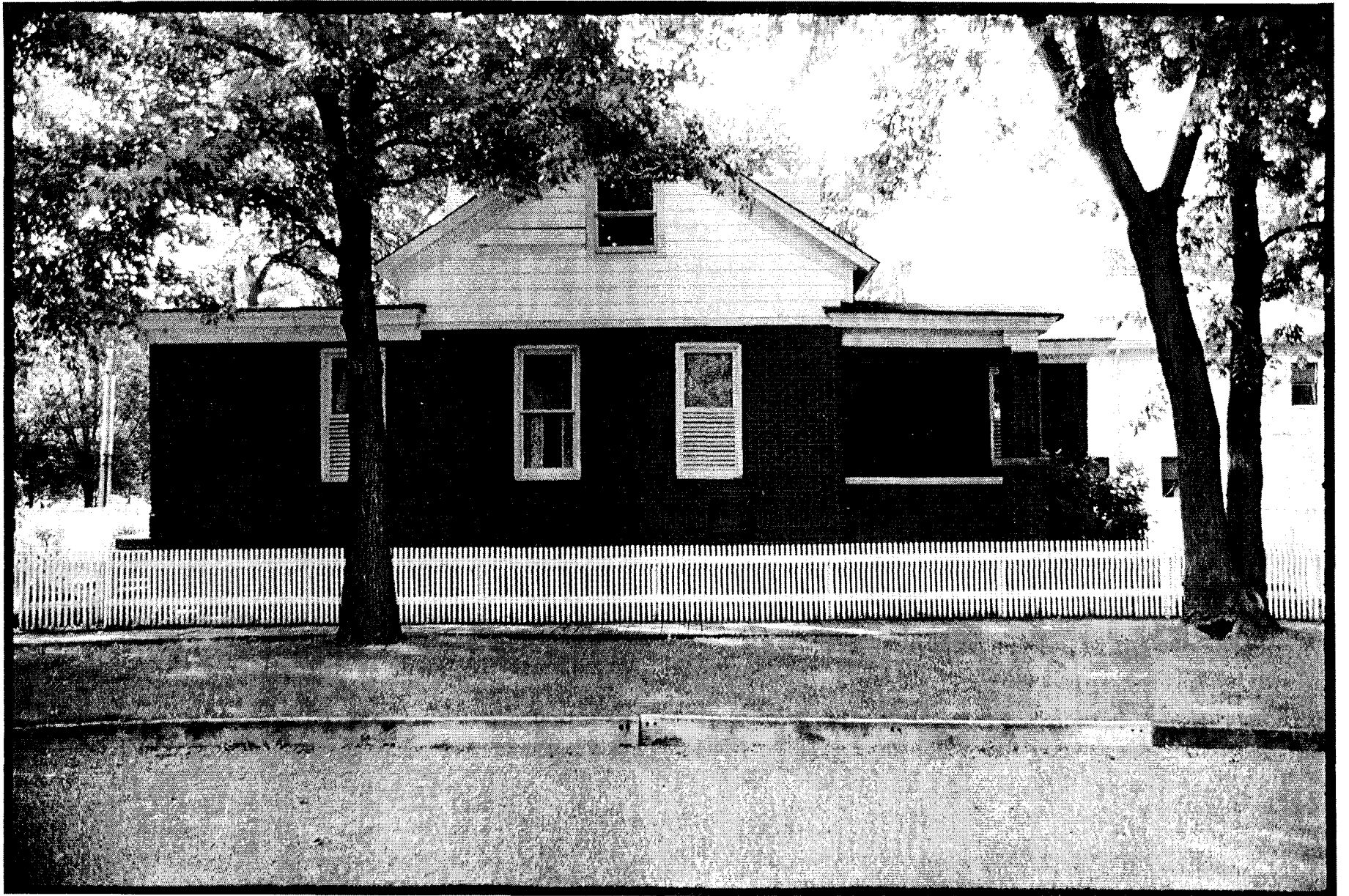


FIGURE 3.1: NORTH ELEVATION

Photo by Fischer-Wisnosky Architects, Inc.





FIGURE 3.2: EAST ELEVATION

Photo by Fischer-Wisnosky Architects, Inc.

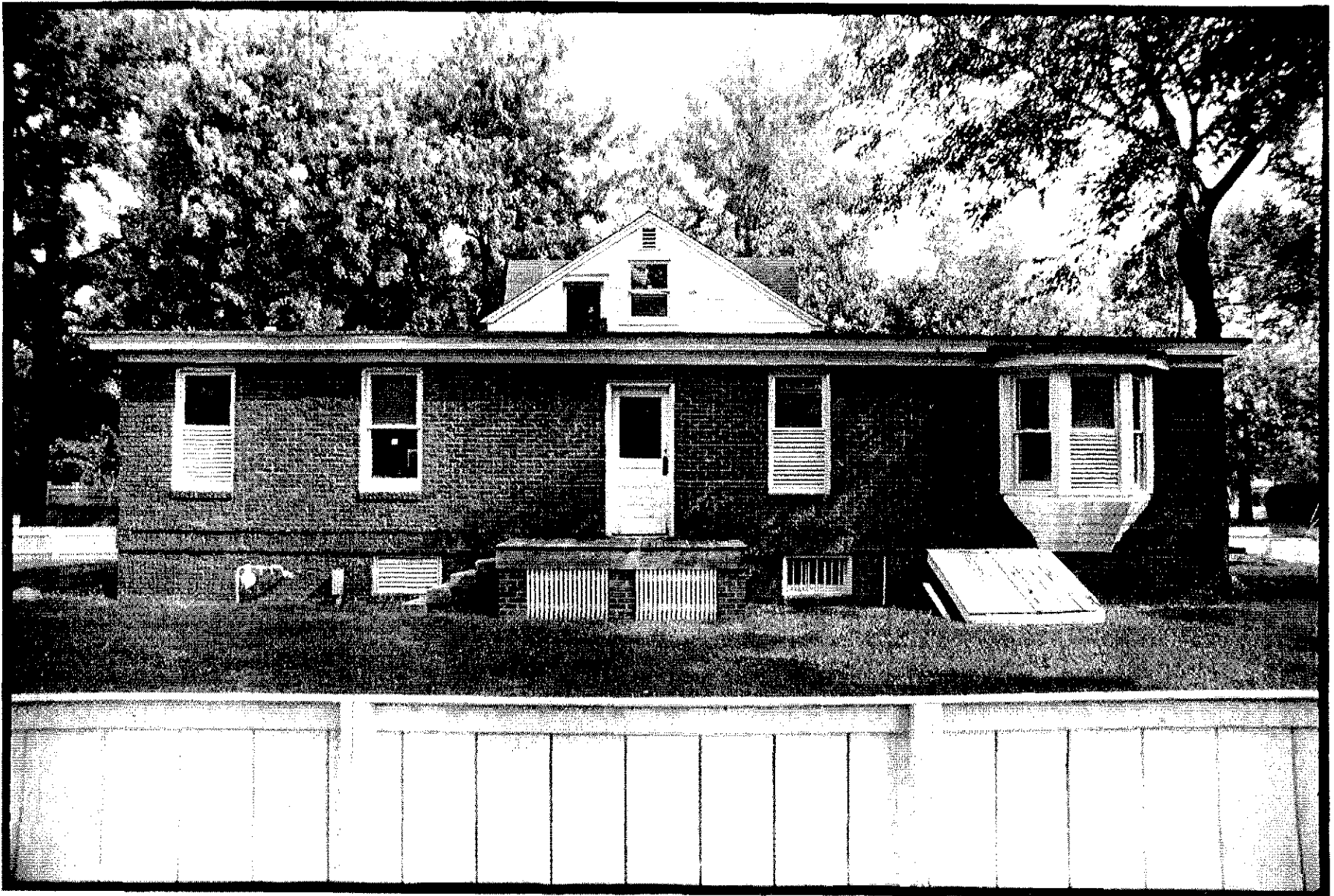


FIGURE 3.3: SOUTH ELEVATION

Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.4: WEST ELEVATION

Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.5: CLAPBOARD SIDING

This clapboard siding was found behind the brick veneer on the north elevation. Note the narrow spacing of the exposed siding.

Photo by Fischer-Wisnosky Architects, Inc.

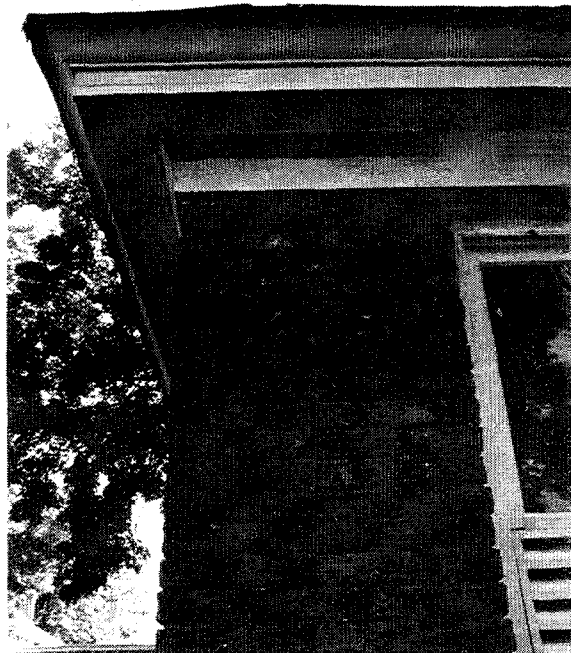


FIGURE 3.6: EAVE DETAIL

Note the missing and repaired section of cove.

Photo by Fischer-Wisnosky Architects, Inc.

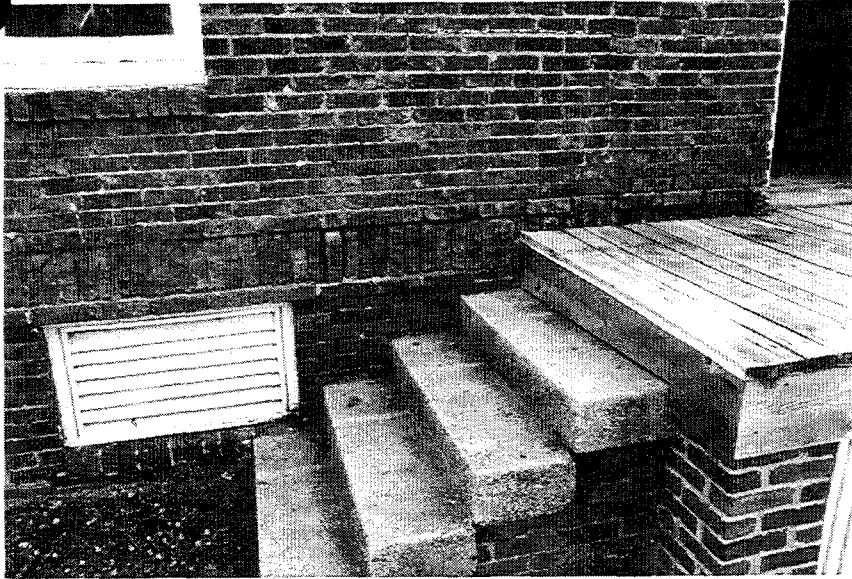


FIGURE 3.7: BRICK BELT COURSE

Deteriorated brick belt course at south porch.

Photo by Fischer-Wisnosky Architects, Inc.

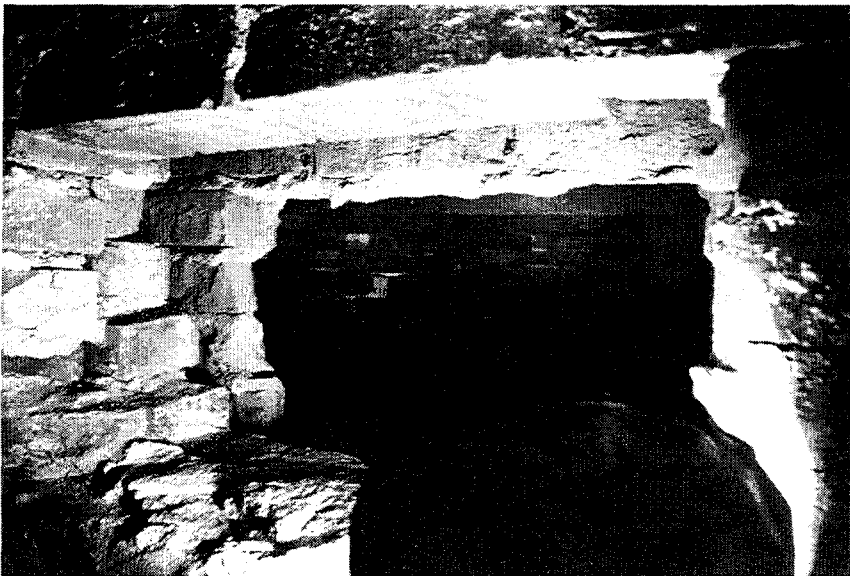


FIGURE 3.8: FOUNDATION WALL AND BRICK VENEER

Opening through the foundation wall and modern brick veneer.

Photo by Fischer-Wisnosky Architects, Inc.

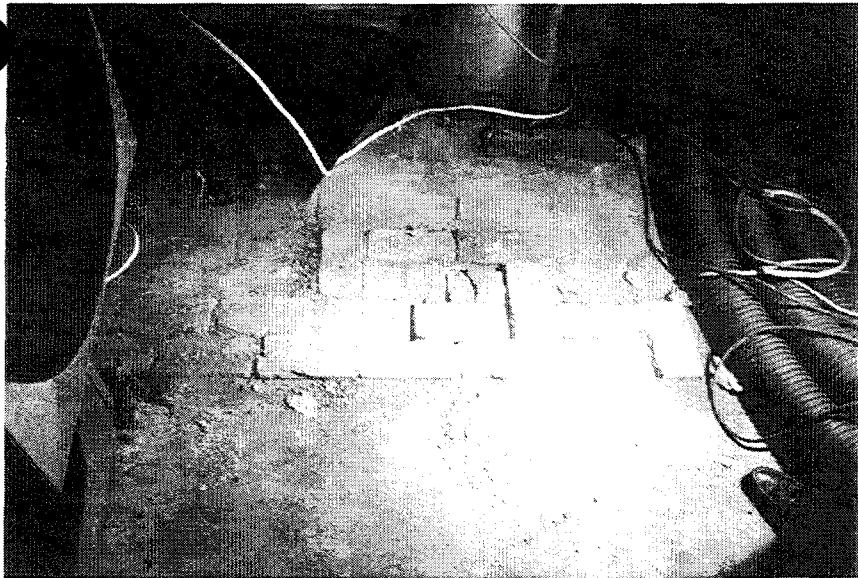


FIGURE 3.9: CHIMNEY FOUNDATION

Brick foundation remnants at the non-extant second chimney.

Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.10: CHIMNEY FOUNDATION

Brick foundation remnants at non-extant chimney in the 1840 cottage. Note the numerous severed joist-end support columns.

Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.11: EVIDENCE OF BASEMENT STAIR

Paint line image of non-extant interior basement access stair.

Photo by Fischer-Wisnosky Architects, Inc.

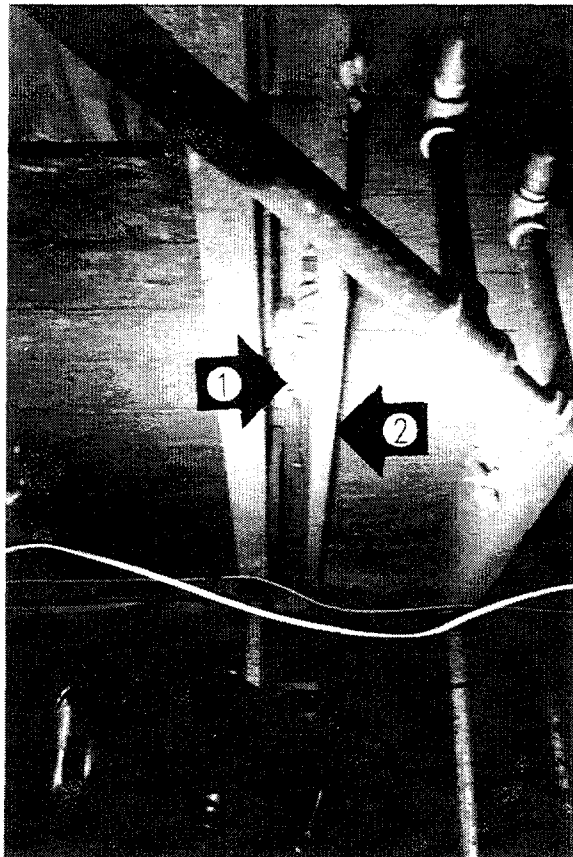


FIGURE 3.12: FRAMING AT NON-EXTANT INTERIOR WALL

Photo at the first floor framing and subfloor at the non-extant historic wall. Note the break in the floor (1) and the 1"x nailer board at the ends of the floor boards (2).

Photo by Fischer-Wisnosky Architects, Inc.

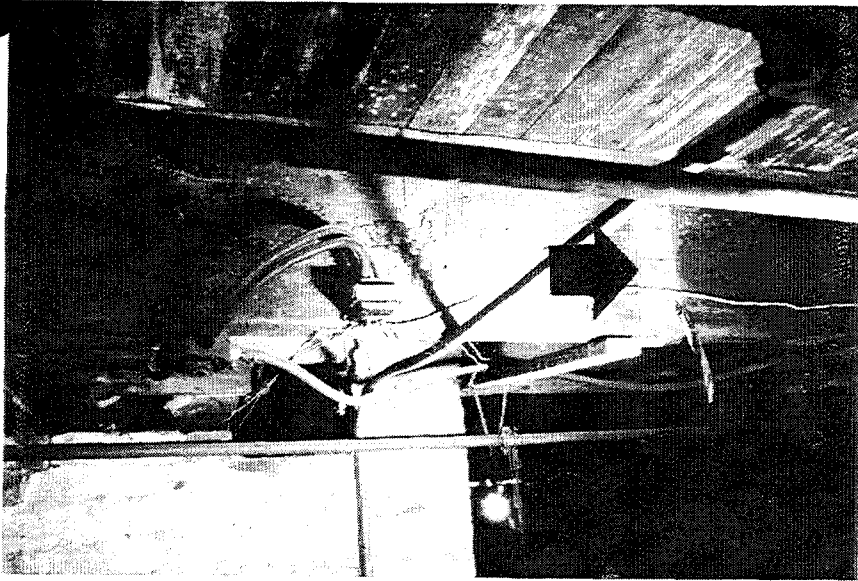


FIGURE 3.13: CHARRED FRAMING

Note the former joist location visible on the bottom and side of this charred joist.

Photo by Fischer-Wisnosky Architects, Inc.

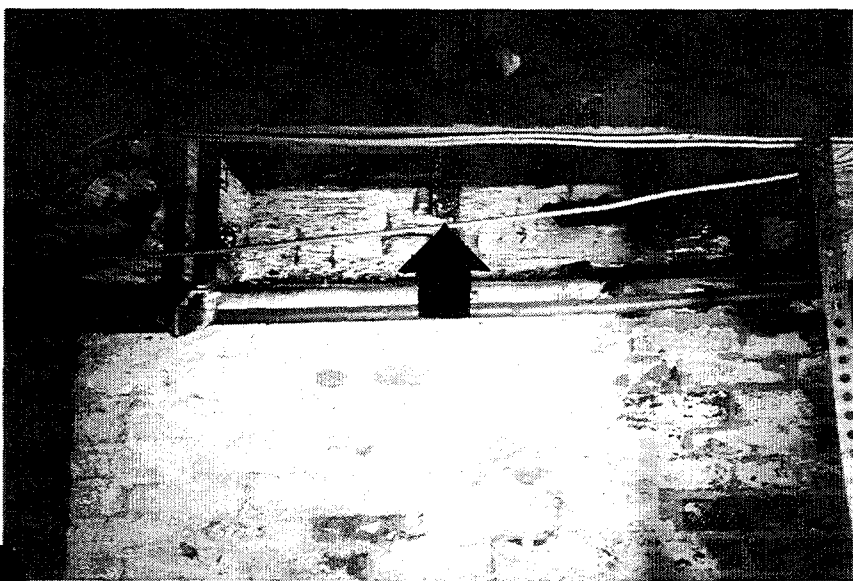


FIGURE 3.14: ALTERED FRAMING

View of sill beam at the interior basement stair opening. Note the severed joist tenon remaining in the sill beam mortise.

Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.15: FOUNDATION WALL

View of brick foundation wall at the exposed base.

Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.16: FLOOR FRAMING

First floor framing at Crawlspace 004A.

Photo by Fischer-Wisnosky Architects, Inc.

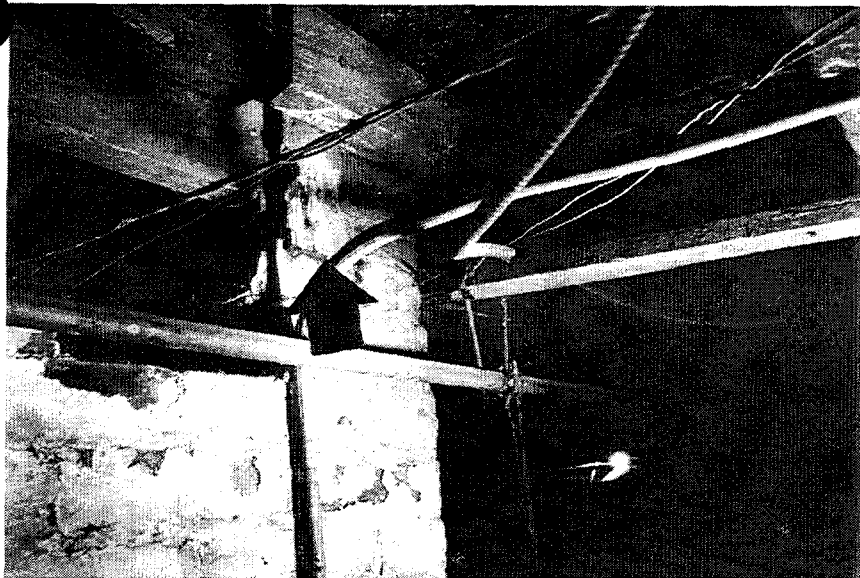


FIGURE 3.17: ORIGINAL CORNER BOARD

Remnants of an original corner board.

Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.18: ORIGINAL CORNER BOARD

Original corner board and wide board sheathing behind later wall finishes. Note the faint historic clapboard siding marks on the board.

Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.19: CORNER BRACING

Diagonal corner bracing at the present northwest (original southwest) exterior corner of the 1840 cottage.

Photo by Fischer-Wisnosky Architects, Inc.

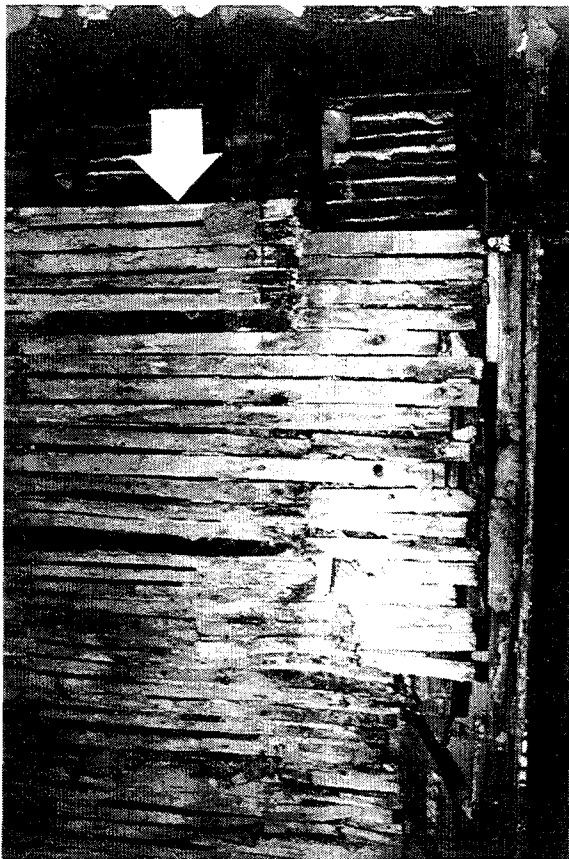


FIGURE 3.20: HAND-SPLIT LATH

Pre-1850 lath at the intermediate post at the east wall of Room 104A.

Photo by Fischer-Wisnosky Architects, Inc.

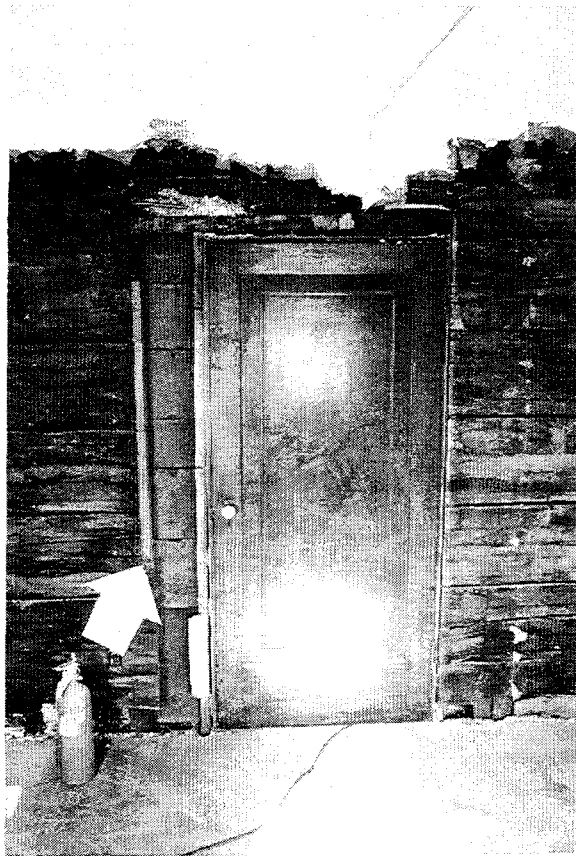


FIGURE 3.21: ORIGINAL WINDOW LOCATION

Door 108E is placed in a former window location. Note the short sheathing board return at the lower left corner of the opening.

Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.22: ORIGINAL STAIR STRINGER

Note the vertical board wall finish at the wall adjacent to the stud.

Photo by Fischer-Wisnosky Architects, Inc.

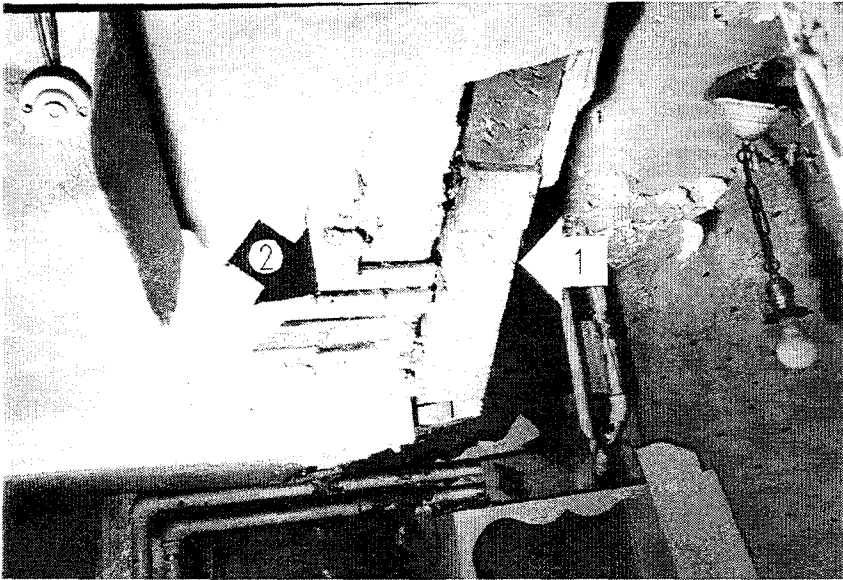


FIGURE 3.23: HAND-SPLIT LATH AT THE STAIR SOFFIT

Remnants of the removed original interior wall at first floor (1) are seen in this photograph. Note the hand-split hickory lath on the stair soffit (2).

Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.24: CUT-OUT IN THE SHEATHING

Opening cut in sheathing for the flue pipe passage.

Photo by Fischer-Wisnosky Architects, Inc.

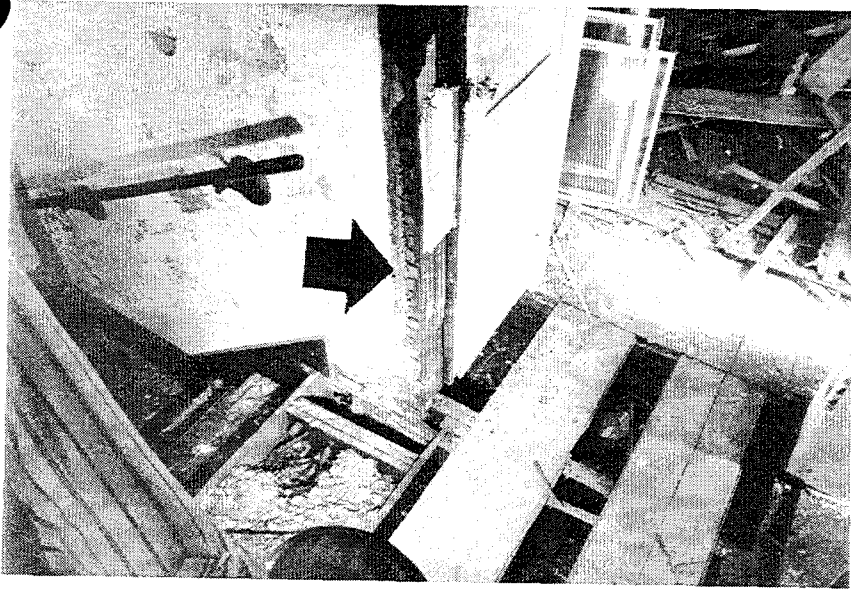


FIGURE 3.25: NON-EXTANT HISTORIC WALL

Remnants of non-extant original interior wall are seen at second floor. Note the hand-split hickory lath and line of an apparent non-extant door trim.

Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.26: NON-EXTANT HISTORIC WALL

Remnants of non-extant original interior wall at second floor. Note the notch in the bottom of the stud.

Photo by Fischer-Wisnosky Architects, Inc.

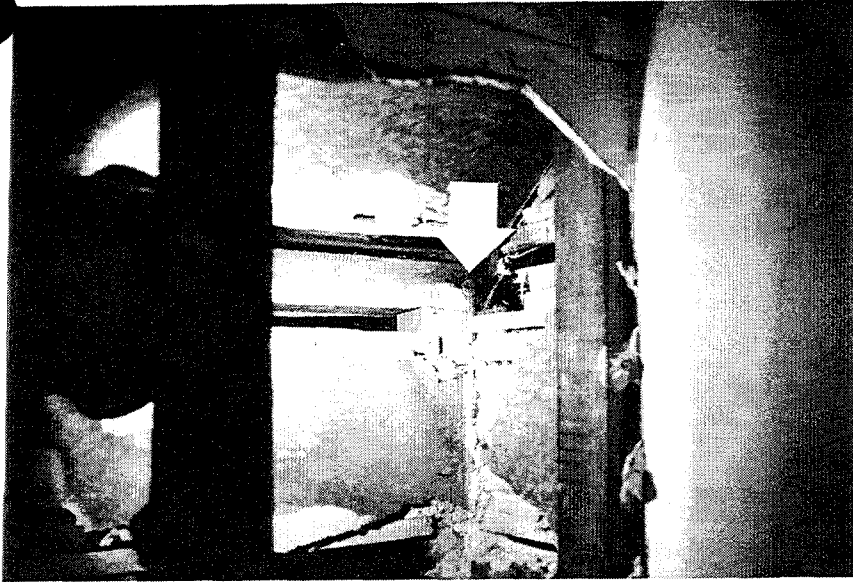


FIGURE 3.27: ORIGINAL TOP PLATE

Exterior sidewall at the top plate. Note the treenail fastening at the top plate and corner post.

Photo by Fischer-Wisnosky Architects, Inc.

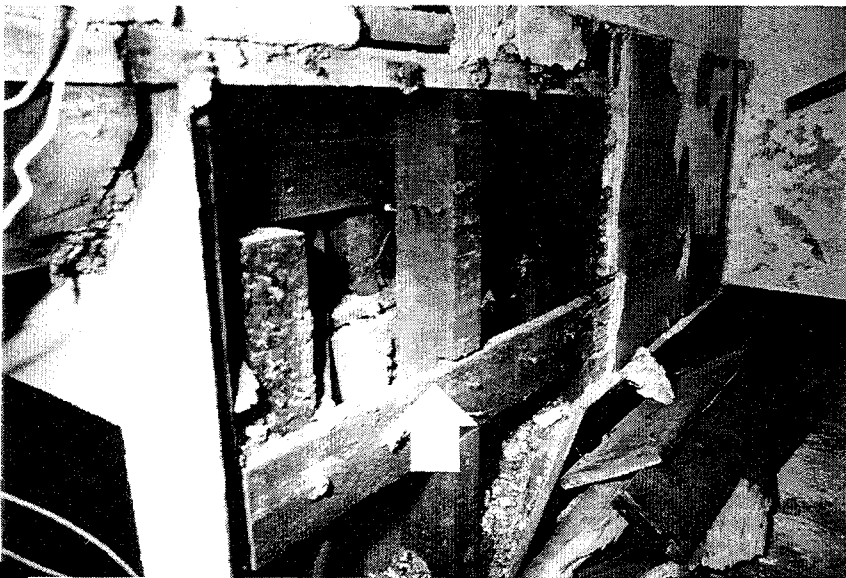


FIGURE 3.28: LEDGER BOARD AT STAIR

Ledger board at the exterior sidewall adjacent to Stair S1. Note the joist saddles on the ledger adjacent to the studs.

Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.29: ROOF FRAMING AT NON-EXTANT CHIMNEY

View of the framing closure at the non-extant chimney.

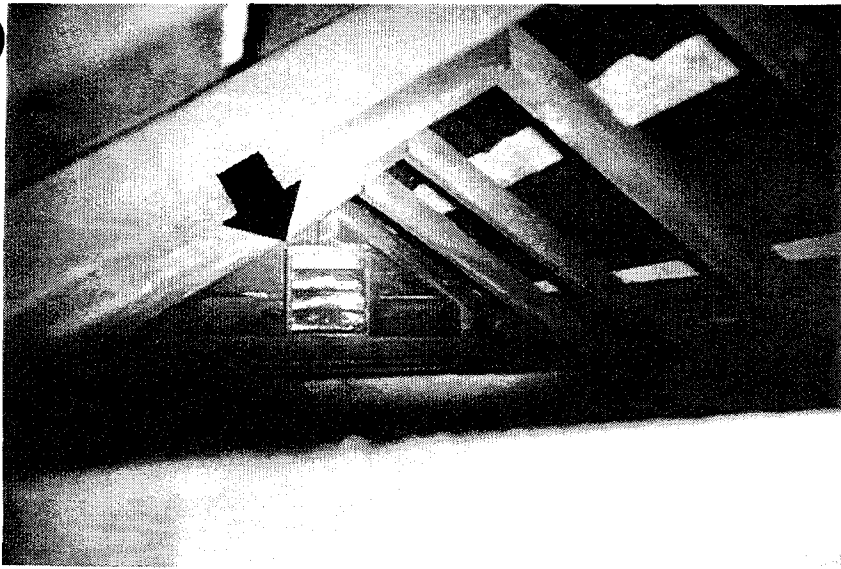
Photo by Fischer-Wisnosky Architects, Inc.



FIGURE 3.30: ROOF FRAMING

View of the roof rafters and original roof sheathing.

Photo by Fischer-Wisnosky Architects, Inc.



**FIGURE 3.31: ROOF AND GABLE
ENDWALL FRAMING**

View of roof rafters and gable end condition. Note the severed stud at the attic vent louver.

Photo by Fischer-Wisnosky Architects,
Inc.

EXISTING CONDITIONS AND FABRIC ANALYSIS ENDNOTES

1. Frances Krupka, Arnold House (HS-20: LIHO) Draft Report (United States Department of the Interior, n.d.) p. 15.
2. This dimension is arrived at by comparing the proportions seen on the Sanborn maps and known dimension from the field investigations. Although Sanborn maps were drawn to a scale, it is not clear how multiple levels of reproduction of these documents has affected their dimensional reliability. Comparison of known dimensions of the Arnold House with the dimensions scaled from the Sanborn maps found that the scaled dimensions varied from the actual dimensions by $\pm 2'-0"$. Thus, scaling from the Sanborn maps is unreliable in this case.
3. Robert R. Harvey and Mary A. Clarke, Historic Grounds Report and Landscape Plan, Lincoln Home National Historic Site, Springfield, Illinois (Omaha, Nebraska: National Park Service, April 1982), V1-1 & V1-2.
4. Ibid.
5. Vergil E. Noble, Trip Report; July 8 - August 1991 (National Park Service; Midwest Archeological Center, September 6, 1991), V1-1 & V1-2.
6. Ibid., 3.
7. Ibid.
8. Ibid., 2.
9. David Arbogast, Mortar and Plaster Analysis: The Arnold House, Lincoln Home National Historic Site, Springfield, Illinois (Iowa City, Iowa: July 1992), 1.
10. Hanson Engineers, Incorporated, Structural Analysis, Charles Arnold House, Lincoln Home National Historic Site, Springfield, Illinois (Springfield, Illinois: May 1993), 1.
11. Ibid.
12. Ibid.
13. Ibid., 5.
14. Ibid.
15. Historic Structure Maintenance Log: Arnold House (HS-20). Lincoln Home National Historic Site. These shingles were removed by the National Park Service in the summer of 1984 during repairs made to the roof. No note was made of the shingle species.
16. Ibid.
17. Hanson Engineers, Incorporated.

18. David Arbogast, Paint Analysis: The Arnold House, Lincoln Home National Historic Site, Springfield, Illinois (Iowa City, Iowa: June 1992), 28 & 29.
19. Ibid., 29, 32, and 34.
20. Andrea Gillmore, Memorandum, Paint Samples from Arnold House (National Park Service, North Atlantic Region, April 10, 1986).
21. Ibid., 31.
22. Ibid., 34.
23. 1850 is generally accepted date when hand-split lath gives way to sawn lath in the Springfield area.
24. David Arbogast, Mortar and Plaster Analysis: The Arnold House, Lincoln Home National Historic Site, Springfield, Illinois, 3 and P14.
25. David Arbogast, Paint Analysis: The Arnold House, Lincoln Home National Historic Site, Springfield, Illinois, 15.
26. Ibid, 16.
27. Ibid., 10 and 11. Two samples on this frame indicate these walnut pieces were probably grained. Walnut is the wood species found at other wood trim.
28. Ibid., 11.
29. Ibid., 13.
30. Ibid., 21.
31. Ibid., 19 and 22.
32. Ibid, 12.
33. Ibid., 10 and 11.
34. F & F Consultants Incorporated, Inspection Report, Building Material Survey, Arnold House, Lincoln Home Historic Site, Springfield, Illinois. (Springfield, Illinois: June 26, 1992), II-2.

EXISTING CONDITIONS DRAWINGS

DIVISION IV

1 ABBREVIATIONS

A	AREA	P.T.D.	PAPER TOWEL DISPENSER
ABBREV	ABBREVIATION	PLAS	PLASTER
AC	AIR CONDITION	PRE	PRESERVE
ACT	ACTUAL	PREFAB	PREFABRICATED
ADD	ADDITION	PTD	PAINTED
AFF	ABOVE FINISHED FLOOR	QTY	QUANTITY
AGGR	AGGREGATE	R	RISER
ALM	ALARM	RAD	RADIATOR
AMT	AMOUNT	RD	ROUND
ATC	ACOUSTICAL TILE CEILING	REC	RECONSTRUCT
ASPH	ASPHALT	REM	REMOVE
AVG	AVERAGE	REP	REPAIR
B	BOTTOM	RES	RESTORE
BD	BOARD	RET	RETAIN
BET	BETWEEN	REV	REVISION
BI	BLACK IRON	RF	ROOF
BLDG	BUILDING	RG	RETURN AIR GRILLE
B.M.	BENCH MARK	RGH	ROUGH
BRK	BRICK	RIK	REPLACE IN KIND
CEM	CEMENT	SAL	SALVAGE
CI	CAST IRON	SB	SPLASH BLOCK
CI P	CAST IRON PIPE	SC	SILL COCK
CIR BKR	CIRCUIT BREAKER	SG	SUPPLY AIR GRILLE
CLG	CEILING	SHT	SHEET
CO	CONTRACTING OFFICER	SHT MTL	SHEET METAL
C.O.A.R.	CONTRACTING OFFICER'S AUTHORIZED REPRESENTATIVE	SM	SURFACE MOUNT
COL	COLUMN	SP	STEAM PIPE
CONC	CONCRETE	SPEC	SPECIFICATION
CONC B	CONCRETE BLOCK	SQ	SQUARE
CONTR	CONTRACTOR	SS	STAINLESS STEEL
CU FT	CUBIC FEET	STL	STEEL
CU YD	CUBIC YARDS	TG	TRANSFER GRILLE
CW	COLD WATER	T&G	TONGUE AND GROOVE
DEM	DEMOLISH	T.P.D.	TOILET PAPER DISPENSER
DET	DETAIL	THK	THICK
DIA	DIAMETER	TOB	TOP OF BEAM
DIM	DIMENSION	TOJ	TOP OF JOIST
DR	DRAIN	TR	TREAD
DS	DOWNSPOUT	TS	TUBULAR STEEL
EA	EACH	TYP	TYPICAL
EL	ELEVATION	V	VENT
EM	ELECTRIC METER	W/	WITH
EXT	EXTERIOR	W/O	WITHOUT
FE	FIRE EXTINGUISHER	WC	WATER CLOSET
FF	FINISHED FLOOR	WD	WIDTH
FIX	FIXTURE	WL	WATER LINE
FH	FIRE HYDRANT	WP	WOOD POST
FL	FLOOR	WS	WATER SUPPLY
FND	FOUNDATION	WSG	WALL SUPPLY AIR GRILLE
FR	FRAME	YD	YARDS
FT	FEET		
FTG	FOOTING		
GAL	GALLON		
GALV	GALVANIZED		
GAS	NATURAL GAS		
GL	GLASS		
GOVT	GOVERNMENT		
GP	GAS PIPE		
GPDW	GYPSTUM DRYWALL		
HDW	HARDWARE		
HT	HEIGHT		
HTG	HEATING		
HW	HOT WATER		
HWH	HOT WATER HEATER		
ID	INSIDE DIAMETER		
INS	INSULATION		
INT	INTERIOR		
JSTS	JOISTS		
LG	LONG		
LIN FT	LINEAR FEET		
M	METER		
MATL	MATERIAL		
MET	METAL		
MFR	MANUFACTURER		
NATL	NATIONAL		
NIC	NOT IN CONTRACT		
NOM	NOMINAL		
NTS	NOT TO SCALE		
OC	ON CENTER		
OD	OUTSIDE DIAMETER		
OPNG	OPENING		
OPP	OPPOSITE		

2 SYMBOLS

DRAWING TITLE & SCALE	
EXISTING ROOM DESIGNATION	BEDROOM (SEE REMOVAL PLANS) E202 ROOM TITLE ROOM NO.
ROOM DESIGNATION	EQUIPMENT ROOM 105
EXISTING DOOR DESIGNATION	E122A (LOCATED IN DOOR SWING)
DOOR DESIGNATION	123A (LOCATED IN DOOR SWING)
EXISTING WINDOW DESIGNATION	E101A (LOCATED ADJACENT TO WINDOW)
WINDOW DESIGNATION	101A (LOCATED ADJACENT TO WINDOW)
VERTICAL ELEVATION	FIRST FLOOR ELEV. 100'-0"
DETAIL DESIGNATION	1-110 DETAIL NO. 110 SHEET NO.
BUILDING SECTION	1-A15 DETAIL NO. A15 SHEET NO.
CONSTRUCTION NOTES	C3/A23 SHEET NO. NOTE NO.
REMOVAL NOTES	R1/A5
WALL TYPE DESIGNATION	A
NEW WALL	
EXISTING WALL	
DIMENSION TO CENTERLINE	
DIMENSION TO FACE OF MATERIAL (UNLESS OTHERWISE INDICATED)	
WATER LINE	W
WATER METER	
GAS LINE	G
GAS METER	
STORM SEWER	+
SANITARY SEWER	SAN
MANHOLE	
BENCH MARK	
EXISTING CONTOUR	560
NEW CONTOUR	560
PROPERTY LINE	PL
CONSTRUCTION LIMITS	
FIRE HYDRANT	
UNDERGROUND ELECTRICAL LINE	EUG
POWER POLE	OPP
ELECTRIC PEDESTAL FOR UNDRGRD. LINE	EP
UNDERGROUND TELEPHONE LINE	T
FIBER OPTICS LINE	F.O.
ORNAMENTAL STREET LIGHT	
NOMINAL LUMBER SIZE	2x8
EXACT LUMBER SIZE	2"x8"

3 MATERIALS

	EARTH
	GRAVEL
	CONCRETE
	BRICK
	LIMESTONE
	MARBLE
	STEEL
	ROUGH WOOD CONSTRUCTION
	WOOD BLOCKING
	FINISH WOOD
	PLYWOOD
	GLASS
	PLASTER
	WOOD SHINGLES
	BATT INSULATION
	POURED OR BLOWN FILL INSULATION
	SHEATHING
	SHEET METAL IN ELEVATION

4 MECHANICAL/ELECTRICAL SYMBOLS

	DIAMETER
	RETURN AIR DUCT
	SUPPLY AIR DUCT
	SUPPLY AIR DUCT-ROUND
	SUPPLY DIFFUSER
	RETURN GRILLE
	THERMOSTAT
	EXPOSED HORIZONTAL PIPING
	HIDDEN HORIZONTAL PIPING
	PIPING UP
	PIPING DOWN
	45° ELBOW
	90° ELBOW
	WALL HYDRANT
	TEE
	LINE PUMP
	LINE VALVE
	ELECTRICAL WALL OUTLET
	ELECTRICAL SWITCH
	ELECTRICAL SWITCH - 3 WAY
	ELECTRICAL SWITCH - DIMMER
	DECORATIVE INCANDESCENT FIXTURE
	RECESSED INCANDESCENT FIXTURE
	WALL MOUNTED INCANDESCENT FIXTURE
	INCANDESCENT FIXTURE/EXHAUST FAN
	INCANDESCENT UTILITY FIXTURE
	ACCENT FIXTURE
	FLUORESCENT FIXTURE
	UNDER CABINET FLUORESCENT FIXTURE
	SMOKE DETECTOR
	BRASS PENDANT SPRINKLER HEAD
	CONCEALED TYPE SPRINKLER HEAD
	BRASS UPRIGHT SPRINKLER HEAD
	EXHAUST FAN
	TELEPHONE
	DATA OUTLET

TITLE: **NOTES, SYMBOLS AND ABBREVIATIONS** PROJECT NO. **9208.00**

EXISTING CONDITIONS

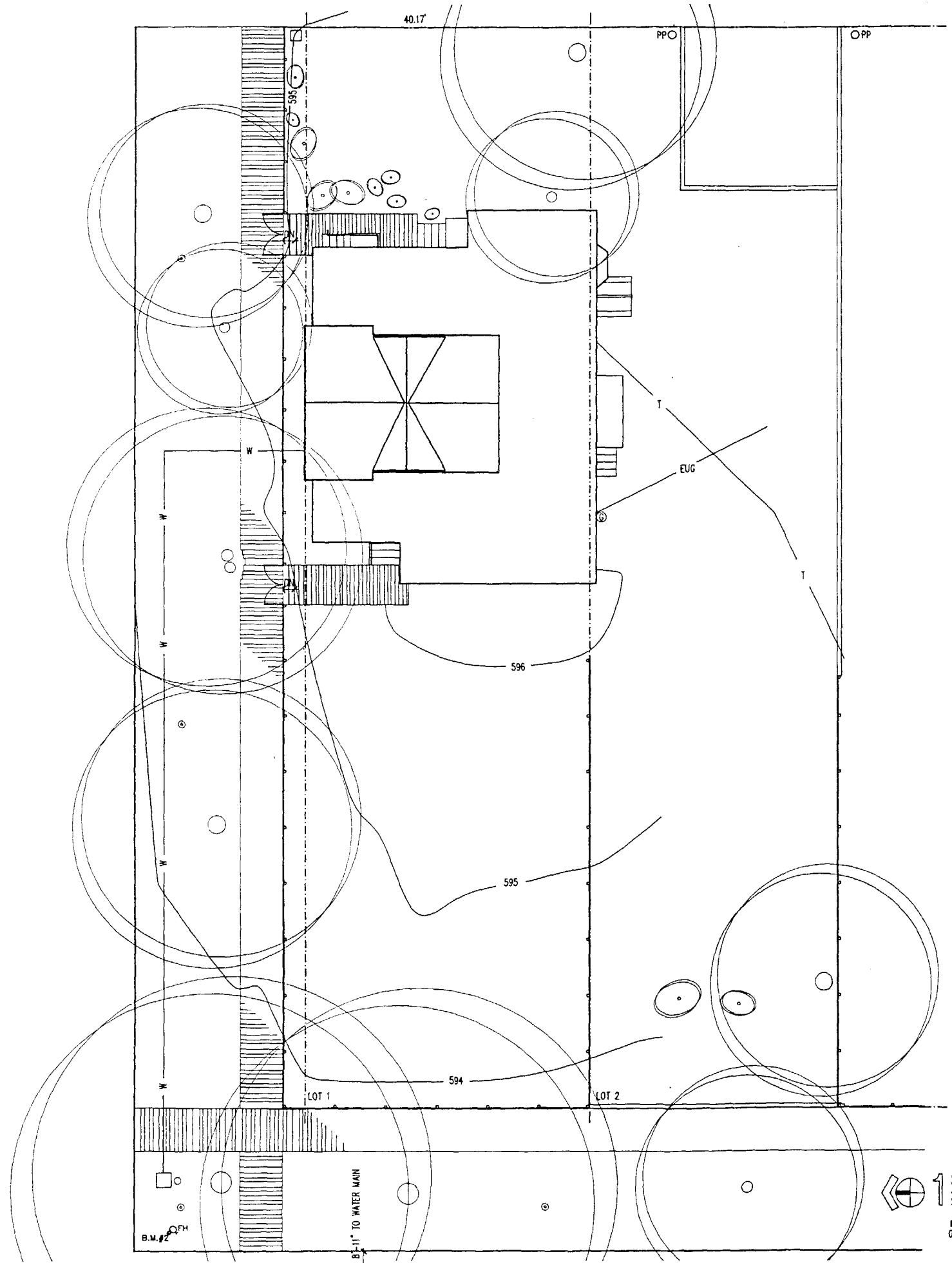
ARNOLD HOUSE (HS-20)


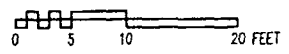
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED	PREPARED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 2
	DATE	OF 27

FILE: ECA00002

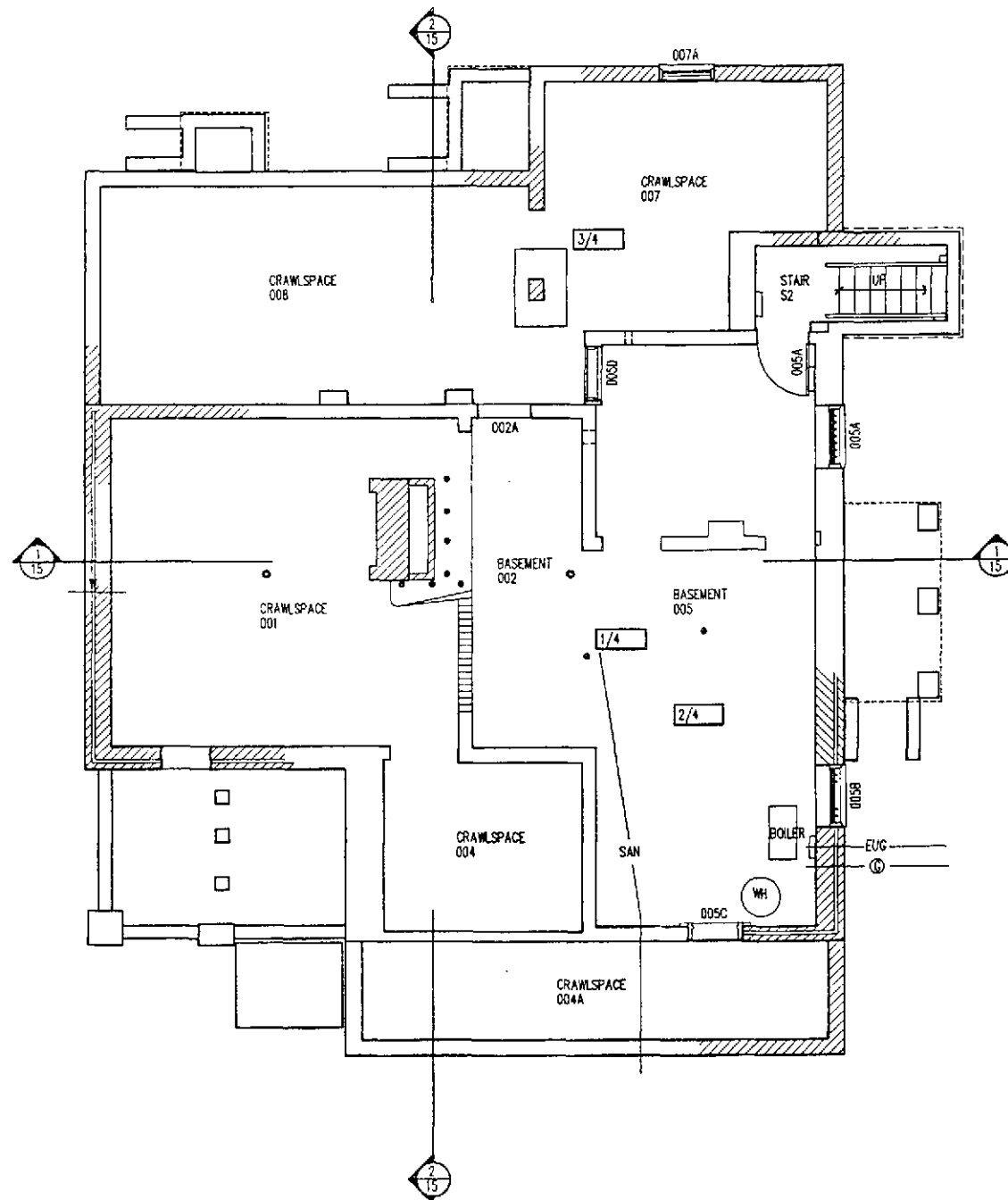




1 SITE PLAN
 SCALE: 1/8" = 1'-0"


TITLE:	PROJECT NO.
TOPOGRAPHICAL SITE PLAN	9208.00

EXISTING CONDITIONS
ARNOLD HOUSE
(HS-20)
 LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS
 FISCHER-WISNOSKY ARCHITECTS INC.

REVISED	PREPARED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET
	DATE	3
FILE: EPA01001		OF 27




BASEMENT FLOOR PLAN
 SCALE: 1/4" = 1'-0"
 0 5 10 FEET

GENERAL NOTES

1. THE EXTENT OF THE FOOTINGS UNDERLYING THE HOUSE REMAIN LARGELY UNKNOWN

NOTES

1. ROUND STEEL COLUMNS
2. POURED CONCRETE FLOOR IN ROOMS 002, 005 AND S2
3. CONCRETE PAD AT PIER

TITLE: BASEMENT FLOOR PLAN	PROJECT NO. 9208.00
--------------------------------------	------------------------

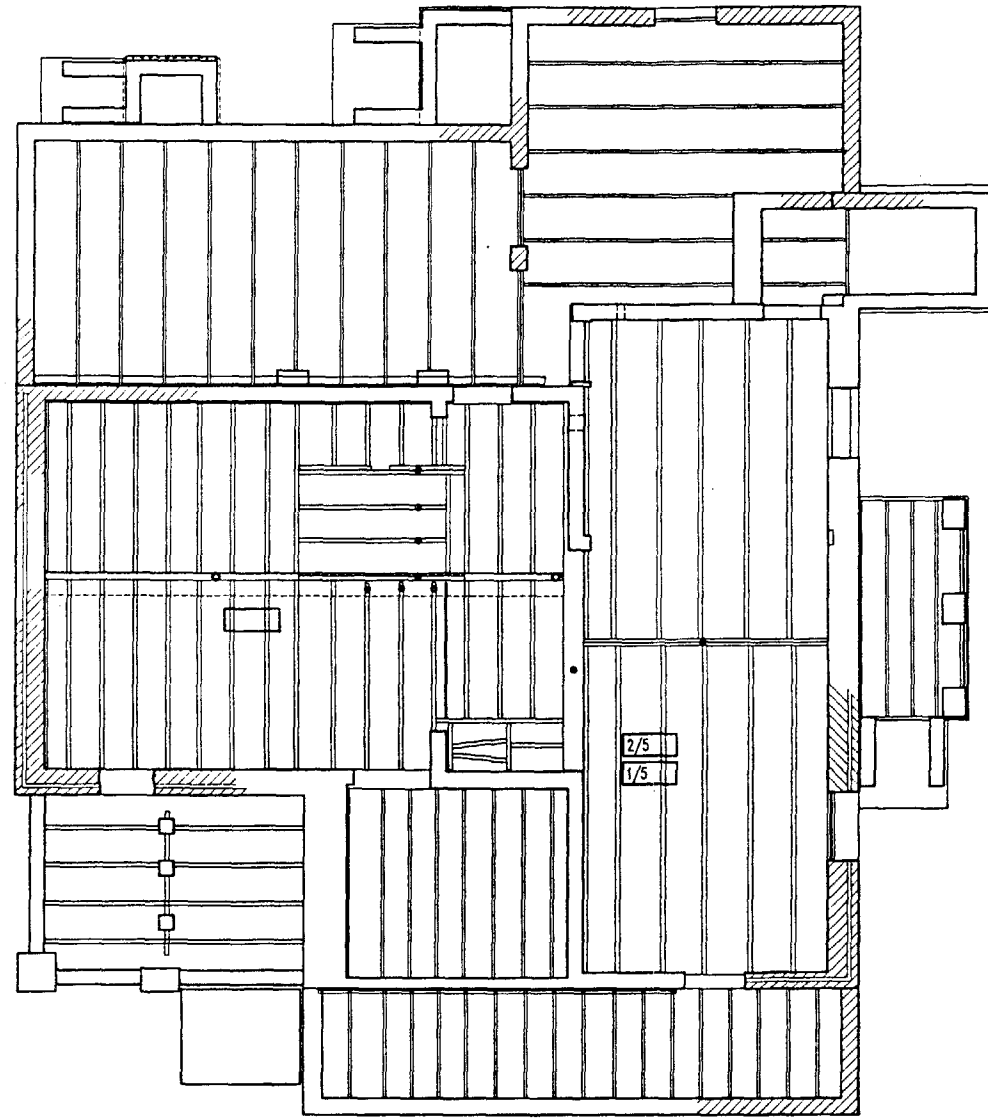
EXISTING CONDITIONS

**ARNOLD HOUSE
(HS-20)**

LINCOLN HOME NHS.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 4
	DATE	OF 27
FILE: EPA02001		



NOTES

1. REMNANT OF ORIGINAL CORNER BOARD
2. REMNANT OF ORIGINAL SIDING

TITLE: **BASEMENT FLOOR REFLECTED CEILING PLAN** PROJECT NO. **9206.00**

EXISTING CONDITIONS

ARNOLD HOUSE (HS-20)

LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

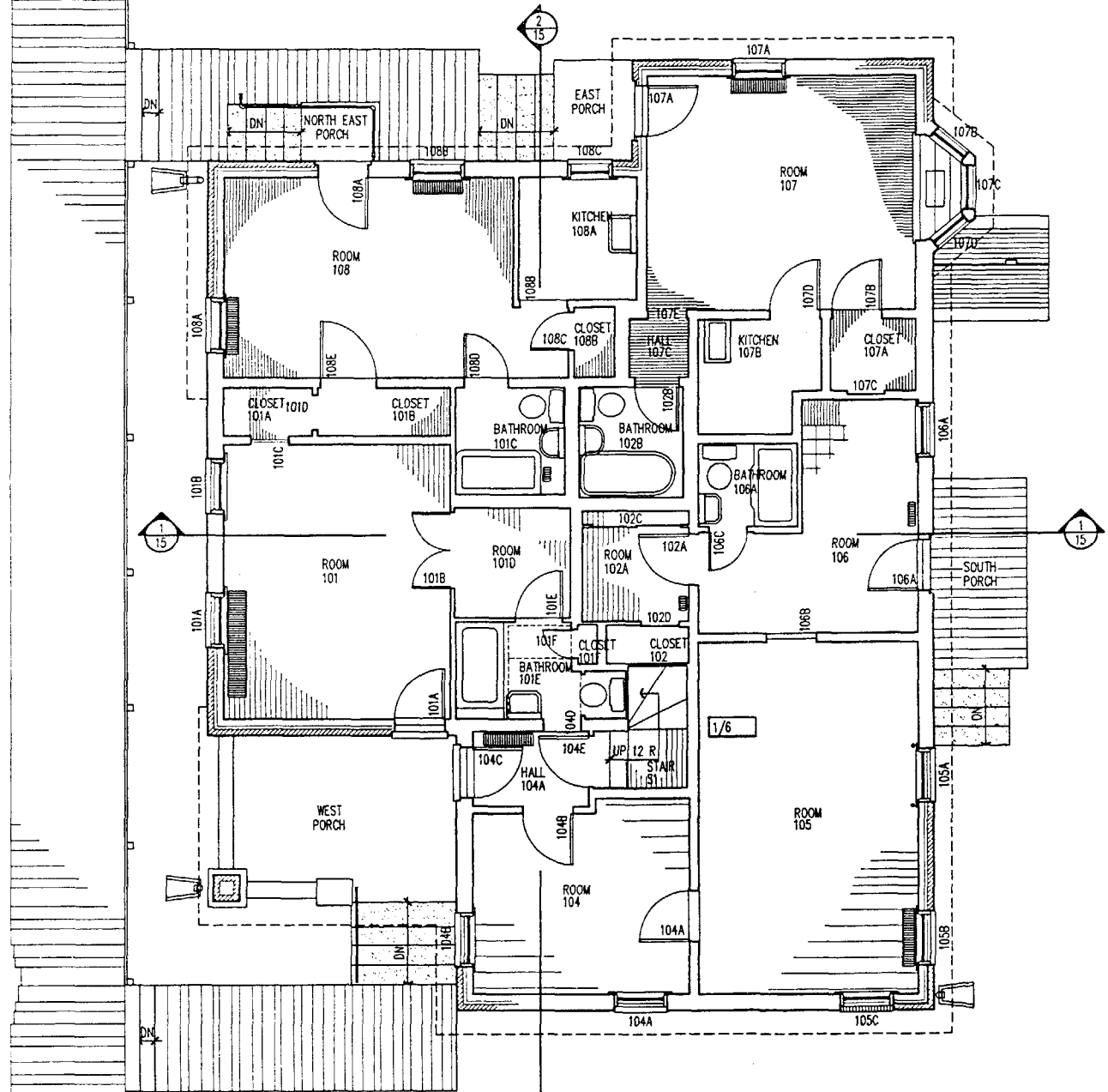
FISCHER-WISNOSKY ARCHITECTS INC.

REVISED		FIELD MEASURED	DRAWING NO.
DATE	INITIAL		
		DESIGNED	449
		DRAWN	80047
		CHECKED	SHEET 5
		DATE	OF 27

BASEMENT FLOOR REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"
0 5 10 FEET

GENERAL NOTES

1. REMNANT OF ORIGINAL CORNER BOARD



FIRST FLOOR PLAN
 SCALE: 1/4" = 1'-0"
 0 5 10 FEET

TITLE: **FIRST FLOOR PLAN** PROJECT NO. _____

EXISTING CONDITIONS

ARNOLD HOUSE (HS-20)

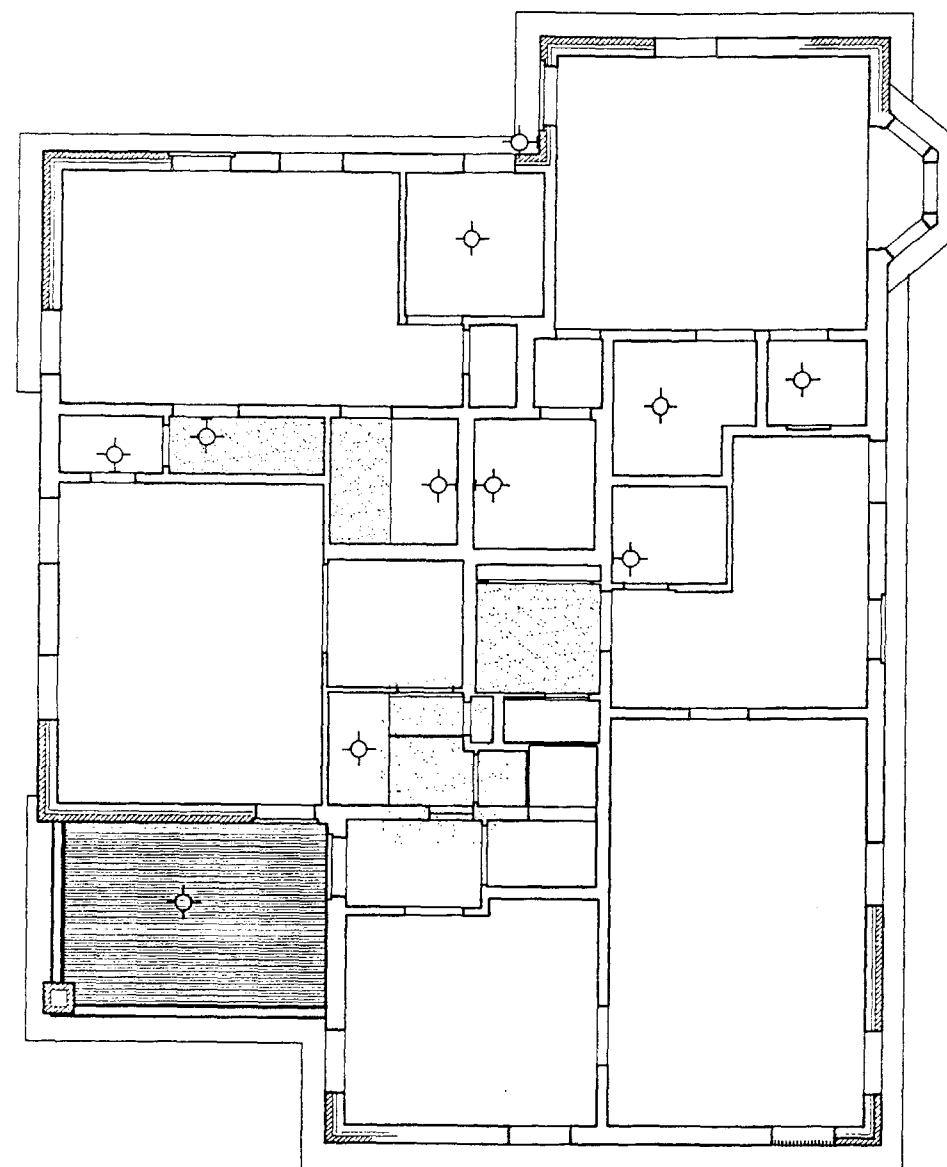
LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 6
	DATE	OF 27
FILE: EPA02002		

GENERAL NOTES

1. AREAS INDICATED WITH PLASTER FINISH ARE REMAINING AREAS OF HISTORIC PLASTER AND WOOD LATH.



TITLE: **FIRST FLOOR REFLECTED CEILING PLAN** PROJECT NO. **9208.00**

ARNOLD HOUSE (HS-20)

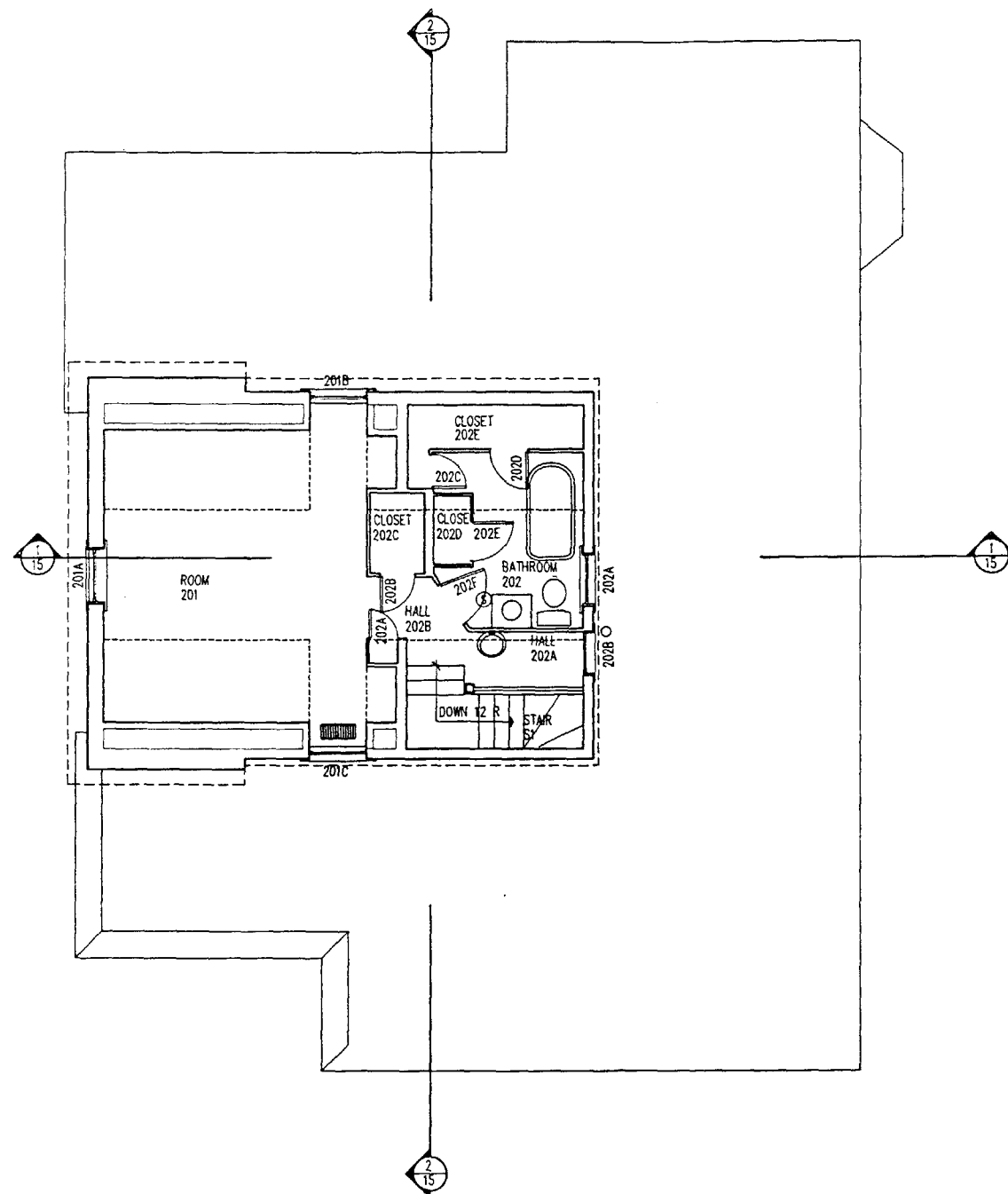
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS


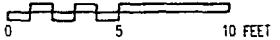
FISCHER-WSNOSKY ARCHITECTS INC.

REVISED		FIELD MEASURED	DRAWING NO.
DATE	INITIAL		
		DESIGNED	449
		DRAWN	80047
		CHECKED	SHEET 7
		DATE	OF 27

FIRST FLOOR REFLECTED CEILING PLAN
SCALE: $1/4" = 1'-0"$
0 5 10 FEET

NOTES




SECOND FLOOR PLAN
 SCALE: 1/4" = 1'-0"


TITLE: **SECOND FLOOR PLAN** PROJECT NO.

EXISTING CONDITIONS

**ARNOLD HOUSE
(HS-20)**

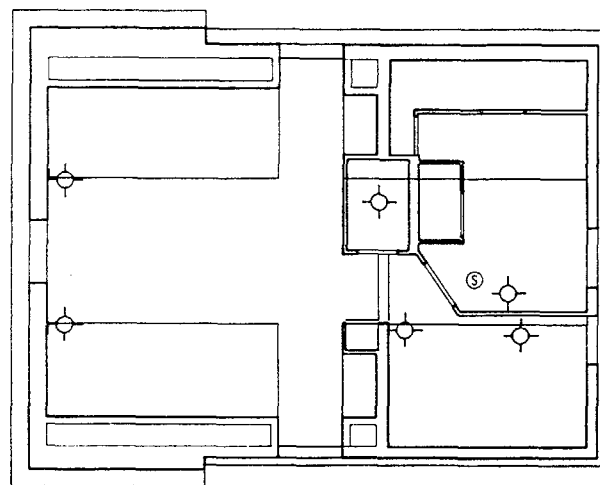
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED		FIELD MEASURED		DRAWING NO.
DATE	INITIAL	DESIGNED	DRAWN	449
				80047
			CHECKED	SHEET 8
			DATE	OF 27

FILE: EPA02003

NOTES



TITLE:
SECOND FLOOR REFLECTED
CEILING PLAN

PROJECT NO.
9208.00

EXISTING CONDITIONS

ARNOLD HOUSE
(HS-20)
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

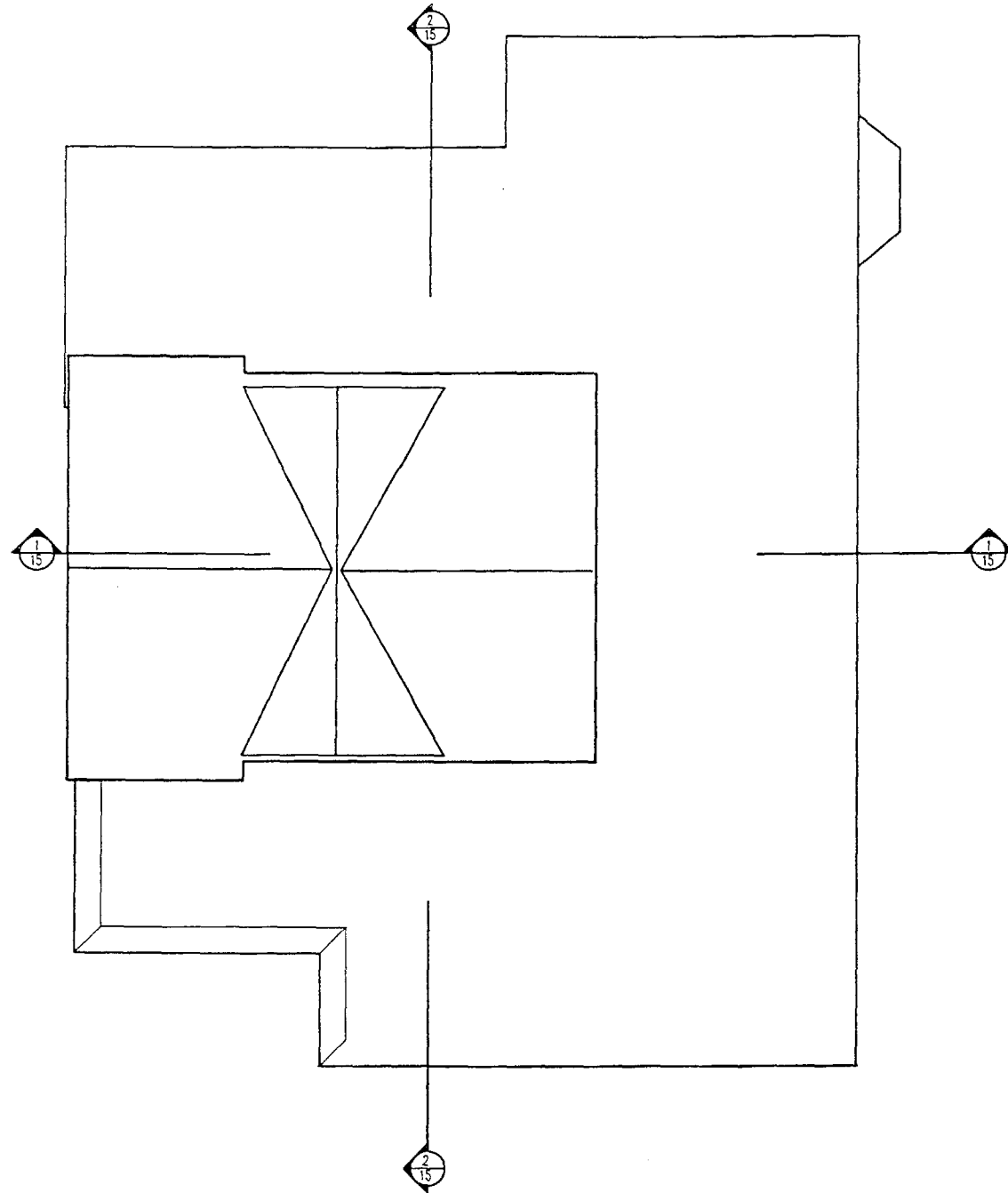
FISCHER-WISNOSKY ARCHITECTS INC.


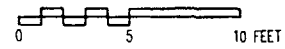
REVISED		FIELD MEASURED	DRAWING NO.
DATE	INITIAL	DESIGNED	449
		DRAWN	80047
		CHECKED	SHEET 9
		DATE	OF 27


SECOND FLOOR REFLECTED CEILING PLAN
 SCALE: 1/4" = 1'-0"


FILE: EPAC2003

NOTES




ROOF PLAN
 SCALE: 1/4" = 1'-0"


TITLE	PROJECT NO.
ROOF PLAN	9208.00

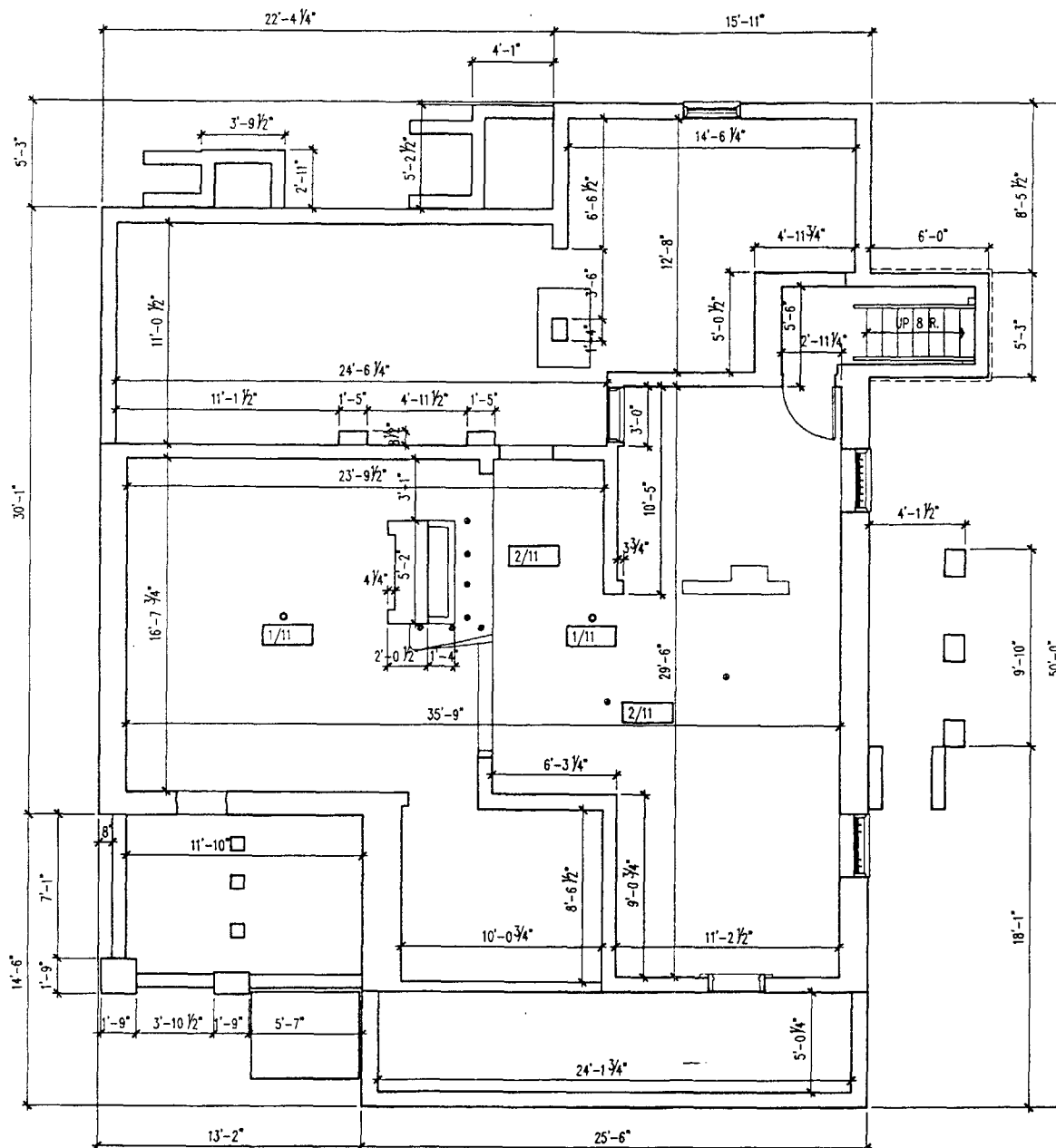
EXISTING CONDITIONS

ARNOLD HOUSE
 (HS-20)
 LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS
 FISCHER-WISNOSKY ARCHITECTS INC.

REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 10
	DATE	OF 27
FILE: EPA02004		

NOTES

- 1. 4" DIAMETER ROUND STEEL COLUMN
- 2. 2 3/4" DIAMETER ROUND STEEL COLUMNS



FOUNDATION PLAN
 SCALE: 1/4" = 1'-0"
 0 5 10 FEET

TITLE: DIMENSIONED FOUNDATION PLAN	PROJECT NO. 9208.00
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EXISTING CONDITIONS

**ARNOLD HOUSE
(HS-20)**
 LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS

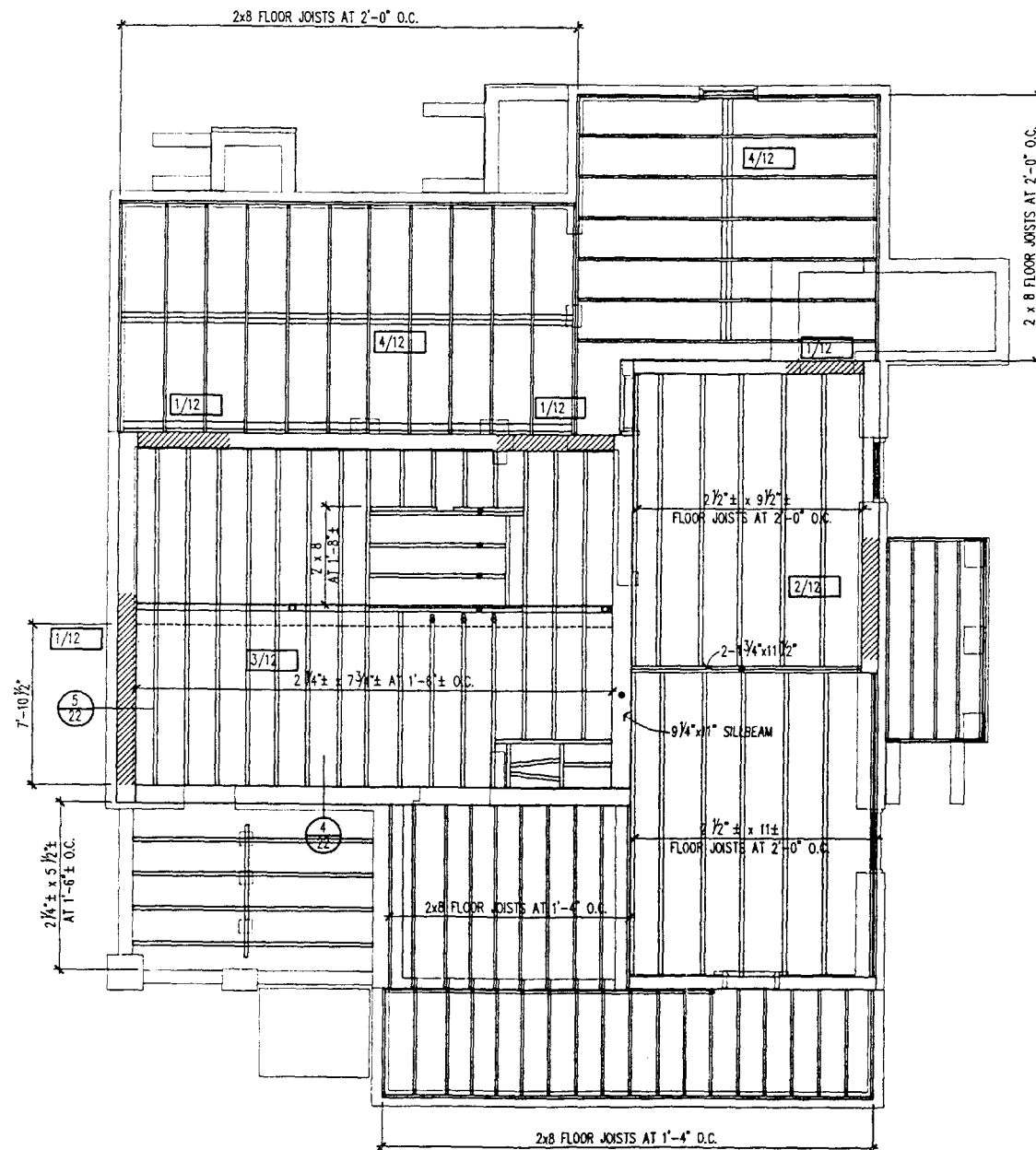
FISCHER-WISNOSKY ARCHITECTS INC.

REVISED		FIELD MEASURED		DRAWING NO.
DATE	INITIAL	DESIGNED	DESIGNED	449
		DRAWN	DRAWN	80047
		CHECKED	CHECKED	SHEET 11
		DATE	DATE	OF 27

FILE: EPS02003

NOTES

1. AREA OF SIGNIFICANT INSECT DAMAGED SILL BEAM
2. AREA OF SIGNIFICANT MOISTURE DAMAGED SILL BEAM
3. LOCATION OF NON-EXTANT BEAM (LIKELY WOOD) 1"x12" NOTCHES AT BOTTOM OF JOISTS
4. CROSS-BRIDGING AT MIDSPAN OF JOISTS IN THIS AREA



FIRST FLOOR FRAMING PLAN
 SCALE: 1/4" = 1'-0"
 0 5 10 FEET

FILE:	FIRST FLOOR FRAMING PLAN	PROJECT NO.	9206.00
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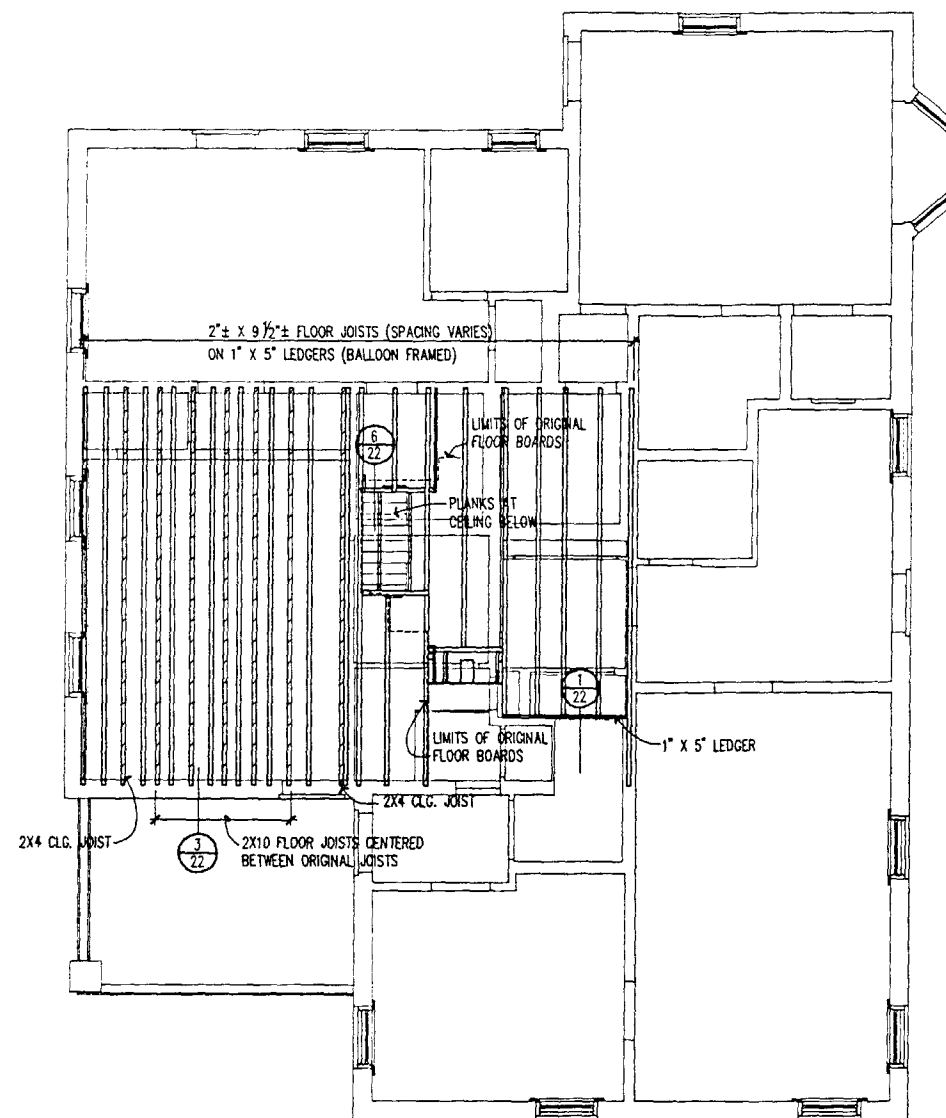
EXISTING CONDITIONS

ARNOLD HOUSE (HS-20)
 LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS
 FISCHER-WISNOSKY ARCHITECTS INC.

REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 12
	DATE	OF 27
FILE: EPS02000		

GENERAL NOTES

1. THE FRAMING AT THE ROOFS OF THE ONE-STORY ADDITIONS TO THE 1840 COTTAGE ARE NOT SHOWN. THE FRAMING OF THESE AREAS HAS NOT BEEN FULLY INVESTIGATED AND NEED NOT BE SINCE THEY WILL NOT REMAIN



LEGEND

- NINETEENTH CENTURY
- TWENTIETH CENTURY

TITLE: SECOND FLOOR FRAMING PLAN PROJECT NO. 9208.00

EXISTING CONDITIONS

ARNOLD HOUSE (HS-20)

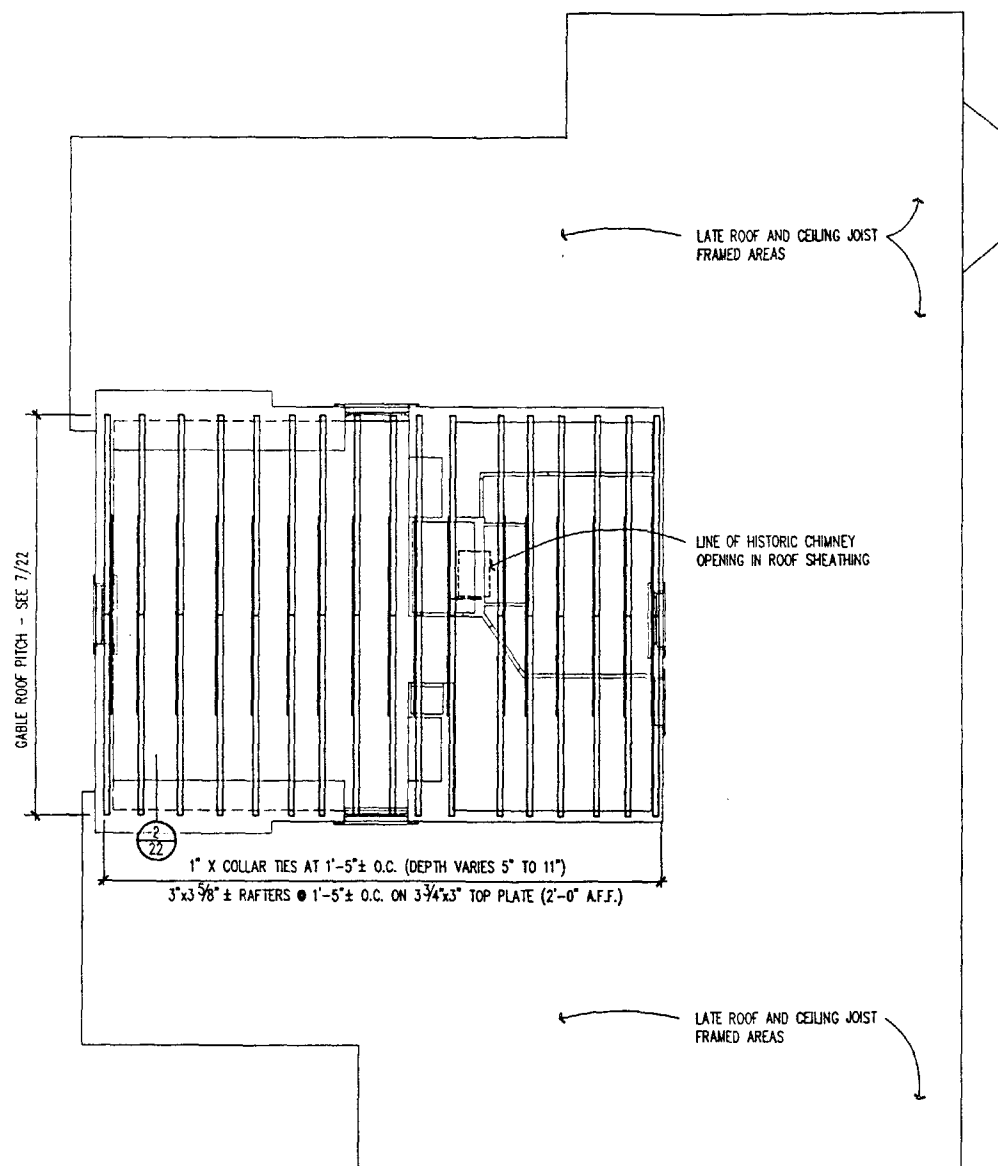
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 13
	DATE	OF 27

SECOND FLOOR FRAMING PLAN
SCALE: 1/4" = 1'-0"
0 5 10 FEET

NOTES



ROOF FRAMING PLAN
 SCALE: 1/4" = 1'-0"
 0 5 10 FEET

TITLE: ROOF FRAMING PLAN PROJECT NO. 9208.00

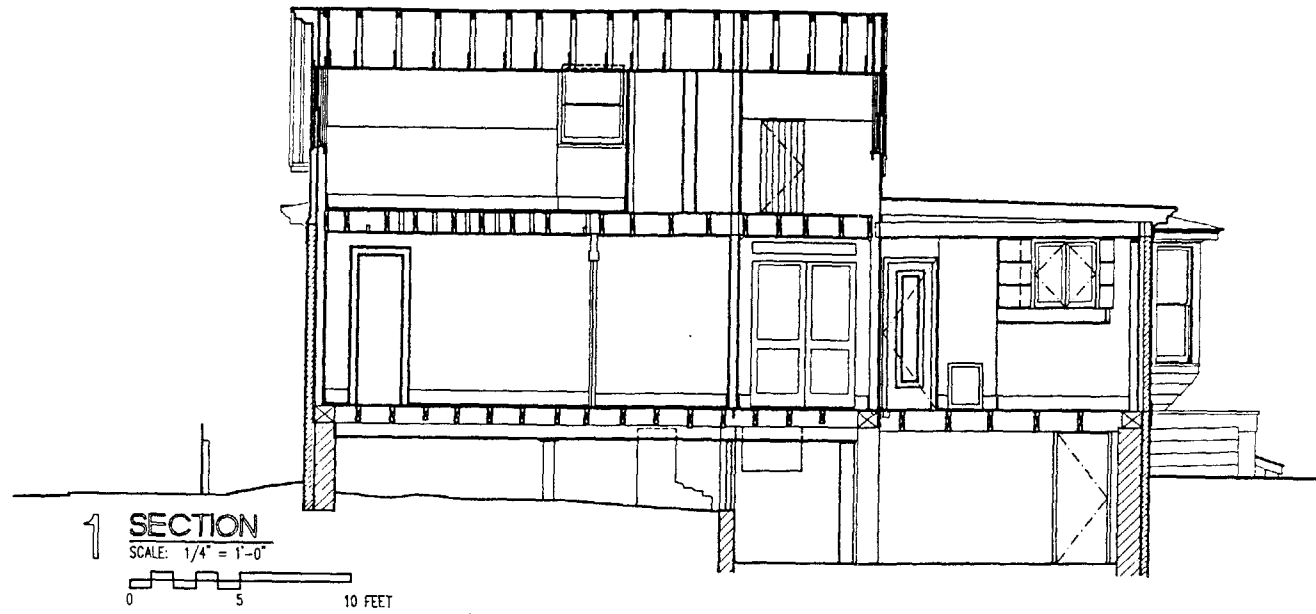
EXISTING CONDITIONS

ARNOLD HOUSE
 (HS-20)

LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED		FIELD MEASURED		DRAWING NO.
DATE	INITIAL	DESIGNED		449
		DRAWN		80047
		CHECKED		SHEET 14
		DATE		OF 27
FILE: EPS02002				



NOTES

TITLE: BUILDING SECTIONS PROJECT NO. 9208.00

EXISTING CONDITIONS

ARNOLD HOUSE (HS-20)

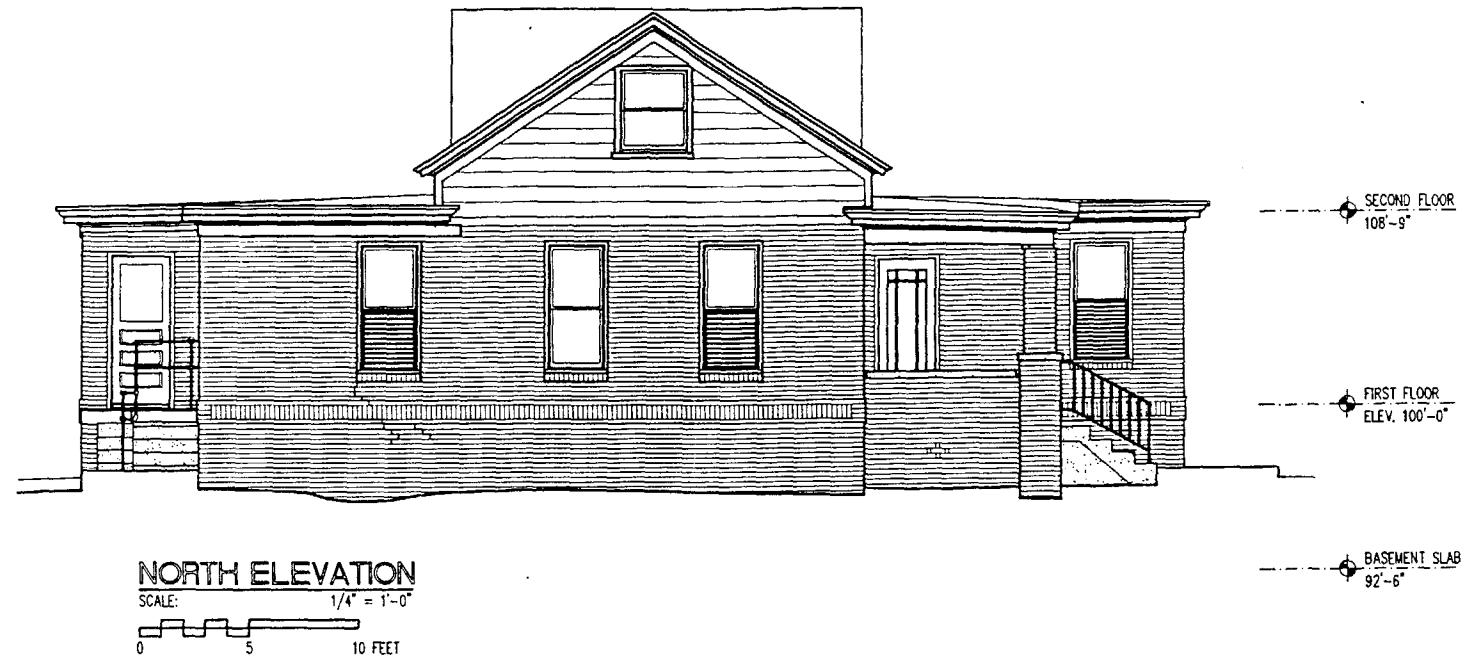
LINCOLN HOME N.H.S. SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED		FIELD MEASURED	DRAWING NO.
DATE	INITIAL		449
		DESIGNED	80047
		DRAWN	
		CHECKED	SHEET 15
		DATE	OF 27

FILE: ESA03001

NOTES



NORTH ELEVATION
SCALE: 1/4" = 1'-0"
0 5 10 FEET



EAST ELEVATION
SCALE: 1/4" = 1'-0"
0 5 10 FEET

TITLE: EXTERIOR ELEVATIONS		PROJECT NO. 9208.00
EXISTING CONDITIONS		
ARNOLD HOUSE (HS-20)		
LINCOLN HOME N.H.S. SPRINGFIELD, ILLINOIS		
FISCHER-WISNOSKY ARCHITECTS INC.		
REVISED DATE	INITIAL	FIELD MEASURED
		DESIGNED
		DRAWN
		CHECKED
		DATE
DRAWING NO. 449		SHEET 16 OF 27
80047		
FILE: EEA03001		

NOTES

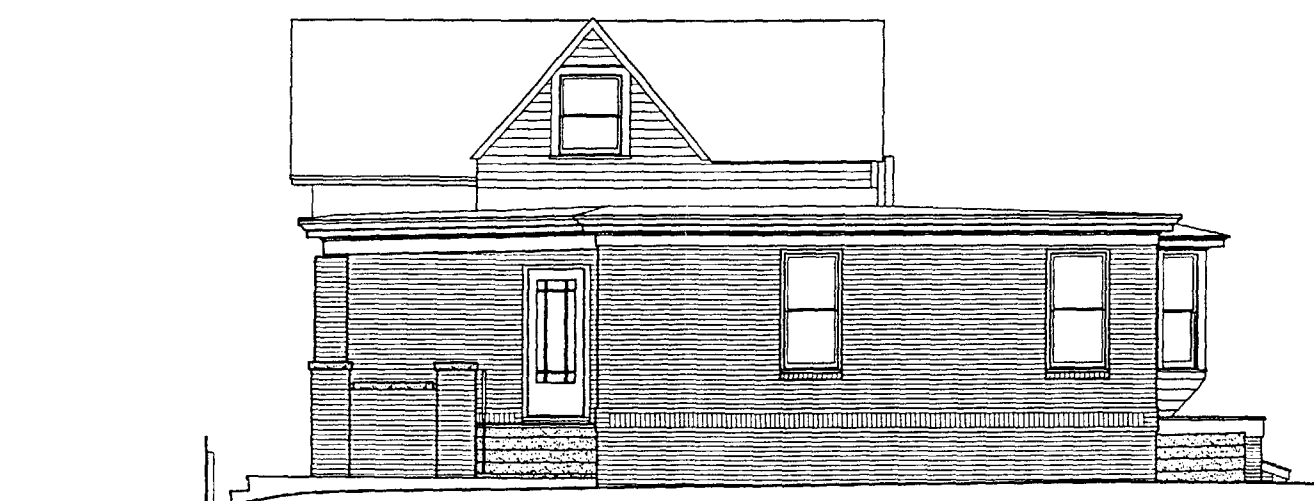


SOUTH ELEVATION
SCALE: 1/4" = 1'-0"
0 5 10 FEET

--- SECOND FLOOR
108'-9"

--- FIRST FLOOR
ELEV. 100'-0"

--- BASEMENT SLAB
92'-6"



WEST ELEVATION
SCALE: 1/4" = 1'-0"
0 5 10 FEET

--- SECOND FLOOR
108'-9"

--- FIRST FLOOR
ELEV. 100'-0"

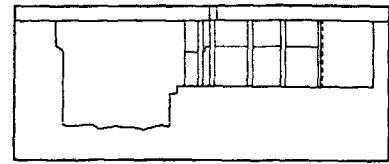
--- BASEMENT SLAB
92'-6"

TITLE: EXTERIOR ELEVATIONS PROJECT NO. 9208.00

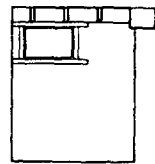
EXISTING CONDITIONS

ARNOLD HOUSE (HS-20)
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS
FISCHER-WISNOSKY ARCHITECTS INC.

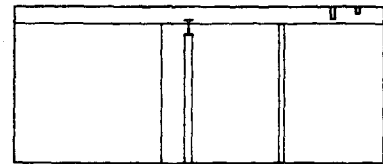
REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 17
	DATE	OF 27
FILE: EEAO3002		



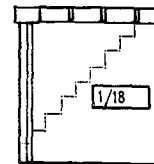
NORTH
002



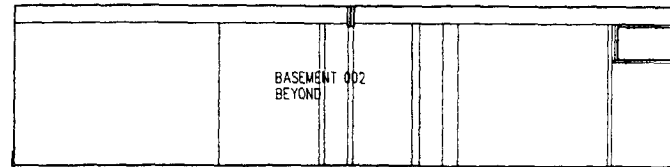
EAST



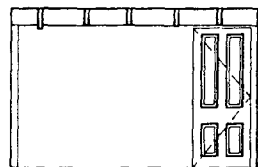
SOUTH



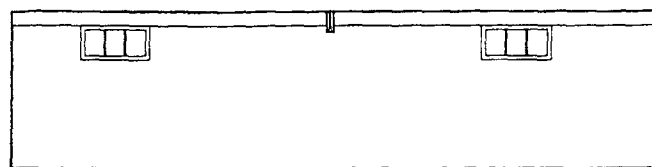
WEST



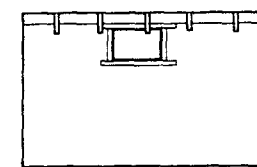
NORTH
005



EAST



SOUTH



WEST

NOTES

- GHOST IMAGE OF INTERIOR BASEMENT STAIR VISIBLE IN WHITEWASH

TITLE:	INTERIOR ELEVATIONS	PROJECT NO.	8208.00
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EXISTING CONDITIONS

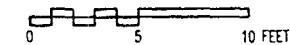
ARNOLD HOUSE
(HS-20)

LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

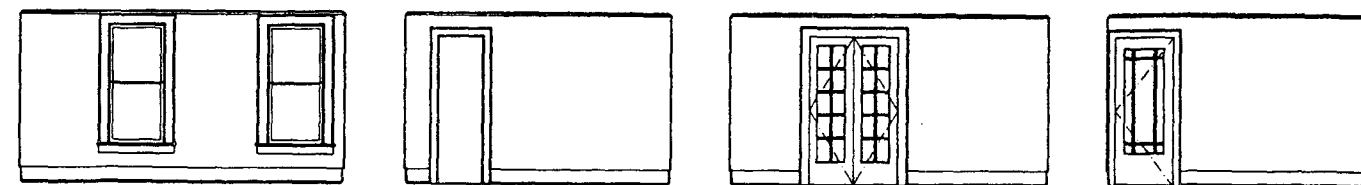
INTERIOR ELEVATIONS

SCALE: 1/4" = 1'-0"

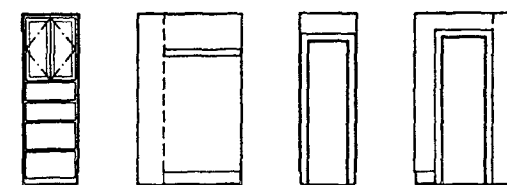


REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 18
	DATE	OF 27
FILE: EEAD5001		

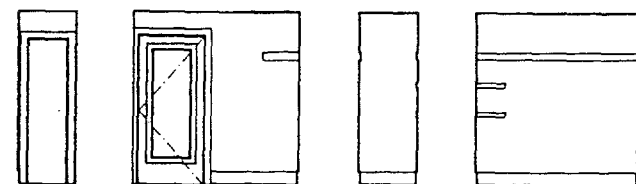
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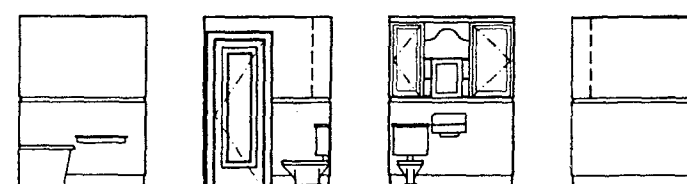
NORTH
101 - ROOM



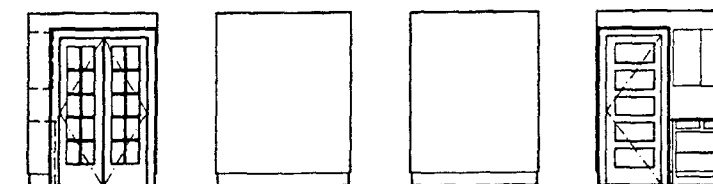
NORTH EAST SOUTH WEST
101A - CLOSET



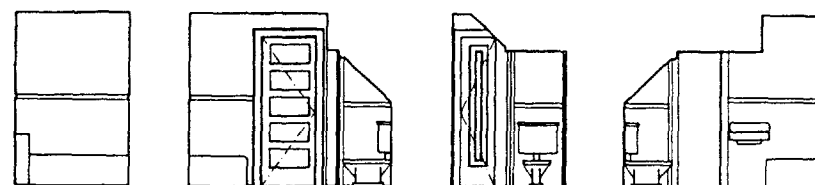
NORTH EAST SOUTH WEST
101B - CLOSET



NORTH EAST SOUTH WEST
101C - BATHROOM



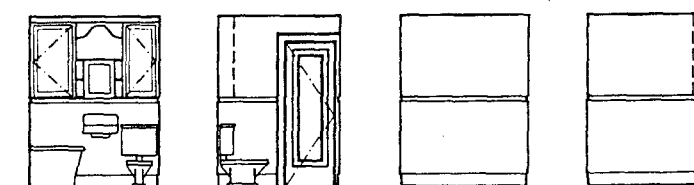
NORTH EAST SOUTH WEST
101D - ROOM



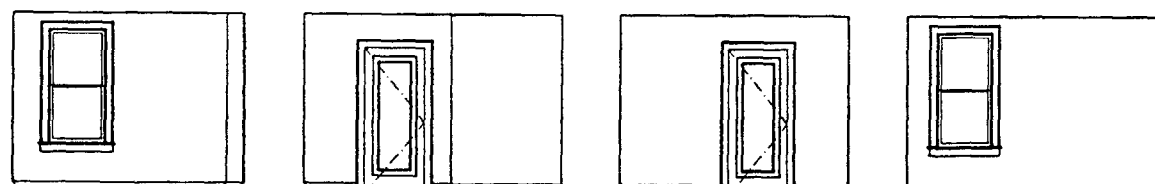
NORTH EAST SOUTH WEST
101E - BATHROOM



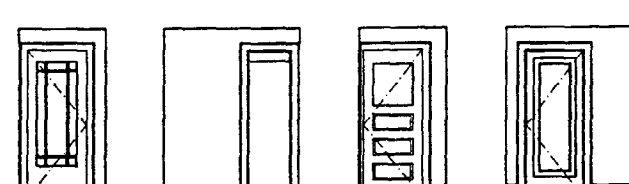
NORTH EAST SOUTH WEST
102A - ROOM



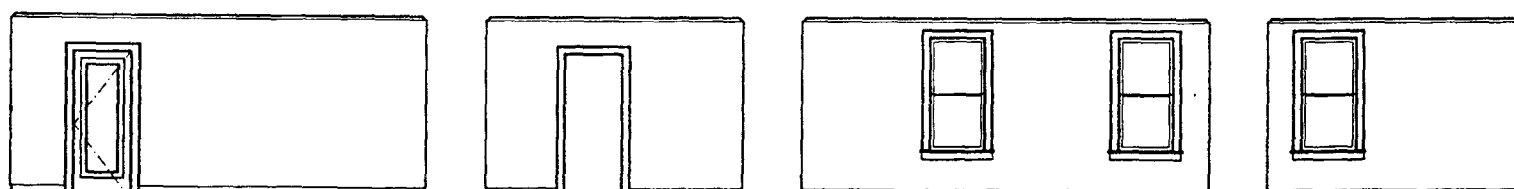
NORTH EAST SOUTH WEST
102B - BATHROOM



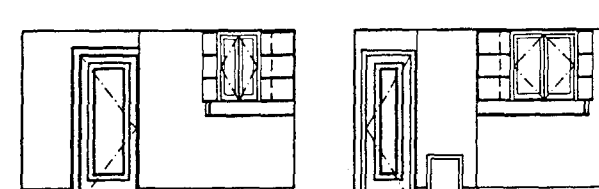
NORTH EAST SOUTH WEST
104 - ROOM



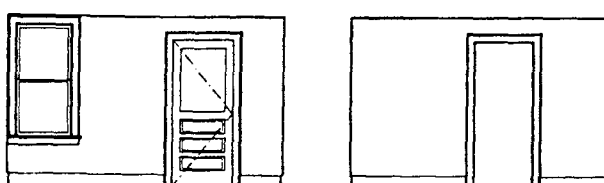
NORTH EAST SOUTH WEST
104A - HALL



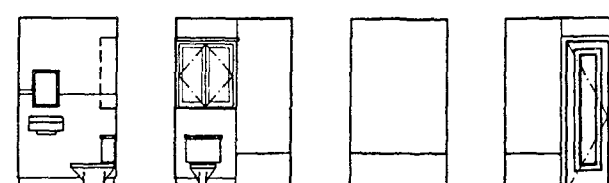
NORTH EAST SOUTH WEST
105 - ROOM



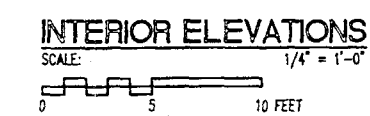
NORTH EAST
106 - ROOM



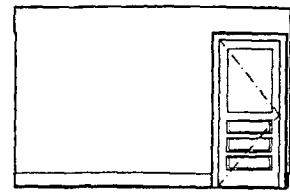
SOUTH WEST
106 - ROOM



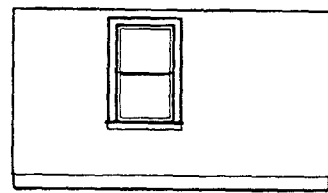
NORTH EAST SOUTH WEST
106A - BATHROOM



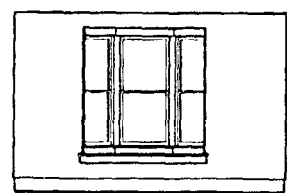
TITLE: INTERIOR ELEVATIONS		PROJECT NO. 9208.00
EXISTING CONDITIONS		
ARNOLD HOUSE (HS-20) LINCOLN HOME N.H.S. SPRINGFIELD, ILLINOIS FISCHER-WISNOSKY ARCHITECTS INC.		
REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	449 80047
	DESIGNED	SHEET 19
	DRAWN	
	CHECKED	OF 27
	DATE	
FILE: EEA05002		



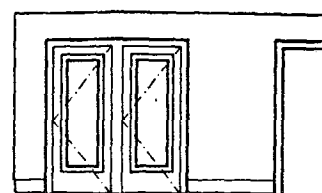
NORTH
107 - ROOM



EAST



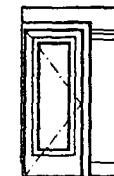
SOUTH



WEST



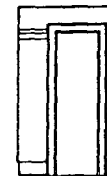
NORTH



EAST

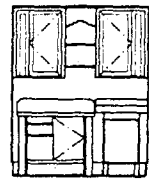


SOUTH

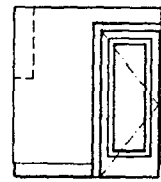


WEST

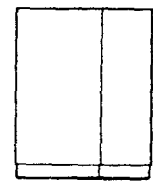
107A - CLOSET



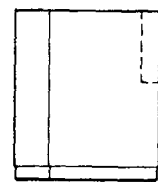
NORTH
107B - KITCHEN



EAST



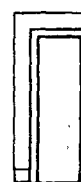
SOUTH



WEST



NORTH



EAST

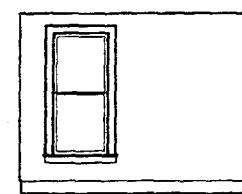


SOUTH

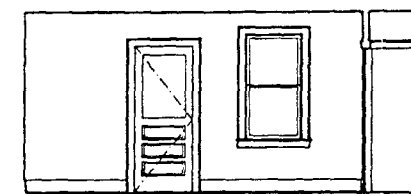


WEST

107C - HALL

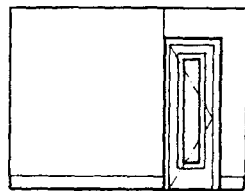


NORTH

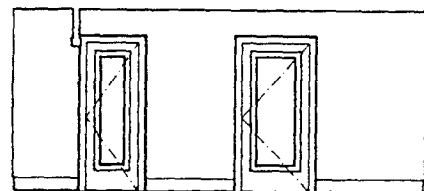


EAST

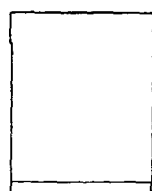
108 - ROOM



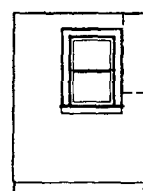
SOUTH
108 - ROOM



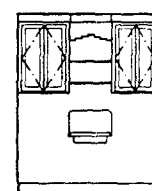
WEST



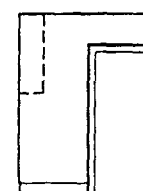
NORTH



EAST



SOUTH



WEST

108A - KITCHEN

NOTES

TITLE: INTERIOR ELEVATIONS	PROJECT NO. 9208.00
--------------------------------------	------------------------

EXISTING CONDITIONS

**ARNOLD HOUSE
(HS-20)**

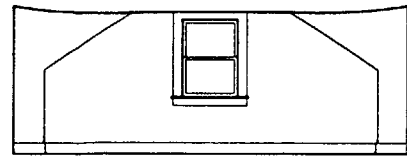
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

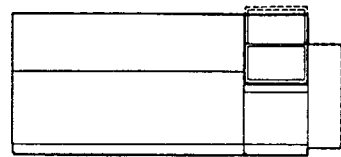
REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 20
	DATE	OF 27

INTERIOR ELEVATIONS
SCALE: 1/4" = 1'-0"
0 5 10 FEET

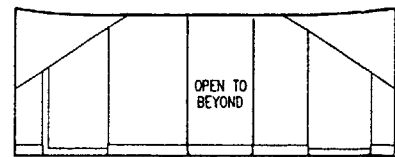
FILE: EEAD5003



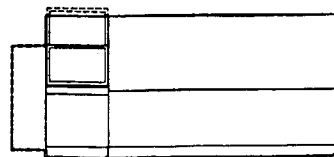
NORTH
201 - ROOM



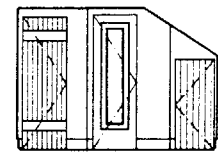
EAST



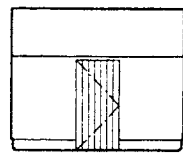
SOUTH



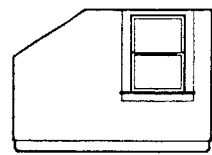
WEST



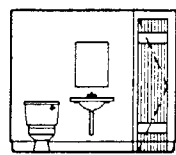
NORTH
202 - BATHROOM



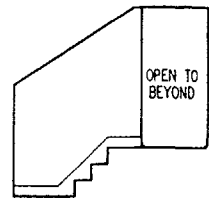
EAST



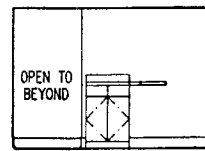
SOUTH



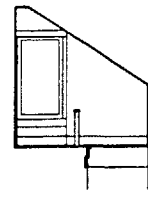
WEST



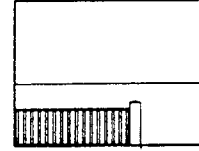
NORTH
202A - HALL



EAST



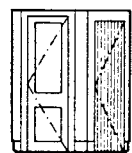
SOUTH



WEST



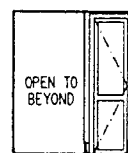
NORTH
202B - HALL



EAST



SOUTH



WEST

NOTES

TITLE:	INTERIOR ELEVATIONS	PROJECT NO.	9208.00
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EXISTING CONDITIONS

ARNOLD HOUSE
(HS-20)

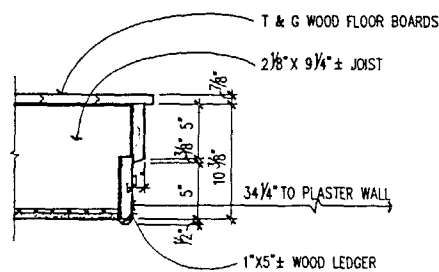
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

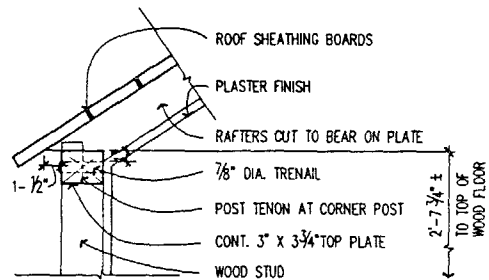
REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 21
	DATE	OF 27
FILE: EEA05004		

INTERIOR ELEVATIONS
SCALE: 1/4" = 1'-0"
0 5 10 FEET

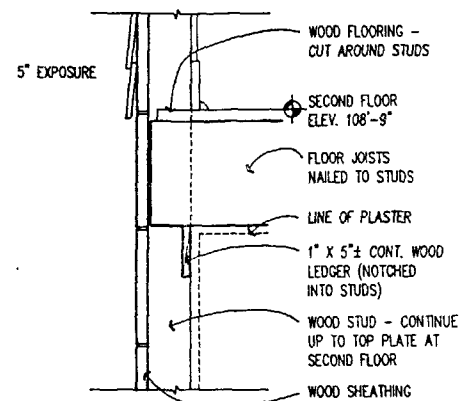
NOTES



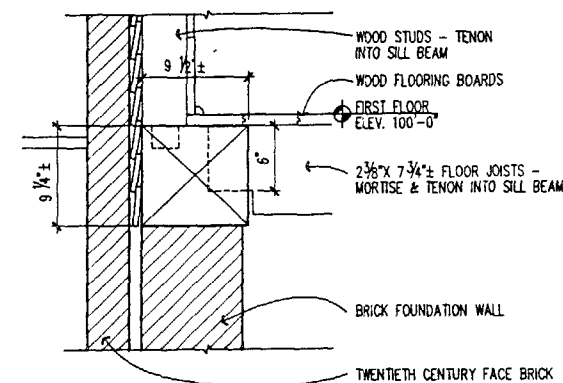
1 **DETAIL • STAIR HEADER**
SCALE 1-1/2" = 1'-0"



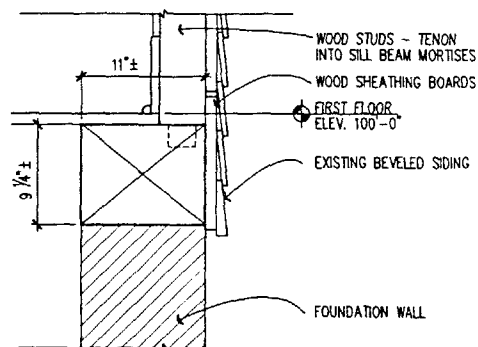
2 **DETAIL • RAFTER END**
SCALE 1-1/2" = 1'-0"



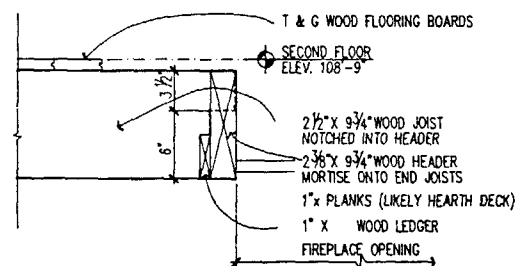
3 **SECOND FLOOR BALLOON FRAMING**
SCALE 1-1/2" = 1'-0"



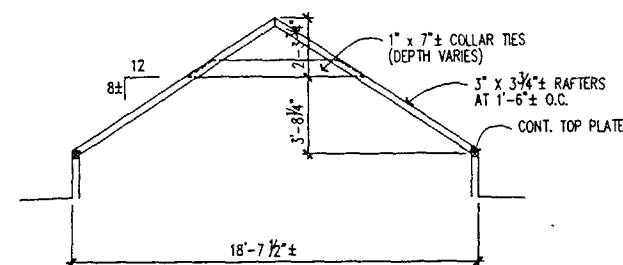
4 **SILL BEAM • CRAWLSPACE 001**
SCALE 1-1/2" = 1'-0"



5 **NORTH SILL BEAM • CRAWLSPACE 001**
SCALE 1-1/2" = 1'-0"



6 **TYPICAL HEADER • 2ND FLOOR OPENING**
SCALE 1-1/2" = 1'-0"



7 **SECTION • ROOF**
SCALE 1/4" = 1'-0"

TITLE: STRUCTURAL FRAMING DETAILS PROJECT NO. 9208.00

EXISTING CONDITIONS

ARNOLD HOUSE (HS-20)

LINCOLN HOME NHLS. SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED	PREPARED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 22
	DATE	OF 27

FILE: EMS04001

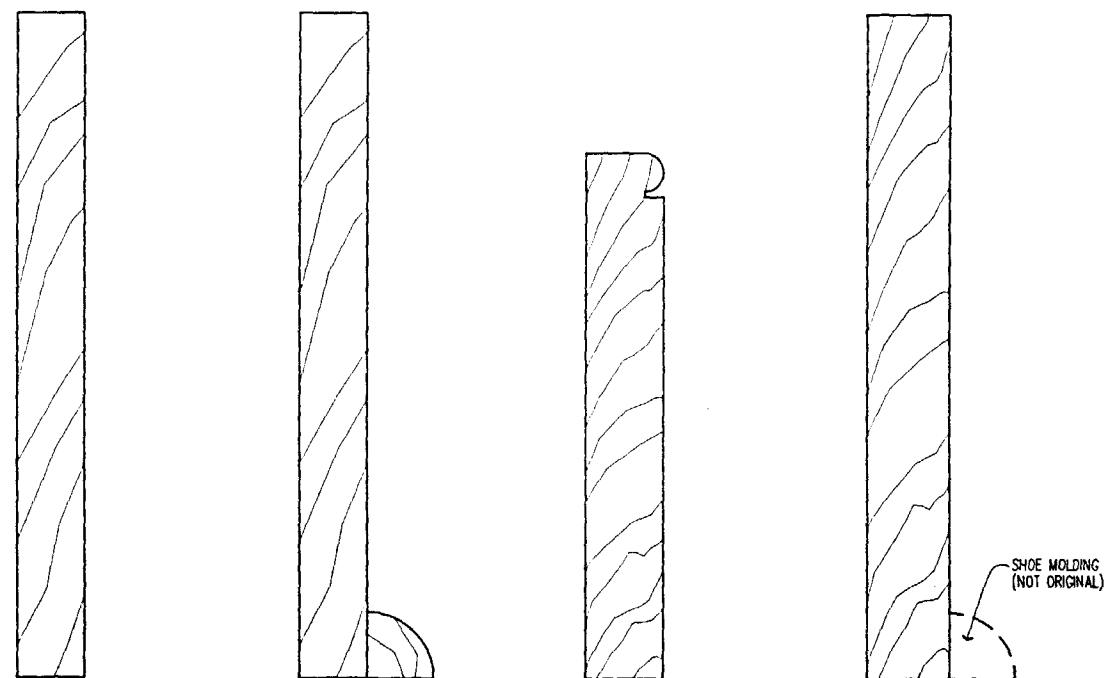
NOTES



TYPE "A" TYPE "B"

COVE TYPES FULL SIZE

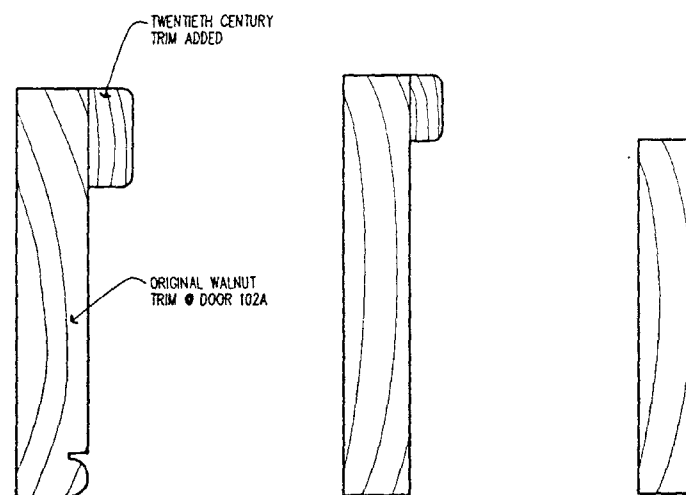
NOTE: NEITHER COVE TRIM DATES TO THE RESTORATION PERIOD



TYPE "A" TYPE "B" TYPE "C" TYPE "D"

BASE TYPES FULL SIZE

NOTE: ONLY BASE TYPES "C" (UNDER STAIR S1) AND "D" (FROM THE SECOND FLOOR) DATE TO THE RESTORATION PERIOD



TYPE "A" TYPE "B" TYPE "C"

CASING TYPES FULL SIZE

NOTE: ONLY CASING TYPE "A" DATES TO THE RESTORATION PERIOD

TITLE: BUILDING DETAILS PROJECT NO. 9208.00

EXISTING CONDITIONS

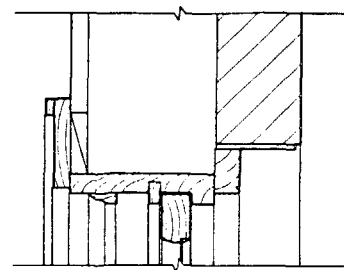
ARNOLD HOUSE
(HS-20)

LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

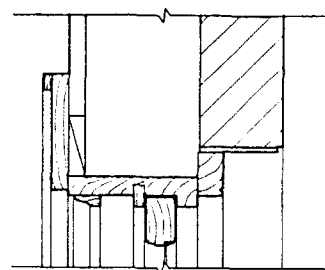
FISCHER-WISNOSKY ARCHITECTS INC.

REVISED	PREPARED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 23
FILE: EMA04003	DATE	OF 27

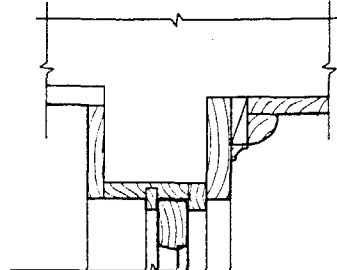
NOTES



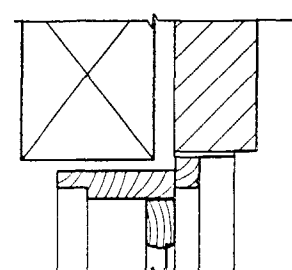
1. HEAD



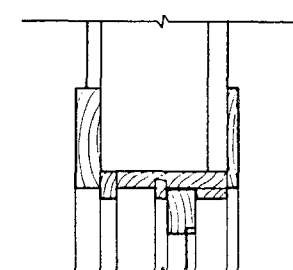
5. HEAD



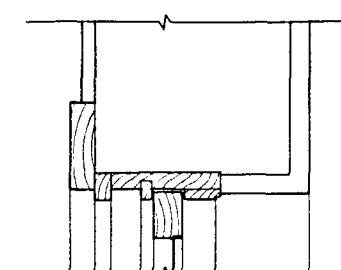
8. HEAD



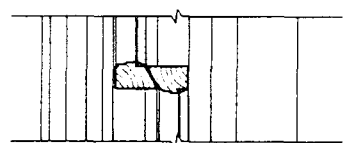
12. HEAD



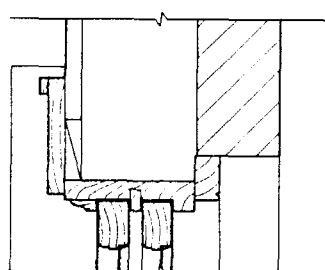
15. HEAD



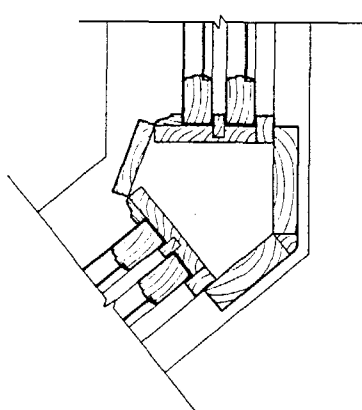
18. HEAD



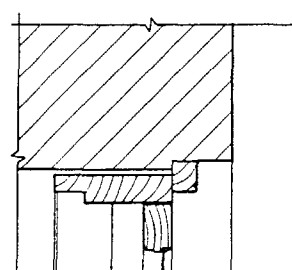
2. MEETING BAR



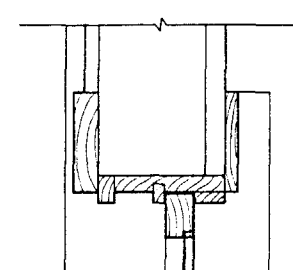
6. JAMB



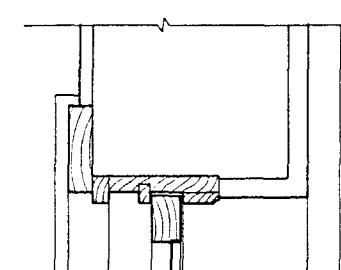
9. JAMB • MULLION



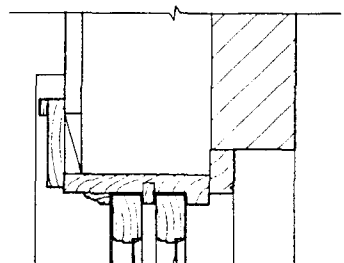
13. JAMB



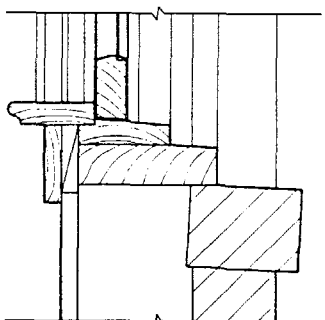
16. JAMB



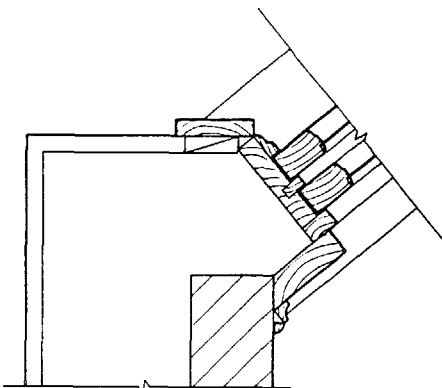
19. JAMB



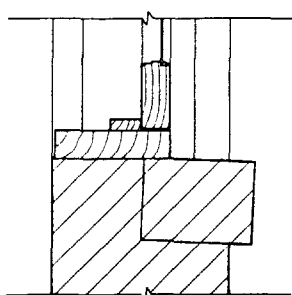
3. JAMB



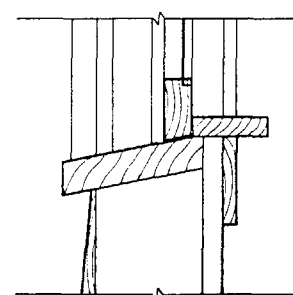
7. SILL



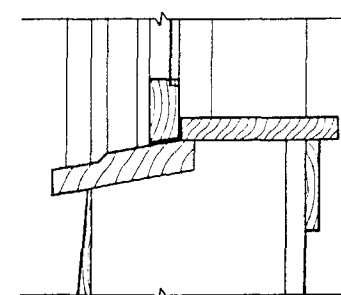
10. JAMB • WALL



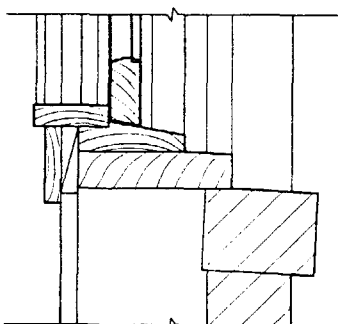
14. SILL



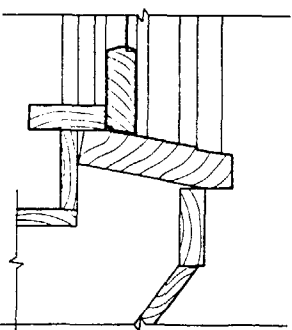
17. SILL



20. SILL



4. SILL



11. SILL

WINDOW DETAILS

SCALE: 3" = 1'-0"
 0 1'-0"

TITLE: WINDOW DETAILS PROJECT NO. 9208.00

EXISTING CONDITIONS

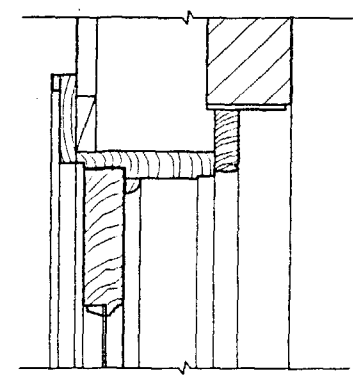
ARNOLD HOUSE (HS-20)

LINCOLN HOME N.H.S. SPRINGFIELD, ILLINOIS

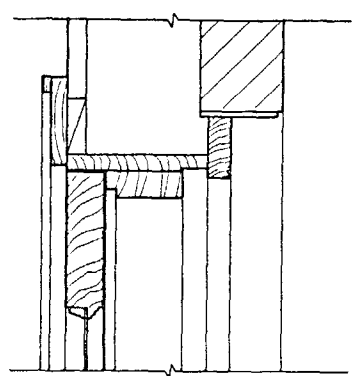
FISCHER-WISNOSKY ARCHITECTS INC.

REVISED	INITIAL	PREPARED	DRAWING NO.
DATE		DESIGNED	449
		DRAWN	80047
		CHECKED	SHEET 24
		DATE	OF 27
FILE: EMA04001			

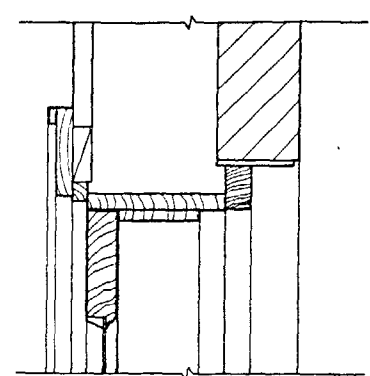
NOTES



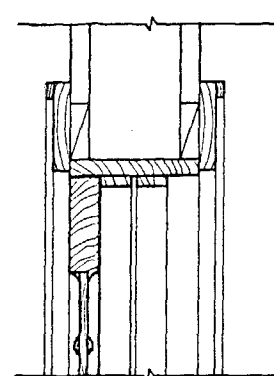
1. HEAD



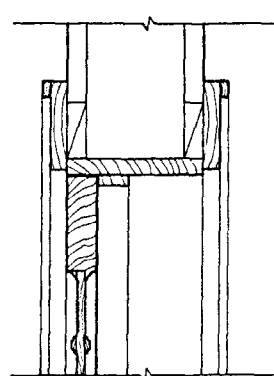
5. HEAD



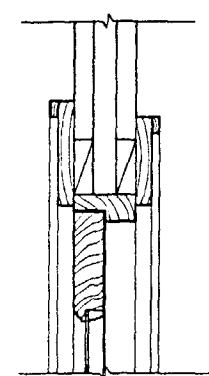
9. HEAD



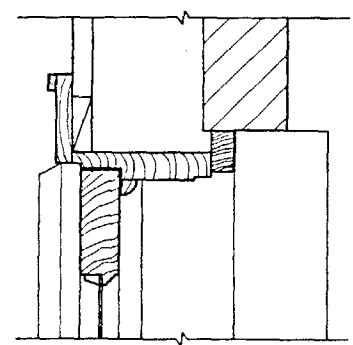
12. HEAD



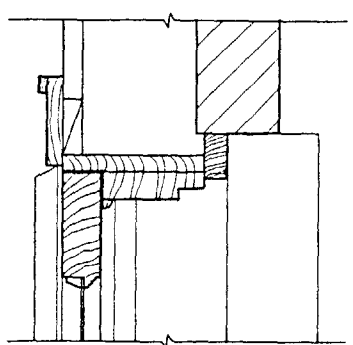
15. HEAD



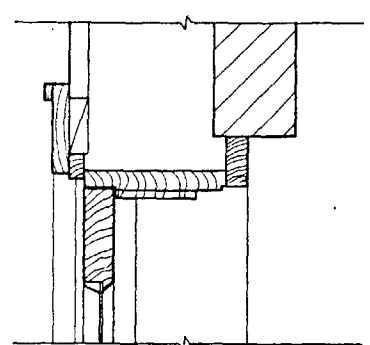
19. HEAD



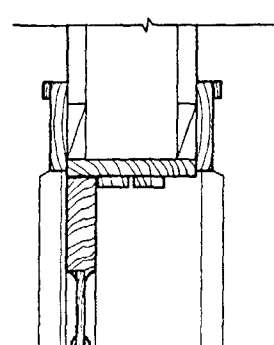
2. JAMB



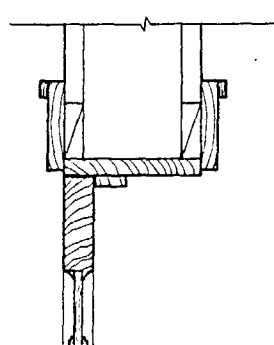
6. JAMB



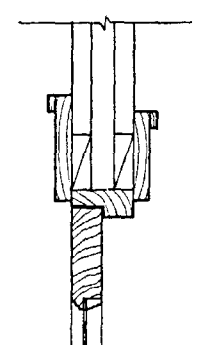
10. JAMB



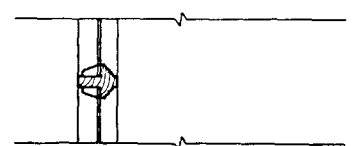
13. JAMB



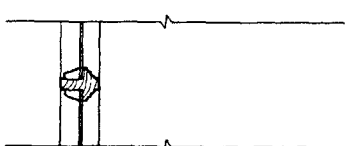
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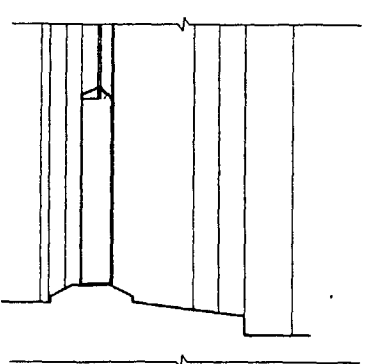
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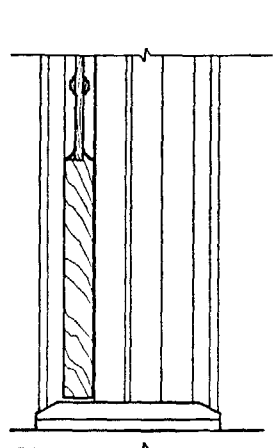
3. MUNTIN



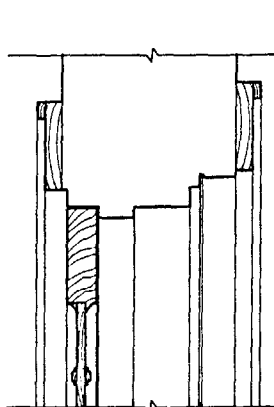
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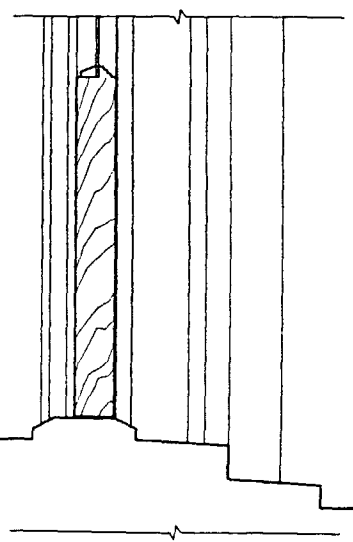
11. SILL



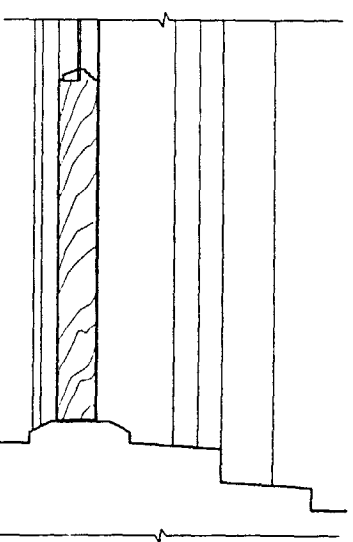
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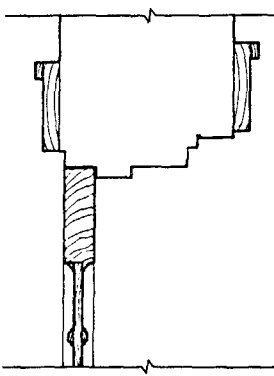
17. HEAD



4. SILL



8. SILL



18. JAMB

DOOR DETAILS
SCALE: 3" = 1'-0"
1'-0"

TITLE: DOOR DETAILS PROJECT NO. 9208.00

EXISTING CONDITIONS
ARNOLD HOUSE (HS-20)
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS
FISCHER-WISNOSKY ARCHITECTS INC.

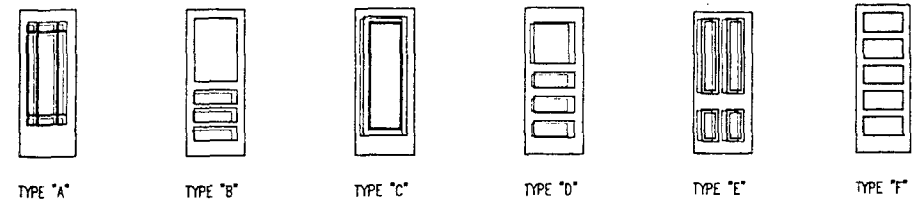
REVISED	PREPARED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 25
	DATE	OF 27
FILE: EMA04002		

DOOR SCHEDULE

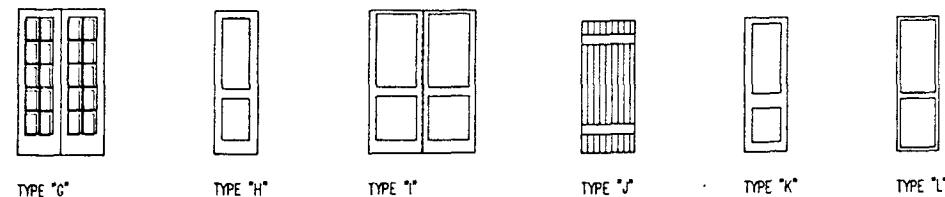
MARK	TYPE	SIZE			DETAILS			REMARKS
		WTH.	HT.	THK.	HEAD	JAMB	SILL	
005A	E	2'-7 1/2"	6'-4 1/2"	1 3/8"	-	-	-	
101A	A	2'-8"	6'-7 1/2"	1 3/4"	5/25	6/25	8/25	
101B	G	4'-0"	6'-8"	1 3/8"	19/25	20/25	-	DOUBLE DOOR
101C	-	-	-	-	-	-	-	DOOR MISSING
101D	-	-	-	-	-	-	-	DOOR MISSING
101E	F	2'-5 3/4"	6'-7 1/4"	1 3/8"	15/25 SIM.	16/25 SIM.	-	
101F	C	1'-6"	6'-7 1/4"	1 3/8"	15/25 SIM.	16/25 SIM.	-	
102A	C	2'-7 1/2"	6'-8"	1 1/2"	17/25	18/25	-	DOOR HAS BEEN RESWUNG
102B	C	2'-4"	6'-8"	1 3/8"	15/25 SIM.	16/25 SIM.	-	
102C	I	4'-8 3/4"	6'-6 1/4"	1 1/2"	-	-	-	SLIDING DOOR
102D	H	1'-11 1/2"	6'-6 1/4"	1 1/2"	-	-	-	SLIDING DOOR
104A	C	2'-8"	6'-7 1/4"	1 3/8"	12/25	13/25	14/25	DOOR HAS BEEN RESWUNG
104B	C	2'-8"	6'-7 1/4"	1 3/8"	15/25	16/25	-	
104C	A	2'-8"	6'-7 1/4"	1 3/4"	1/25	2/25	3/25	
104D	-	-	-	-	-	-	-	DOOR MISSING
104E	D	2'-7 1/2"	6'-7 1/2"	1 3/8"	15/25 SIM.	16/25 SIM.	-	
106A	B	2'-8"	6'-7 1/4"	1 1/2"	9/25	10/25	11/25	
106B	-	-	-	-	-	-	-	DOOR MISSING
106C	C	2'-0"	6'-6 3/4"	1 3/8"	15/25 SIM.	16/25 SIM.	-	DOOR HAS BEEN RESWUNG
107A	B	2'-8"	6'-8"	1 1/2"	9/25	10/25	11/25	
107B	C	2'-8 1/2"	-	1 3/8"	15/25 SIM.	16/25 SIM.	-	
107C	-	-	-	-	-	-	-	DOOR MISSING, OPENING INFILLED ON WEST SIDE
107D	C	2'-8 1/2"	6'-7 1/2"	1 3/8"	15/25 SIM.	16/25 SIM.	-	
107E	-	-	-	-	-	-	-	CASED OPENING (NO DOOR)
108A	B	2'-8"	6'-8"	1 1/2"	9/25	10/25	11/25	
108B	-	-	-	-	-	-	-	DOOR MISSING
108C	C	2'-0"	6'-8"	1 3/8"	15/25 SIM.	16/25 SIM.	-	
108D	C	2'-4"	6'-8"	1 3/8"	15/25 SIM.	16/25 SIM.	-	
108E	C	3'-0 1/4"	6'-8"	1 3/8"	15/25 SIM.	16/25 SIM.	-	
202A	L	1'-5"	6'-0 3/4"	3/4"	-	-	-	
202B	K	1'-11"	6'-1 1/2"	1 3/8"	-	-	-	
202C	J	1'-9 1/2"	4'-1"	3/4"	-	-	-	
202D	J	1'-10 3/4"	4'-1"	3/4"	-	-	-	
202E	C	1'-11 3/4"	6'-1"	1 3/8"	-	-	-	
202F	J	2'-4 1/2"	6'-0"	1"	-	-	-	

WINDOW SCHEDULE

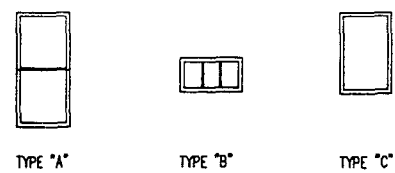
MARK	TYPE	FRAME SIZE (WIDTH X HEIGHT)	DETAILS			REMARKS
			HEAD	JAMB	SILL	
002A	B (SIM.)	-	-	-	-	SASH MISSING
005A	B	2'-10" X 1'-7"	12/24	13/24	14/24	
005B	B	2'-8" X 1'-7"	12/24	13/24	14/24	
005C	B (SIM.)	-	-	-	-	SASH MISSING
005D	B (SIM.)	-	-	-	-	SASH MISSING
007A	B	2'-6" X 1'-6 1/2"	12/24	13/24	14/24	
101A	A	2'-6 1/2" X 5'-6 1/2"	5/24	6/24	7/24	
101B	A	2'-6 1/2" X 5'-6 1/4"	5/24	6/24	7/24	
104A	A	2'-6" X 5'-2"	1/24	3/24	4/24	
104B	A	2'-6" X 5'-2"	1/24	3/24	4/24	
105A	A	2'-6" X 5'-2"	1/24	3/24	4/24	
105B	A	2'-6" X 5'-2"	1/24	3/24	4/24	
105C	A	2'-6" X 5'-1 3/4"	1/24	3/24	4/24	
106A	A	2'-6" X 5'-1 3/4"	1/24	3/24	4/24	
107A	A	2'-7" X 4'-6"	1/24	3/24	4/24	
107B	A	2'-0" X 5'-0 3/4"	8/24	9/24 & 10/24	11/24	
107C	A	2'-4" X 5'-0 3/4"	8/24	9/24 & 10/24	11/24	
107D	A	2'-0" X 5'-0 3/4"	8/24	9/24 & 10/24	11/24	
108A	A	2'-6 3/4" X 5'-6 1/4"	1/24	3/24	4/24	
108B	A	2'-7" X 4'-10"	1/24	3/24	4/24	
108C	A	2'-0 1/4" X 2'-9"	1/24	3/24	4/24	
201A	A	2'-6" X 3'-6"	18/24	19/24	20/24	
201B	A	2'-10 1/2" X 3'-5 3/4"	15/24 SIM.	16/24 SIM.	17/24 SIM.	
201C	A	2'-10 1/2" X 3'-5 3/4"	15/24 SIM.	16/24 SIM.	17/24 SIM.	
202A	A	2'-6" X 3'-6"	15/24	16/24	17/24	
202B	C	2'-4" X 3'-8 1/2"	-	-	-	



DOOR TYPES SCALE: 1/4"=1'-0"



DOOR TYPES SCALE: 1/4"=1'-0"



WINDOW TYPES SCALE: 1/4"=1'-0"

NOTES

TITLE: DOOR AND WINDOW SCHEDULES AND TYPES PROJECT NO. 9208.00

EXISTING CONDITIONS

ARNOLD HOUSE
(HS-20)
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED DATE	INITIAL	PREPARED	DRAWING NO. 449 80047
		DESIGNED	
		DRAWN	SHEET 26
		CHECKED	OF 27
FILE: ECA00003		DATE	

ROOM SCHEDULE

MARK	ROOM NAME	ROOM DIMENSION ±			FLOOR		BASE			WALLS								CEILING		REMARKS
		EAST	NORTH	CLG. HT.	MATL.	FIN.	MATL.	FIN.	TYPE <small>SEE SHT. A3.7</small>	NORTH		EAST		SOUTH		WEST		MATL.	FIN.	
										MATL.	FIN.	MATL.	FIN.	MATL.	FIN.	MATL.	FIN.			
001	CRAWL	17'-8"	16'-8"	-	FL3	F1	B1	-	-	W8	F1	W8	F1	W8	F1	W8	F1	C7	F1	
002	BASEMENT	5'-7"	16'-8"	6'-4 5/8"	FL4	F1	B1	-	-	W8	F10	W8	F10	W8	F10	W8	F10	C7	F1	
004	CRAWL	10'-1 1/2"	8'-7"	-	FL3	F1	B1	-	-	W8	F1	W8	F1	W8	F1	W8	F1	C7	F1	
004A	CRAWL	23'-10"	5'-0"	-	FL3	F1	B1	-	-	W8	F1	W8	F1	W8	F1	W8	F1	C7	F1	
005	BASEMENT	11'-2 1/2"	29'-6 1/2"	6'-6"	FL4	F1	B1	-	-	W8	F10	W8	F10	W8	F10	W8	F10	C7	F1	
007	CRAWL	14'-6"	12'-8"	-	FL3	F1	B1	-	-	W8	F1	W8	F1	W8	F1	W8	F1	C7	F1	
008	CRAWL	21'-9 1/2"	11'-1"	-	FL3	F1	B1	-	-	W8	F1	W8	F1	W8	F1	W8	F1	C7	F1	
101	ROOM	12'-0"	14'-6"	7'-9 1/2"	FL1	F6	B2/B3	F2	-	W3	F2	W3	F2	W6	F2	W6	F2	C3	F2	
101A	CLOSET	4'-8 1/4"	2'-6 3/4"	7'-9 1/2"	FL2	F6	B2/B3	F6	-	W3 ON W2	F2	W1	F2	W3	F2	W3	F2	C1	F2	
101B	CLOSET	7'-0 1/2"	2'-6 3/4"	7'-9 1/2"	FL2	F6	B2/B3	F6	-	W3	F2	W3	F2	W6	F2	W3	F2	C1	F2	
101C	BATHROOM	5'-9 1/4"	5'-8 1/4"	7'-9"	FL2	F4	B2/B3	F6	-	W3 ON W6	F2/F3 (OW6)	W3	F2	W3	F2	W3	F2	C3	F2	
101D	ROOM	6'-1 1/2"	5'-9 1/2"	7'-10 1/4"	FL1	F6	B2/B3	F2	-	W6	F2	W3	F2/F3	W7	F2/F3	W6	F2	C3	F2	
101E	BATHROOM	9'-0"	5'-1 1/2"	VARIES	FL1	F4	B2	F6	-	W6	F3	W6/W7	F3	W6/W7	F3	W7	F3	C3	F2/F3	
101F	CLOSET	1'-0"	2'-1"	7'-9"	FL1	F4	B3	F6	-	W7	F6	W7	F6	W7	F6	W7	F6	C5	F1	
102	CLOSET	4'-4"	1'-11"	7'-10"	FL1	F4	B1	-	-	W7	F2	W7	F2	W7	F2	W7	F2	C4	F2	
102A	ROOM	5'-7 1/2"	4'-11 1/2"	7'-10"	FL1	F6	B1/B2/B3	F2	-	W7	F2	W3	F2	W1	F2	W7	F2	C3	F2	
102B	BATHROOM	5'-6"	5'-10 1/4"	7'-9"	FL2	F4	B2/B3	F6	-	W3	F2	W3	F2	W3	F2	W3	F2	C3	F2	
104	ROOM	11'-6"	10'-4"	7'-3 1/2"	FL5	F1	B3	F6	-	W3	F2	W7	F2	W3	F2	W3	F2	C3	F2	
104A	HALL	6'-2"	3'-11 1/2"	7'-3 1/2"	FL5	F1	B3	F6	-	W3	F2	W3	F2	W7	F2	W7	F2	C3	F2	
105	ROOM	11'-8"	18'-6"	8'-4 1/2"	FL1 & FL5	F6/F1	B3	F6	-	W3 ON W5	F2	W3	F2	W3	F2	W7	F2	C3	F2	NORTH WALL FURRED
106	ROOM	11'-8 1/4"	12'-4"	7'-9 1/2"	FL1	F5/F6	B2/B3	F6	-	W3 ON W2	F2	W3/W7	F2	W3 ON W5	F2	W3	F2	C3	F2	
106A	BATHROOM	5'-3 1/4"	4'-4 3/4"	7'-10"	FL1	F5	B2/B3	F6	-	W3 ON W5	F2 & F8	W3	F2 & F9	W3	F9	W3	F2 & F9	C3	F2	NORTH WALL FURRED
107	ROOM	14'-3 1/4"	12'-4 1/4"	8'-3"	FL2	F6	B2/B3	F6	-	W3	F2	W3	F2	W3	F2	W3	F2	C3	F2	
107A	CLOSET	4'-6 1/4"	3'-9 1/2"	7'-9"	FL2	F6	B2/B3	F6	-	W3	F2	W3	F2	W3 ON W1	F2	W3	F2	C3	F2	
107B	KITCHEN	6'-6 1/2"	6'-0 3/4"	7'-9"	FL2	F4	B2/B3	F6	-	W3	F2	W3	F2	W3	F2	W3	F2	C3	F2	
107C	HALL	3'-1 1/2"	3'-1"	7'-9"	FL2	F6	B2/B3	F6	-	W3	F2	W3	F2	W3	F2	W3	F2	C3	F2	
108	ROOM	18'-3 1/4"	10'-6 3/4"	8'-3"	FL2	F6	B2/B3	F6	-	W3	F2	W3	F2	W3	F2	W3 ON W5	F2	C3	F2	
108A	KITCHEN	6'-3 1/4"	6'-5 1/2"	8'-3 1/2"	FL2	F4	B2/B3	F6	-	W3	F2	W3	F2	W3	F2	W3	F2	C3	F2	
108B	CLOSET	2'-1 1/2"	3'-8 1/2"	8'-3"	FL2	F6	B2/B3	F6	-	W3	F2	W3	F2	W3	F2	W3	F2	C3	F2	
201	ROOM	13'-5"	17'-7 1/2"	6'-4" ±	FL2	F6	B2/B3	F2	-	W1	F2	W7 & W1	F2	W6 & W1	F2	W7 & W1	F2	C1	F2	
202	BATHROOM	7'-9"	9'-0"	6'-4" ±	FL2	F5	B2/B3	F2	-	W7	F2	W7	F2	W1	F2	W7	F2	C1	F2	
202A	HALL	5'-10"	3'-2 1/2"	6'-4" ±	FL2	F6/F7	B2/B3	F2	-	W1	F2	W7	F2	W1	F2	W7/W1	F2	C1	F2	
202B	HALL	5'-3"	3'-0"	6'-4" ±	FL2	F6/F7	B2/B3	F2	-	-	-	W6	F2	-	-	W6	F2	C1	F2	
202C	CLOSET	2'-10"	4'-1 1/2"	6'-4" ±	FL2	F4	B1	-	-	W6	F2	W6	F2	W6	F2	W6	F2	C4	F2	
202D	CLOSET	1'-11"	3'-6"	6'-4" ±	FL2	F6	B2/B3	F2	-	W6	F2	W7	F2	W7	F2	W7	F2	C1	F2	
202E	CLOSET	9'-0"	4'-3"	6'-4" ±	FL2	F6	B1	-	-	W7	F2	W4	-	W7	F2	W7	F2	C6	-	
S1	STAIR	-	-	-	FL6	F6	B3	F6	-	W7	F2	W7	F2	W7	F2	W7	F2	C4	F2	
S2	STAIR	9'-8"	3'-11"	6'-5"	FL4	F1	B1	-	-	W8	F10	W8	F10	W8	F10	W8	F10	C7	F1	

NOTES

FLOOR MATERIAL

- FL1 WOOD PLANKS T&G
- FL2 WOOD STRIP T&G
- FL3 EARTH
- FL4 CONCRETE
- FL5 2X WOOD PLANKS
- FL6 WOOD TREADS AND RISERS

BASE MATERIAL

- B1 NO BASE
- B2 QUARTER ROUND SHOE
- B3 1X WOOD

WALL MATERIAL

- W1 PLASTER ON WOOD LATH
- W2 WOOD LATH ONLY
- W3 PLASTER OVER FIBEROUS BOARD
- W4 ACCOUSTICAL TILE (12" X 12")
- W5 SHEATHING BOARD
- W6 GYPSUM DRYWALL
- W7 WOOD PANEL
- W8 BRICK

CEILING MATERIAL

- C1 PLASTER ON WOOD LATH
- C2 1X WOOD PLANKS
- C3 PLASTER OVER FIBEROUS BOARD
- C4 WOOD PANEL
- C5 FIBEROUS BOARD
- C6 ACCOUSTICAL TILE
- C7 EXPOSED STRUCTURE

FINISHES

- F1 NO FINISH
- F2 PAINT
- F3 WALL PAPER
- F4 SHEET GOODS
- F5 VINYL TILE
- F6 VARNISH
- F7 CARPET
- F8 GLAZED CERAMIC TILE
- F9 FORMICA
- F10 WHITWASH

TITLE:	ROOM FINISH SCHEDULE	PROJECT NO.	9208.00
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EXISTING CONDITIONS

ARNOLD HOUSE (HS-20)

LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED	PREPARED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80047
	DRAWN	
	CHECKED	SHEET 27
	DATE	OF 27

FILE: ECA00004

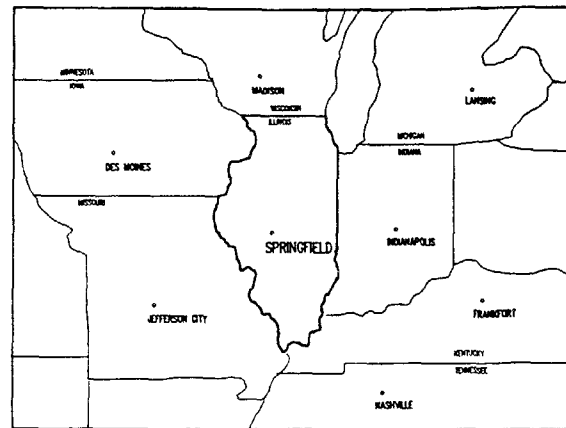
Introduction
ca. 1840
ca. 1841 - 1847
by 1854
by 1884
by 1896
by 1917
1917-1993

CHRONOLOGICAL HISTORY

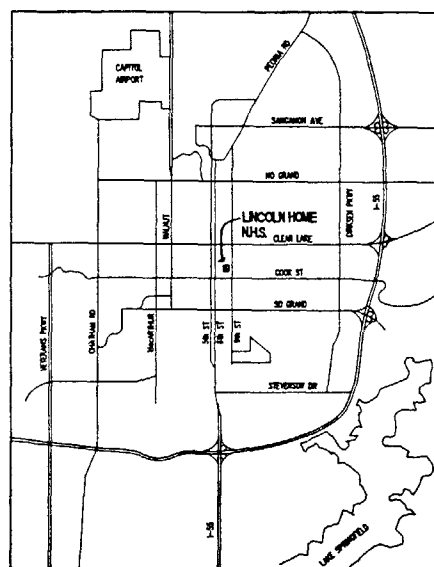
DIVISION V

INTRODUCTION

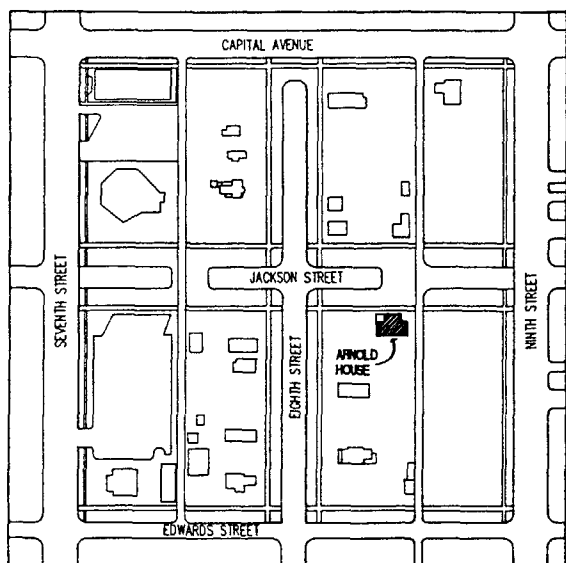
This Division presents the chronological history of the Arnold House. The following Divisions are notated with references to the information presented in Divisions II and III. The time periods presented here are based upon available specific data, such as: the likely date of the earliest construction on the site undertaken by Reverend Springer following his purchase of the lot for the circa 1840 chronology plan; the subsequent construction undertaken by Springer prior to the sale of the lot to Charles E. Arnold for the circa 1841-1847 chronology plan; the corresponding McManus City of Springfield map for the circa 1854 chronology plan; the corresponding Sanborn Maps for the circa 1884, circa 1896, and circa 1917 chronology plans; and finally the apparent single phase of construction on the house for the last seventy plus years for the circa 1917 - 1993 plan.



REGIONAL MAP
NOT TO SCALE



CITY MAP
NOT TO SCALE



LINCOLN HOME N.H.S.
NOT TO SCALE

BUILDING CHRONOLOGY

1. INDEX SHEET & LOCATION MAPS
2. CHRONOLOGICAL HISTORY - ca. 1840
3. CHRONOLOGICAL HISTORY - ca. 1841-1847
4. CHRONOLOGICAL HISTORY - by 1854
5. CHRONOLOGICAL HISTORY - by 1884
6. CHRONOLOGICAL HISTORY - by 1896
7. CHRONOLOGICAL HISTORY - by 1917
8. CHRONOLOGICAL HISTORY - 1917-1992

11/11/2011

TITLE: INDEX SHEET AND LOCATION MAPS PROJECT NO. 9206.00

BUILDING CHRONOLOGY

ARNOLD HOUSE (HS-20)
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS
FISCHER-WISNOSKY ARCHITECTS INC.

RECOMMENDED:	DATE	REVISD	DATE	INITIAL	PREPARED	DRAWING NO.
_____ SUPERINTENDENT	_____ DATE	_____ DATE	_____ DATE	_____ INITIAL	_____ DESIGNED	449
_____ CHIEF, CULTURAL RESOURCES MANAGEMENT	_____ DATE	_____ DATE	_____ DATE	_____ INITIAL	_____ DRAWN	80042
CONCURRED:	DATE	_____ DATE	_____ DATE	_____ INITIAL	_____ CHECKED	SHEET 1
_____ ASSOCIATE REGIONAL DIRECTOR	_____ DATE	_____ DATE	_____ DATE	_____ INITIAL	_____ DATE	OF 8
APPROVED:	DATE	FILE: ECA00001	_____ DATE	_____ INITIAL	_____ DATE	
_____ REGIONAL DIRECTOR	_____ DATE		_____ DATE	_____ INITIAL	_____ DATE	

NOTES

- PHYSICAL EVIDENCE INDICATES THAT THE ORIGINAL STRUCTURE WAS ONE STORY WITH A SLEEPING LOFT AND A GABLE ROOF. DOCUMENTARY EVIDENCE SUGGESTS THAT REVEREND SPRINGER BUILT THIS HOUSE IN 1840 AFTER PURCHASING THE LOT IN NOVEMBER 1839. IT IS POSSIBLE THAT SPRINGER MOVED THIS HOUSE INTACT FROM ANOTHER SITE.
 - ALTHOUGH A PRIVY WOULD HAVE BEEN FOUND ON THE LOT BY THIS TIME ITS PRECISE LOCATION IS NOT KNOWN.
- 1 THIS BARN IS SHOWN ON THE 1854 McMANUS MAP AND WAS PROBABLY BUILT BY SPRINGER EARLY DURING HIS OWNERSHIP OF THE PROPERTY. HISTORIC PHOTOGRAPHS INDICATE A WINDOW ON THE NORTH ELEVATION AND A DOOR ON THE WEST ELEVATION. THE BARN LIKELY HAD A "SECOND FLOOR" LOFT. FOR FURTHER DISCUSSION SEE NON-EXTANT HISTORIC BARN IN DIVISION III.
 - 2 LOCATION OF WINDOW IN PRESENT DOOR OPENING. CONJECTURAL.
 - 3 PHYSICAL EVIDENCE OF ORIGINAL WINDOW OPENING. FOR FURTHER DISCUSSION SEE WINDOWS IN DIVISION III.
 - 4 ORIGINAL WINDOW LOCATIONS. FOR FURTHER DISCUSSION SEE WINDOWS IN DIVISION III.
 - 5 PHOTOGRAPHIC EVIDENCE OF DOOR AND WINDOW IN NORTH WALL. SEE FIGURE 2.16.
 - 6 HATCH AND LADDER TO SLEEPING LOFT. FOR FURTHER DISCUSSION SEE INTERIOR STAIRS IN DIVISION III.
 - 7 LOCATION OF WINDOW. CONJECTURAL FROM EXISTING WINDOW LOCATION.
 - 8 LOCATION OF DOOR. CONJECTURAL.
 - 9 AN HISTORIC PHOTOGRAPH (FIGURE 2.13) INDICATES A PRIVY IN THIS APPROXIMATE LOCATION.
 - 10 ARCHEOLOGICAL SURVEYS OF THE EAST YARD FOUND TWO PRIVY LOCATIONS FOR THE ARNOLD PROPERTY. FOR FURTHER DISCUSSION SEE PRIVIES IN DIVISION III.
 - 11 LOCATION OF HAND-SPLIT LATH AT THE EXTERIOR SIDE OF THE WALL SURFACE SECURED WITH CUT NAILS. THERE IS NO EVIDENCE OF AN INTERIOR SPACE AT THIS LOCATION UNTIL 1884. FOR FURTHER DISCUSSION SEE INTERIOR FINISHES IN DIVISION III.
 - 12 HISTORIC PHOTOGRAPHS INDICATE A DOOR IN THIS LOCATION. FOR FURTHER DISCUSSION SEE EXTERIOR DOORS IN DIVISION III.
 - 13 CHIMNEY STACK AND HEARTHIS BASED ON PHYSICAL EVIDENCE. FOR FURTHER DISCUSSION SEE FIREPLACES AND CHIMNEYS IN DIVISION III.
 - 14 LOCATION OF DOOR BASED ON PHYSICAL EVIDENCE. FOR FURTHER DISCUSSION SEE INTERIOR FINISHES IN DIVISION III.
 - 15 LOCATION OF INTERIOR WALL BASED ON PHYSICAL EVIDENCE. FOR FURTHER DISCUSSION SEE INTERIOR FINISHES IN DIVISION III.

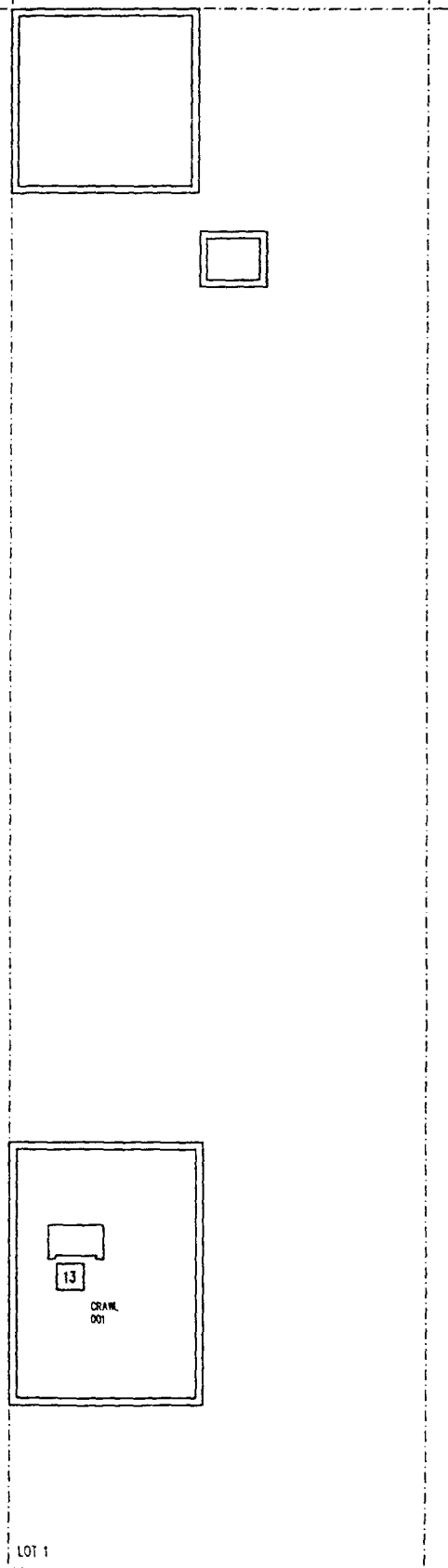
TITLE: CHRONOLOGICAL HISTORY ca. 1840	PROJECT NO. 9208.00
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BUILDING CHRONOLOGY

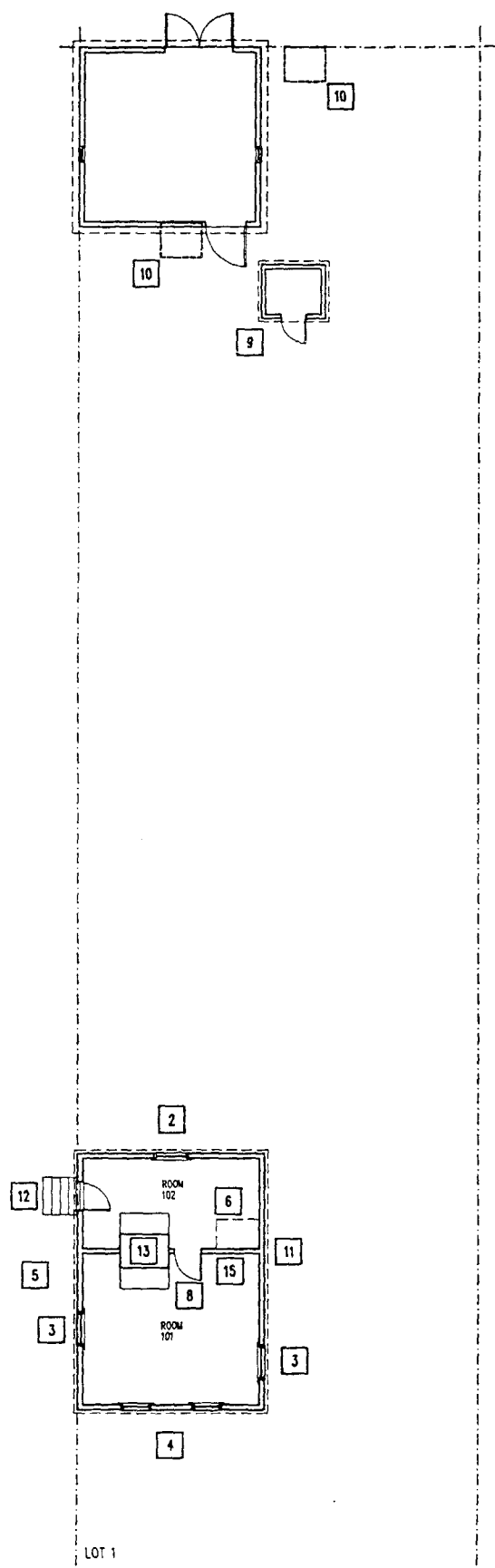
ARNOLD HOUSE
(HS-20)
LINCOLN HOME NHS.
SPRINGFIELD, ILLINOIS

FISCHER-WENOSKY ARCHITECTS INC.

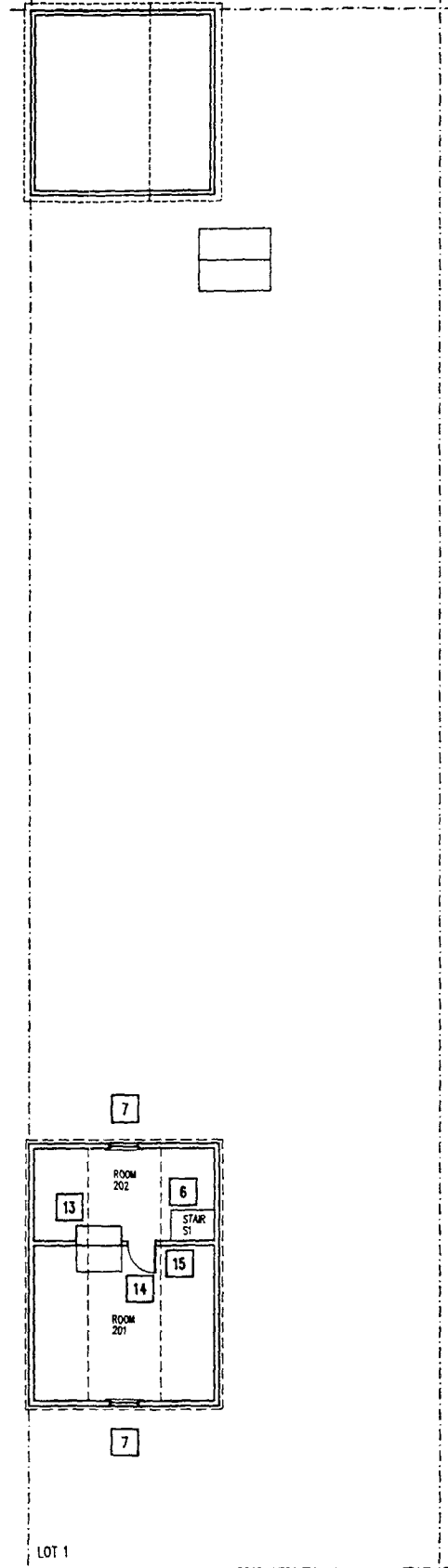
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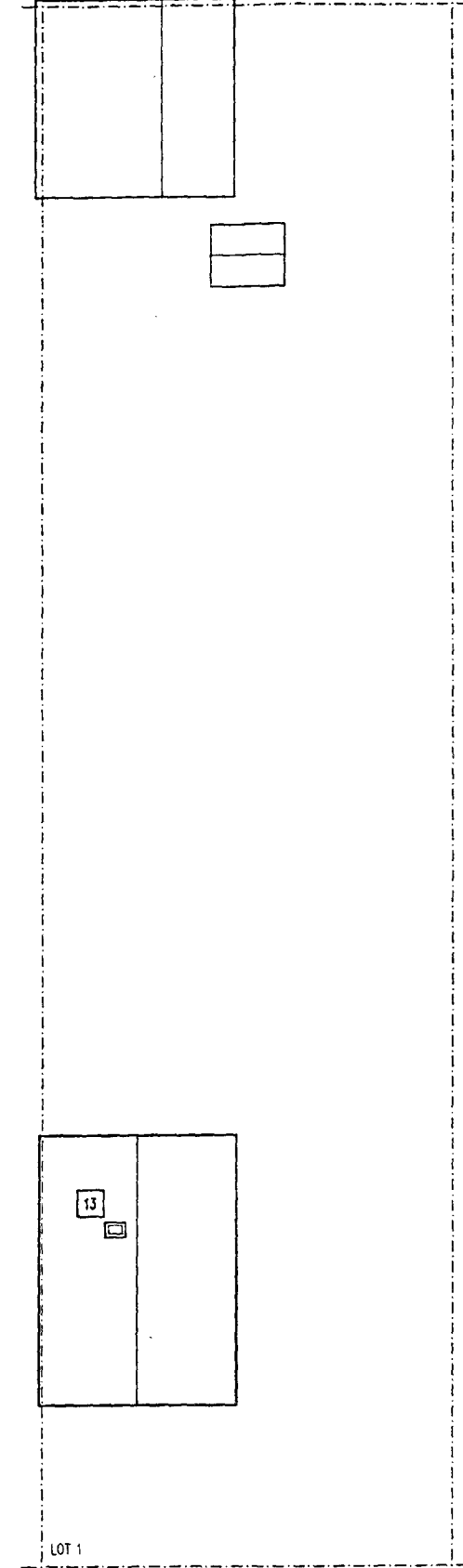
BASEMENT



FIRST



SECOND



ROOF

PLANS ca. 1840
SCALE: 1/8" = 1'-0"

NOTES

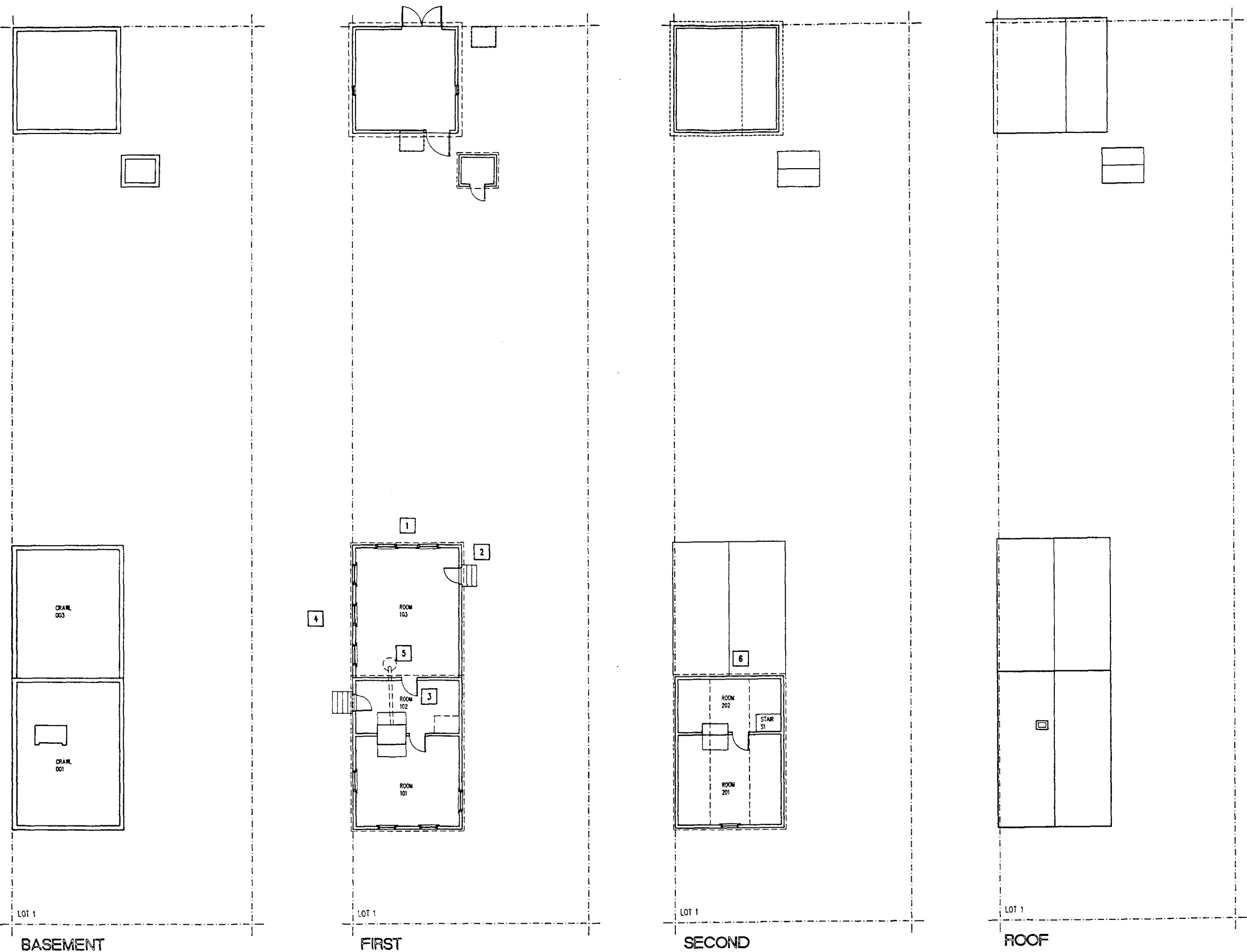
- IT IS LIKELY THAT SOON AFTER SPRINGER BUILT THE ORIGINAL COTTAGE, HE ADDED ON TO THE EAST END OF THE HOUSE. THIS PORTION NOT ONLY ACCOMMODATED HIS GROWING FAMILY BUT MAY HAVE ALSO PROVIDED SPACE FOR HIS SCHOOL AND CHURCH SERVICES.
- 1 THE 1867 RUGER PANORAMA (FIGURE 2.3) INDICATES WINDOWS ON THIS ELEVATION.
- 2 THE 1872 BECK AND PAULI PANORAMA (FIGURE 2.4) INDICATES A DOOR ON THIS ELEVATION.
- 3 EXISTING DOOR IN PREVIOUS CONJECTURAL WINDOW LOCATION.
- 4 HISTORIC PHOTOGRAPHS INDICATE THE WINDOWS IN THE NORTH WALL. SEE FIGURES 2.14 - 2.19. FOR FURTHER DISCUSSION SEE WINDOWS IN DIVISION III.
- 5 PHYSICAL EVIDENCE SUGGESTS THE LOCATION OF A WOOD BURNING HEATING STOVE IN THIS SPACE. FOR FURTHER DISCUSSION SEE FIREPLACES AND CHIMNEYS IN DIVISION III.
- 6 ANY WINDOW WHICH MAY HAVE PREVIOUSLY BEEN LOCATED IN THIS WALL AT THE SECOND FLOOR WOULD HAVE BEEN REMOVED WHEN THE ONE-STORY EAST ADDITION WAS BUILT.

TITLE: CHRONOLOGICAL HISTORY ca. 1841-1847	PROJECT NO. 9208.00
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BUILDING CHRONOLOGY

ARNOLD HOUSE
(HS-20)
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS
FISCHER-WISNOSKY ARCHITECTS INC.

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		DRAWN	80042
		CHECKED	SHEET 3
		DATE	OF 8
FILE: CPA02007			



PLANS ca. 1841-1847
SCALE: 1/8" = 1'-0"
0 5 10 20 FEET

NOTES

- 1 THE 1854 McMANUS AND 1858 SIDES CITY OF SPRINGFIELD MAPS INDICATE THESE ADDITIONAL LIMITS FOR THE HOUSE.
- 2 AN HISTORIC PHOTOGRAPH (FIGURE 2.13) INDICATES A VERTICAL BOARD FENCE ALONG THE NORTH PROPERTY LINE FROM THE CORNER OF THE BARN TOWARD THE HOUSE. THE FENCE POST LOCATIONS ARE CONJECTURAL SINCE THE NORTH PROPERTY LINE WAS FENCED, IT IS LIKELY THAT THE ENTIRE REAR LOT WAS FENCED; HOWEVER THIS IS CONJECTURAL FOR FURTHER DISCUSSION, SEE SITE CONDITIONS IN DIVISION III.
- 3 PHYSICAL EVIDENCE SUGGESTS THAT THE STAIR MAY HAVE HAD THIS CONFIGURATION BY ca. 1850. FOR FURTHER DISCUSSIONS SEE INTERIOR STAIRS IN DIVISION III.
- 4 NOBLE'S ARCHEOLOGICAL TRIP REPORT (SEPTEMBER 6, 1991) DISCUSSES A POSSIBLE WELL OR CISTERN IN THIS APPROXIMATE LOCATION. NO PHYSICAL EVIDENCE HAS UNCOVERED. FOR FURTHER DISCUSSION, SEE SITE CONDITIONS IN DIVISION III.

TITLE: CHRONOLOGICAL HISTORY by 1854 PROJECT NO. 9208.00

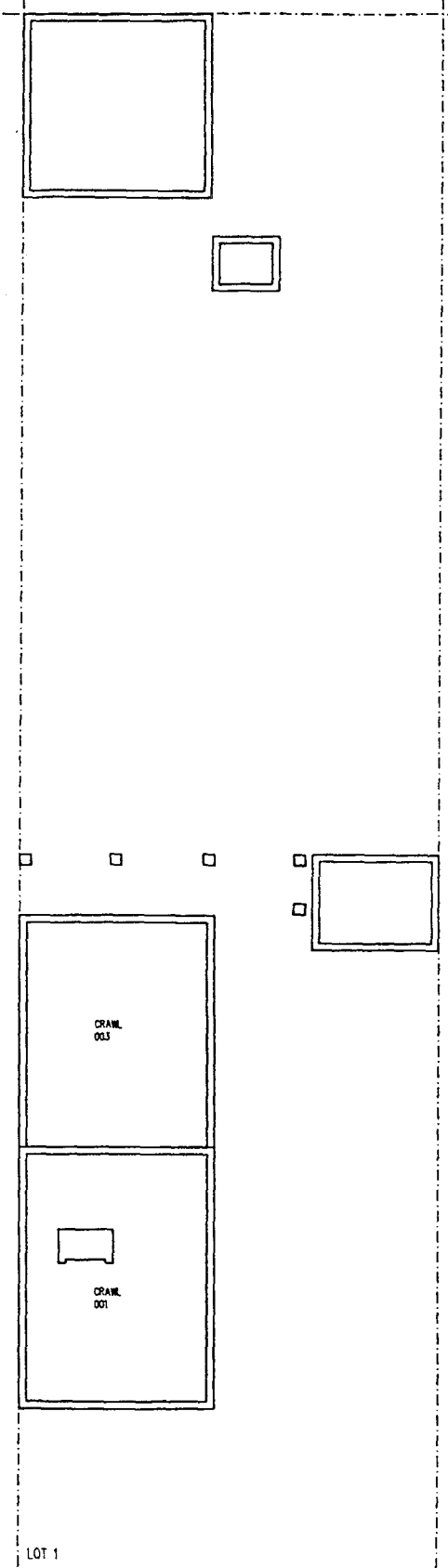
BUILDING CHRONOLOGY

ARNOLD HOUSE (HS-20)

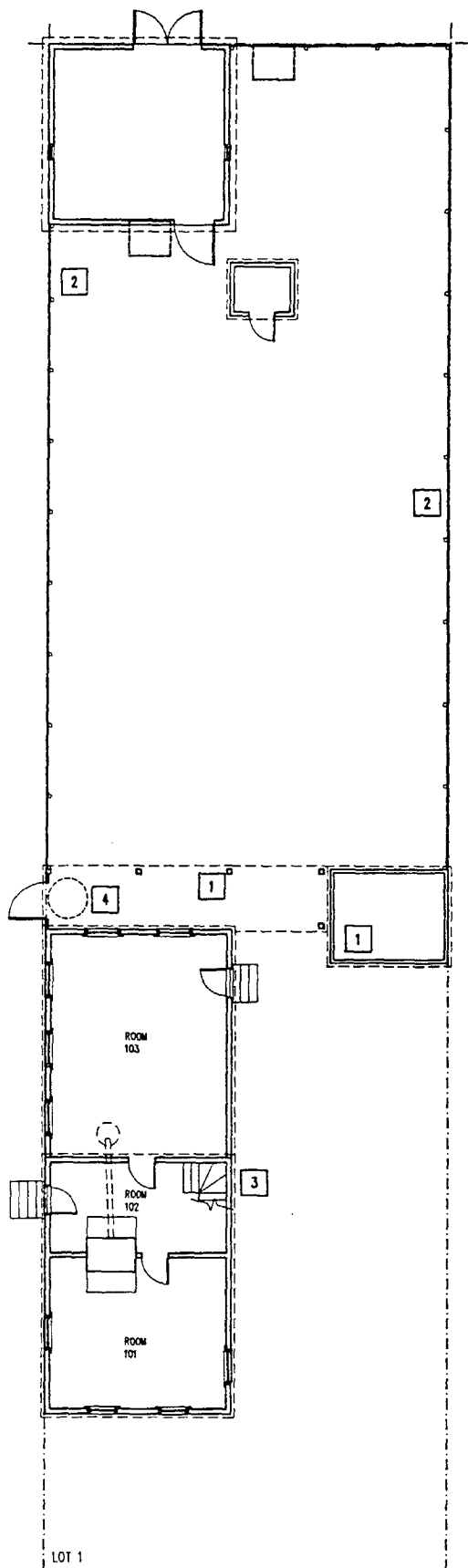
LINCOLN HOME N.H.S. SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

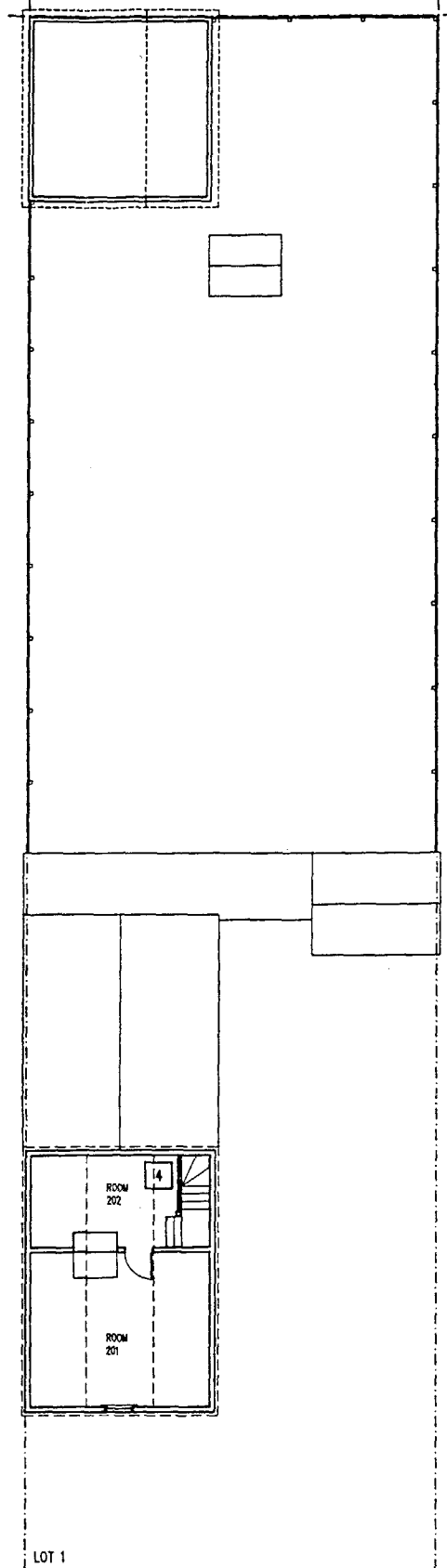
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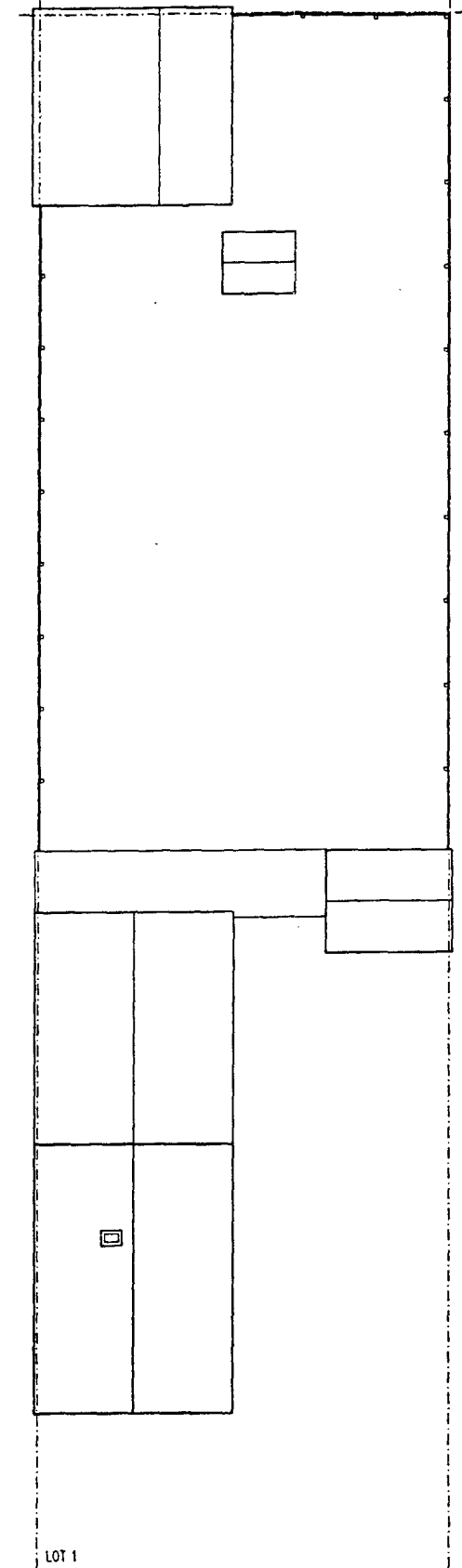
BASEMENT



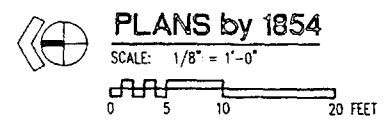
FIRST



SECOND




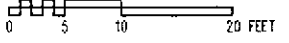
ROOF

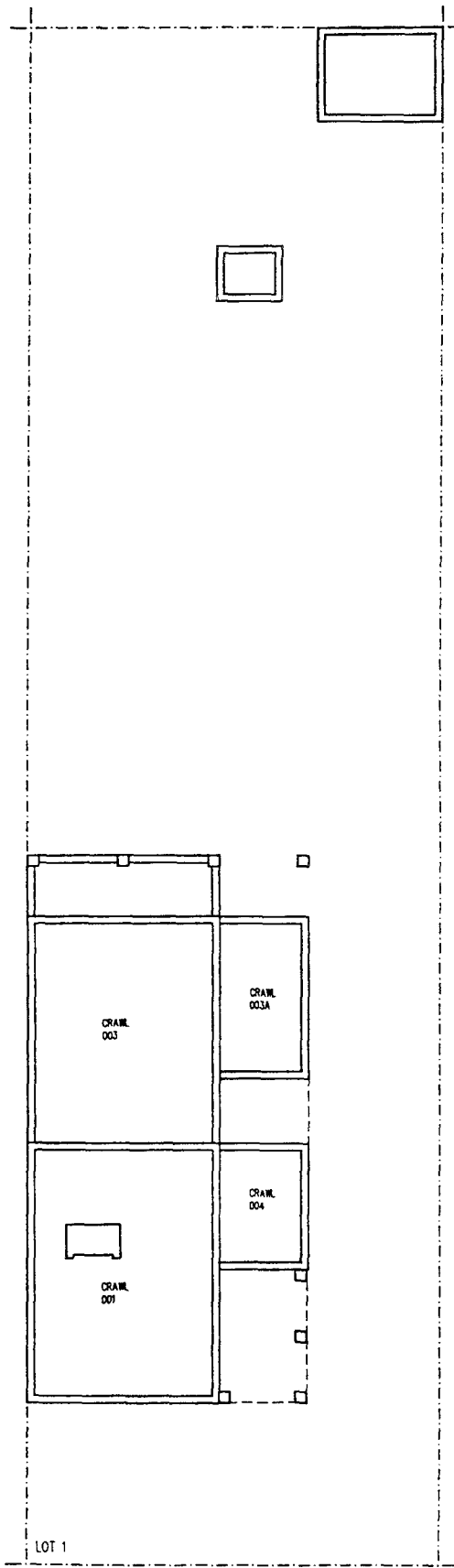




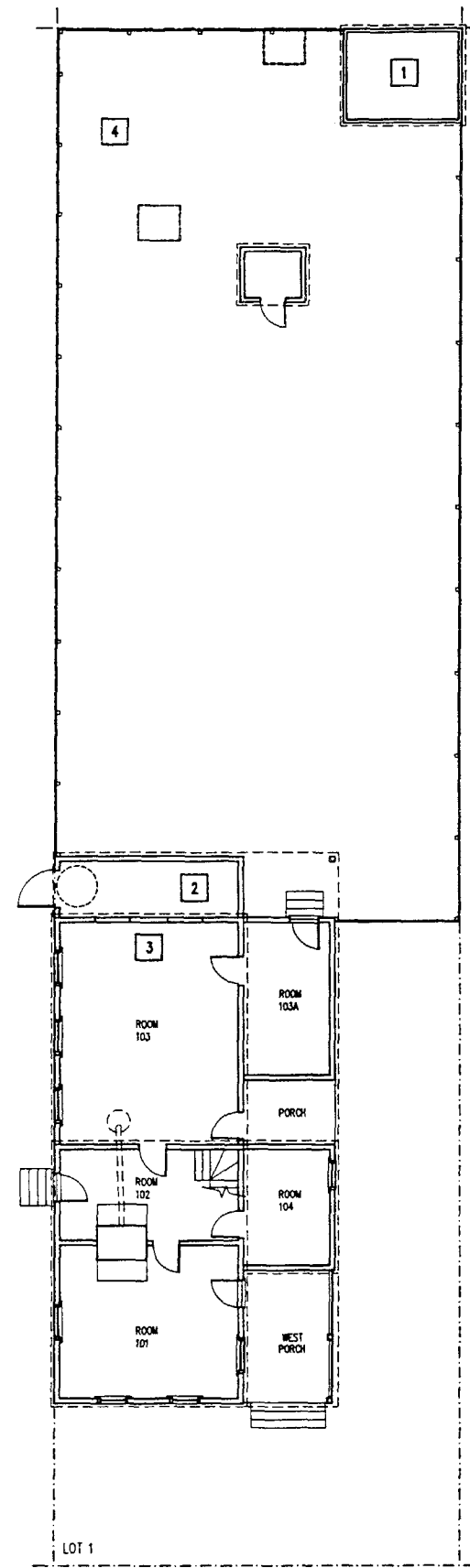
- NOTES**
- THE 1884 SANBORN MAP INDICATES SIGNIFICANT ADDITIONS TO THE SOUTH AND EAST SIDE OF THE HOUSE. THE ADDITION AT THE EAST AND THE ADJACENT OUTBUILDING LIKELY MATCH THE LIMITS. SEEN ON THE EARLIER McMANUS MAP.
 - 1 DOOR AND STAIR LOCATION. CONJECTURAL.
 - 2 FLOOR AREAS ADDED TO HOUSE BY 1884.
 - 3 ALTHOUGH THIS PORTION OF THE ADDITION IS SHOWN AS AN ENCLOSED SPACE ON THE 1884 SANBORN MAP, THE 1896 SANBORN MAP INDICATES THIS AREA TO BE A PORCH. THEREFORE IT IS ASSUMED THIS WAS ALWAYS A PORCH.
 - 4 DOOR LOCATION. CONJECTURAL.
 - 5 ASSUMING THAT THIS PORTION OF THE HOUSE WAS RELOCATED IN 1900, THIS WINDOW IS SEEN IN FIGURE 2.21. FOR FURTHER DISCUSSION SEE WINDOWS IN DIVISION II.
 - 6 ASSUMING THAT THIS PORTION OF THE HOUSE WAS RELOCATED IN 1900, THIS DOOR IS SEEN IN FIGURE 2.21. FOR FURTHER DISCUSSION SEE EXTERIOR DOORS IN DIVISION III.
 - 7 THE 1884 SANBORN MAP INDICATES THIS PORTION OF THE HOUSE AS A SEPERATE BUILDING (POSSIBLY A WASHHOUSE OR SUMMER KITCHEN).
 - 8 ON THE 1884 SANBORN MAP, THIS ATTACHED SHED IS INDICATED TO BE OPEN AT THE EAST SIDE; HOWEVER, AN END WALL WITH A DOOR (OR GATE) IS SEEN IN HISTORIC PHOTOGRAPHS OF THE NORTH ELEVATION. SEE FIGURES 2.14 - 2.17.

TITLE: CHRONOLOGICAL HISTORY by 1884		PROJECT NO. 8208.00
BUILDING CHRONOLOGY		
ARNOLD HOUSE (HS-20) LINCOLN HOME NHS. SPRINGFIELD, ILLINOIS		
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FILE: CPA02004	DATE	

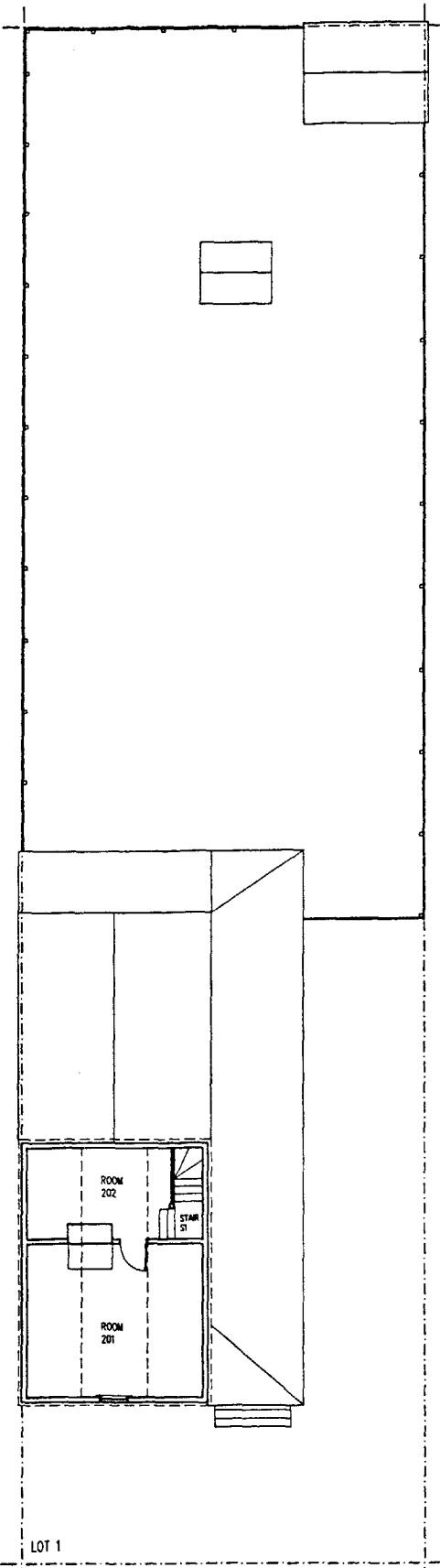

PLANS by 1884
 SCALE: 1/8" = 1'-0"




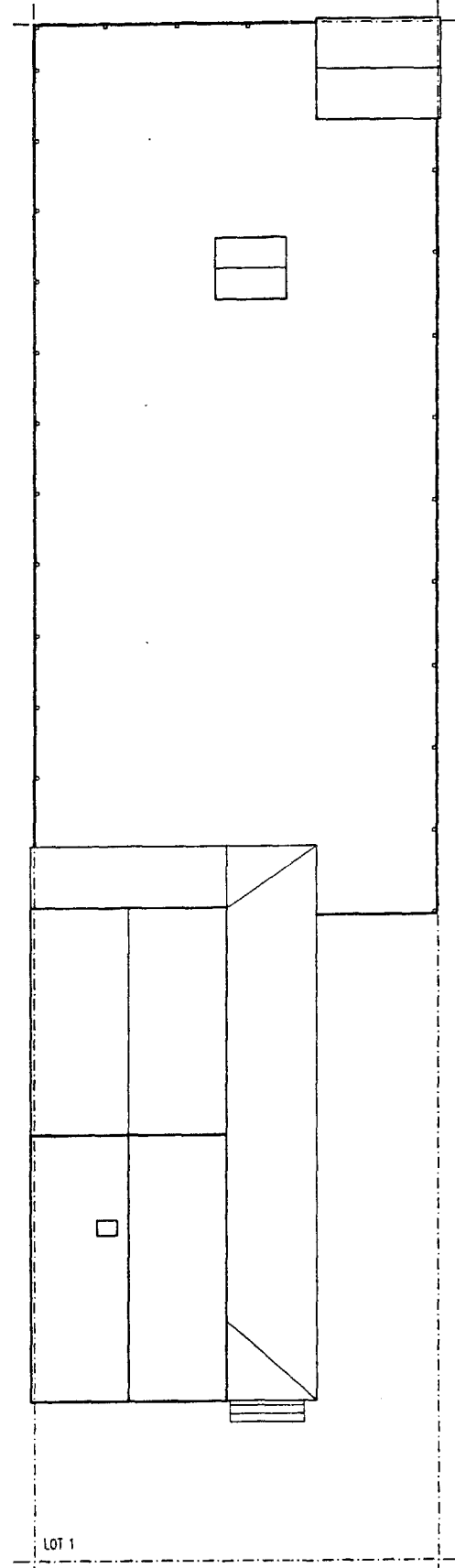
BASEMENT



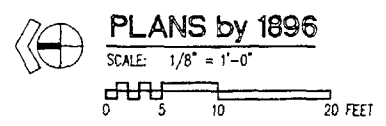
FIRST



SECOND



ROOF



PLANS by 1896
SCALE: 1/8" = 1'-0"

NOTES

- THE 1896 SANBORN SHOWS ONLY MINOR CHANGES TO THE HOUSE AND OUTBUILDINGS ON THE LOT.
- 1 THE 1896 SANBORN MAP SHOWS AN OUTBUILDING IN THIS LOCATION. THIS OUTBUILDING IS SIMILAR IN SIZE TO THE OUTBUILDING PREVIOUSLY SEEN ADJACENT TO THE ATTACHED SHED. IT IS POSSIBLE THAT THESE OUTBUILDINGS ARE ONE IN THE SAME.
- 2 THE 1896 SANBORN MAP INDICATES THAT THESE PORTIONS OF THE ATTACHED SHED HAD BEEN ENCLOSED.
- 3 WINDOWS REMOVED WHEN THE ATTACHED SHED WAS ENCLOSED. CONJECTURAL.
- 4 THE BARN IS NO LONGER SEEN ON THE 1896 SANBORN MAP.

TITLE: **CHRONOLOGICAL HISTORY by 1896** PROJECT NO. **9208.00**

BUILDING CHRONOLOGY

ARNOLD HOUSE (HS-20)

LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

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NOTES

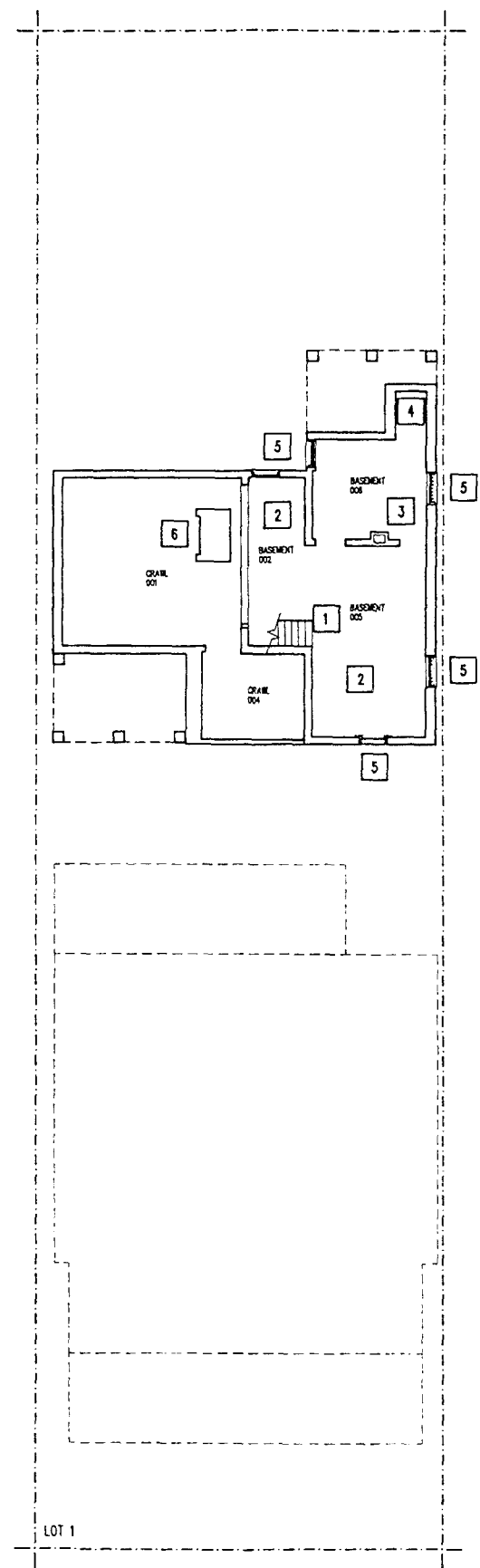
- IN CIRCA 1900, PORTIONS OF THE HOUSE WERE WERE ROTATED AND RELOCATED INTACT TO THE REAR OF THE LOT, WHILE NEW PORTIONS WERE REBUILT WITH SALVAGED LUMBER.
 - PHOTOGRAPHIC EVIDENCE AND SANBORN MAPS INDICATED THE LIMITS OF THE HOUSE IN 1917.
- 1 PAINT MARKS ON THIS BASEMENT WALL INDICATE AN INTERIOR STAIR TO THE BASEMENT. FOR FURTHER DISCUSSION SEE INTERIOR STAIRS IN DIVISION III.
 - 2 BASEMENT EXCAVATED WHEN THE HOUSE WAS RELOCATED ON THE SITE.
 - 3 PHYSICAL EVIDENCE IN FLOOR AND EARLY TWENTIETH CENTURY PHOTOGRAPHS INDICATE THIS LOCATION FOR A CHIMNEY STACK. SEE FIGURES 2.21 AND 2.22.
 - 4 PHYSICAL EVIDENCE IN BRICK INDICATES THE POSSIBLE LOCATION OF AN EXTERIOR BASEMENT ACCESS.
 - 5 BASEMENT WINDOWS (ONE SEEN IN FIGURE 2.21) DOCUMENTED DURING THE FIELD INVESTIGATIONS SUGGEST THE LIMITS OF THE USABLE BASEMENT AT THIS TIME.
 - 6 NEW (ca. 1900) CHIMNEY FOUNDATION.
 - 7 PHYSICAL EVIDENCE SUGGESTS A PORTION OF A WALL WAS REMOVED AND THE CEILING PATCHED WITH TWENTIETH CENTURY LATH AND PLASTER. FOR FURTHER DISCUSSION SEE INTERIOR FINISHES IN DIVISION III.
 - 8 LOCATION OF DOOR TO PORCH. CONJECTURAL BASED ON CURRENT INTERIOR DOOR LOCATION.
 - 9 THE 1940 COTTAGE AND ONE-STORY PORTIONS OF THE HOUSE RELOCATED ON SITE IN 1900.
 - 10 ROOMS BUILT WITH SALVAGED LUMBER, POSSIBLY FROM THE FORMER ARNOLD HOUSE. THE ROOF SLOPE OF THESE PORTIONS OF THE HOUSE CAN BE SEEN IN FIGURE 2.21. FOR FURTHER DISCUSSION SEE ROOF SYSTEMS IN DIVISION III.
 - 11 NEW PORCH (ca. 1900) SEEN ON 1917 SANBORN MAP.
 - 12 ROOF DORMER AND WINDOWS ADDED.
 - 13 TWENTIETH CENTURY WINDOW INSTALLED IN ORIGINAL WINDOW FRAMES. FOR FURTHER DISCUSSION SEE WINDOWS IN DIVISION III. SEE FIGURE 2.21.
 - 14 BY THIS TIME, THE OUTBUILDING HAD BEEN REMOVED.
 - 15 THE PRIVY PROBABLY WOULD HAVE BEEN REMOVED BY THIS TIME.
 - 16 APPROXIMATE LIMITS OF THE HOUSE BUILT AT THE FRONT OF THE LOT IN ca. 1902. SEE FIGURE 2.24.

TITLE: CHRONOLOGICAL HISTORY by 1917 PROJECT NO. 9208.00

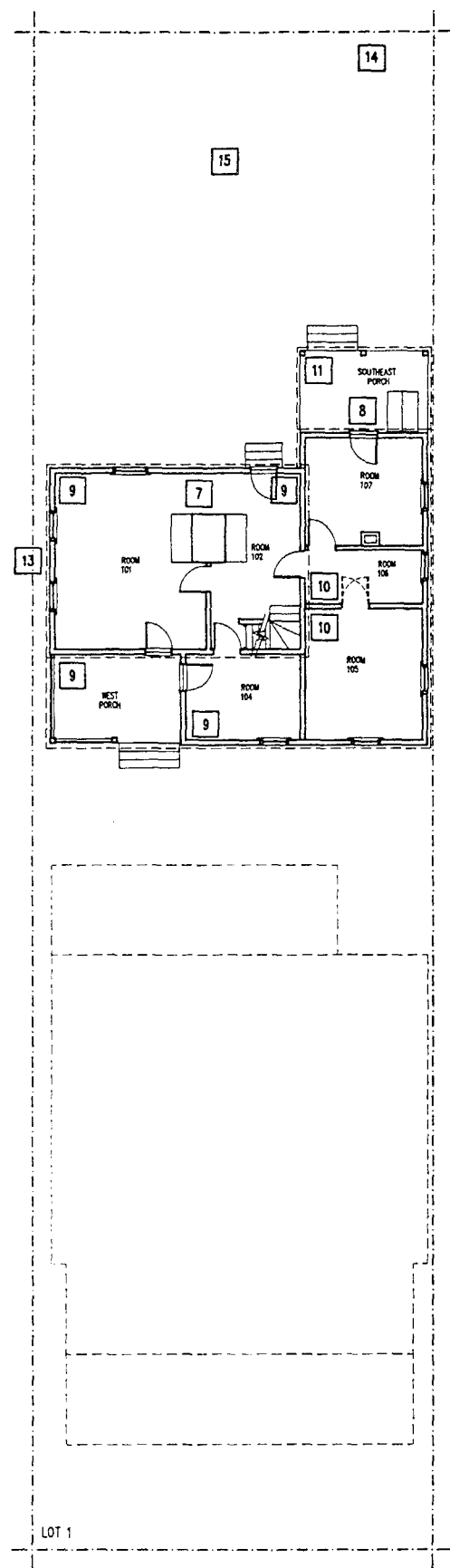
BUILDING CHRONOLOGY

ARNOLD HOUSE (HS-20)
 LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS
 FISCHER-WISNOSKY ARCHITECTS INC.

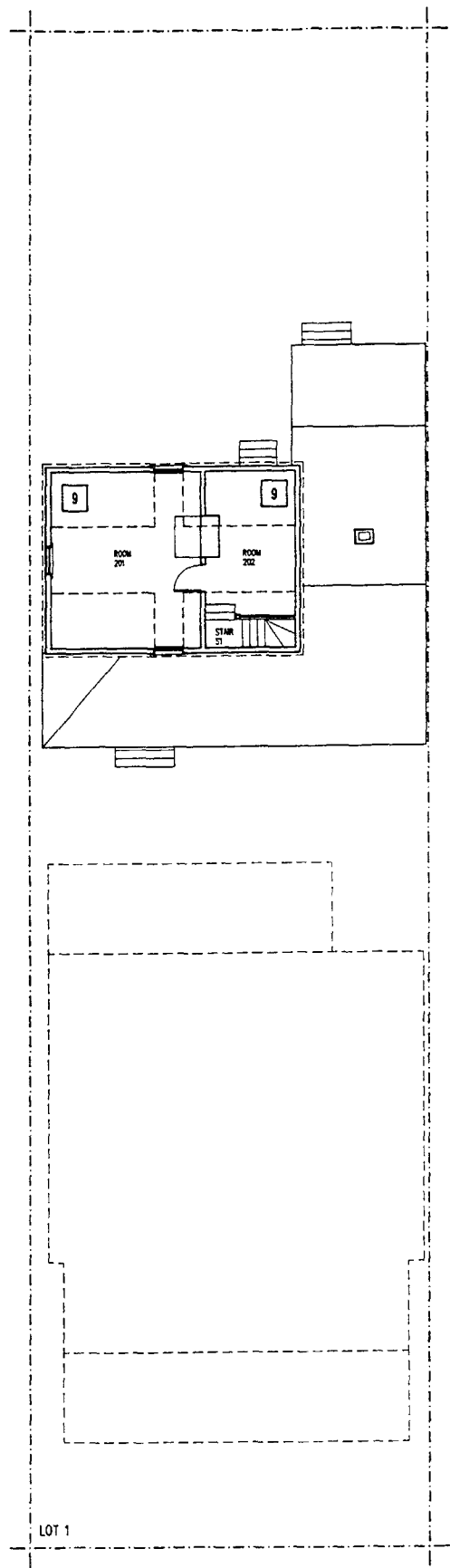
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	DATE	
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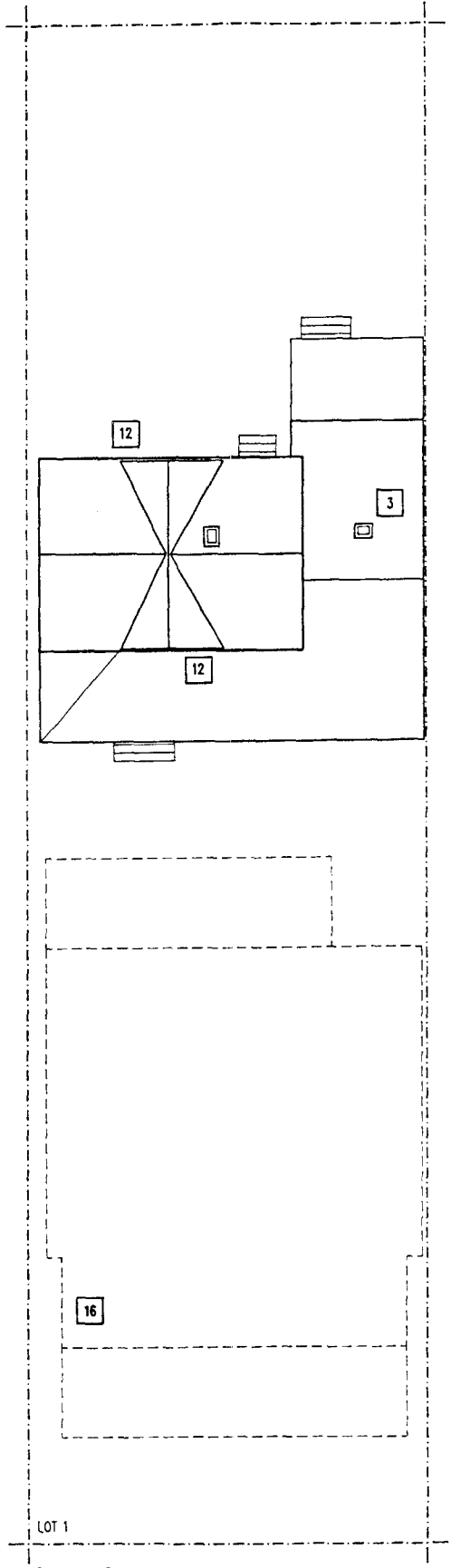
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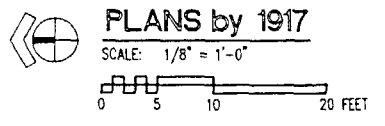
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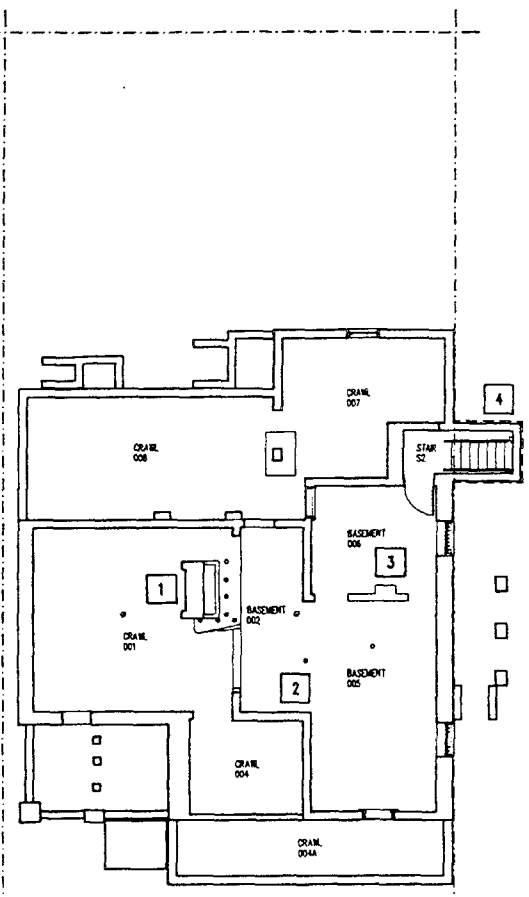


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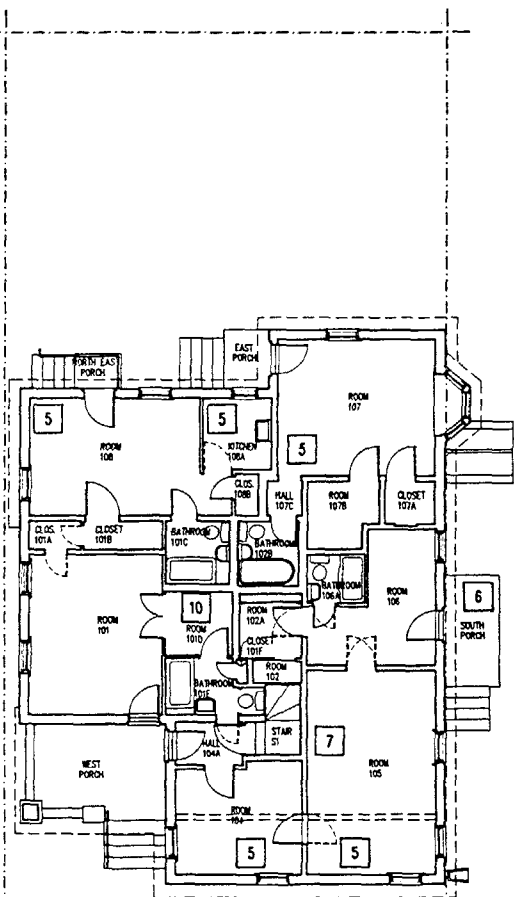


ROOF

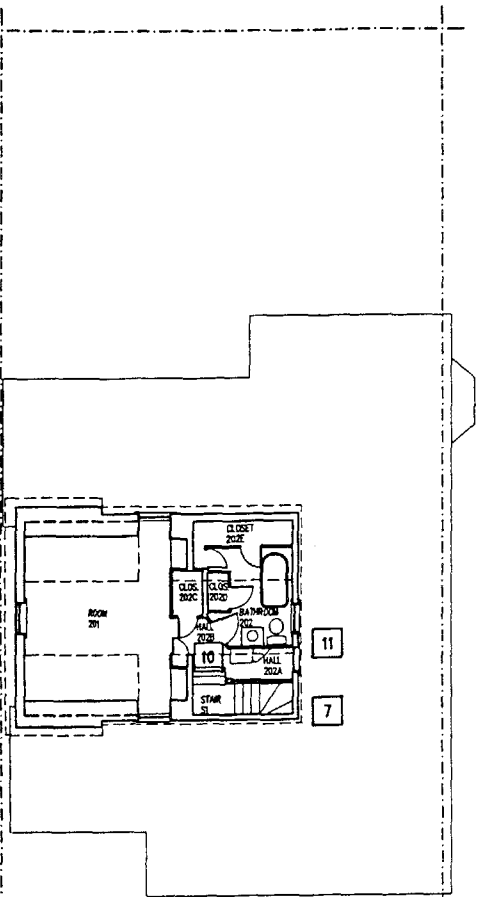




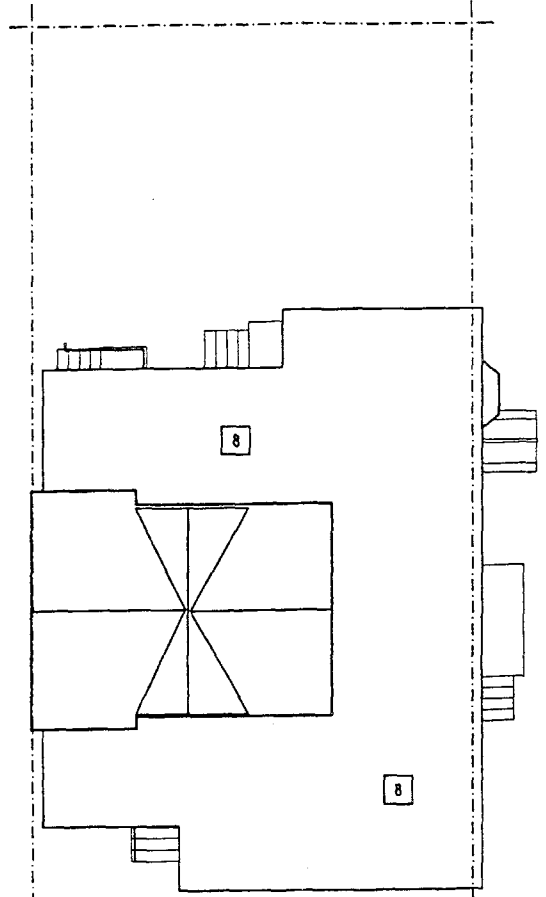
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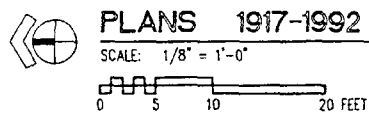
FIRST



SECOND



ROOF



NOTES

- IN ca. 1940 THE HOUSE WAS RENOVATED AND ENLARGED BY ONE-THIRD. THESE RENOVATIONS INCLUDED FACING THE EXTERIOR WITH BRICK AT THE FIRST FLOOR. THESE CHANGES OCCURRED DURING THE OWNERSHIP OF ADELE & FRANK T. DAVIDSON, ALTERING THE HOUSE INTO FOUR AND LATER FIVE APARTMENTS.
- 1 THIS FIREPLACE AND CHIMNEY STACK WAS DEMOLISHED TO THE FOUNDATION AND THE HEARTHINGS WERE REMOVED.
- 2 INTERIOR BASEMENT ACCESS REMOVED.
- 3 CHIMNEY FLUE AND BASEMENT WALL DEMOLISHED TO FLOOR.
- 4 EXTERIOR BASEMENT ACCESS RECONFIGURED.
- 5 FLOOR AREAS ADDED TO HOUSE INCLUDING: THE WEST 5'-6"± AT ROOMS 104 AND 105 AND AREAS AT THE EAST SIDE OF HOUSE.
- 6 DOOR AND SOUTH PORCH ADDED AT FORMER WINDOW.
- 7 THE STAIR HAS BEEN RECONFIGURED AND NEW TREADS AND RISERS INSTALLED. A GUARDRAIL HAS BEEN INSTALLED AT THE SECOND FLOOR.
- 8 A FLAT ROOF WAS BUILT OVER ALL ONE-STORY PORTIONS OF THE HOUSE.
- 9 THE SECOND HOUSE, AT THE FRONT OF THE SITE WAS DEMOLISHED IN 1978.
- 10 REMAINING PORTIONS OF ORIGINAL INTERIOR WALL HAVE BEEN REMOVED AT THE FIRST FLOOR. THE DOOR AT THIS WALL ON THE SECOND FLOOR HAS BEEN REMOVED.
- 11 NEW WINDOWS INSTALLED AFTER THE ROOF WAS FLATTENED.

TITLE: CHRONOLOGICAL HISTORY 1917-1992		PROJECT NO. 9206.00
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BUILDING CHRONOLOGY

**ARNOLD HOUSE
(HS-20)**
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS
FISCHER-WASNOSKY ARCHITECTS INC.

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Introduction
Implications of New Construction
Removal
Stabilization
Restoration
Reconstruction
Interior Rehabilitation
Archeological Remains
Site Conditions
Site Fencing
Historic Barn
Privies
Porches and the Attached Shed
Foundations
Structural Systems
Roof Systems
Building Envelope
Exterior Doors
Windows
Fireplaces & Chimneys
Exterior Stairs
Interior Stairs
Interior Doors
Interior Finishes
Plumbing Systems
Mechanical Systems
Electrical Systems
Communication and Security Systems
Fire Alarm and Suppression Systems
Recommendations for In-Situ Architectural Displays

DESIGN RECOMMENDATIONS

DIVISION VI

DESIGN RECOMMENDATIONS

INTRODUCTION

Restoration of the Arnold House (including the attached shed) and the associated barn and privy to the suggested Lincoln Home National Historic Site's target date of 1860 is attainable, since there are several pieces of information indicating the appearance of the structure. Despite being relocated on the site, significant portions of the 1840 cottage remain largely intact. Numerous period photographs exist indicating the appearance of the north elevation of the house and the north and west elevations of the associated outbuildings at the east yard. The cartographic evidence from 1854 and 1858 are supported by the photographs and later Sanborn maps. The available evidence taken together provides sufficient information to restore and reconstruct the house much as it appeared immediately prior to Lincoln's departure from Springfield to Washington, D. C.

The National Park Service's intended use of the Arnold House calls for it to serve as a visitor waiting/meeting area and display space at the ground floor, with the upstairs designated as non-habitable space. It is the National Park Service's intent to re-create and maintain the interior of the house much as it would have been in 1860.

It is recommended that the house be restored, as much as is practical, to the 1860 period, with intrusions as may be necessary to conform to its use and to comply with the mandatory accessibility and life safety codes.

Extensive removal of the contemporary fabric and the relocation of the original portions of the house on site will be necessary to accurately restore the house to the historic period. In addition, there will need to be some selective demolition of original interior fabric to accommodate structural stabilization,

rewiring for new electrical service and communications distribution, heating diffusers and grilles, security systems, and other contemporary and code requirements.

There is limited evidence to reconstruct such missing elements as window trims, clapboard siding, and finishes of the building. Reconstruction of the doors and windows will be difficult since there appears to be no extant historic doors or windows in the house and no clear photographic evidence. Restoration and reconstruction of the east and south sides of the house will be largely conjectural based on some limited physical evidence and the panoramic views. Data from the paint analysis will provide information to restore the paint scheme for the historic period.

It is advisable that a trained observer be located on site for the removal operations during Title III services. The observer should be familiar with the content of this report, previous reports, and background information regarding the structure. The observer should identify and document any historical evidence found during those operations that was not discovered during the limited fabric removal. This work should be coordinated with the site curatorial staff.

The age of the Arnold House and its proximity to the Lincoln Home, its role in neighborhood and community life during and before the designated historic period for this Historic Site, and the roles of its various occupants and their relationships with the Lincolns, considered in aggregate, give the Arnold House a uniquely significant role in the history of the Lincoln Home neighborhood and City of Springfield. Relocation of this structure to its original location on its property will help to re-establish its historic physical relationship to its surroundings.

The adaptive interior reuse of this structure's first floor as a visitor waiting/meeting area and display space will closely parallel the structure's uses historically, requiring minimal interior modifications. The second floor will be

closed to the general public and its features restored to their historic appearance. The basement will be reserved for storage, maintenance functions, and utility equipment. The building's wood frame structure will be reinforced throughout and brought into conformance with current building, health, accessibility, and safety codes with minimal intrusion on the historic fabric.

It is recommended that the work proceed with removal, stabilization, restoration, reconstruction, and interior rehabilitation. If the project must be phased, a maximum of three phases is recommended. The first phase would include the removals, building relocation, stabilization, exterior preservation/restoration, and reconstruction of the non-extant portions of the house. To provide some interior environmental controls and fire detection capabilities, the first phase should also include the basic structural, mechanical, electrical, and telecommunications systems. The second phase would consist of interior restoration and reconstruction for adaptive reuse. The third phase would consist of the reconstruction of the non-extant barn and privy.

The following sections of this report include specific treatment recommendations for the Arnold House. For additional information, see the Design Recommendation drawings in Division VII of this report.

IMPLICATIONS OF NEW CONSTRUCTION

The programmed use developed by the National Park Service will parallel the house's historic use. Although the house was built as a single-family residence, almost from the beginning it served as an assembly space being used by Reverend Springer as a school, a church, and an assembly hall for the Springfield Mechanics Union. Despite the similarities between the historic and programmed use, the assembly-use occupancy will introduce structural, mechanical, electrical, life safety, and accessibility requirements that did not historically exist. All present applicable code requirements for the new occupancy will have to be met.

The major impact will come from accessibility and life safety exit requirements. To comply with the Uniform Federal Accessibility Standards, a mechanical lift is to be located at a new upper and lower decks at the south side of the house. This lift would be used for both ingress and egress for the physically disabled and should be similar to the system constructed at other properties at the Site. Doors in the accessible limits of the house will need to have a minimum Slear dimension of 2'-8". Strengthening of the first floor joists can be accomplished with little or no disturbance of original building fabric. Limited strengthening of the second floor will require the removal of some of the original fabric, either ceiling plaster or floor boards. To accomplish the structural stabilization work, a combination of plaster and floor board removals (and reinstallation of those floorboards) is recommended, since the locations of original plaster and original floor boards are generally not adjacent to each other. Through this kind of careful combination removal process, damage to original fabric will be minimized. The strengthening of the roof rafters will require the removal of the roofing material and some of the original wide-board sheathing. The oak sheathing boards should be carefully removed, salvaged, and reinstalled, if possible. Exterior removals at the roof are preferable to removal of the original ceiling plaster at the second floor. It should be noted that, with the relocation of the house on the site, there will undoubtedly be some damage to the original plaster finishes remaining in the house.

Except for the above items, there is nothing in the proposed program that would impact the restoration of the house.

REMOVAL

As soon as possible, and prior to the beginning of any removal construction work, all asbestos-bearing and lead-based materials should be removed by a certified abatement contractor. The restoration design of the Arnold House

should revert, to the greatest extent possible, to the circa 1860 configuration. This requires removal of the brick envelope as well as the removal of fully two-thirds of the existing structure including: Rooms 104, 104A, 105, 106, 106A, 107, 107A, 107B, 107C, 108, 108A, 108B, and all basement and crawl spaces. Numerous walls in the areas to be retained and portions of the existing stair (up to the winder) will also need to be removed. The roof dormers will be removed from the 1840 cottage. Additional removal of selected fabric should be accomplished for stabilization and programmed requirements. The hole left by the basement removal will be backfilled and all of the debris will need to be removed from the site.

STABILIZATION

Stabilization of the structure for its programmed use is mandatory. Stabilization would include all work necessary to repair and/or replace the existing deteriorated building fabric and components to bring the structure to a useful, maintainable and, above all, safe level. This includes stabilization prior to relocating the structure on the lot. Exact duplication of concealed structural members is not recommended due to the lack of available material, and the probable prohibitive costs of such components. Deteriorated components should either be reinforced or replaced using contemporary construction methods and materials. Deteriorated, exposed, weather-protective components should be repaired and/or replaced in kind and matched to the existing dimensions, sizes, and placement.

A wood-shingle roof will need to be installed after the roof structure is stabilized and the existing deck reinstalled. New flashing and a new guttering system will also need to be included. The existing historic siding at the present north endwall and gable will be retained and restored, and replaced with new wood to match where necessary. The 1" thick wide-board sheathing should be

replaced with new sheathing to match where it is missing or damaged. New siding will need to be installed over the remaining exterior walls. Any previously unseen nineteenth-century finishes discovered during the removal work under Title III should be evaluated for their historic integrity and shall be retained and restored when possible. The exterior wood finishes will need to be painted with two coats of high-quality, oil-based paint to ensure an extended life span for the building and to reduce, to the greatest extent possible, future maintenance expenditures.

RESTORATION

Restoration for this project refers to the repair of deteriorated building components. One aspect of the restoration will obviously be accomplished through the stabilization process. This will also include: the work to restore the historic door frame at Door 102A, the interior baseboards where they exist, the original interior finishes, window frame at Window 101B (and probably 101A), and the historic stair configuration. Other work includes the restoration of a partially non-extant wall at the first and second floors.

RECONSTRUCTION

The primary reconstruction of the Arnold House will be the work required to build the east one-story addition and attached shed seen in several historic photographs. Analysis and study of historic photographs will aid in the reconstruction of these additions, particularly the windows, trimming, and shutters. Historic photographs will aid in reconstruction of the doors and the chimney stack also seen in these photographs. Not all of the information for reconstruction is available in these period photographs, and the gaps in what is known will have to be filled by evidence from later photographs or even from period examples of other houses. Also included is the reconstruction of the privy and barn in the east

yard. These reconstructions will be guided by analysis of historic photographs and archeological investigation.

INTERIOR REHABILITATION

Although interior rehabilitation is the process of bringing the interior of the building to contemporary standards for the program requirements, this can be accomplished with only minor revisions to the circa 1860 plan and minimal damage to the remaining original finishes.

Proposals for the interior reuse of the structure will require structural reinforcement in several areas. It does not appear that such reinforcement will conflict with the exterior or interior integrity of the Arnold House.

As much of the building's surviving historic interior fabric and features as possible will be preserved or restored. The proposed interior adaptive reuse of this structure as a visitor waiting/meeting area, and display space will closely parallel the building's historic uses between 1840-1847 (i.e., a church, school, and meeting room). Because the proposed uses essentially restore the structure's historic uses, physical and visual intrusions to the interior will be minimized.

Access by the disabled to the public spaces of the building is required. The visual intrusiveness of the necessary lift and platform will be mitigated by locating these features at the southeast corner of the structure away from the Lincoln Home and by landscape screening.

ARCHEOLOGICAL REMAINS

The National Park Service Midwest Archeological Center has determined that several areas of probable ground disturbance should be tested and evaluated prior to demolition or construction work. Some salvage of archeological materials may be necessary, and coordination with the contractor and the Contracting

Officer will be necessary to ensure this work does not negatively impact the completion of the project. The following areas will be significantly impacted by the restoration work. Archeological investigations should therefore be undertaken in these areas prior to construction:

1. The crawl space and basement areas under the existing house and perimeter of the existing foundation walls as determined appropriate by the Contracting Officer.
2. Any area to be excavated for the foundation and basement of the relocated house which is determined by the Contracting Officer to need additional investigation.
3. The area of the barn at the northeast corner of the property indicated on the 1854 and 1858 City of Springfield maps and the 1884 and 1890 Sanborn maps.
4. The area of the outbuilding at the southeast corner of the property indicated on the 1896 Sanborn map.
5. The area of the two privies located by Noble during his investigations in the east yard.
6. The possible cistern location, as determined by Noble to be immediately west of the west porch, under the boardwalk (see Existing Conditions Drawings).
7. Any area of the property in which significant surface and subsurface disturbance is likely to occur during construction operations.
8. Any additional areas identified by the Midwest Archeological Center as part of the project review required by Section 106 of the National Historic Preservation Act.

It will be desirable to have this work accomplished before the contractor commences Title III work, especially in the area of the possible cistern at the west

yard (see Existing Conditions Drawings) and areas of the privy and barn at the east property line.

SITE CONDITIONS

The 1840 cottage will be rotated and relocated to the front of the lot with its north (presently east) face set directly on the north property line and its west (presently north) face set 16'-0" east of the west property line, restoring the house to its original 500 South Eighth Street location.

The topography of the Arnold House lot should remain largely unchanged from its present configuration. Excess soil from excavations could be used to fill evacuated areas of the removed foundations. This fill soil should be compacted to 95% compaction so that settling is minimized. Topsoil should be gently sloped away from the foundations for drainage.

Landscaping, other than boardwalks, fencing, and seeding, will not be part of the immediate restoration work. Trees to remain should be protected to the drip-line against damage during demolition, removal, and construction work. Grass should be planted soon after all construction work has ceased to prevent erosion and to give the site a more pleasing appearance. The National Park Service will soon undertake a project to prepare a comprehensive Cultural Landscape Plan for the Site. Following completion of this plan, all additional landscaping of the property will be completed.

All existing wood boardwalks within the lot boundaries should be removed as part of the demolition. New on-site walks should be wood planks on concrete runners with wood nailers similar to others at the Site. These new walks should be constructed to meet accessibility standards.

The existence (or non-existence) and location of the possible cistern determined by Noble should be confirmed. If at all possible, this feature should be retained; however, present assumptions suggest it will not be retained. At a

minimum, this feature should be excavated and fully documented prior to its demolition.

Termite shields will be installed at the foundation/sill joint to provide a physical barrier against infestations. The site and structures will need to be inspected periodically for the presence of termites and treated according to the National Park Service's Integrated Pest Management Program.

SITE FENCING

The tall, vertical board fence seen in the historic photographs shall be reconstructed at the east (rear) yard of the lot. The height of this fence should be approximately 4'-0" tall. Although not seen in historic photographs, the west (front) yard of the lot was likely enclosed with a fence. A low picket fence should be built around the perimeter of the front yard. All of these fences should be painted white.

HISTORIC BARN

The barn indicated on the early maps and seen in historic photographs should be reconstructed on the north and east property lines at the northeast corner of the lot. Existing archeological documentation, coupled with other documentation, indicates an east and west elevation length of 18'-0"± for the barn. It is strongly recommended that the existing archeological data be supplemented with additional archeological investigations aimed at unearthing information about the precise size and location of this barn. Additional archeological data is necessary to accurately reconstruct this barn.

The barn should be reconstructed with the features seen in the historic photographs, including vertical board and batten siding, the small, nearly-square window, slightly off-center near the top of the north wall (with a similarly-located window on the south elevation), the gabled roof with the off-center peak, and the

apparent door seen on the west elevation. The probable, but not confirmed, two-leaf carriage door should also be part of this reconstruction. Although historic documentation suggests that this barn had a loft, this feature should not be part of the reconstruction, and the full building height (to the side wall top plate) should be available for storage. The barn should be painted white.

The barn will be used for storage by the Site curatorial staff. The following design requirements were supplied by the Lincoln Home National Historic Site staff for inclusion in this report:

Temperature

Maintain interior temperatures at a stable 65° - 75° F year round. Temperatures can drift to the high end of the range during the warmer months at 1° per month increments, and to the low end during the colder months at 1° per month.

Relative Humidity

Maintain interior relative humidity levels at a stable 45% - 55% R.H. Humidity level fluctuations in a 24-hour period should not exceed 10% and ideally should not be more than 1.5%. Once again, humidity can slowly drift to the high end of the range during the warmer months and to the low end during the colder months.

Air Cleanliness

The amount of internal dust should be kept as low as possible. To accomplish this, air handling equipment must be filtered, and all building surfaces sealed, including those behind false walls, ceilings, and concrete.

Air Infiltration/Insulation

A positive vapor barrier is required to limit water vapor access to the insulation of the structure. An air-tight barrier is also required to prevent air leakage from the interior of the building to the building fabric. An insulation R-value which retards wide temperature swings is required in the walls and ceilings.

Fire Safety

All insulating materials must be fire retardant. Fire detection and suppression systems are required.

Pest Control

All doors and windows must be sealed to prevent pest access to the interior of the structure.

Water

No water lines should pass through the building, except those supplying the sprinkler system.

Windows/Lights

The windows of the building must be well insulated, sealed, and UV filtered. All fluorescent lights should be shatter-proof and UV filtered.

Security

Because the building will house museum collections and will be unoccupied by staff, it must be equipped with limited access doorways and doors, secured with remotely monitored intrusion detection and alarm systems. Water, electrical meters and panels, and gas and utility valves that require monitoring by non-curatorial personnel should be kept to a minimum and be easily and separately accessible.

Interior Finishes

Wall and ceiling paint must contain titanium dioxide to absorb stray ultraviolet radiation not absorbed by ultraviolet filters.

Storage

The interior should be designed to accommodate compact, modular, museum storage units to make the most efficient use of available interior space.

PRIVIES

The privy seen in a period photograph of the east yard will be reconstructed. Since previous archeological investigations failed to locate a privy pit similar to that viewed in the aforementioned photograph, further investigations will need to be undertaken to locate this privy. Excavation of this pit will aid in determining the size of the privy seen in the photograph.

Although it is not clear from the photograph, the privy probably had a vertical batten-and-board finish like other outbuildings in the rear yard. The reconstructed privy should be finished in kind. The door with the small window on the west elevation and the gable roof with the north-south running ridge should also be part of this reconstruction. The interior of the privy should be finished similarly to the rough finishes at the Lincoln Home Privy. The exterior should be painted white.

PORCHES AND ATTACHED SHED

There are no porches associated with the historic period of the Arnold House which are to be reconstructed. However, as part of the rehabilitation of the house, a porch will be built at the southeast corner of the house to accommodate a lift providing access to the building by the disabled. This porch should be detailed and built so that it is as visually unobtrusive as possible.

The attached shed seen in numerous photographs at the east end of the east addition to the house will be reconstructed. The features seen in the period photographs, including the endwall with a door and the shed roof, will be part of this reconstruction. Due to the open east elevation of this feature, post-and-beam construction (bearing on subgrade piers) will be used, leaving this side open. The floor of this feature will be level and finished with wood planks. A trap door in the floor will open to the stairs providing access to the basement.

FOUNDATIONS

All of the existing foundations will be completely removed and the pit backfilled. New concrete footings and foundation walls will be poured at the building's new location. The use of concrete block for interior load-bearing walls and as the brick back-up at the top of the perimeter poured concrete foundation walls should be considered. A brick veneer shall be applied to exposed areas above grade. A sub-slab and perimeter footing drain tile system should be installed under the house. This system should be drained to the sump pit in the basement. The new basement will be excavated to allow for a basement floor elevation of 8'-6" below the first floor elevation allowing a minimum 6'-8" clear height under the ductwork.

STRUCTURAL SYSTEMS

The structural systems of the house will require several modifications to stabilize what remains of the 1840 cottage and to bring the loading capabilities of the structure in compliance with modern codes.

The first-floor framing will need to be modified and strengthened to allow a 100 psf minimum live load capacity. The primary problem with the existing first-floor framing is the notches that are cut into the ends of the joists which are tenoned into mortises in the perimeter sill beams. This will require that new structural steel components be placed under the joist ends at the foundation walls to provide a full member bearing for the existing joists. Additional joists should be added at the same elevation as the existing joists. If mid-span support is needed, beams should be installed below the joists.

Due to its non-habitable space designation, the second floor will require less substantial modifications. Since the bearing capacity ledger board is extremely low and the condition of most mechanical connections of the joists to the sidewall studs is not known, it will be necessary to provide a solid connection

between the joists and the studs, thus removing any load from the ledger. This will require that the sidewalls be pulled back to square prior to providing these reinforced connections. A through-bolted connection would provide the best bearing condition. In addition, tie rods or cables should be installed across the structure between the floor joists to strengthen the exterior walls. These modifications to the second floor will also serve to improve the condition of the roof structure. It is further recommended that new framing be added and the existing framing be modified to improve the condition of the second floor at the former chimney and hearth opening. These modifications should be designed to make use of the reconstructed early wall adjacent to these areas.

Pulling the exterior sidewalls back to square and tying them to the rest of the structure with improved mechanical connections will greatly increase the bearing capacities of these walls. Since much of the house's original lateral bracing has been altered or removed, it will be necessary to restore this bracing using one or more of the following options:

1. Place new plywood sheathing at the corners.
2. Install new timber cross-bracing.
3. Install new light gage steel strap bracing.
4. Reinforce the altered existing bracing.

Installation of new sheathing boards at walls where they no longer remain will not only properly restore the exterior wall surfaces, but also provide further structural bracing for the walls. Any new framing in the walls should be nominal lumber furred out as necessary to be flush with the adjacent wall framing.

To the greatest extent possible, the structural stabilization work should be accomplished prior to the relocation of the house. At a minimum, it is recommended that the walls be pulled back to square, the new connections made, the roof modifications made, and the walls laterally braced prior to relocating the

house on site. Great care must be taken during the relocation of the house to ensure that it moves just as it sits and no undue shifting of the structure occurs.

The new framing used to reconstruct the non-extant east addition should be built with nominal lumber to meet current codes. Modern carpentry standard techniques should be used to construct the skeletal frame.

ROOF SYSTEMS

As stated previously, modifications at the second floor framing will significantly improve the condition of the roof system; however, these modifications by themselves will not provide the roof with the minimum live load of 30 psf prescribed by the 1990 BOCA Building Code. The rafter ends bearing on the top plates should be reinforced with nails. The collar tie connection to the rafters should also be reinforced with nails, and a steel plate should be installed to securely tie the rafters to one another at the ridge. Further, new roof rafters with collar ties should be placed between each existing rafter.

All work to reinforce the roof should be accomplished by removing the sheathing boards, leaving the interior plaster untouched. The removed deck boards should be salvaged, stored, and reinstalled once work on the roof framing is complete. Where it cannot be salvaged, the existing deck should be infilled with new boards.

The roof, at the reconstructed east addition, should be built with nominal lumber to meet current codes. Modern carpentry standard techniques should be used to construct the frame.

These roofs should be finished with wood shingles with a 5" exposure. A terne-coated metal cricket should be installed at the south side of the chimney stack. Any flashing used should also be formed out of terne-coated metal.

Reconstruction of the gutters and downspouts will be an important feature in restoring the house's 1860 appearance. Half-round terne-coated metal gutters

should be installed at the north and south fascia of the roof at the 1840 cottage and the east addition, as well as the east eave fascia of the attached shed. At the 1840 cottage roof gutter downspouts will be installed at the west and east ends of this roof. The downspouts at the east end will drain into the gutter at the east addition roof. Downspouts will be installed at the northeast and southwest corners of the east addition roof. The gutters at the south side of the house will drain to grade through 3'-0" long leaders emptying onto loose-laid brick splash blocks. The gutters at the north side of the house at the extreme ends of the house will drain to a sub-grade system emptying through drain tile placed under the boardwalk (between the runners onto gravel) parallel to Jackson Street. A similar drainage system will be used for the downspout at the northwest corner of the attached shed to drain under the adjacent boardwalk.

BUILDING ENVELOPE

All that is known to exist of the original building envelope are the remaining sheathing boards, the original siding behind the brick veneer on the present north elevation, and remnants of a cornerboard and siding in Rooms 005 and 105. This evidence, though some of it minimal, does provide examples upon which to base the restoration and reconstruction of the house. The existing cornerboard remnant should be removed and accessioned into the Site's museum collection. This remnant should be used as a standard for restoring the cornerboards. The existing siding at the present north wall of the 1840 cottage should be retained, and patched and repaired as necessary.

The sheathing at the 1840 cottage should be restored where missing. At the reconstructed east portion of the house, a new plywood sheathing should be installed. Where it does not already exist, clapboard siding with a 3"± exposure to the weather should be installed over all weather surfaces. Cornerboards should

be restored as necessary. It is important that the reconstructed wall surfaces of the east addition align with the wall surfaces of the 1840 cottage.

The findings of the Arbogast paint analysis, contracted for inclusion in this report, should be used as a guide for restoring the house's historic paint scheme. This paint analysis indicates that the original paint scheme was probably off-white (Munsell 2.5Y 8.5/2) on the clapboards with gray (Munsell 5Y 4/1) at the trimming pieces (probably including the gutters and downspouts). The paint analysis suggests that the paint scheme did not change for quite a number of years. The original exterior finishes which survive should be stripped, scraped, repaired as required. One prime coat and at least two coats of a quality, oil-based paint should be applied.

EXTERIOR DOORS

Although one exterior door location is seen in the period photographs, the character of this door is not seen. This door should be reconstructed in its original location. It is recommended that other doors at the Site, or doors from other houses of the same era, serve as a guide for sympathetic reconstruction of the doors. The door trim, sill, and two-leaf shutters seen at the door in period photographs should be reconstructed. The door shutters should be painted dark green, since this was a common nineteenth-century shutter color and is consistent with other examples in the park. The apparent porcelain knob, seen on this door in period photographs, should be restored. A door with a minimum 2'-8" clear opening and a lever knob must be provided at the upper deck at the location of the lift.

WINDOWS

Evidence of window locations and exterior trim is plentiful in historic photographs and in the physical structure; however, there is almost no evidence of

the window sashes. The window frame at Window 101B is original to the house and it is likely that its counterpart at 101A is also original. These frames will remain in their present location. Other windows will be reconstructed in locations determined from the several pieces of information discussed. Windows on the 1840 cottage can be reconstructed in openings determined through physical investigation. The windows at the north elevation of the east one-story addition will be determined through close examination of the historic photographs, while the windows at the east end will be reconstructed in locations seen in the early panoramic views.

Only the twentieth-century photographs seem to provide any evidence of the nineteenth century window sashes. Figure 2.21 provides clear evidence of 6/6 sashes in window frames on this elevation. Since these windows are believed to have been part of the house moved in 1900, they provide the best evidence of the nineteenth-century windows. Therefore, it is recommended that 6/6 sashes be reconstructed for all window openings.

The reconstructed windows should be fully operable and reproduction hardware should be installed. New interior UV filtered storm/screen combination units should be installed at all reconstructed window locations.

Two new windows shall be installed at the south side of the east addition. These windows shall match those elsewhere on the house.

Shutters, similar to the ones seen in the period photographs, should be reconstructed and installed at all windows and, like the door shutters, these should be painted dark green.

FIREPLACES AND CHIMNEYS

The chimney stack at the 1840 cottage, as seen in several period photographs, will be reconstructed from the attic to above the roof line. The chimney will rest on a shelf in the attic space and will measure 2'-0" (east and west) x 1'-4"

(north and south). The height of the stack above the roof is not known, but close study of the period photographs suggests that its top was approximately 3'-0" above the ridge line. The chimney should be reconstructed similarly. Period photographs apparently indicate some kind of profile near the top of the chimney. This profile, or as close an approximation as possible, should be part of the reconstruction. The vent stack for the plumbing will be concealed in, and screened from view by, this chimney stack.

The possible heating stove at the east portion of the house shall not be reconstructed; however, the evidence of it in the sheathing might be a point for interpretation to visitors to the Site.

EXTERIOR STAIRS

The four-tread, closed-riser stair seen in period photographs at the north door (Door 102B) will be reconstructed. This stair will need to meet current codes for riser and tread dimensions, and a handrail will be required. The handrail can be a simple free-standing steel pipe handrail. A second similar stair will be needed at the porch at the lift.

The basement will be accessible by an exterior concrete stair entered through a hatch in the wood floor boards at the attached shed. The riser and treads will have to meet the prescribed codes and a handrail will be required.

INTERIOR STAIRS

The existing interior stair from the top of the winder to the second floor dates to the historic period and should be retained. The remainder of the stair to the first floor should be demolished and the stair restored to its historic configuration with a winder emptying into Room 002. The existing stair to remain will not be reinforced with additional structure. The new portions of the stair will be constructed to meet current codes; however, the riser and tread requirements will

not necessarily be met in the restored stair. The beaded board wall at the stair will be restored and reinstalled at the rebuilt portions of the stair.

INTERIOR DOORS

None of the existing doors date to the restoration period; however, there is one remaining original door frame and casing. The door frame and casing at Door 102A will be restored to its original condition. This door frame will serve as a guide for other interior door frames while the casing will be a guide for the interior trim at all doors and windows in the house. Paint analysis of these features indicate that they were likely oak-grained. This finish should be restored. Although there is no evidence of the original interior doors, it is likely that the doors were rail and stile construction with four panels. This is typical of nineteenth century door construction. Other restored doors at the Site, or doors from other houses of the same era, could serve as a guide for a sympathetic reconstruction for the interior doors. An alternative would be to not construct replacement interior doors.

INTERIOR FINISHES

Where original plaster finishes remain, they should be retained if possible, while all twentieth-century plaster should be removed. It would be advisable to resecure areas of the existing original plaster where either the keys have broken or the lath and plaster have pulled away from the framing. Plaster anchors and a fiberglass mesh and thin coat plaster can be used to save original plaster finishes. In areas where wood lath still remains intact, it should be resecured to the studs and a new three-coat plaster system applied. In areas where both plaster and lath are missing, replacement with a metal lath and a three-coat plaster system is recommended.

Although paint analysis found the earliest finishes over the original plaster surfaces to have almost always been a wallpaper, these finishes should not be restored or reinstalled. Further analysis of the existing wallpapers will need to be done sometime in the future to determine the relative age before any wallpaper restoration or reinstallation can be done. Historic evidence from other houses at the Site suggest that the walls were papered by 1860, but ceilings were not until the late 1890's or early 1900's. Prior to this, ceilings appeared to have been only plastered and maybe whitewashed. It is recommended that the plaster surfaces throughout the house be finished with a paint finish which simulates whitewash, since whitewash itself is not a durable finish for public areas. The new plaster finishes at the east addition should be similarly painted.

The baseboards will require complete replacement at the first floor. The baseboard remnant under Stair S1 should be used as a guide for the restoration of this feature. This remnant should be accessioned into the Site curatorial collection. These bases should be oak-grained just as the door trim apparently had been. This baseboard should be carried through the east addition as well; however, it should only be painted in these portions. The bases at the second floor will require approximately 50% replacement. All existing original baseboards should remain in place and serve as a guide for baseboard restoration throughout the remainder of the second floor. These bases should be restored to their early grey (Munsell 5Y 3/1) painted finish.

The existing maple finishing floor throughout the first floor should be removed and discarded. The existing oak subfloor was probably the historic finish floor and should be restored as such. Once the maple flooring has been removed, a determination will need to be made concerning any further treatment for the floor. One alternative to exposing the original floor to daily wear-and-tear would be to overlay the existing with a contemporary matching material finished in the

same manner. A second alternative would be to install an underlayment board and carpet at the first floor. Either alternative would conserve the historic fabric.

At the second floor, the existing oak strip flooring should be removed, and the painted historic finish floor underneath should be restored. Large areas of this floor will need to be replaced with new floor boards, since there has been significant replacement with twentieth-century wood planks. The new replacement plank floor boards should be painted tan (Munsell 2.5Y 5/6) to match the historic floor finish.

PLUMBING SYSTEMS

The entire plumbing system, including waste and water supply systems and fixtures, should be removed. Portions of the existing waste line to the sewer should be retained if possible to service the building should any interior fixtures be added in the future. Provisions should be made for inspection of the cast iron sewer line before integration into the new design work. Roughed-in domestic water service lines should also be provided in the basement. This service can be tapped from the fire-suppression line prior to the back-flow preventer. A storm sump pit should be installed to remove water from the sub-slab drainage system and this water should be ejected to the curb at Jackson Street. The new plumbing system in the house will be for the fire suppression system and the gas and condensate lines associated with the HVAC systems and the sump pump. No restroom facilities will be provided. Plumbing lines will also service exterior yard hydrants. The existing water meter at Eighth Street should be removed and a new meter installed in the same location for the relocated house. The existing gas meter should be removed and a new meter and regulator installed in an inconspicuous location at the south side of the house. The existing gas line shall be used to provide service to the house at its new location; however, new plumbing will be required to tap onto the existing service line to bring it to the house. The

existing line has provided gas service to a 300 MBH boiler and is more than sufficient to handle the service loads required by the new design.

MECHANICAL SYSTEMS

The entire existing heating system, including the boiler, distribution pipes, registers, radiators, and ductwork should be removed. One independent, gas-fired high-efficiency heating furnace and one air-cooled air conditioning condenser unit should be installed. The condenser unit should be located at the south property line fence and screened with a new board fence. The unit should have humidity controls. Similar equipment will be required at the barn. The mechanical engineer should be advised to keep in mind the almost constant stream of visitors entering and leaving the first floor of the house. The large number of visitors coming and going will need to be taken into account when calculating heating and cooling loads. Supply air and return air at the first floor will be ducted through the floor. The grilles should be sized for an assembly occupancy. The supply air to the second floor will only serve to provide minimum ventilation for the non-habitable spaces and the return air will be allowed to fall to the first floor returns through an open door at Door 201A and the open stair. Chase space for the second-floor ducts will be through the cavities in the wall between Room 101 and 102, and registers will be provided at the baseboards.

ELECTRICAL SYSTEM

With the exception of the existing underground service conduit, the entire electrical system, including conduit, cables, outlets, fixtures, panels, etc., should be completely removed. The service meter could be retained. The existing conduit should be extended to the south side of the house and enter the house under the upper deck. A new set of service conductors shall be pulled from the existing meter base to the new panelboard. Although installation of a splice box at the

existing service is an option, it is not recommended. An entirely new electrical system, including panels, distribution, and devices, will need to be installed. All electrical, security, and communication wiring should be installed in rigid conduit. Track lighting should be installed in the first floor exhibit spaces to allow for lighting which can be adjusted to meet the needs of specific and varying exhibits. Provisions should be made for temporary electrical service for construction and maintenance of the fire alarm system.

COMMUNICATION AND SECURITY SYSTEMS

The existing telephone systems should remain in operation to serve the existing fire alarm system, to the greatest extent possible, during demolition and relocation work. All other distribution and devices pertaining to the telephone service will be removed. A new 25-pair cable should be brought in to service the house, primarily to operate the fire detection and alarm system. This cable should be brought to the house under the boardwalk at Jackson Street.

A new underground television cable should be brought into the house to facilitate any future needs for educational or closed-circuit television. Conduit for the future installation of a fiber optic system should also be provided to the house at this time.

A complete intrusion alarm system should be installed. The system should be connected to the Site's central security system. Provisions should be made, and conduit installed, for potential future security camera system needs which may arise with any expansion of exhibit types displayed in the space.

FIRE ALARM AND SUPPRESSION SYSTEMS

The existing fire detection and alarm system should remain in operation as long as possible during the demolition and should continue in operation until the house is ready to be relocated. The electrical service and telephone lines which

serve the alarm system should also remain in operation during this work. As soon as possible after the house is relocated, the fire alarm system should be installed, at least temporarily, for use during the construction phase.

The new fire detection and suppression system for the house and barn should be designed and installed as part of the restoration work. It should be connected to the Site's central security system. A siamese connection shall be provided on the lot (aligned with the west face of the house on the south property line) as part of the fire suppression system. Dry-head (concealed) sprinklers should be installed throughout the public areas of the house, and pendant type sprinklers should be installed at the barn.

RECOMMENDATIONS FOR IN SITU ARCHITECTURAL DISPLAYS

The Arnold House provides the National Park Service the opportunity to illustrate and interpret early construction techniques to the visitors to the Site. Further, this house could be used as a means to explain historic preservation at the Site to visitors. The following three proposals are intended as suggestions for how these features could be interpreted and they are open to modification and further consideration. These interpretive devices were detailed in consultation with Site Operations and Museum staff.

At the northwest (present northeast) corner of the house is an almost complete example of the earliest construction techniques found in the house. This corner could be exposed to a 4'-6" square area from the basement to the roof sheathing. An exposure to these limits would allow visitors to view a complete example of the basic techniques used to construct and finish the house, including views of: the braced-framed components, the balloon-framed components, the heavy timber sills and joist pockets, the trenails used to mechanically fasten the components together, the cut nails, the hand-split lath, the window construction, the original-finish floors, and the wide-board sheathing. These features could be

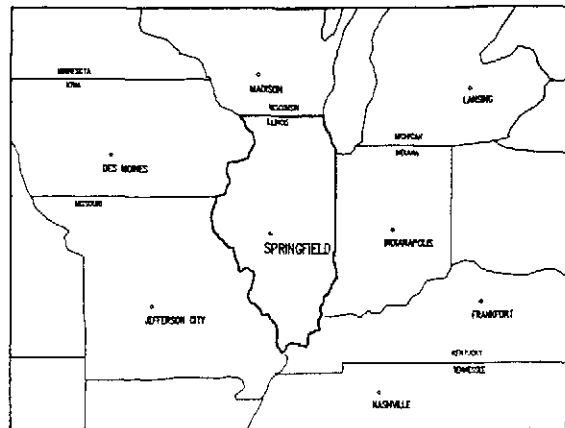
displayed with a series of removed, peel-away layers of construction, such as exposure of the framing in the north wall and exposure of hand-split lath in the west wall. The view to the basement could be limited to the joist/sill beam connection only. This display could be supplemented with graphics to enhance the visitors' understanding of what they are viewing. Of course, any exposure of the house in this manner would require the possible removal of some original fabric. Protection devices would need to be provided not only for the features, but also for the safety of the visitor.

A second possible exhibit would be at the location of the non-extant chimney stack. This exhibit could help to illustrate the "detective" work associated with preservation work and could present the most-likely configuration of the non-extant chimney stack. This exhibit could expose the framing, from the first-floor joists to the roof, through which a plexiglass "chimney stack" would rise, illustrating the likely configuration. The framing for the hearths would be exposed. This display would also be supplemented with graphics to explain the features displayed. Protection devices would need to be provided not only for the features, but also for the safety of the visitor.

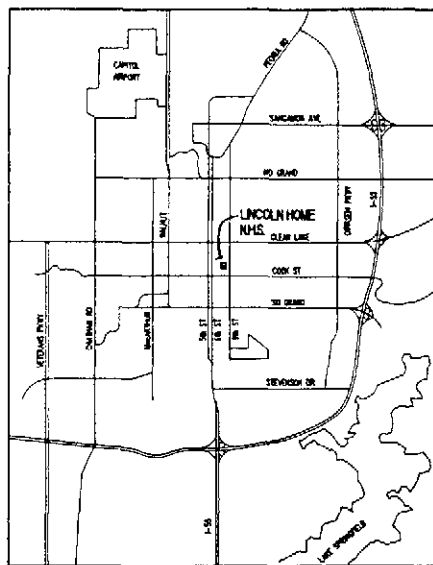
A third possible exhibit could be at the 10" rough-cut flue passage hole at the east wall (presently south wall), between the 1840 cottage and the east one-story addition. This could be interpreted by simply placing an opening cap at this wall with a simple explanatory label identifying its purpose.

DESIGN RECOMMENDATIONS DRAWINGS

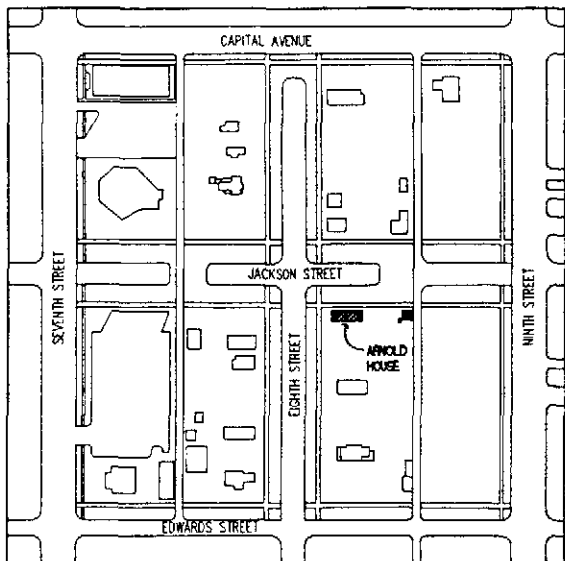
DIVISION VII



REGIONAL MAP
NOT TO SCALE



CITY MAP
NOT TO SCALE



LINCOLN HOME N.H.S.
NOT TO SCALE

DESIGN RECOMMENDATIONS

1. INDEX SHEET & LOCATION MAPS
2. SITE PLAN
3. BASEMENT FLOOR PLAN
4. BASEMENT REFLECTED CEILING PLAN
5. FIRST FLOOR PLAN
6. FIRST FLOOR REFLECTED CEILING PLAN
7. SECOND FLOOR PLAN
8. SECOND FLOOR REFLECTED CEILING PLAN
9. ROOF PLAN
10. EXTERIOR ELEVATIONS
11. EXTERIOR ELEVATIONS
12. BARN AND PRIVY - FLOOR PLANS & ELEVATIONS

TITLE: INDEX SHEET AND LOCATION MAPS	PROJECT NO. 9208.00
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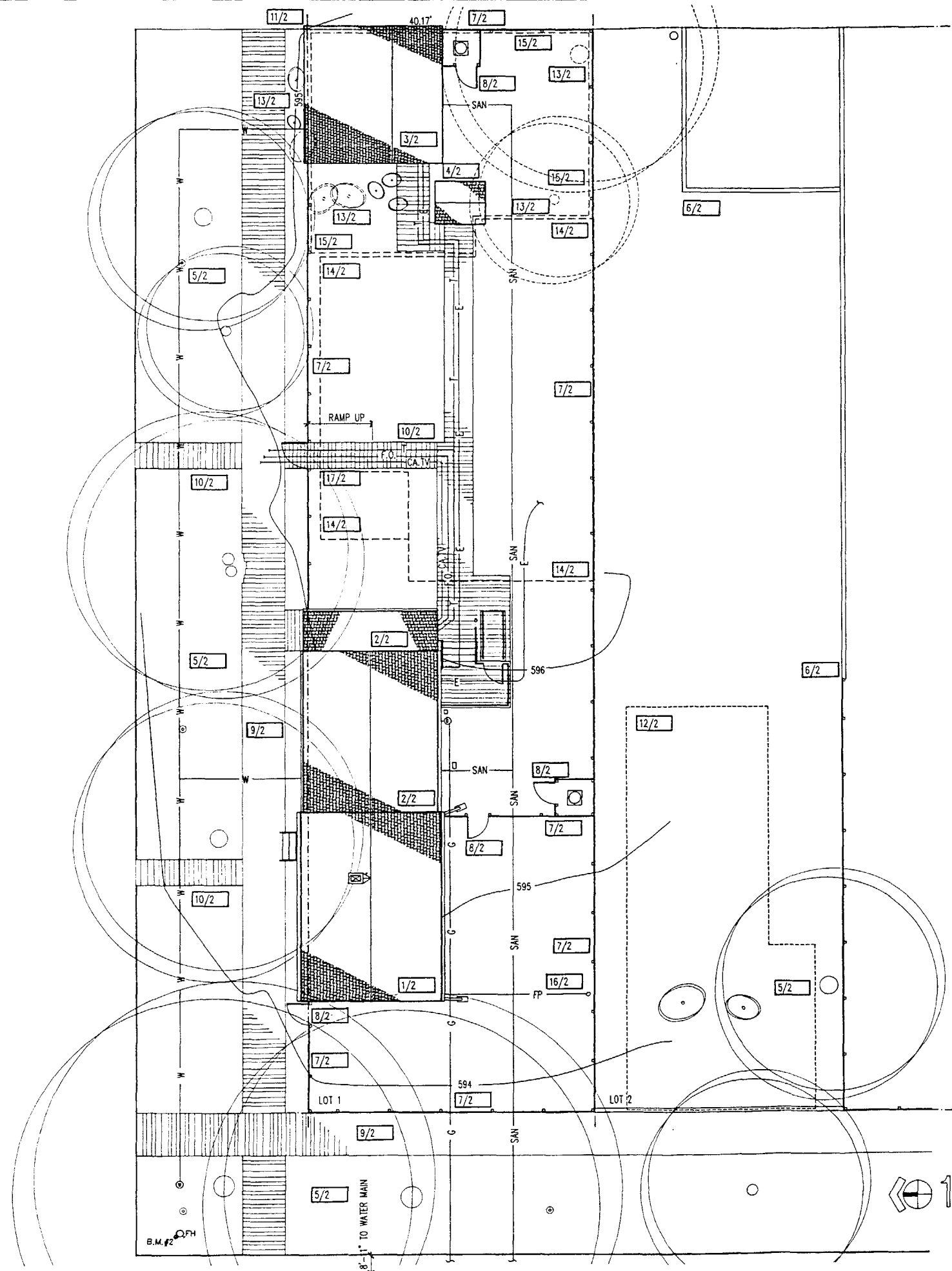
DESIGN RECOMMENDATIONS

**ARNOLD HOUSE
(HS-20)**

LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

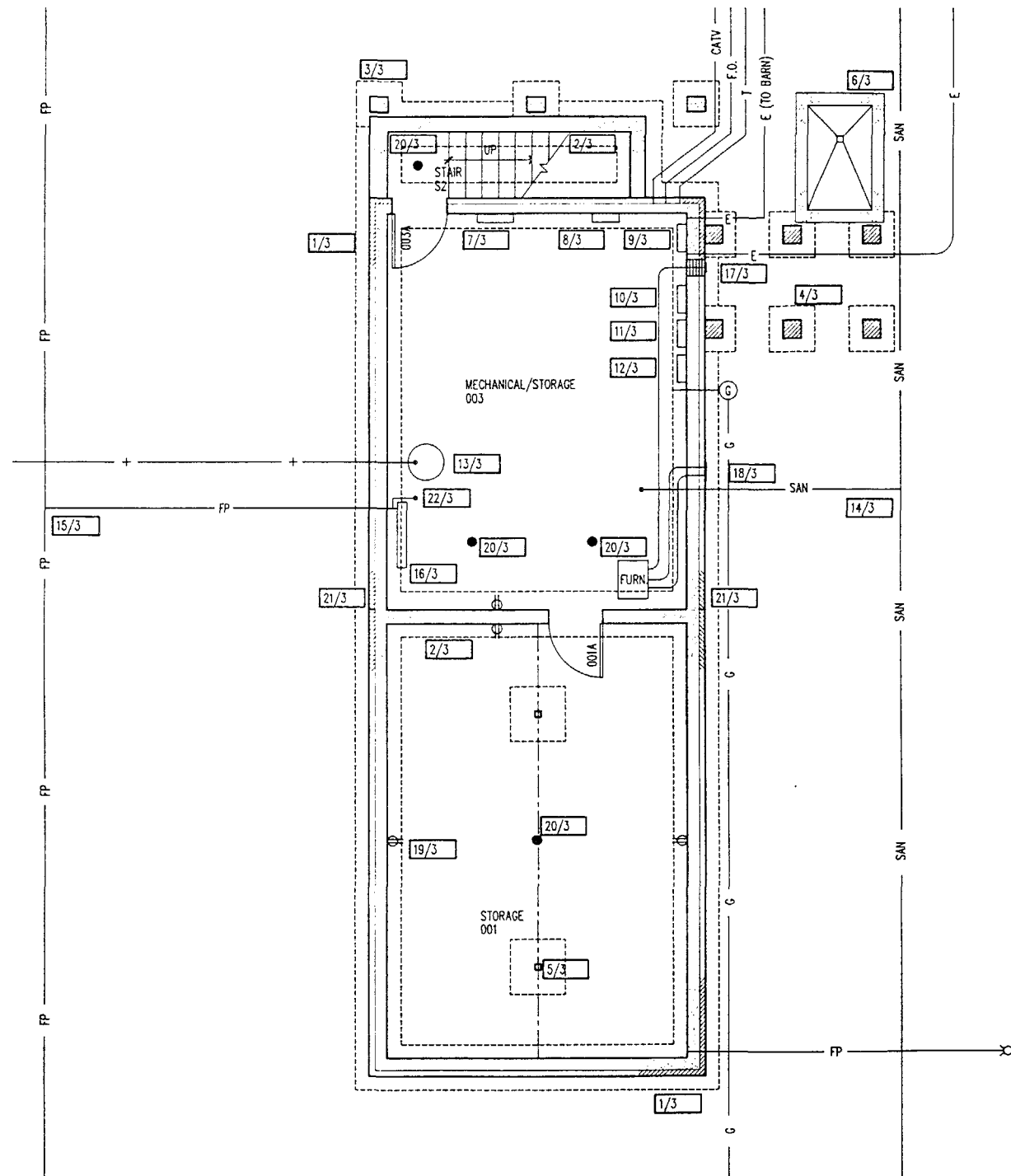
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	DATE	INITIAL		
CONCURRED: CHIEF, CULTURAL RESOURCES MANAGEMENT _____ DATE _____			DRAWN	SHEET 1 OF 12
APPROVED: ASSOCIATE REGIONAL DIRECTOR _____ DATE _____			CHECKED	
APPROVED: REGIONAL DIRECTOR _____ DATE _____			DATE	
	FILE: EGAC0001			



- NOTES**
- EXISTING PORTIONS OF HOUSE TO BE ROTATED 90° AND RELOCATED ON THE SITE
 - NEW PORTIONS OF HOUSE TO BE RECONSTRUCTED
 - RECONSTRUCTED BARN - SEE SHEET 12 OF 12
 - RECONSTRUCTED PRIVY - SEE SHEET 12 OF 12
 - EXISTING PLANTING TO REMAIN
 - EXISTING WOOD FENCE TO REMAIN
 - NEW WOOD FENCE
 - NEW GATE AT NEW FENCE
 - EXISTING BOARDWALK TO REMAIN
 - NEW BOARDWALK
 - SURVEYOR'S PIN
 - POSSIBLE BUILDING AREA IN 1854
 - EXISTING PLANTING TO BE REMOVED
 - LIMITS OF PRESENT ARNOLD HOUSE
 - ARCHAEOLOGICALLY SENSITIVE AREAS TO BE PROTECTED DURING THE CONSTRUCTION PHASE
 - SIAMESE CONNECTION
 - NEW BOARDWALK RAMP

1 SITE PLAN
 SCALE: 1/8" = 1'-0"
 0 5 10 20 FEET

TITLE: TOPOGRAPHICAL SITE PLAN		PROJECT NO. 9208.00
DESIGN RECOMMENDATIONS		
ARNOLD HOUSE (HS-20)		
LINCOLN HOME N.H.S. SPRINGFIELD, ILLINOIS		
FISCHER-WISNOSKY ARCHITECTS INC.		
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DATE	INITIAL	DESIGNED
		DRAWN
		CHECKED
		DATE
FILE: DPA01001		SHEET 2 OF 12



BASEMENT FLOOR PLAN
 SCALE: 1/4" = 1'-0"
 0 5 10 FEET

NOTES

1. NEW EXTERIOR CONCRETE FOUNDATION WALLS AND CONCRETE FOOTINGS WITH NEW BRICK VENEER EXTENDING TO BELOW GRADE.
2. NEW CONC. FOUNDATION WALLS W/CONC. FOOTINGS. NO BRICK VENEER
3. NEW CONC. PIERS W/CONC. FOOTINGS FOR PORCH POSTS
4. NEW BRICK & CONC. PIERS ON CONC. FOOTINGS
5. NEW TUBE STEEL COLUMNS W/CONC. FOOTINGS. NEW STEEL BEAM AT MID SPAN
6. NEW CONC. FOUNDATION AND FOOTINGS FOR LIFT PIT
7. FIRE ALARM PANEL
8. TELEPHONE SWITCHING PANEL
9. ELECTRICAL PANEL
10. TRANSFER SWITCH
11. EMERGENCY POWER PANEL
12. BATTERY BACKUP FOR EMERGENCY LIGHTING ONLY
13. STORM SUMP W/DUPLIX PUMPS - DRAIN TO CURB AT JACKSON STREET
14. TIE NEW SEWER LINE INTO EXISTING SEWER LINE
15. NEW 6" WATER SERVICE LINE FOR FIRE SUPPRESSION & ROUGHED-IN DOMESTIC WATER LINE. NEW WATER METER
16. BACKFLOW PREVENTER & SPRINKLER SERVICE EQUIPMENT
17. FRESH AIR INTAKE
18. COMBINATION AIR INTAKE & EXHAUST FOR FURNACE
19. ELECTRICAL OUTLETS 42" A.F.F. TYPICAL
20. NEW FLOOR DRAIN LOCATION
21. BUTT JOINT IN BRICK VENEER
22. ROUGHED-IN DOMESTIC WATER LINE. TAP BEFORE BACKFLOW PREVENTER.

TITLE: **BASEMENT FLOOR PLAN** PROJECT NO. **9208.00**

DESIGN RECOMMENDATIONS

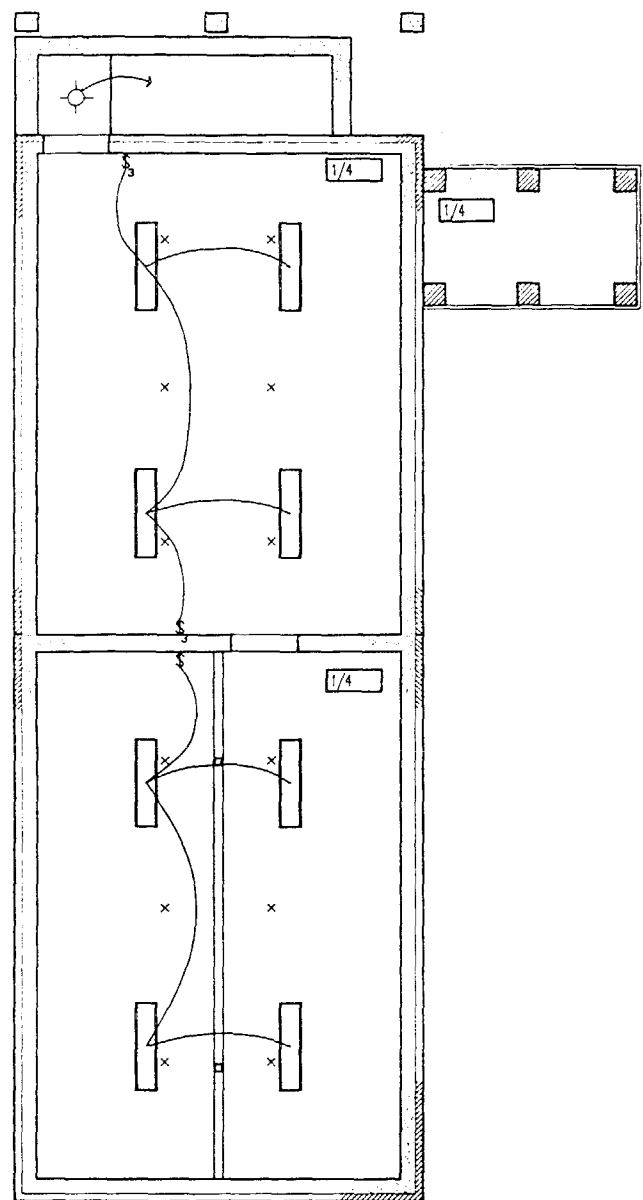
ARNOLD HOUSE (HS-20)
 LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS
 FISCHER-WISNOSKY ARCHITECTS INC.

REVISED		FIELD MEASURED		DRAWING NO.
DATE	INITIAL	DESIGNED	DRAWN	449
				80048
			CHECKED	SHEET 3
			DATE	OF 12

FILE: DPA02001

NOTES

1. EXPOSED STRUCTURE AT CEILING



BASEMENT FLOOR REFLECTED CEILING PLAN
 SCALE: 1/4" = 1'-0"
 0 5 10 FEET

TITLE: **BASEMENT FLOOR REFLECTED CEILING PLAN** PROJECT NO. **9208.00**

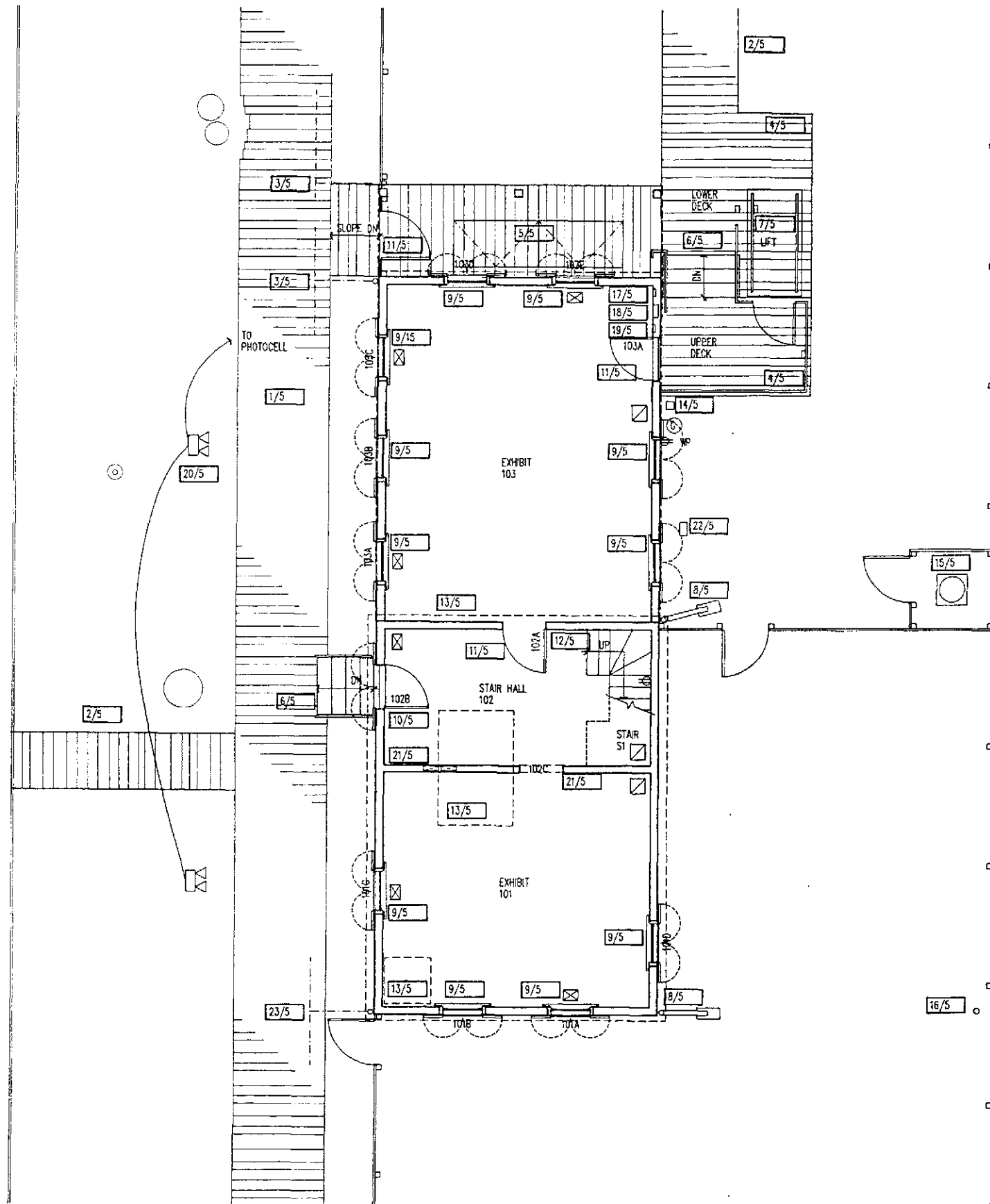
DESIGN RECOMMENDATIONS


ARNOLD HOUSE (HS-20)
 LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

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DATE	INITIAL		449
		DESIGNED	80048
		DRAWN	
		CHECKED	SHEET 4
		DATE	OF 12

FILE: DPA02001




FIRST FLOOR PLAN
 SCALE: 1/4" = 1'-0"


NOTES

1. EXISTING BOARDWALK TO REMAIN
2. NEW BOARDWALK
3. NEW DOWNSPOUT - DRAIN TO DRAIN TILE LOCATED UNDER THE BOARDWALK
4. NEW BOARDWALK DECK
5. NEW BASEMENT HATCH AT WOOD DECK
6. NEW WOOD STAIR
7. NEW HANDICAPPED LIFT WITH REMOVABLE RAILS
8. NEW DOWNSPOUT & SPLASH BLOCK
9. NEW FULLY OPERABLE WOOD WINDOW WITH EXTERIOR WOOD SHUTTERS
10. NEW WOOD DOOR WITH EXTERIOR SHUTTER
11. NEW WOOD DOOR
12. RECONSTRUCTED WINDER STAIR
13. LOCATION FOR POSSIBLE IN SITU ARCHITECTURAL DISPLAYS (SEE DIVISION VI FOR DISCUSSION)
14. EMERGENCY GENERATOR JUNCTION BOX
15. AIR COOLED CONDENSING UNIT
16. SIAMESE CONNECTION
17. RECESSED ANNUNCIATOR
18. CENTRAL LIGHT CONTROL PANEL (FIRST & SECOND FLOOR ONLY)
19. SECURITY KEY PAD
20. NEW SITE LIGHTING
21. RECONSTRUCTED HISTORIC WALL
22. NEW YARD HYDRANT

TITLE	PROJECT NO.
FIRST FLOOR PLAN	9208.00

DESIGN RECOMMENDATIONS

**ARNOLD HOUSE
(HS-20)**

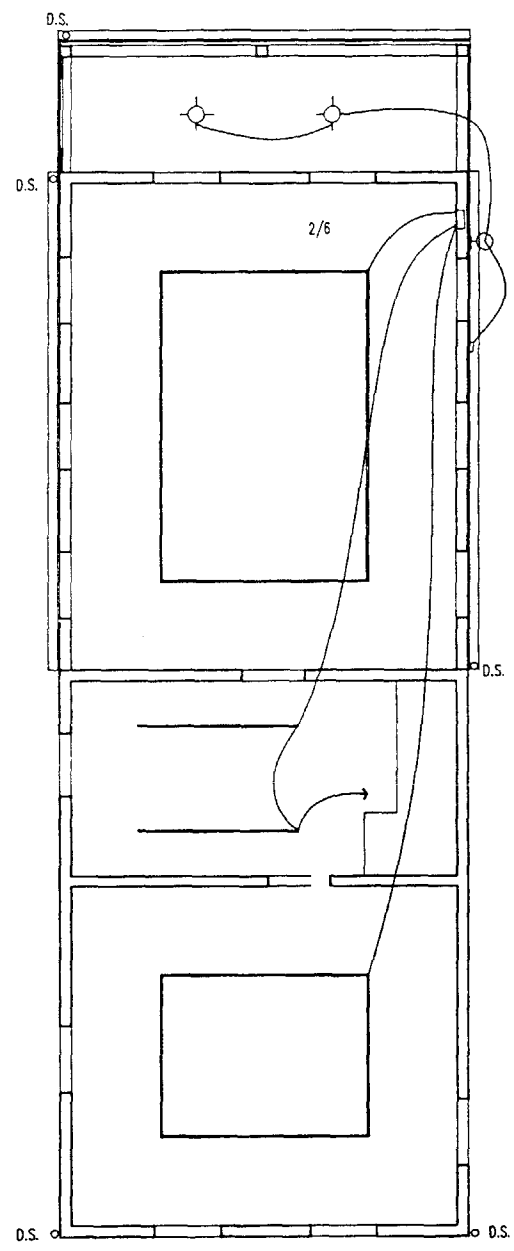
LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WENOSKY ARCHITECTS INC.

REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	80048
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FILE: DPA02002	DATE	OF 12

NOTES

1. PHOTOCELL LIGHT CONTROL FOR EXTERIOR LIGHTING
2. ATTIC ACCESS HATCH



TITLE: FIRST FLOOR REFLECTED CEILING PLAN	PROJECT NO. 9208.00
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DESIGN RECOMMENDATIONS

**ARNOLD HOUSE
(HS-20)**
 LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS
 FISCHER-WISNOSKY ARCHITECTS INC.

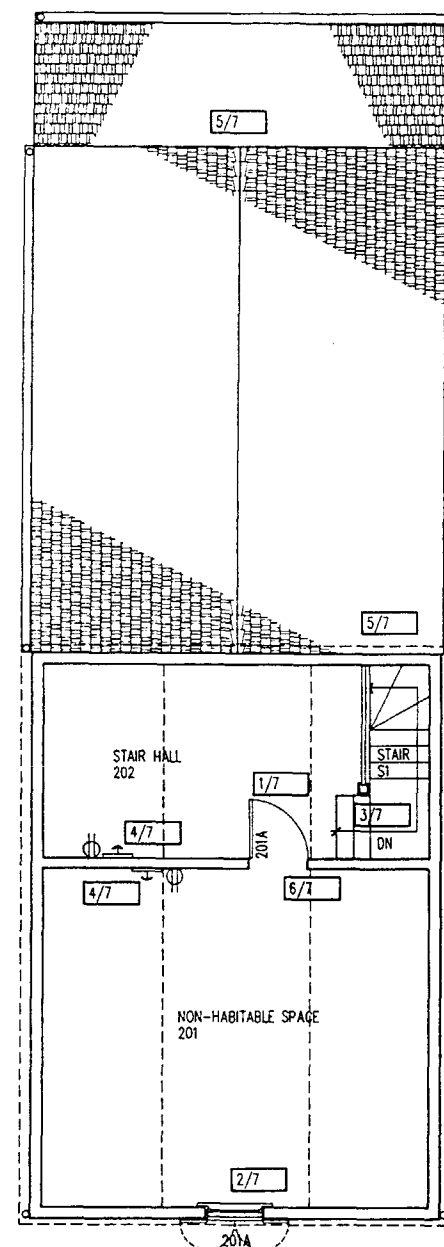
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DATE	INITIAL	449
	DESIGNED	80048
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	CHECKED	SHEET 6
	DATE	OF 12




FIRST FLOOR REFLECTED CEILING PLAN
 SCALE: 1/4" = 1'-0"


FILE: DPAD2002

NOTES

1. NEW WOOD DOOR
2. NEW FULLY OPERABLE WOOD WINDOW WITH EXTERIOR SHUTTERS
3. EXISTING STAIR TO REMAIN
4. BASEBOARD HVAC REGISTERS, DUCTS THROUGH WALL CAVITIES
5. NEW WOOD SHINGLE ROOF
6. RECONSTRUCTED HISTORIC WALL




SECOND FLOOR PLAN
 SCALE: 1/4" = 1'-0"


TITLE:	PROJECT NO.
SECOND FLOOR PLAN	9208.00

DESIGN RECOMMENDATIONS

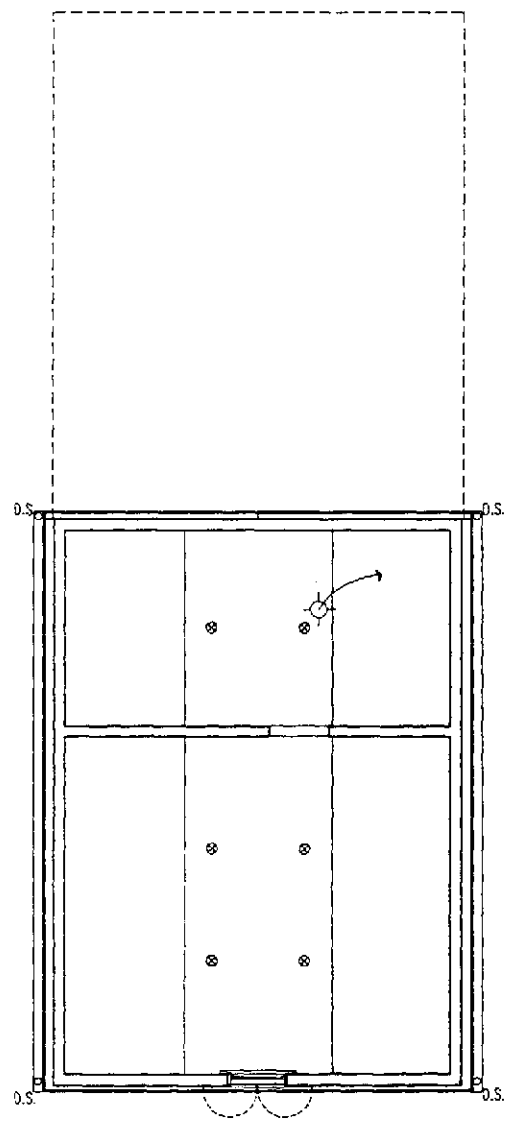
ARNOLD HOUSE
(HS-20)
 LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS
 FISCHER-WISNOSKY ARCHITECTS INC.

REVISED		FIELD MEASURED	DRAWING NO.
DATE	INITIAL		
		DESIGNED	449
		DRAWN	80948
		CHECKED	
		DATE	

SHEET	7
OF	12

FILE: DPA02003

NOTES




SECOND FLOOR REFLECTED CEILING PLAN
 SCALE: 1/4" = 1'-0"


TITLE: SECOND FLOOR REFLECTED CEILING PLAN	PROJECT NO. 920800
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DESIGN RECOMMENDATIONS

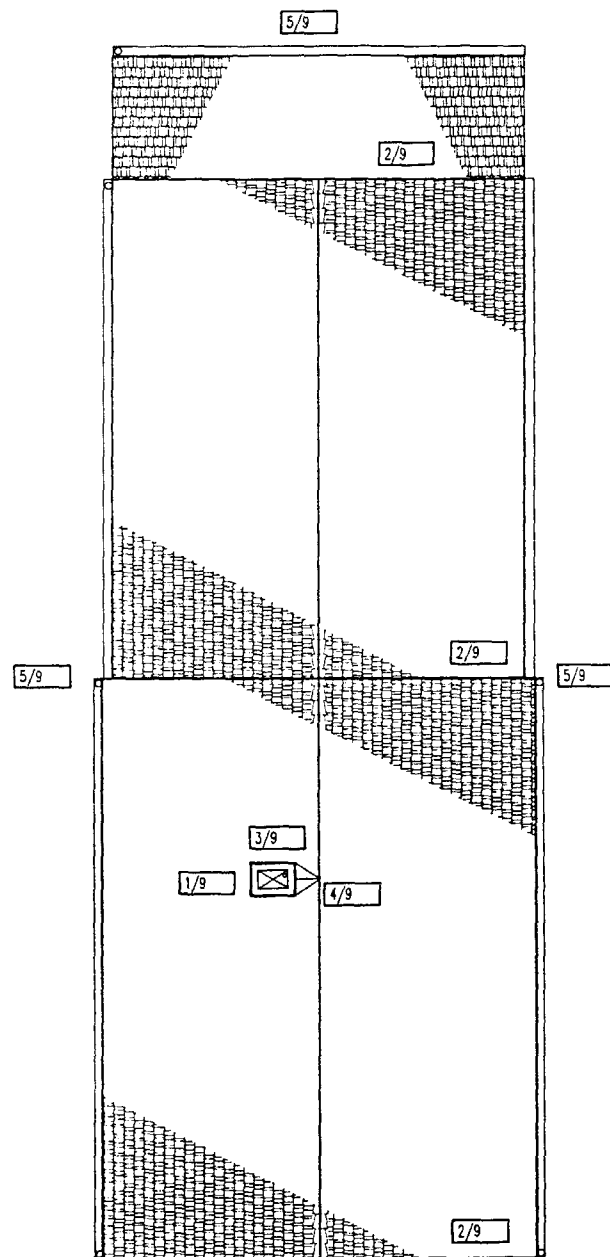
**ARNOLD HOUSE
(HS-20)**
 LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS
 FISCHER-WISNOSKY ARCHITECTS INC.

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DATE	INITIAL		
		DESIGNED	449
		DRAWN	80848
		CHECKED	SHEET 8
		DATE	OF 12

FILE: DPA02003

NOTES

1. FALSE CHIMNEY STACK
2. NEW WOOD SHINGLE ROOF
3. 2" PLUMBING VENT STACK CONCEALED IN FALSE CHIMNEY STACK
4. NEW TERNE COATED METAL CRICKET.
5. NEW TERNE COATED METAL GUTTER SYSTEM



ROOF PLAN
 SCALE: 1/4" = 1'-0"
 0 5 10 FEET

TITLE: **ROOF PLAN** PROJECT NO. **9208.00**

DESIGN RECOMMENDATIONS

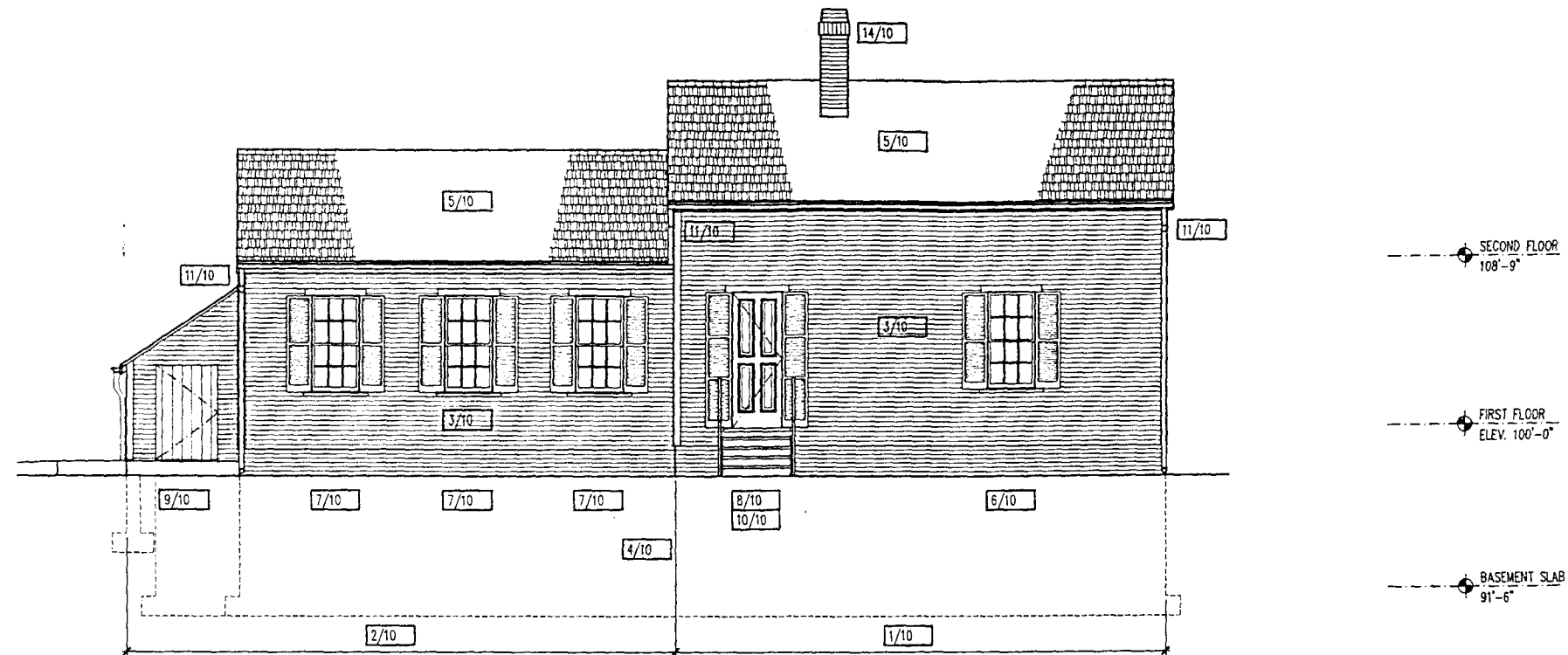
ARNOLD HOUSE (HS-20)

LINCOLN HOME N.H.S.
 SPRINGFIELD, ILLINOIS

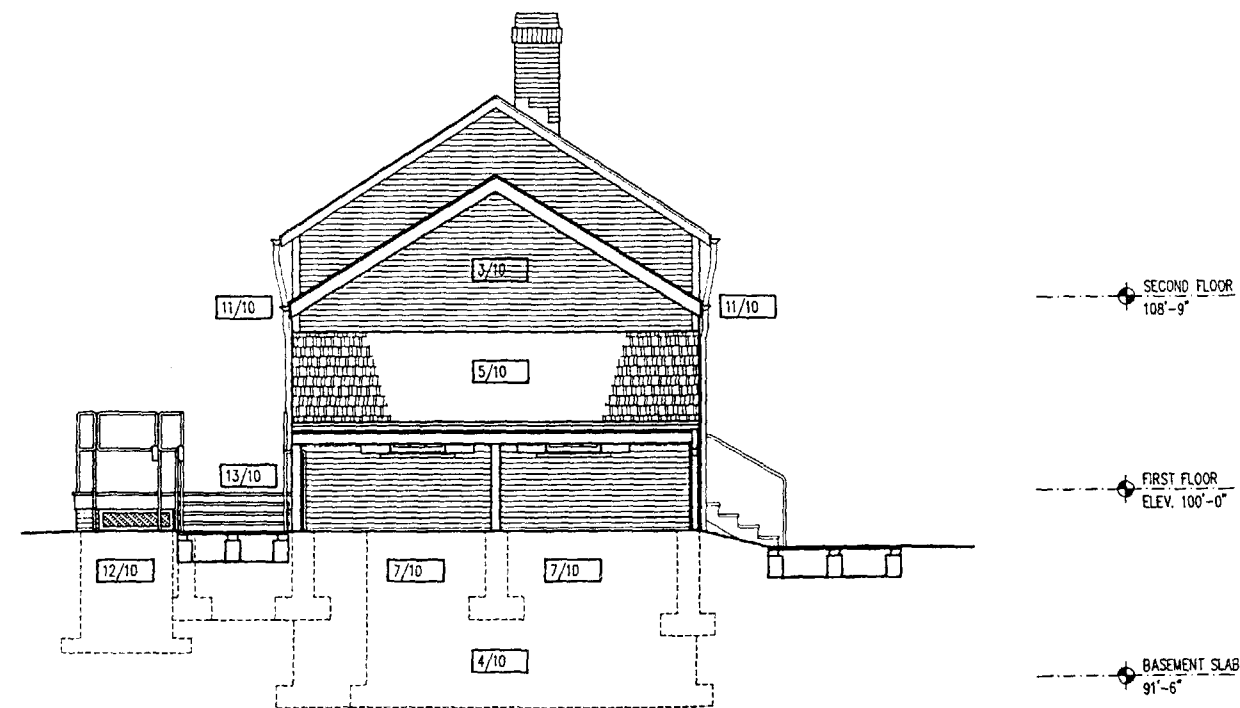
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REVISED		FIELD MEASURED	DRAWING NO.
DATE	INITIAL		
		DESIGNED	449
		DRAWN	80848
		CHECKED	
		DATE	

FILE: DPAD2004 SHEET **9** OF **12**



NORTH ELEVATION
SCALE: 1/4" = 1'-0"
0 5 10 FEET



EAST ELEVATION
SCALE: 1/4" = 1'-0"
0 5 10 FEET

NOTES

1. EXISTING PORTIONS OF HOUSE TO BE ROTATED AND RELOCATED ON SITE
2. PORTIONS OF HOUSE TO BE RECONSTRUCTED
3. NEW WOOD CLAPBOARD SIDING
4. NEW CONCRETE AND BRICK FOUNDATION AND FOOTING
5. NEW WOOD SHINGLE ROOF
6. NEW FULLY OPERABLE WOOD WINDOW, WITH EXTERIOR SHUTTERS, IN EXISTING OPENING
7. NEW FULLY OPERABLE WOOD WINDOW WITH EXTERIOR SHUTTERS
8. NEW WOOD DOOR WITH EXTERIOR SHUTTERS
9. NEW WOOD DOOR
10. NEW WOOD STEPS
11. NEW TERNE COATED METAL GUTTERS AND DOWNSPOUTS
12. NEW HANDICAPPED LIFT WITH REMOVABLE RAILING
13. NEW WOOD DECK ON BRICK AND CONCRETE PIERS WITH WOOD LATTICE SKIRTS, PIPE HANDRAILS AT DECK AND STEPS
14. FALSE BRICK CHIMNEY

TITLE:	EXTERIOR ELEVATIONS	PROJECT NO.	9208.00
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DESIGN RECOMMENDATIONS

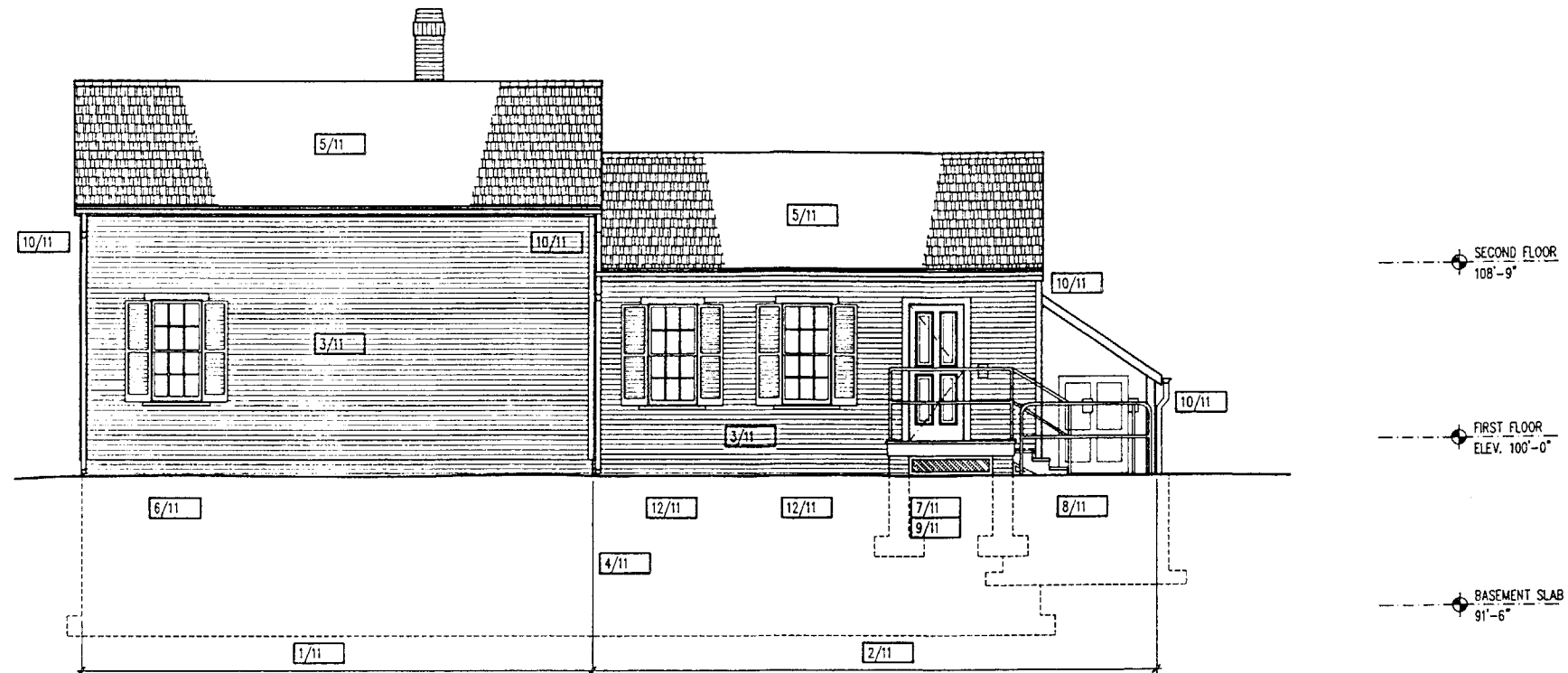
ARNOLD HOUSE (HS-20)

LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

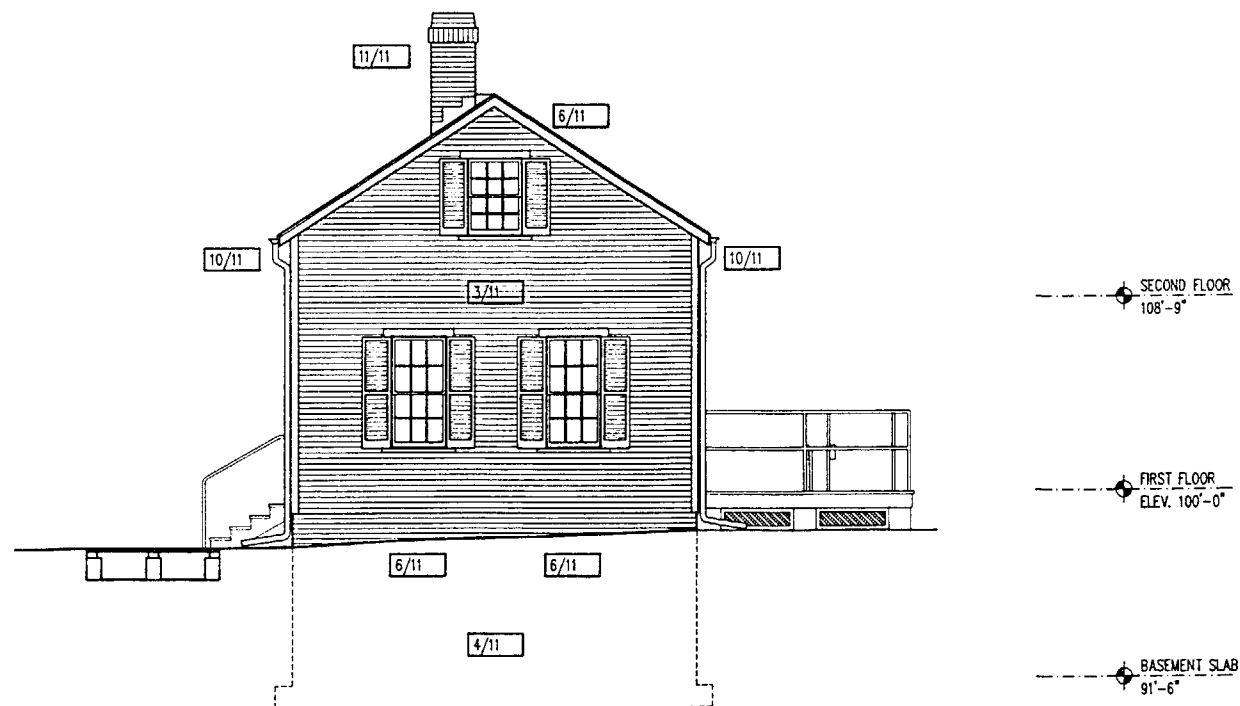
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DATE	INITIAL		449
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		DRAWN	
		CHECKED	SHEET 10
		DATE	OF 12

FILE: DE403001



SOUTH ELEVATION
SCALE: 1/4" = 1'-0"
0 5 10 FEET



WEST ELEVATION
SCALE: 1/4" = 1'-0"
0 5 10 FEET

NOTES

1. EXISTING PORTIONS OF HOUSE TO BE ROTATED AND RELOCATED ON SITE
2. PORTIONS OF HOUSE TO BE RECONSTRUCTED
3. NEW WOOD CLAPBOARD SIDING
4. NEW CONCRETE AND BRICK FOUNDATION AND FOOTING
5. NEW WOOD SHINGLE ROOF
6. NEW FULLY OPERABLE WOOD WINDOW, WITH EXTERIOR SHUTTERS, IN EXISTING OPENING
7. NEW WOOD DOOR
8. NEW HANDICAPPED LIFT WITH REMOVABLE RAILING
9. NEW WOOD DECK ON BRICK AND CONCRETE PIERS WITH WOOD LATTICE SKIRTS, PIPE HANDRAILS AT DECK AND STEPS
10. NEW TERNE COATED METAL GUTTERS AND DOWNSPOUTS
11. FALSE BRICK CHIMNEY
12. NEW FULLY OPERABLE WOOD WINDOW WITH EXTERIOR SHUTTERS

TITLE:	EXTERIOR ELEVATIONS	PROJECT NO.	9208.00
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DESIGN RECOMMENDATIONS

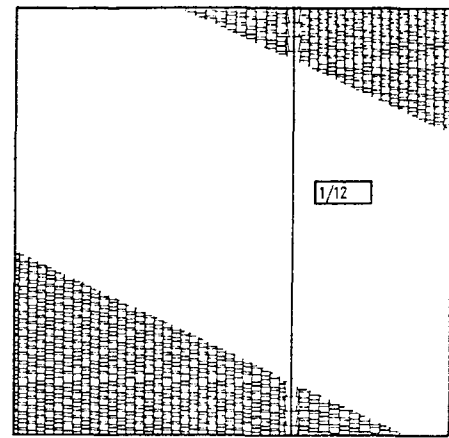
**ARNOLD HOUSE
(HS-20)**

LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

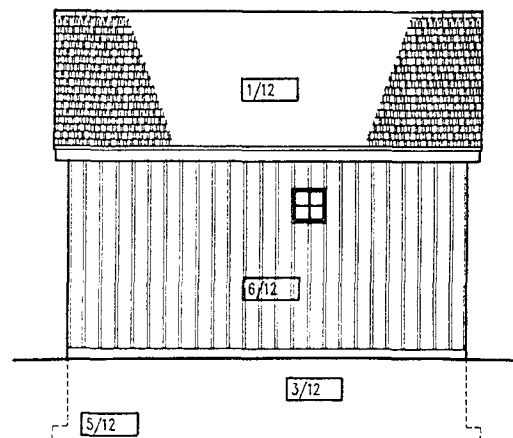
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REVISED		FIELD MEASURED		DRAWING NO.
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		DATE		OF 12

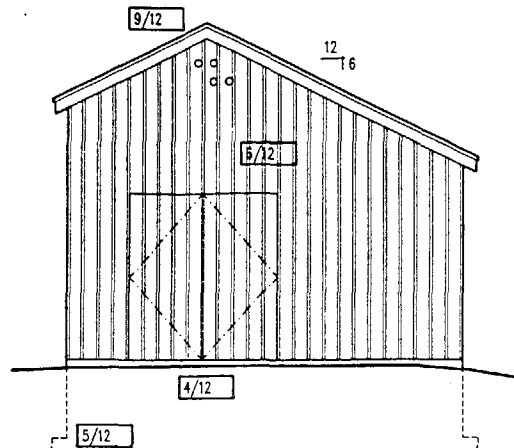
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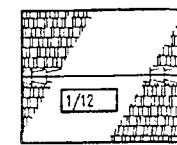
ROOF PLAN



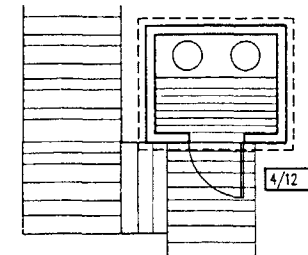
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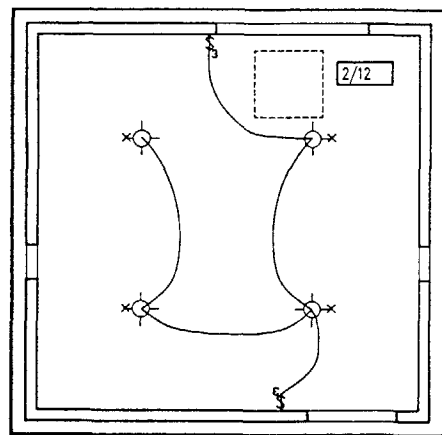
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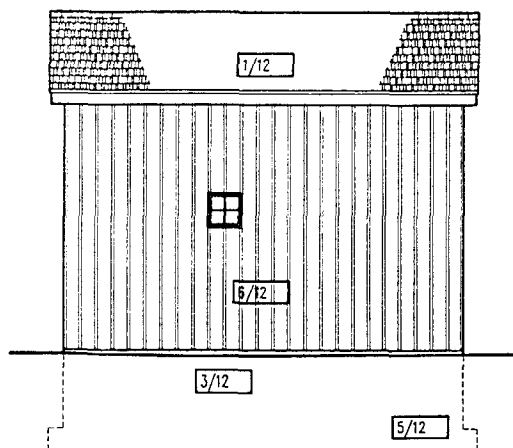
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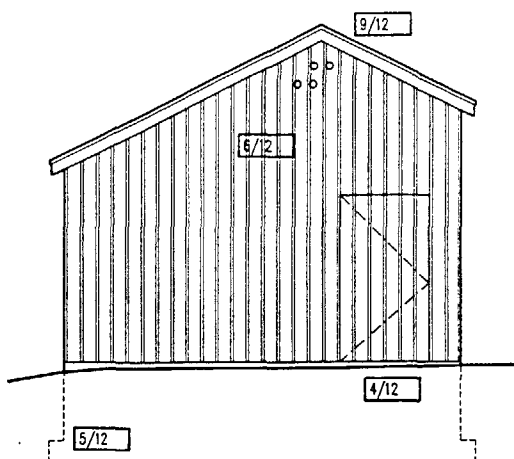
FLOOR PLAN



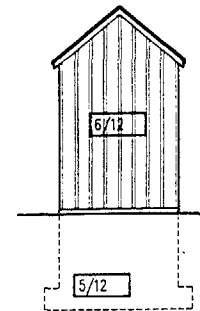
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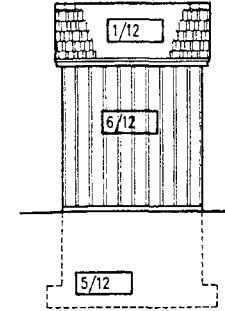
SOUTH ELEVATION



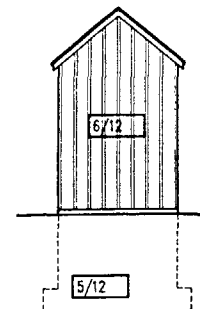
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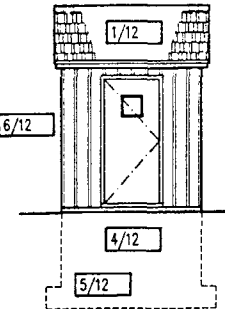
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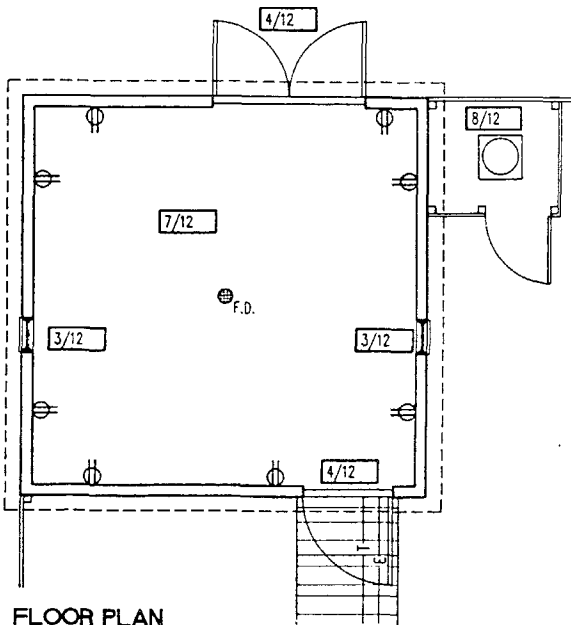
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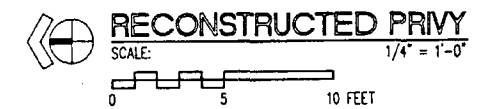
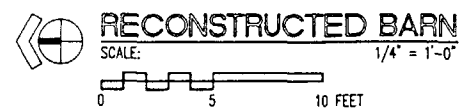
SOUTH ELEVATION



WEST ELEVATION



FLOOR PLAN



NOTES

1. NEW WOOD SHINGLE ROOF
2. LOCATION OF HVAC UNIT IN ATTIC SPACE
3. NEW WOOD WINDOW WITH INTERIOR STORM
4. NEW WOOD DOOR
5. NEW CONCRETE AND BRICK FOUNDATIONS
6. NEW WOOD BATTEN-AND-BOARD SIDING
7. NEW CONCRETE SLAB FLOOR
8. AIR COOLED CONDENSING UNIT
9. HOLES IN BOARD FINISH FOR ATTIC VENTILATION SEE HISTORIC PHOTOGRAPHS (FIGURES 2.12 & 2.13)

TITLE: BARN AND PRIVY
FLOOR PLANS & ELEVATIONS PROJECT NO. 9208.00

DESIGN RECOMMENDATIONS

ARNOLD HOUSE
(HS-20)

LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED		FIELD MEASURED		DRAWING NO. 449 80048
DATE	INITIAL	DESIGNED	DRAWN	
				SHEET 12 OF 12
FILE: DPA02010		DATE		

APPENDICES

**Arbogast Report
Gilmore Report**

PAINT ANALYSIS

APPENDIX A

Paint Analysis

The Arnold House
Lincoln Home National Historic Site
Springfield, Illinois

Fischer-Wisnosky Architects, Inc.
One Northwest Old Capitol Plaza
Springfield, Illinois

June, 1992

David Arbogast
Architectural Conservator
701 Eastmoor Drive
Iowa City, Iowa

Table of Contents

	Page
I. Introduction	1
II. Interior	3
A. Room 101.	3
B. Room 101B	8
C. Room 102B	9
D. Room 106.	10
E. Room 102A	11
F. Room 102.	12
G. Room 105.	13
H. Room 101E	14
J. Room 201.	17
K. Room 202E	22
L. Room 202.	23
M. Room 202A	24
N. Room 005.	28
III. Exterior	29
A. West Porch.	29
B. North Elevation	32
C. East Dormer	36
D. South Elevation and Dormer.	38
E. West Elevation.	43
IV. Conclusions.	44
A. Interior Woodwork	44
B. Interior Plaster.	44
C. Exterior Woodwork	44

I. Introduction

On June 12 and 13, 1992 David Arbogast, architectural conservator, of Iowa City, Iowa made a site visit to the Arnold House at Lincoln Home National Historic Site at the request of Steve Warren of Fischer-Wisnosky Architects of Springfield, Illinois to collect samples of paint and mortar for technical analyses. He was directed in the collection process not only by Steve Warren, but also Craig Drone of Fischer-Wiscnosky and by Chris Wise of his own office. A total of eighty paint and ten mortar samples were collected.

Laboratory analysis commenced the following week and was concluded on June 19 in the laboratory of Mr. Arbogast in Iowa City. The paint samples were visually examined under an optical Olympus microscope having magnification between 14 and 80 power. Each layer observed was color matched to the Munsell System of Color utilizing natural north light. Only opaque, pigmented layers (i.e. paint layers) were matched. It is impossible to color match finishes such as metallic paints and leafs and varnishes because their color is directly affected by their translucency and reflectance.

The Munsell System of Color is a scientific system in which colors have been ranged into a color fan based upon three attributes: hue or color, the chroma or color saturation, and the value or neutral lightness or darkness. Unlike color systems developed by paint manufacturers, the Munsell system provides an unchanging standard of reference which is unaffected by the marketplace and changing tastes in colors.

The hue notation, the color, indicates the relation of the sample to a visually equally spaced scale of 100 hues. There are 10 major hues, five principal and five intermediate within this scale. The hues are identified by initials indicating the central member of the group: red R, yellow-red YR, yellow Y, yellow-green GY, green G, blue-green BG, blue B, purple-blue PB, purple P, and red-purple RP. The hues in each group are identified by the number 1 to 10. The most purplish of the red hues, 1 on the scale of 100, is designated as 1R, the most yellowish as 10R, and the central hue as 5R. The hue 10R can also be expressed as 10, 5Y as 25, and so forth - if a notation of the hue as a number is desired.

Chroma indicates the degree of departure of a given hue from the neutral gray axis of the same value. It is the strength or saturation of color from neutral gray, written /0 to /14 or further for maximum color saturation.

Value, or lightness, makes up the neutral gray axis of the color wheel, ranging from black, number 1, to white at the top of the axis, number 10. A visual value can be approximated by the help of the neutral gray chips of the Rock or Soil Color Chart with ten intervals. The color parameters can be expressed with figures semi-quantitatively as: hue, value/chroma (H, V/C). The color "medium red" should serve as an example for presentation with the three color attributes, 5R 5.5/6. This means that 5R is located in the middle of the red hue, 5.5 is the lightness of Munsell value near the middle between light and dark, and 6 is the degree of the Munsell chroma, or the color saturation, which is about in the middle of the saturation scale.

II. Paint Samples

The paint samples proved to be much more interesting than initially expected. As will be seen they included a variety of paint types, varnishes, and even a metallic finish. Although very few layers were found which could be positively identified as original to the house the later layers are interesting in their own right.

Discussion of the samples commences with the interior of the house using the room numbering system on the floor plans of the house and then proceeds to the exterior, commencing with the northwest corner and working clockwise around the house. It will be seen that the chronological numbering of the samples does not relate to the order of discussion. The primary reason is the method in which samples were collected, which was not entirely logical. Following standard procedures of the Midwest Regional Office of the Park Service a maximum of two samples per page has been followed, resulting in some pages with very little writing. Although this has resulted in a bulkier report, it is also a much easier report to follow without the crossover of information between pages that often results from paint analyses.

A summary section concludes the report giving an overview of the findings.

II. Interior

A. Room 101

1. Sample 1 - North Wall Between Windows

Layer	Munsell
Beige	2.5Y 7.5/2
Beige	2.5Y 8/2
Beige	2.5Y 7.5/2
Light green	10G 8/1
White	5Y 9/1
Pastel green	10G 9/1
Cream	2.5Y 8/4

The first sample was removed from a section of modern plastering in order to provide a control against which other samples could be evaluated. The oldest cream layer was quite thick and not a prime coat, but a finish coat.

2. Sample 6 - Plaster Below Window 101B

Beige	2.5Y 7.5/2
Beige	2.5Y 8/2
Beige	2.5Y 7.5/2
Light green	10G 8/1
White	5Y 9/1
Pastel green	10G 9/1
Cream	2.5Y 8/4
Off-white	2.5Y 8.5/2
Off-white	2.5Y 8.5/2
Off-white	2.5Y 8.5/2
Off-white	2.5Y 8.5/2
Off-white	2.5Y 8.5/2
Tan	2.5Y 6/4
Cream	2.5Y 8/4

Sample 6, from older horsehair plaster, revealed over twice as many paint layers as sample 1, which is not surprising. What is surprising is that even this large number of layers was not significantly larger than that seen on some obviously modern woodwork samples below. The oldest cream layer here may well be not original to the earliest construction of the house.

3. Sample 12 - North Wall, West End

Layer	Munsell
Beige	2.5Y 7.5/2
Beige	2.5Y 8/2
Beige	2.5Y 7.5/2
Light green	10G 8/1
Cream	2.5Y 8.5/4
Cream	2.5Y 8.5/4
Cream	2.5Y 8.5/4
Beige	2.5Y 8/2
Beige	2.5Y 8/2
Beige	2.5Y 8/2
Dark gray	5Y 4/1
Brown	5Y 5/2

Sample 12 retained a large number of additional layers not seen in samples 1 or 6 above. The oldest dark gray and brown layers are typical nineteenth century colors encountered elsewhere on historic architectural fabric.

4. Sample 2 - Baseboard Between Windows

Layer	Munsell
Beige	2.5Y 7.5/2
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
Cream	2.5Y 8/5

The number of layers observed in sample 2 was equal to that seen in sample 1, confirming that the baseboard is also not historic in origin. Its oldest cream layer was also quite thick, being somewhat more intense in color than that seen in sample 1.

5. Sample 3 - Window 101B, Interior Face, Bottom Sash, West Side

Layer	Munsell
Beige	2.5Y 7.5/2
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
Cream	2.5Y 8/5
Cream	2.5Y 8/4
Tan	2.5Y 6/4
White	5Y 9/1
Dark varnish	-----
Off-white	2.5Y 9/2
Golden varnish	-----

The third sample was surprising. It was expected to reveal a similar number and type of layers as the second sample. In fact, not only did it contain the same layers, but also an additional six layers. It appears that the window sash predates the plaster and baseboard. The oldest golden varnish was quite thin and probably used as a prime coat, which was a popular technique at the turn of the century. The off-white and dark varnish layers may represent graining in imitation of fumed oak. In an event, the sash cannot be considered original to the house. Thus, the paint chronology sheds much light into twentieth-century finishes, but none on nineteenth-century finishes.

6. Sample 4 - Window 101B, Interior Face, West Casing, Outer Molding

Layer	Munsell
Beige	2.5Y 7.5/2
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
Cream	2.5Y 8/5
White	10YR 9/1
White	5Y 9/1
White	5Y 9/1
Golden varnish	-----

Sample 4 showed some interesting deviations from sample 3 in its oldest layers. Here was seen the thin coat of golden varnish primer. In this case, however, it was followed by a succession of white layers without any evidence of dark varnish, providing a contrast with the dark varnish seen on the window sash.

7. Sample 5 - Window 101B, Interior Face, West Casing, Flat Face

Layer	Munsell
Beige	2.5Y 7.5/2
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
Cream	2.5Y 8/5
Cream	2.5Y 8/4
Tan	2.5Y 6/4
White	5Y 9/1
Dark varnish	-----
Off-white	2.5Y 9/2
Golden varnish	-----

Sample 5, interestingly, matched sample 3 from the window sash, but did not match sample 4 from the adjacent outer molding on the casing. Thus its original early twentieth-century finish seems to have been dark varnish graining to match the sash in contrast to the white border of the outer casing molding.

8. Sample 80 - Door 101A, Upper South Stile

Layer	Munsell
Beige	2.5Y 7.5/2
White	5Y 9/1
Golden varnish	-----

Sample 80 gave clear indication of having had golden varnish as its finish for most of its life.

9. Sample 24 - Doorway, West Wall, Inner Jamb

Layer	Munsell
Beige	2.5Y 7.5/2
White	N 9.5/
White	N 9.5/
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4
White	5Y 9/1
White	5Y 9/1
Golden varnish	-----
Off-white	5Y 9/2

Sample 24 proved to be a relatively typical twentieth-century woodwork sample. The presence of an off-white prime coat beneath the oldest golden varnish layer was surprising.

10. Sample 25 - Door 101B, West Jamb, Flat Face

Layer	Munsell
White	5Y 9/1
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8.5/3
Off-white	2.5Y 9/2
Cream	2.5Y 8/5
Cream	2.5Y 8.5/3
Golden varnish	-----
Off-white	5Y 9/2

Sample 25, not surprisingly, was very similar to its neighbor, sample 24, directly above.

B. Room 101B

1. Sample 7 - Ceiling

Layer	Munsell
Beige	2.5Y 7.5/2
Beige	2.5Y 8/2
Beige	2.5Y 7.5/2
Light green	7.5GY 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Gray	5Y 6/2
Gray	5Y 6/2
Gray	5Y 6/2

The presence of three layers of gray paint beneath the typical oldest cream layer as also seen on the plaster samples from room 101 indicates possible nineteenth-century paint finishes on this ceiling. The small number of layers prevents any definite conclusion that the oldest gray layer could be original to the house.

C. Room 102B

1. Sample 8 - Ceiling, New Plaster

Layer	Munsell
Cream	2.5Y 8/6

Sample 8 revealed only one layer over thick cream paint. Its color relates to that seen as original to other early twentieth-century layers and, given its location it might have survived from that period without overpainting.

2. Sample 23 - Ceiling, Old Plaster

Layer	Munsell
Tan	10YR 6/4

The twenty-third sample revealed but one layer of paint - a relatively typical tan color. It is impossible to determine the relative age of this layer other than the fact that it remained on original plaster.

D. Room 106

1. Sample 11 - Door 102A, West Frame, Original Portion

Layer	Munsell
Dark varnish	-----
Cream	2.5Y 8/4
Beige	2.5Y 7.5/2
Beige	2.5Y 8/2
Beige	2.5Y 7.5/2
Dark varnish	-----
Tan	2.5Y 6/2
Dark red varnish	-----
Rose	5YR 5/5
Cream	2.5Y 8.5/4
Steel gray	10G 5/1
Gray	5Y 4/2
Gray	5Y 5/1
Brown	2.5Y 5/4
Dark brown	2.5Y 4/2
Varnish	-----
Tan	2.5Y 6/4
Cream	2.5Y 9/3
Gray	5Y 6/1

Sample 11 is probably the most complete of all of the samples taken from original woodwork. As can be seen, its palette is radically different than that seen on later pine woodwork. The oldest tan and cream layers probably represent oak graining, which was commonly applied to walnut woodwork in the period. The oldest gray layer may be a prime coat, but more likely a simple finish coat.

E. Room 102A

1. Sample 9 - Door 102A, North Casing, Inside Bead

Layer	Munsell
White	N 9.5/
Beige	2.5Y 8/2
Beige	2.5Y 7.5/2
Cream	2.5Y 8.5/4
Brown	2.5Y 4/3
Cream	2.5Y 8.5/4
Dark varnish	-----
Beige	2.5Y 8/2
Tan	2.5Y 5/2
Tan	2.5Y 7/2
Dark brown	2.5Y 3/2
Rose	5YR 7/4
Varnish	-----
Cream	2.5Y 8.5/3
Steel gray	10G 5/1

Sample 9 gave every evidence of being from an surviving member of the original house. Not only was the detailing typical of the period, but the wood (walnut) was in contrast to the pine used in the later remodelling efforts. The paint layers were both numerous and typical of a nineteenth century palette. However, it apparent that when compared with sample 11 above, the steel gray is probably not the original finish of this doorway.

2. Sample 10 - Door 102A, North Casing, Outside Molding

Layer	Munsell
White	N 9.5/
Beige	2.5Y 8/2
Beige	2.5Y 7.5/2
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Tan	2.5Y 6/4

Sample 10 stands in marked contrast to sample 9, giving abundant indication of a twentieth-century addition. The small number of layers is an indication of the removal of the doorway to an obscure location as opposed to a primary location previously, as indicated by the large number of earlier layers seen in sample 9.

F. Room 102

1. Sample 13 - Ceiling

Layer	Munsell
Wallpaper	-----
Glue	-----

Sample 13 retained only a single layer of wallpaper and its glue with no paint beneath it.

2. Sample 21 - Crawlspace Under Stairway

Layer	Munsell
Dirt	-----

Sample 1 retained no evidence of any finishes ever applied to its surface.

3. Sample 22 - Crawlspace Under Stairway

Layer	Munsell
Brown	5YR 6/6
Gray	N 5.0/
Whitewash	N 9.5/

Sample 22 was unique among the interior samples in retaining historic paint finishes. All three layers were calcimine type paints. It is likely, based on this evidence, that the house was probably finished with calcimine paint on its walls where it was not wallpapered. Because of the incompatibility of calcimine paints with oil-base paints, all original calcimine paint would have had to have been removed in areas where oil paint was later applied, thus accounting for its great rarity in this paint analysis.

G. Room 105

1. Sample 14 - North Wall, Corner Board Face

Layer	Munsell
Dirt	-----
White	5Y 9/1

Sample 14 was heavily weathered and worn, retaining only traces of an old and possibly original finish of white paint. Because of the condition of the sample, it was impossible to determine with any certainty the original finish.

H. Room 101B

1. Sample 15 - Upper Wall of Stairwell

Layer	Munsell
Pink	7.5R 8/3
Light green	10G 8/1
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4

The number and color range of the layers of sample 15 give evidence of post-original applications.

2. Sample 16 - Sloping Underside of Staircase

Layer	Munsell
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Golden varnish	-----

Sample 16 revealed a very consistent set of layers originating with a golden varnish prime coat, which probably dates from the early years of this century.

3. Sample 17 - Underside of Stair Landing, New Plaster

Layer	Munsell
White	N 9.5/
Pink	7.5R 8/3
Light green	10G 8/1
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Varnish	-----
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Cream	2.5Y 8/4

Not surprisingly, sample 17 proved to be markedly similar to sample 16 above, verifying the relatively modern origin of that sample.

4. Sample 18 - Underside of Stair Landing, Old Plaster

Layer	Munsell
White	N 9.5/
Pink	7.5R 8/3
Light green	10G 8/1
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Varnish	-----
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Off-white	2.5Y 8.5/3
Cream	2.5Y 8/4
Wallpaper	-----
Glue	-----
Sizing	N 9.5/

Sample 18 not only retained the layers identified as non-historic in samples 16 and 17, but also a single layer of wallpaper which may well be the original finish of the wall surface.

5. Sample 19 - Stair Stringer

Layer	Munsell
Wallpaper	-----
Glue	-----

Like its counterpart, sample 18, this sample revealed a layer of historic wallpaper as its oldest, and probably original, finish.

6. Sample 20 - Board Wall Beneath Stair Stringer

Layer	Munsell
Wallpaper	-----
Glue	-----

Sample 20 proved to be identical to sample 19.

7. Sample 72 - Structural Stair Post

Layer	Munsell
Beige	2.5Y 7.5/2
Off-white	5Y 8/1
White	N 9.5/
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Cream	2.5Y 8/4
Light green	10G 8/1
Tan	10YR 7/3
Warm gray	5Y 8/2
White	5Y 9/1
Varnish	-----
Warm gray	5Y 7/2
Warm gray	5Y 4/2
Warm gray	5Y 7/2
Gray	5Y 4/1
Mauve	10R 6/4
Varnish	-----
Cream	2.5Y 8.5/3

Sample 72 showed all appearances of being from an original piece of woodwork. Its oldest layers were markedly similar to those seen in other samples from original woodwork.

J. Room 201

1. Sample 58 - North Wall, West End

Layer	Munsell
Glue	-----

Sample 58 retained only a dirty layer of glue, indicating the former presence of wallpaper as its probable original finish.

2. Sample 62 - North Wall, East of Window

Layer	Munsell
White	5Y 9/1
Peach	7.5YR 7/4
Warm gray	5Y 7/2
Silver	-----
Sizing	-----

Sample 62 was quite interesting, despite the fact that it was an obviously modern sample. The silver layer (actually composed of aluminum powder) was striking and quite unusual as a wall finish. The sizing may have been used as a base for the silvering or it may have been remains of wallpaper glue.

3. Sample 64 - Ceiling

Layer	Munsell
White	5Y 9/1
Peach	7.5YR 7/4
Warm gray	5Y 7/2
Silver	-----
Sizing	-----

Sample 64 proved to be identical to sample 62 above, which is hardly surprising.

4. Sample 65 - South Wall, West Inset

Layer	Munsell
Very dark brown	-----
Sizing	-----

Sample 65 retained only a single layer of very dark brown paint over a layer of what may have been wallpaper glue.

5. Sample 59 - North Baseboard, West End

Layer	Munsell
Warm gray	5Y 7/2
Warm gray	5Y 3.5/2
White	5Y 9/1
Warm gray	5Y 3.5/2
Light gray	5Y 7.5/1
Light gray	5Y 7.5/1
Mauve	7.5R 6/4
Gray	5Y 3/1
Off-white	5Y 8.5/2
Golden varnish	-----

Sample 59 was similar to sample 57 above, but retained far more layers. Not only did it reveal the oldest mauve layer seen in sample 57, but also three older layers, as well. The golden varnish may have been the original finish of the wood or, perhaps, a sealer prior to application of an off-white prime coat, making gray the original finish color.

6. Sample 63 - North Baseboard, Below Window

Layer	Munsell
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
Off-white	2.5Y 8.5/1
Cream	2.5Y 8/3
Cream	2.5Y 8/3
Silver	-----
Cream	2.5Y 8/4
Cream	10YR 8/4
Tan	2.5Y 6/4
White	5Y 9/1
White	5Y 9/1
Sanded layer	-----
Warm gray	5Y 4/2
Warm gray	5Y 4/2
Tan	2.5Y 5/3
Off-white	2.5Y 8/2
Golden varnish	-----

Sample 63 was from a piece of walnut baseboard which gave ever evidence of being of the original construction of the house. Its layering, while quite complete, was also quite difficult to analyze. Not helping matters was a layer of mostly sand grains bonded together with paint. Its oldest layers were not unlike those seen in other samples from original interior woodwork.

7. Sample 66 - Baseboard, South Wall of West Inset

Layer	Munsell
Very dark brown	2.5Y 2/2
Dark maroon	10R 3/4
White	5Y 9/1
Tan	2.5Y 5/3
Brown	2.5YR 4/4
Off-white	2.5Y 9/2

Sample 66 retained more paint layers than its wall counterpart, sample 65, above. The relative paucity of paint layers prevents any certain identification of original paint.

8. Sample 60 - Window, North Wall, Lower Sash, Top Side of Meeting Rail

Layer	Munsell
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
Off-white	5YR 9/2
Silver	-----
Off-white	5YR 9/2

Although sample 60 did not retain anything close of original finishes (nor could it since it is a twentieth-century sash) it did reveal the silver layer seen on typical second-floor wall samples. Its use on this woodwork is unique to the house and cannot be logically explained.

9. Sample 28 - Floor at South End

Layer	Munsell
Dark maroon	2.5YR 2/4
Varnish	-----
Tan	2.5Y 5/6
Gray	5Y 4.5/1

Sample 28, as expected, was not only difficult, but curious. Paint samples from floors are always difficult to interpret given an indeterminate number of typical repaintings. The oldest gray layer was unimpressive. The tan layer was unusual in its relative brightness. It is a color not uncommonly used in the nineteenth century for floors.

K. Room 202E

1. Sample 56 - North Wall

Layer	Munsell
Glue	-----

Sample 56 retained a very dirty layer of glue on top of its plaster surface, indicating the former presence of wallpaper as the oldest finish applied to the plaster.

2. Sample 57 - North Wall, Baseboard

Layer	Munsell
Gray	5Y 6/1
Gray	5Y 4/1
Gray	5Y 4/1
Gray	5Y 4/1
Mauve	7.5R 6/4

Sample 57 retained a surprising number of layers, considering its location. The color range fits that of the nineteenth century. The oldest mauve layer was probably considerably more intense as most red pigments are notoriously fugitive.

L. Room 202

1. Sample 53 - South Wall East of Window

Layer	Munsell
White	N 9.5/
Off-white	5Y 8.5/2
Canvas	-----
Canvas	-----
Glue	-----
Off-white	5Y 8.5/2
Off-white	5Y 8.5/2
Warm gray	5Y 5/2
White	5Y 9/1
White	5Y 9/1

Sample 53 was interesting in its retention of canvas wall coverings, which was a unique application in the house. The use of canvas was popular in the early decades of the twentieth century. Thus, none of the layers which antedate the canvas could be positively identified as being from the original construction.

2. Sample 54 - Window 202A, Jamb Trim

Layer	Munsell
White	N 9.5/
Pink	10R 8/3
White	5Y 9/1
Tan	10YR 8/6
Off-white	10YR 9/2

Sample 54 revealed a set of five relatively modern paint layers applied to an obviously non-historic piece of trimwork.

3. Sample 55 - Window 202A, Bottom Sash, Bottom Side of Meeting Rail

Layer	Munsell
White	N 9.5/
Pink	10R 8/3
Tan	10YR 8/6
Off-white	2.5Y 8.5/3

Sample 55 proved to be virtually identical to sample 54, but was missing one white layer and differed slightly in the color of its oldest layer.

M. Room 202A

1. Sample 26 - South Wall at Stair Landing

Layer	Munsell
Wallpaper	-----
Glue	-----

Sample 26 retained only a single layer of wallpaper, similar to other samples.

2. Sample 67 - North Wall at Stair Landing

Layer	Munsell
White	5Y 9/1
Peach	7.5YR 7/4
Warm gray	5Y 7/2
Silver	-----
Sizing	-----

The finish layers of sample 67 matched those of samples 62 and 64 from the adjacent room 201.

3. Sample 69 - West Wall Above Baseboard

Layer	Munsell
Tan	10YR 8/2
Wallpaper	-----
Glue	-----

Unlike its counterparts above, sample 69 retained what may be original wallpaper over the skim coat of plaster.

4. Sample 68 - Newel Post

Layer	Munsell
Dark glossy varnish	-----
Burnt sienna	10YR 8/2
Off-white	5Y 9/2

Sample 68 was somewhat surprising as it had been expected that it retained only the varnish layer over pine. Instead, it revealed two additional paint layers now obscured by the thick coat of dark varnish.

5. Sample 70 - Stair Platform

Layer	Munsell
Dark varnish	-----

Sample 70, unlike sample 68 above, retained only a single layer of very dirty varnish.

6. Sample 71 - Top Stair Winder

Layer	Munsell
Dark varnish	-----

Sample 71 matched sample 70, serving to confirm that both elements probably date from the same period.

7. Sample 27 - Joist at South Wall Above Stair Winder

Layer	Munsell
White	N 9.5/
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
Cream	2.5Y 8/5
Brown	10YR 5/6
Gray	5Y 7/1
Gray	5Y 5/1
Gray	5Y 7/1
Gray	5Y 5/3

Apart from the obviously modern layers, sample 27 displayed a set of older layers not unlike those observed in sample 11 above, which was positively identified as being original. A comparison shows that this sample does not retain the oldest layers seen in sample 11, leading to the conclusion that the oldest gray layer is probably not the original finish.

8. Sample 29 - Floor at South End

Layer	Munsell
Dark maroon	2.5YR 2/4
White	5Y 9/1
Varnish	-----
Tan	2.5Y 5/6
Gray	5Y 4.5/1

Sample 29 proved to be identical to its counterpart, sample 28, from the south floor of room 201 with the exception of an additional post-historic layer of white, which is not surprising as a color for a floor.

M. Room 005

1. Sample 51 - Bottom of Corner Board

Layer	Munsell
Gray	5Y 3/1
Yellow	2.5Y 8/6
Gray	5Y 7/1

Although sample 51 was extremely deteriorated and dirty, it did reveal three layers of oil-based paint. The paint exhibited a wide range of shades as a result of its weathering so that a middle color was used for matching, leaving the possibility that the exact original color may have been lighter or darker than that used in the analysis.

2. Sample 52 - Bottom of Clapboard Siding

Layer	Munsell
Gray	5Y 3/1
Gray	5Y 7/1

Sample 52 matched sample 51 with the exception of the yellow layer observed on sample 51.

III. Exterior

A. West Porch

1. Sample 30 - Original Clapboards Behind Brick

Layer	Munsell
Gray	5Y 7/1
Warm gray	5Y 8/2
Gray	5Y 6/1
Warm gray	5Y 8/2
Warm gray	5Y 7/2
Gray	5Y 5/1
Warm gray	5Y 6/2
Varnish	-----
Off-white	5Y 8.5/2

If the exterior of a house is typically painted every five years, then sample 30 represents almost half a century of paint. If the exterior was bricked over in 1905 then the oldest layer probably falls within the historic period. As will be seen in sample 31, off-white may not be the original color of the clapboards.

2. Sample 49 - North Elevation, Lower Fascia

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6
Pink	5YR 7/2
White	5Y 9/1
Off-white	5YR 9/2
White	5Y 9/1
Light gray	5Y 7.5/1
Light gray	5Y 7.5/1
Gray	5Y 3.5/1
Light gray	5Y 7.5/1
Gray	5Y 3.5/1
Light gray	5Y 7.5/1

Sample 49 was most interesting. It revealed a very large number of layers for an element known to be of this century. The layers were quite marked and distinguished by sharply defined dirt layers. A comparison with the clapboard samples (30-32) shows some apparent overlap among the gray layers.

3. Sample 50 - North Elevation, Upper Fascia

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6
Pink	5YR 7/2
White	5Y 9/1
White	N 9.5/
Light gray	5Y 7.5/1
Light gray	5Y 7.5/1
Gray	5Y 3.5/1
Light gray	5Y 7.5/1
Gray	5Y 3.5/1
Warm gray	5Y 7/2

Sample 50, as expected, was virtually identical to its counterpart, sample 49, above. The oldest gray layer was not as cool in tone as that seen in sample 49.

4. Sample 78 - Door 101A, South Frame

Layer	Munsell
Pink	5YR 8/3
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
Gray	5Y 7/1
Off-white	5Y 8.5/1

Sample 78 retained a set of relatively recent trim colors less complete than those seen in samples 49 and 50 above.

5. Sample 79 - Door 104C, Upper East Frame

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
Gray	5Y 7/1
Off-white	2.5Y 8.5/1
Off-white	2.5Y 8/2

Sample 79 was slightly more complete than its counterpart, sample 78, above.

B. North Elevation

1. Sample 31 - Original Clapboard Siding Behind Brick

Layer	Munsell
Gray	5Y 7/1
Warm gray	5Y 8/2
Gray	5Y 6/1
Warm gray	5Y 8/2
Warm gray	5Y 7/2
Gray	5Y 5/1
Warm gray	5Y 6/2
Off-white	2.5Y 8.5/2
Gray	5Y 4/1

Sample 31 proved to be virtually identical to sample 30 above with the principal exception of a distinct layer of gray as its oldest layer. Thus, it appears that gray may have been the original color of the exterior of the house.

2. Sample 32 - Gable, East of Window, Original Clapboards

Layer	Munsell
Warm gray	5Y 7/2
Warm gray	5Y 7/2
Warm gray	5Y 6/2
Light gray	5Y 8/1
Gray	5Y 7/1
Warm gray	5Y 8/2
Warm gray	5Y 8/2
Gray	5Y 5/1
Off-white	2.5Y 8.5/2
Gray	5Y 5/1
Off-white	2.5Y 8.5/2
Brown	2.5Y 5/4
Off-white	2.5Y 8.5/2

Sample 32 was surprisingly different from samples 30 and 31, with not only additional layers, but also a very old coat of brown paint. The oldest off-white layer matched that seen in samples 30 and 31. It is unlikely that the clapboards of the gable would have been originally painted in a different color than the clapboards of the lower walls.

3. Sample 47 - Gable, West of Window, New Clapboards

Layer	Munsell
White	N 9.5/
Yellow	2.5Y 8/6
Pink	5YR 7/2
Brown	2.5Y 4/4
Brown	2.5Y 4/4
Varnish	-----

Sample 47 retained a relatively complete set of modern paint layers.

4. Sample 48 - West Fascia, Wide Lower Board

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6
Pink	5YR 7/2
Brown	2.5Y 4/4
Brown	2.5Y 4/4
Gray	5Y 5/1
Off-white	2.5Y 8.5/2
Light gray	5Y 8/1
Varnish	-----

Sample 48 contained several additional layers beneath the typical modern layers of other samples. These additional layers probably date from the early years of the present century.

5. Sample 73 - Window 101B, Frame

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/4
Gray	5Y 5/1
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
Gray	5Y 7/1
Gray	5Y 7/1
White	5Y 9/1
Gray	5Y 7/1
Gray	5Y 7/1
Warm gray	5Y 7/2
Gray	5Y 5/1
Gray	5Y 5/1
Gray	5Y 5/1
Light gray	5Y 7.5/1
Dark gray	5Y 4/1

Sample 73 gave every evidence of retaining virtually all layers of paint since the original construction of the house. Not only was there a large number of layers but the colors are typical of those used in the nineteenth century.

6. Sample 74 - Window 101B, Meeting Rail

Layer	Munsell
Beige	5YR 8/3
Yellow	2.5Y 8/6
Off-white	5Y 8.5/1
Black	N 1.0/
White	5Y 9/1
Off-white	5Y 8/1
Dark varnish	-----
Dark gray	5Y 3.5/1
Gray	5Y 7/1
Dark gray	5Y 3.5/1

Sample 74 displayed a surprisingly large number of layers for a building element known to be less than ninety years old.

7. Sample 61 - Gable Window, West Jamb

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6
Pink	5YR 7/2
Gray	5Y 6/1
Dark brown	2.5Y 3/3
White	5Y 9/1
Gray	5Y 7/1
Off-white	5Y 8.5/3

Although technically removed from room 201, sample 61 showed exterior types of paint layers. Its layering was relatively typical of twentieth-century paint seen on other exterior samples.

C. East Dormer

1. Sample 33 - Board Below Window

Layer	Munsell
Pink	5YR 8/3
Black	N 1.0/
Tan	10YR 6/4
Dark brown	10YR 3/4
Off-white	2.5Y 9/3
Off-white	2.5Y 9/3
Varnish	-----
Off-white	2.5Y 9/3
Off-white	2.5Y 9/3
Varnish	-----

Sample 33 is the first of a series of samples from exterior wood elements added or relocated from the house when it was moved. The purpose of this portion of the analysis is to identify any possible elements that were relocated. In the case of the boards below the east gable window, it appears that all of its finishes are of the twentieth century, because of their relative lack of layers and the color range.

2. Sample 34 - Clapboard Siding North of Window

Layer	Munsell
White	N 9.5/
Yellow	2.5Y 8/6

Sample 34 retained only the two most recent layers thus indicating either that the siding is very recent in origin (unlikely) or that earlier paint layers had been lost prior to application of the yellow (very likely).

3. Sample 35 - Window, North Jamb

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6
Gray	5Y 7/1
Brown	10YR 4/4
White	5Y 9/1
Brown	10YR 4/4
Gray	5Y 6/1
Gray	5Y 3.5/1
Gray	5Y 6/1
Gray	5Y 3.5/1
Gray	5Y 4/1
Varnish	-----

Sample 35 retained a large number of gray layers not unlike those observed in original clapboard paint samples from the lower walls (nos. 30-32). It did not, however, retain the oldest layers seen in those samples.

4. Sample 36 - Window Sash, Underside of Meeting Rail

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6
Pink	5YR 7/2
Black	N 1.0/
Gray	5Y 7/1

Sample 36 retained what was seen to be a typical set of recent paint layers.

5. Sample 37 - Vent Above Window, South Jamb

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6
Pink	5YR 7/2
Brown	2.5Y 4/4
Brown	2.5Y 4/4
Gray	5Y 7/1

Sample 37 displayed a typical set of layers which give every evidence of modern origin.

D. South Dormer

1. Sample 38 - East Fascia, Lower Section

Layer	Munsell
Pink	5YR 8/3
Pink	5YR 7/2
Brown	2.5Y 4/4
Brown	2.5Y 4/4
Gray	5Y 7/1

Sample 38 retained most of the typical modern paint layers as seen in many of the samples from the east dormer above.

2. Sample 39 - West Fascia, Upper Section

Layer	Munsell
White	N 9.5/
Yellow	2.5Y 8/6
Brown	2.5Y 4/4
Brown	2.5Y 4/4
Gray	5Y 7/1

Sample 39, like its counterpart, retained typical modern layers of paint, although not the same layers.

3. Sample 40 - Clapboard Siding East of Window

Layer	Munsell
White	N 9.5/
Yellow	2.5Y 8/6
Brown	2.5Y 4/4
Brown	2.5Y 4/4
Varnish	-----

Sample 40 revealed a typical set of modern paint layers with a very distinct layer of varnish as an apparent sealer for the wood.

4. Sample 41 - Center Window, West Jamb

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6

Sample 41 retained only the two most recent layers seen in other samples.

5. Sample 42 - Center Window Head

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6
Brown	2.5Y 4/4
Brown	2.5Y 4/4
Varnish	-----

Sample 42 retained a set of typical modern layers over a varnish sealer.

6. Sample 43 - Upper Window Sash, Top Rail

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6
Pink	5YR 7/2
Black	N 1.0/

Sample 43 revealed four typical modern layers of paint.

7. Sample 44 - West Window Frame

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6

Sample 44 displayed only the two most recent paint layers.

8. Sample 45 - West Corner Board

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6
Brown	2.5Y 4/4
Brown	2.5Y 4/4
Brown	2.5Y 4/4

Sample 45 showed a set of typical modern layers with an additional layer of brown paint unique to this sample.

9. Sample 76 - Window 105A, Upper Sash, Bottom Side of Meeting Rail

Layer	Munsell
Pink	5YR 8/3
Yellow	2.5Y 8/6
Black	N 1.0/
White	5Y 9/1
Warm gray	5Y 5/2

Sample 76 revealed an incomplete set of modern paint layers, as was to be expected.

10. Sample 77 - Exterior Door 113, East Frame

Layer	Munsell
Pink	5YR 8/3
White	5Y 9/1
White	5Y 9/1
White	5Y 9/1
Gray	5Y 7/1
Off-white	5Y 8.5/1

Sample 77 retained atypical paint layers probably indicative of trim colors used on the door in contrast to basic elements such as siding. As expected, none of the layers were historic.

F. West Elevation

1. Sample 46 - South End, West of Dormer, Clapboard

Layer	Munsell
White	N 9.5/
Pink	5YR 8/3
Yellow	2.5Y 8/6
Pink	5YR 7/2
Brown	2.5Y 4/4
Brown	2.5Y 4/4
Varnish	-----

Sample 46 revealed a relatively complete set of layers of twentieth-century paint.

2. Sample 75 - Window 105C, Meeting Rail

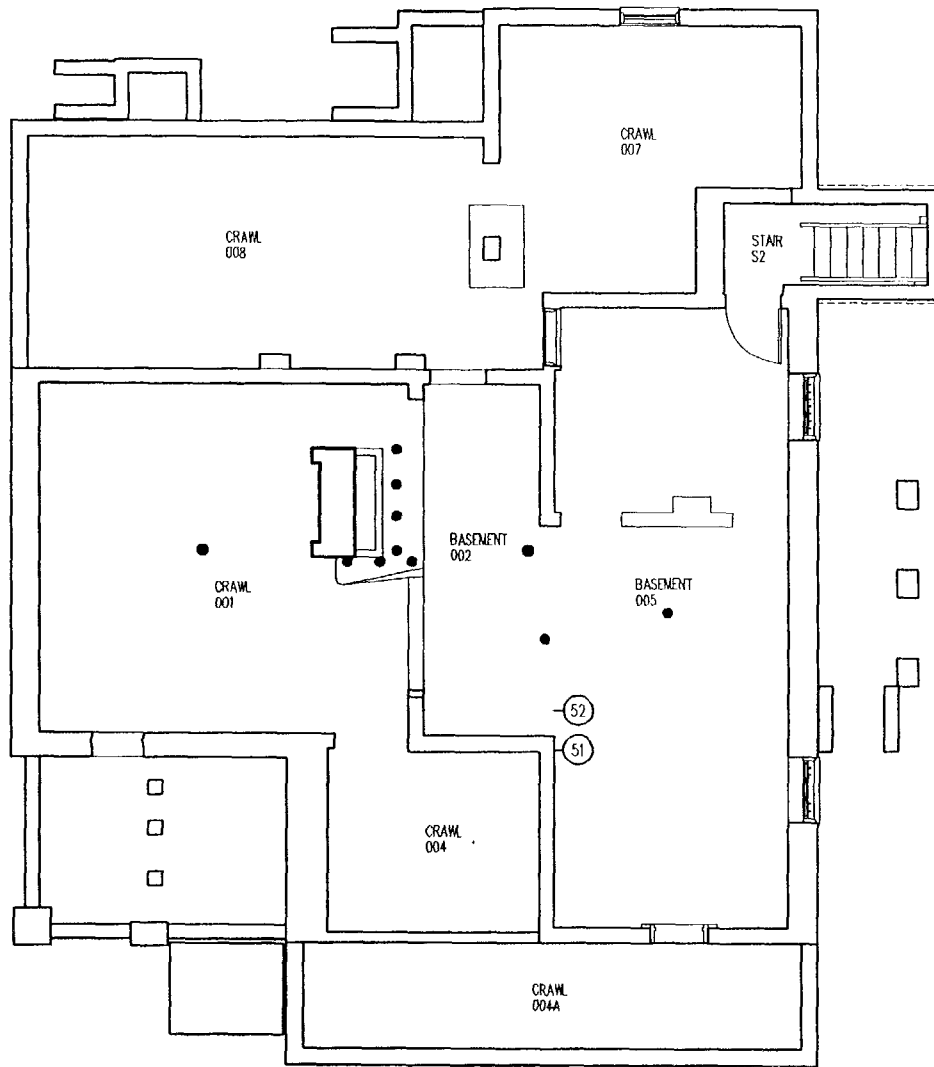
Layer	Munsell
Pink	5YR 8/3
White	N 9.5/


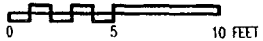
Sample 75 retained only the two most recent layers of paint as seen in other samples, indicating that it was probably stripped and primed prior to its present repainting.

IV. Conclusions

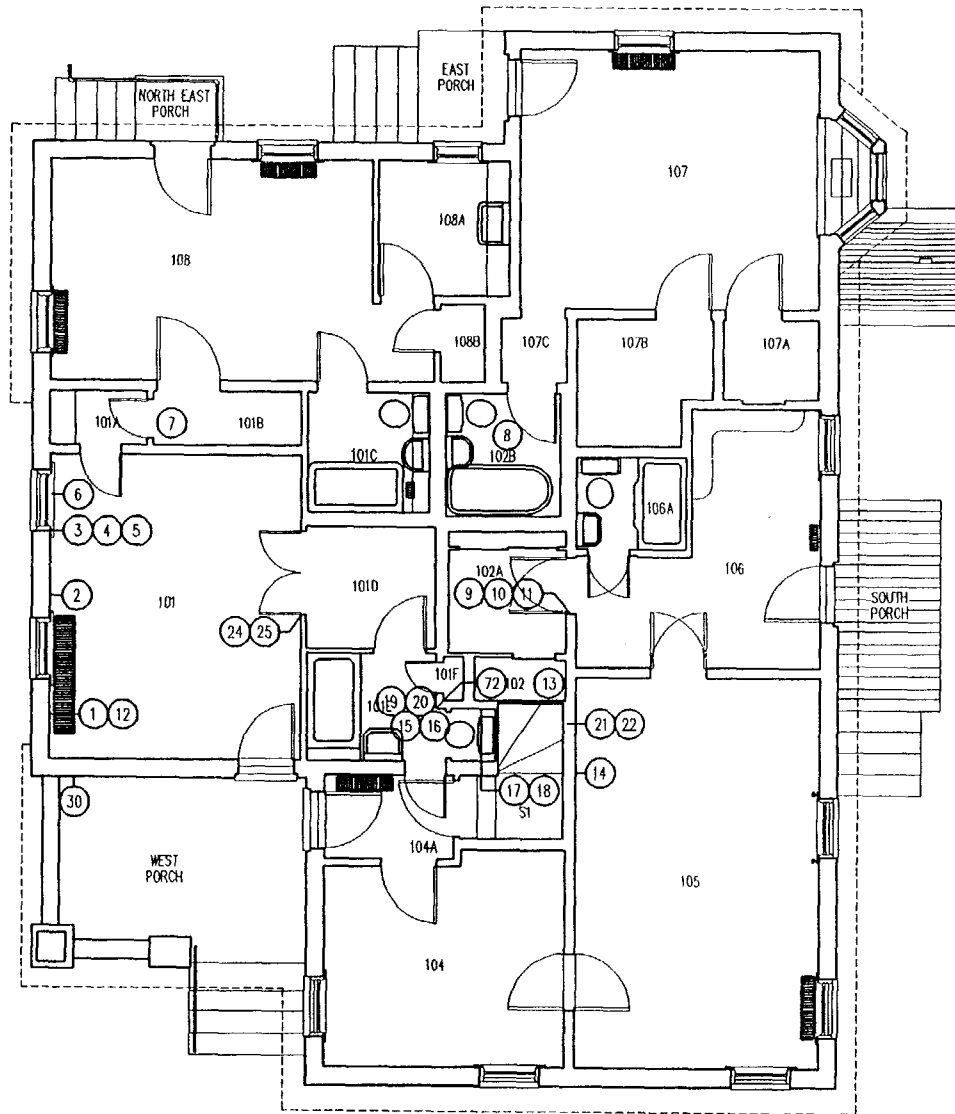
Despite the extreme alterations made to the Arnold House which were intended to obliterate all evidence of original construction, a surprising amount of original finishes have survived. Unfortunately, not enough finishes survive to accurately replicate a complete set of finishes for each room of the original portion of the house. However, those that do survive provide guidelines and evidence for an overall picture of the original house. These include the following:

- A. The interior woodwork appears to have been walnut, but not left in its natural appearance. It appears to have been painted with an oil-based paint with some evidence to suggest areas of graining in imitation of oak.
- B. The interior plaster walls and ceilings seem to have been finished with either wallpaper, which survived in multiple samples or calcimine paint, which survived in only one sample. Both were typical finishes in the period for plaster surfaces in middle-class houses of this type. No evidence was found of oil-based paint on the plaster surfaces, which would have been less typical.
- C. The wooden exterior of the house showed consistent evidence of having been originally painted with an oil-based paint, which was also normal in the historic period.




BASEMENT FLOOR PLAN


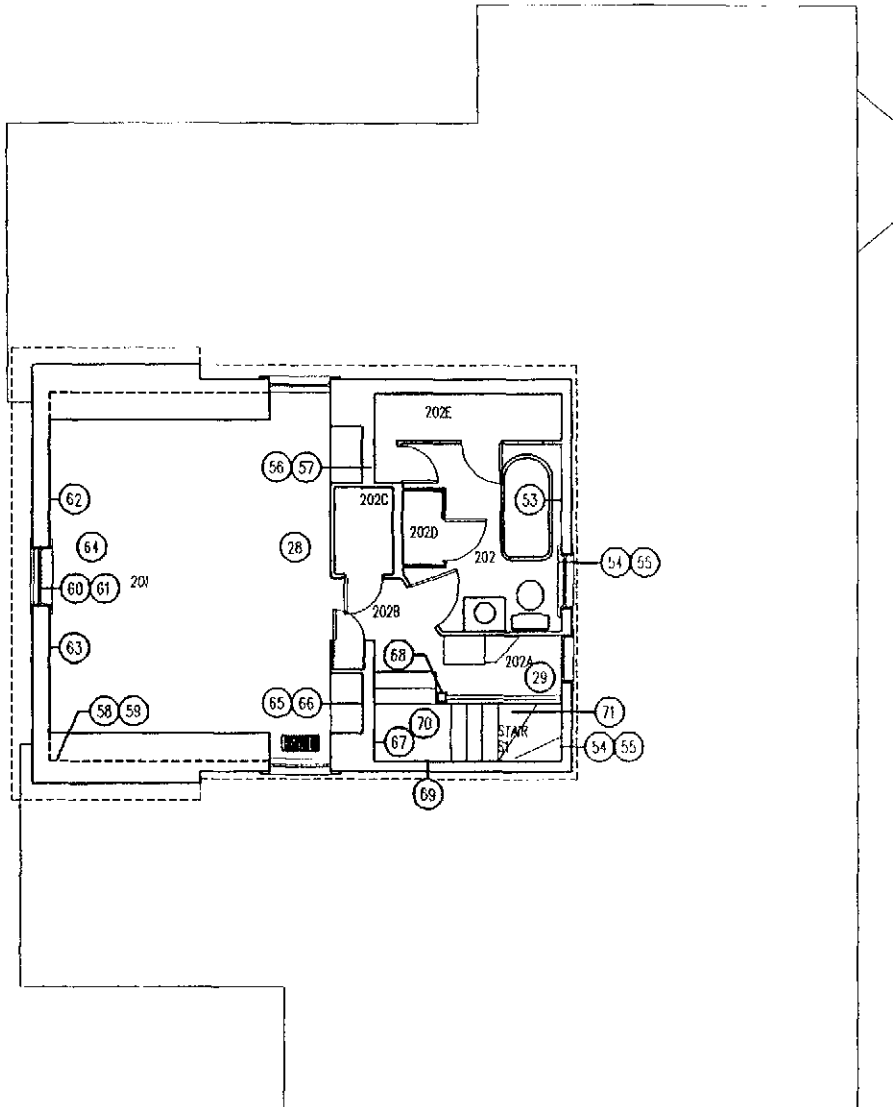
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ARNOLD HOUSE (HS-20)		
LINCOLN HOME N.H.S. SPRINGFIELD, ILLINOIS		
FISCHER-WISNOSKY ARCHITECTS INC.		
REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	440
	DESIGNED	BOOK
	DRAWN	
	CHECKED	SHEET
	DATE	1
FILE: D143700		OF 7




FIRST FLOOR PLAN

 0 5 10 FEET

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FIRST FLOOR PLAN		9208.00	
PAINT ANALYSIS			
ARNOLD HOUSE (HS-20)			
LINCOLN HOME N.H.S. SPRINGFIELD, ILLINOIS			
FISCHER-WISNOSKY ARCHITECTS INC.			
REVISED	INITIAL	FIELD MEASURED	DRAWING NO.
DATE			449
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		CHECKED	SHEET 2
FILE: 02/2/2002		DATE	OF 7




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PAIN ANALYSIS

ARNOLD HOUSE

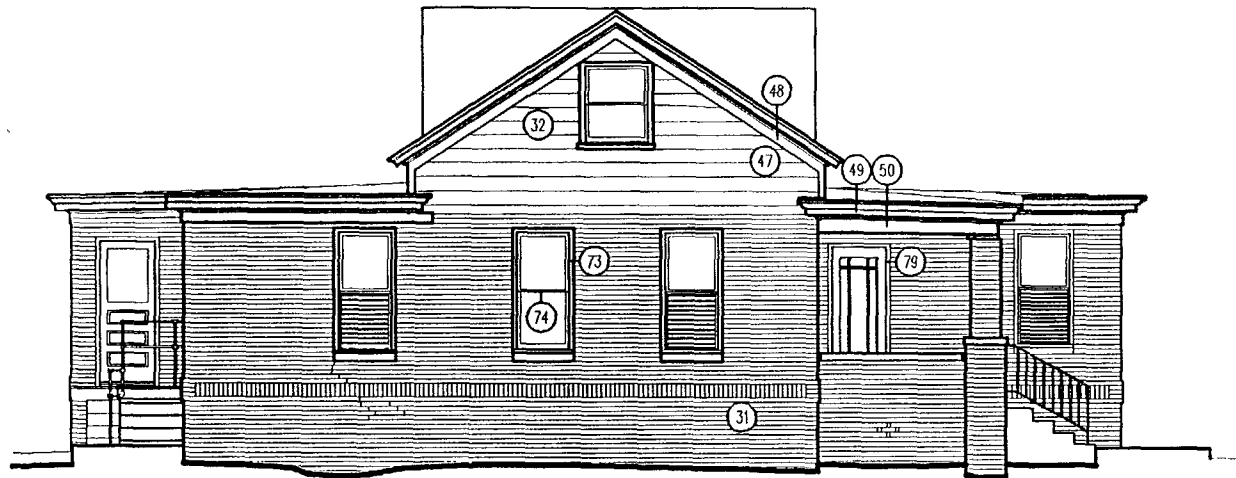
(HS-20)

LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

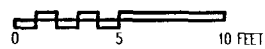
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SHEET **3**
 OF **7**



NORTH ELEVATION



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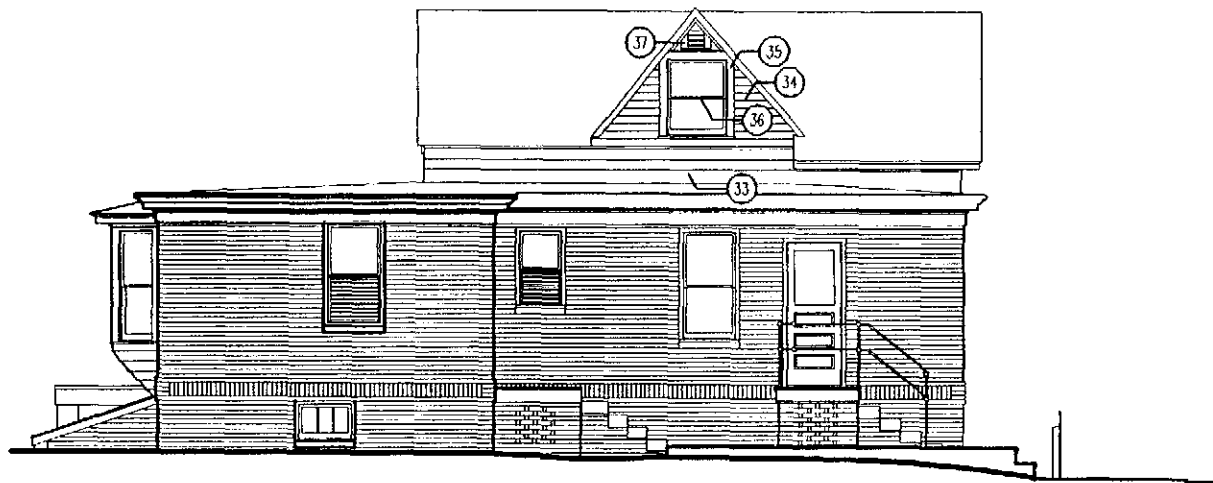
PAINT ANALYSIS

ARNOLD HOUSE (HS-20)

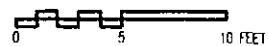
LINCOLN HOME NHS. SPRINGFIELD, ILLINOIS

FROCHET-WISNOSKY ARCHITECTS INC.

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		DATE		OF 7



EAST ELEVATION



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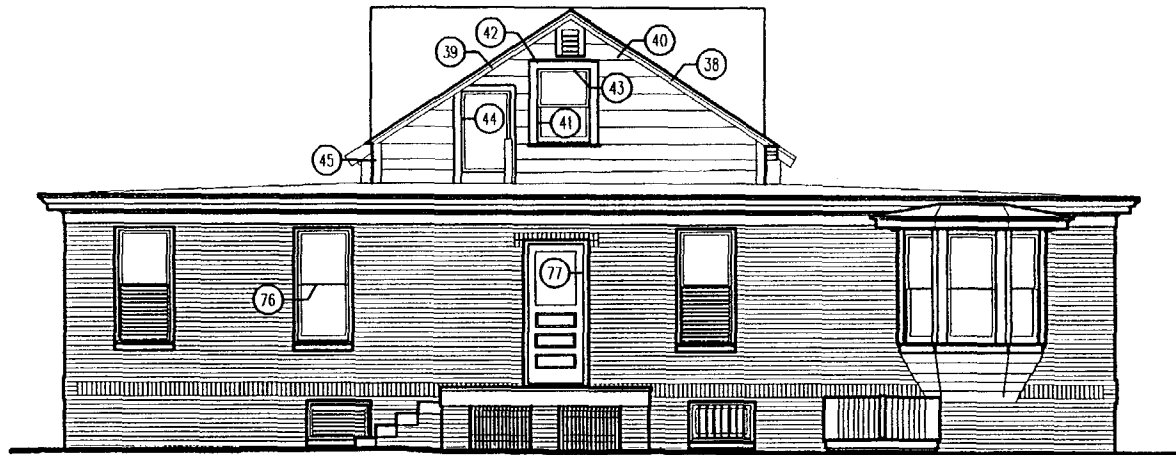
PAINT ANALYSIS

ARNOLD HOUSE
(HS-20)

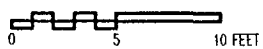
LINCOLN HOME NHS
SPRINGFIELD, ILLINOIS

FISCHER-WISNORSKY ARCHITECTS INC.

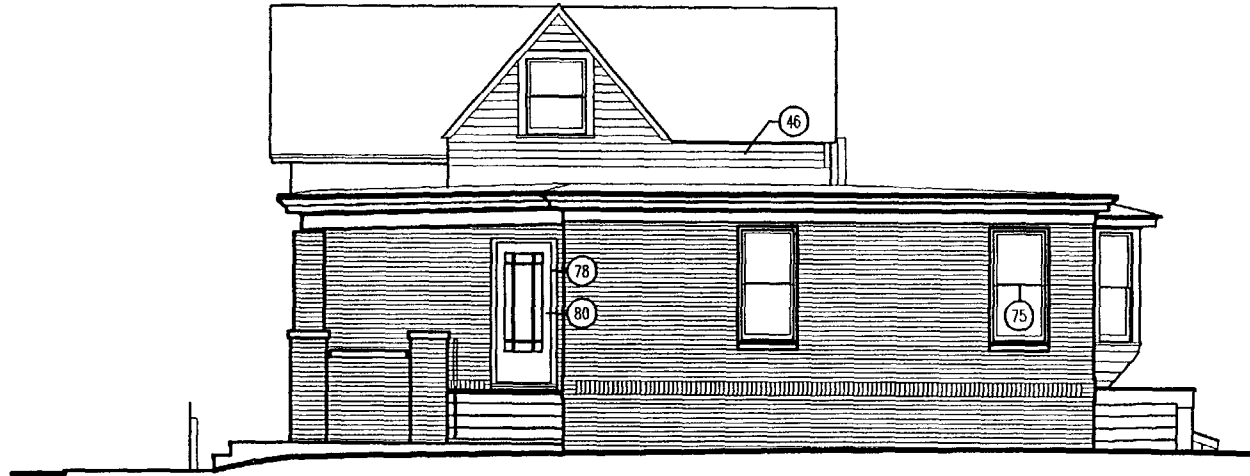
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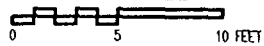
SOUTH ELEVATION



TITLE: EXTERIOR ELEVATIONS		PROJECT NO. 9208.00
PAIN ANALYSIS		
ARNOLD HOUSE (HS-20)		
LINCOLN HOME NHS SPRINGFIELD, ILLINOIS		
FISCHER-WISNOSKY ARCHITECTS INC.		
REVISED	FIELD MEASURED	DRAWING NO. 440
DATE	INITIAL	BOOKS
	DESIGNED	
	DRAWN	SHEET 6
	CHECKED	OF 7
DATE	DATE	



WEST ELEVATION



TITLE: EXTERIOR ELEVATIONS		PROJECT NO. 0208.00
PAINT ANALYSIS		
ARNOLD HOUSE (HS-20)		
LINCOLN HOME N.H.S. SPRINGFIELD, ILLINOIS		
FISCHER-WISNOSKY ARCHITECTS INC.		
REVISED	FIELD MEASURED	DRAWING NO. 440
DATE	INITIAL	BOOKX
	DESIGNED	
	DRAWN	SHEET 7
	CHECKED	OF 7
BY: DMW/2007	DATE	

PAINT SCHEDULE
ARNOLD HOUSE

AREA	SURFACE	COLOR	TYPE	APPLICATION	REMARKS
BOX GUTTERS	WOOD	10 YR 8/4 BM CB-59	3	SPOT PRIME	ALL NEW OR BARE WOOD
			4	2 TOPCOATS	
HUNG GUTTERS	N/A	N/A			
DOWNSPOUTS	METAL	10 YR 8/4 BM CB - 59	1	SPOT PRIME	
			2	2 TOPCOATS	
CHIMNEY FLASHING	N/A	N/A			
FLASHING	N/A	N/A			
METAL ROOFS	N/A	N/A			
SOFFIT	WOOD	10 YR 8/4 BM CB - 59	3	SPOT PRIME	ALL NEW OR BARE WOOD
			4	2 TOPCOATS	
BAY WINDOW	WOOD	10 YR 8/4 BM CB - 59	3	SPOT PRIME	ALL NEW OR BARE WOOD
			4	2 TOPCOATS	
CELLAR DOORS AND TRIM	WOOD	10 YR 8/4 BM CB - 59	3	SPOT PRIME	ALL NEW OR BARE WOOD
			4	2 TOPCOATS	
VENTS	WOOD	10 YR 8/4 BM CB - 59	3	SPOT PRIME	ALL NEW OR BARE WOOD
			4	2 TOPCOATS	
BODY	WOOD (ONLY)	2.5 Y 9/2 BM GB - 18	3	SPOT PRIME	ALL NEW OR BARE WOOD
			4	2 TOPCOATS	
WINDOWS	WOOD	10 YR 8/4 BM CB - 59	3	SPOT PRIME	ALL NEW OR BARE WOOD
			4	2 TOPCOATS	
WINDOW TRIM	WOOD	10 YR 8/4 BM CB - 59	3	SPOT PRIME	ALL NEW OR
			4	2 TOPCOATS	
SHUTTERS	N/A	N/A			
DOORS	WOOD	10 YR 8/4 BM CB - 59	3	SPOT PRIME	ALL NEW OR BARE WOOD
			4	2 TOPCOATS	
DOOR TRIM	WOOD	10 YR 8/4 BM CB - 59	3	SPOT PRIME	ALL NEW OR BARE WOOD
			4	2 TOPCOATS	
PORCH RAILINGS	N/A	N/A			
PORCH DECK	WOOD	2.5 YR 4/2 BM ET - 67	6	THIN FIRST COAT 20-25%	
			6	1 TOPCOAT	
STEPS	N/A	N/A			
HANDRAILS	METAL	10 YR 8/4 BM CB - 59	1	SPOT PRIME	
			2	2 TOPCOATS	
LATTICE	N/A	N/A			
BASEMENT WINDOWS	WOOD	10 YR 8/4 BM CB - 59	3	SPOT PRIME	ALL NEW OR BARE WOOD
FOUNDATION	N/A	N/A			
GAS METER	METAL	10 YR 8/4 BM CB - 59	1	SPOT PRIME	
			2	2 TOPCOATS	
ELECTRICAL BOXES	N/A	N/A			

KEY

Color Column designates Munsell Color System and Benjamin Moore Paint Colors by Chip Number.

TYPE OF PAINT

1. Alkyd Rust Inhibitive Metal Paint
2. Alkyd Enamel
3. Oil Alkyd Base Primer
4. Alkyd Oil Exterior Paint
5. Exterior Satin Varnish
6. Porch and Deck Enamel

* Primer Paint shall be tinted slightly lighter than finished top coats.



United States Department of the Interior

NATIONAL PARK SERVICE

North Atlantic Region

15 State Street

Boston, Massachusetts 02109

IN REPLY REFER TO:

MEMORANDUM

Date: April 10, 1986

To: Richard Lusardi, Chief of Maintenance, Lincoln Home N.H.S.

From: Andrea Gilmore, Architectural Conservator, NAHPC

Subject: Paint Samples

I have examined the enclosed paint samples and matched the colors of the earliest paint schemes to the Munsell Color System and Benjamin Moore paint colors. These paint color recommendations are based on the examination of only a limited number of paint samples, and particularly the houses that have more decorative paint schemes, should be sampled further for more accurate painting. Also it appears that the Stuve House stone surfaces may not have been painted originally. Further research and sampling should be done to verify its original paint scheme. This additional work should be done by someone on site and is not a project that I can undertake.

The paint colors for the houses are as follows:

Arnold House

Clapboards - North Elevation

Munsell 2.5 Y 9/2
Benjamin Moore GB-18

Faciaboard - East Elevation

Munsell 10 YR 8/4
Benjamin Moore CB-59

Cook House

Clapboards - East Elevation

Darmer - North Elevation

Soffit - East Elevation

Munsell 10 YR 7/6
Benjamin Moore GB-26

Porch Railing - West Elevation

Door Trim - West Elevation

Window Trim - East Elevation

Munsell 2.5 Y 8/2
Benjamin Moore CB-5

MORTAR AND PLASTER ANALYSIS

APPENDIX B

Mortar Analysis
The Arnold House
Lincoln Home National Historic Site
Springfield, Illinois
July, 1992

I. Introduction

On June 12 and 13, 1992 David Arbogast, architectural conservator, of Iowa City, Iowa made a site visit to the Arnold House at Lincoln Home National Historic Site at the request of Steve Warren of Fischer-Wisnosky Architects of Springfield, Illinois to collect samples of paint and mortar for technical analyses. He was directed in the collection process not only by Steve Warren, but also Craig Drone of Fischer-Wisnosky and assisted by Chris Wise of his own office. A total of eighty paint and ten mortar samples were collected.

Following his return it was decided to substitute six plaster samples for six of the mortar samples. These were subsequently collected and sent to him by Steve Warren. As a result, only mortar samples M1, M3, M4, and M8 were analyzed.

Analysis was undertaken on July 1 and 2 using the standardized test developed by E. Blaine Cliver, Regional Historical Architect of the North Atlantic Region of the National Park Service to determine basic components.

The samples proved to be relatively straight-forward to analyze, proving to be relatively typical of their sort. Sample sizes were excellent, especially for the plaster samples, such that excess plaster remained in case further analysis might be undertaken in the future.

For purposes of discussion, the samples are grouped into sets of the mortar samples and of the plaster samples. The numbering system follows that used in the field for the mortar samples and that on the plaster samples as sent.

II. Mortar Samples

Sample M1 proved to be a typical lime mortar sample. Its analysis revealed a ration of approximately ten parts of sand to three parts of lime, by volume, assuming that the fines were merel dirt associated with the sand, or, roughly a ratio of three parts of sand to each part of lime. The sand sieve analysis showed a poorly graded sand with a surprisingly large proportion of pebbles. Nevertheless, over three-quarters of the sand passed all but the two finest sieves.

Sample M3 proved to be quite similar to sample M1. Its analysis produced an approximate ration of eleven parts of sand to four parts of lime, by volume, or roughly three parts of sand to each part of sand, as in sample M1. The sand sieve analysis revealed a somewhat coarser sand, with more pebbles caught by the largest sieve. Over half of the sand passed all but the two finest sieves.

Sample M4 was also similar to samples M1 and M2. Its analysis showed a ratio of three parts of sand to each part of lime, by volume, as in samples M1 and M2. The sand sieve analysis revealed a somewhat finer sand than in the other two samples. Over three-quarters of the sand passed all but the two finest sieves.

Sample M8 also proved typical of the mortar samples, in most aspects. It was somewhat brittle, indicating the possible use of Portland cement in addition to the lime and sand. If so, it was a very minor component. As it is, the analysis revealed a mixture of appoximately ten parts of sand to three parts of lime, by volume, or roughly three parts of sand to each part of lime. The sand sieve analysis showed a typically coarse sand with only over three-fifths of the sand passing all but the two finest sieves.

III. Plaster samples.

Sample PL1 was removed from the ceiling of room 101B. It proved to be a relatively typical horeshair plaster. Its analysis revealed a mixture of approximately fifteen parts of sand to seven parts of lime, by volume or, roughly, two parts of sand to each part of lime. This is a very typical plaster mixture. The sand sieve analysis revealed a typical fine sand of which over nine-tenths passed all by the two finest sieves.

Sample PL2 was collected from the south wall of room 102. Its analysis showed some significant differences between it and sample PL1. The analysis resulted in a mixture of approximately nine parts of sand to two parts of lime, by volume, or roughly two parts of sand to each part of lime. The sand sieve analysis revealed a coarser sand, with only two-thirds passing the two finest sieves. Interestingly, the fines retained small wood chips along with the hair used in the plaster.

Sample PL3 was taken from the east wall of room 105. Its analysis showed a mixture very similar to that of sample PL2. A ratio of approximately nine parts of sand to two parts of lime, or roughly two parts of sand to each part of lime, was found. The sand proved to be relatively fine, with almost seven-eighths of it passing all but the two finest sieves.

Sample PL4 was found on the ceiling below the stair landing in room 101E. It proved to have a relatively high ratio of lime to sand, with approximately five parts of sand to three parts of lime, by volume. As with sample PL1 the sand was very fine, with over nine-tenths of it passing all but the two finest sieves.

Sample PL5 came from behind the knee wall in the northwest corner of room 201. Its analysis revealed a relatively low ratio of lime to sand, with approximately eleven parts of sand to four parts of lime, by volume, or roughly three parts of sand to each part of lime. The sand sieve analysis revealed a very fine sand with almost nine-tenth passing all but the two finest sieves.

Sample PL6, from the mid-ceiling area of room 201, was similar to sample PL5, which is hardly surprising. Its analysis revealed a ratio of approximately eleven parts of sand to four parts of sand, by volume, which was identical to that found in sample PL5. The sand sieve analysis revealed a similar very fine sand, with over nine-tenths passing all but the two finest sieves.

Mortar/Plaster/Stucco Analysis Test Sheet

Building: BRAVO HOUSE MI
 Location: LINCOLN HOME NHS, SPRINGFIELD, ILLINOIS
 Sample Location: _____
 Sample Description: Light tan, stones, ^{30%} fast bubbly reaction, rapid filtering

Test No. 1 - Soluble Fraction

Data:

- | | |
|---|---|
| 1. <u>184.7</u> Container A weight | 8. <u>no</u> Hair or fiber _____ type |
| 2. <u>204.7</u> Container A and sample | 9. <u>3.7</u> Fines and paper weight |
| 3. <u>749.05</u> Barometric pressure | 10. <u>2.0</u> Filter paper weight |
| 4. <u>28.0</u> Temperature | 11. <u>199.3</u> Sand and Container A weight |
| 5. <u>.66</u> Liters of water displaced | 12. <u>9.4</u> cc. of sand |
| 6. <u>yellow</u> Filtrate color | 13. <u>43.2</u> Weight of graduated cylinder & sand |
| 7. <u>tan</u> Fines color | 14. <u>28.6</u> Weight of graduated cylinder |

Computations:

15. 70.0 Starting weight of sample: No. 2 - No. 1
16. 1.7 Weight of fines: No. 9 - No. 10
17. 14.6 Weight of sand: No. 11 - No. 1
18. 64383.56 Sand density: No. 12 ÷ (No. 13 - No. 14)
19. 3.7 Weight of soluble content: No. 15 - (No. 16 + No. 17)
20. 0.26245 Mols. of CO₂: No. 5 x No. 3 x 0.016 ÷ (No. 4 + 273.16 C.)
21. 2.63 Gram weight of CaCO₃: 100 x No. 20
22. 1.07 Gram weight of Ca(OH)₂: No. 19 - No. 21
23. 0.745 Mols. of Ca(OH)₂: No. 22 ÷ 74
24. 3.02 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
25. 1.16 Gram weight CO₂: No. 20 x 44
26. 1.79 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
27. 64.80 %CO₂ gain: No. 25 ÷ No. 26

Conclusions:

28. 18.04 Gram weight of sample: No. 15 - No. 25
29. 9.92 Fines parts/volume: No. 16 ÷ No. 28
30. 52.11 Sand parts/volume: (No. 17 ÷ No. 28) x No. 18
31. 18.41 Lime Parts/volume: (No. 24 ÷ No. 28) x 1.1

Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 ÷ No. 28) x 0.78
33. _____ Natural cement parts/volume: (No. 16 ÷ No. 28) x 0.86
34. _____ Lime with cement parts/volume: ((No. 16 x 0.2) ÷ No. 28) x 1.1

Test No. 2 - Sand Sieve Analysis

Seive	Seive w/ sand weight	Seive weight	Sand weight	Sand ratio
No. 10	<u>109.0</u>	<u>106.2</u>	<u>2.8</u>	<u>7.67</u>
No. 20	<u>108.5</u>	<u>105.5</u>	<u>3.0</u>	<u>8.22</u>
No. 30	<u>108.1</u>	<u>96.9</u>	<u>3.2</u>	<u>8.77</u>
No. 40	<u>111.9</u>	<u>100.1</u>	<u>11.8</u>	<u>32.33</u>
No. 50	<u>109.0</u>	<u>92.6</u>	<u>16.4</u>	<u>31.23</u>
Base	<u>75.1</u>	<u>70.8</u>	<u>4.3</u>	<u>11.78</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Building: ARNOLD HOUSE M.3
 Location: LINCOLN HOME NHS SPRINGFIELD, ILLINOIS
 Sample Location: _____
 Sample Description: Light tan, soft, stony, fast bubbly reaction, rapid filtering

Test No. 1 - Soluble Fraction

Data:

- | | |
|--|---|
| 1. <u>198.3</u> Container A weight | 8. <u>no</u> Hair or fiber _____ type |
| 2. <u>208.3</u> Container A and sample | 9. <u>29</u> Fines and paper weight |
| 3. <u>749.05</u> Barometric pressure | 10. <u>2.0</u> Filter paper weight |
| 4. <u>28</u> Temperature | 11. <u>203.2</u> Sand and Container A weight |
| 5. <u>73</u> Liters of water displaced | 12. <u>94</u> cc. of sand |
| 6. <u>yellow</u> Filtrate color | 13. <u>43.5</u> Weight of graduated cylinder & sand |
| 7. <u>tan</u> Fines color | 14. <u>28.6</u> Weight of graduated cylinder |

Computations:

15. 20.0 Starting weight of sample: No. 2 - No. 1
16. 0.9 Weight of fines: No. 9 - No. 10
17. 14.9 Weight of sand: No. 11 - No. 1
18. 6308724 Sand density: No. 12 ÷ (No. 13 - No. 14)
19. 4.2 Weight of soluble content: No. 15 - (No. 16 + No. 17)
20. 0.29 Mols. of CO₂: No. 5 x No. 3 x 0.016 ÷ (No. 4 + 273.16 C.)
21. 2.9 Gram weight of CaCO₃: 100 x No. 20
22. 1.3 Gram weight of Ca(OH)₂: No. 19 - No. 21
23. 0.175 Mols. of Ca(OH)₂: No. 22 ÷ 74
24. 3.44 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
25. 1.28 Gram weight CO₂: No. 20 x 44
26. 2.05 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
27. 62.44 %CO₂ gain: No. 25 ÷ No. 26

Conclusions:

28. 18.72 Gram weight of sample: No. 15 - No. 25
29. 4.81 Fines parts/volume: No. 16 ÷ No. 28
30. 50.21 Sand parts/volume: (No. 17 ÷ No. 28) x No. 18
31. 26.21 Lime Parts/volume: (No. 24 ÷ No. 28) x 1.1

Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 ÷ No. 28) x 0.78
33. _____ Natural cement parts/volume: (No. 16 ÷ No. 28) x 0.86
34. _____ Lime with cement parts/volume: ((No. 16 x 0.2) ÷ No. 28) x 1.1

Test No. 2 - Sand Sieve Analysis

Seive	Seive w/ sand weight	Seive weight	Sand weight	Sand ratio
No. 10	<u>113.0</u>	<u>106.2</u>	<u>6.8</u>	<u>13.52</u>
No. 20	<u>113.7</u>	<u>105.5</u>	<u>8.2</u>	<u>16.30</u>
No. 30	<u>105.3</u>	<u>98.9</u>	<u>6.4</u>	<u>12.72</u>
No. 40	<u>112.2</u>	<u>100.0</u>	<u>12.2</u>	<u>24.25</u>
No. 50	<u>104.8</u>	<u>92.6</u>	<u>12.2</u>	<u>24.25</u>
Base	<u>75.3</u>	<u>70.8</u>	<u>4.5</u>	<u>8.96</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Building: Armed House M 4
 Location: Lincoln Home NHS Springfield, Illinois
 Sample Location: _____
 Sample Description: Light tan, soft, fast bubbly reaction, fast filtering

Test No. 1 - Soluble Fraction

Data:

- | | |
|--|---|
| 1. <u>184.6</u> Container A weight | 8. <u>no</u> Hair or fiber _____ type |
| 2. <u>209.6</u> Container A and sample | 9. <u>3.2</u> Fines and paper weight |
| 3. <u>749.05</u> Barometric pressure | 10. <u>1.8</u> Filter paper weight |
| 4. <u>28°</u> Temperature | 11. <u>194.3</u> Sand and Container A weight |
| 5. <u>1.66</u> Liters of water displaced | 12. <u>9.0</u> cc. of sand |
| 6. <u>light tan</u> Filtrate color | 13. <u>43.3</u> Weight of graduated cylinder & sand |
| 7. <u>tan</u> Fines color | 14. <u>28.6</u> Weight of graduated cylinder |

Computations:

15. 20.0 Starting weight of sample: No. 2 - No. 1
16. 1.4 Weight of fines: No. 9 - No. 10
17. 14.7 Weight of sand: No. 11 - No. 1
18. 16122448 Sand density: No. 12 ÷ (No. 13 - No. 14)
19. 3.9 Weight of soluble content: No. 15 - (No. 16 + No. 17)
20. 022265 Mols. of CO₂: No. 5 x No. 3 x 0.016 ÷ (No. 4 + 273.16 C.)
21. 2.6 Gram weight of CaCO₃: 100 x No. 20
22. 1.3 Gram weight of Ca(OH)₂: No. 19 - No. 21
23. 0172 Mols. of Ca(OH)₂: No. 22 ÷ 74
24. 3.22 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
25. 1.16 Gram weight CO₂: No. 20 x 44
26. 1.91 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
27. 60.73 %CO₂ gain: No. 25 ÷ No. 26

Conclusions:

28. 18.84 Gram weight of sample: No. 15 - No. 25
29. 7.43 Fines parts/volume: No. 16 ÷ No. 28
30. 47.77 Sand parts/volume: (No. 17 ÷ No. 28) x No. 18
31. 18.80 Lime Parts/volume: (No. 24 ÷ No. 28) x 1.1

Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 ÷ No. 28) x 0.78
33. _____ Natural cement parts/volume: (No. 16 ÷ No. 28) x 0.86
34. _____ Lime with cement parts/volume: ((No. 16 x 0.2) ÷ No. 28) x 1.1

Test No. 2 - Sand Sieve Analysis

Seive	Seive w/ sand weight	Seive weight	Sand weight	Sand ratio
No. 10	<u>108.5</u>	<u>106.2</u>	<u>2.3</u>	<u>4.67</u>
No. 20	<u>108.5</u>	<u>105.5</u>	<u>3.0</u>	<u>6.09</u>
No. 30	<u>107.8</u>	<u>98.8</u>	<u>5.0</u>	<u>10.14</u>
No. 40	<u>119.1</u>	<u>100.0</u>	<u>19.1</u>	<u>38.74</u>
No. 50	<u>107.3</u>	<u>97.6</u>	<u>14.7</u>	<u>29.82</u>
Base	<u>76.0</u>	<u>70.8</u>	<u>5.2</u>	<u>10.54</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Building: ARNOLD HOUSE MS
 Location: LINCOLN HOME NHS SPRINGFIELD, ILLINOIS
 Sample Location: _____
 Sample Description: off-white, brittle, fast bubbly reaction

Test No. 1 - Soluble Fraction

Data:

- | | |
|--|---|
| 1. <u>184.9</u> Container A weight | 8. <u>00</u> Hair or fiber _____ type |
| 2. <u>204.9</u> Container A and sample | 9. <u>3.0</u> Fines and paper weight |
| 3. <u>749.05</u> Barometric pressure | 10. <u>2.0</u> Filter paper weight |
| 4. <u>280</u> Temperature | 11. <u>200.3</u> Sand and Container A weight |
| 5. <u>74</u> Liters of water displaced | 12. <u>9.5</u> cc. of sand |
| 6. <u>yel-grn</u> Filtrate color | 13. <u>14.0</u> Weight of graduated cylinder & sand |
| 7. <u>tan</u> Fines color | 14. <u>28.6</u> Weight of graduated cylinder |

Computations:

15. 20.0 Starting weight of sample: No. 2 - No. 1
16. 1.0 Weight of fines: No. 9 - No. 10
17. 15.4 Weight of sand: No. 11 - No. 1
18. 4168831 Sand density: No. 12 ÷ (No. 13 - No. 14)
19. 3.6 Weight of soluble content: No. 15 - (No. 16 + No. 17)
20. 0.2945 Mols. of CO₂: No. 5 x No. 3 x 0.016 ÷ (No. 4 + 273.16 C.)
21. 2.945 Gram weight of CaCO₃: 100 x No. 20
22. 6.55 Gram weight of Ca(OH)₂: No. 19 - No. 21
23. 0.0885 Mols. of Ca(OH)₂: No. 22 ÷ 74
24. 2.83 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
25. 1.30 Gram weight CO₂: No. 20 x 44
26. 1.69 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
27. 76.92 %CO₂ gain: No. 25 ÷ No. 26

Conclusions:

28. 18.70 Gram weight of sample: No. 15 - No. 25
29. 5.35 Fines parts/volume: No. 16 ÷ No. 28
30. 50.80 Sand parts/volume: (No. 17 ÷ No. 28) x No. 18
31. 16.65 Lime Parts/volume: (No. 24 ÷ No. 28) x 1.1

Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 ÷ No. 28) x 0.78
33. _____ Natural cement parts/volume: (No. 16 ÷ No. 28) x 0.86
34. 1.18 Lime with cement parts/volume: ((No. 16 x 0.2) ÷ No. 28) x 1.1

Test No. 2 - Sand Sieve Analysis

Seive	Seive w/ sand weight	Seive weight	Sand weight	Sand ratio
No. 10	<u>111.6</u>	<u>106.2</u>	<u>5.4</u>	<u>6.12</u>
No. 20	<u>119.3</u>	<u>105.5</u>	<u>13.8</u>	<u>15.63</u>
No. 30	<u>113</u>	<u>98.8</u>	<u>12.5</u>	<u>14.16</u>
No. 40	<u>130.5</u>	<u>100.0</u>	<u>30.5</u>	<u>34.54</u>
No. 50	<u>112.6</u>	<u>92.6</u>	<u>20.0</u>	<u>22.65</u>
Base	<u>76.9</u>	<u>70.8</u>	<u>6.1</u>	<u>6.90</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Building: ARNOLD HOUSE PL-1
 Location: LINCOLN HOME NHS SPRINGFIELD, ILLINOIS
 Sample Location: Room 1018 CEILING
 Sample Description: Tan, soft, fast bubbly reaction, rapid filtering

Test No. 1 - Soluble Fraction

Data:

- | | |
|---|---|
| 1. <u>184.6</u> Container A weight | 8. <u>yes</u> Hair or fiber <u>hair</u> type |
| 2. <u>209.6</u> Container A and sample | 9. <u>33</u> Fines and paper weight |
| 3. <u>744.73</u> Barometric pressure | 10. <u>2.0</u> Filter paper weight |
| 4. <u>29°</u> Temperature | 11. <u>198.1</u> Sand and Container A weight |
| 5. <u>614</u> Liters of water displaced | 12. <u>82</u> cc. of sand |
| 6. <u>gull-grn</u> Filtrate color | 13. <u>42.1</u> Weight of graduated cylinder & sand |
| 7. <u>tan</u> Fines color | 14. <u>28.6</u> Weight of graduated cylinder |

Computations:

15. 20.0 Starting weight of sample: No. 2 - No. 1
 16. 1.3 Weight of fines: No. 9 - No. 10
 17. 13.5 Weight of sand: No. 11 - No. 1
 18. 6074 Sand density: No. 12 ÷ (No. 13 - No. 14)
 19. 5.2 Weight of soluble content: No. 15 - (No. 16 + No. 17)
 20. .045 Mols. of CO₂: No. 5 x No. 3 x 0.016 ÷ (No. 4 + 273.16 C.)
 21. 4.5 Gram weight of CaCO₃: 100 x No. 20
 22. 0.7 Gram weight of Ca(OH)₂: No. 19 - No. 21
 23. 0095 Mols. of Ca(OH)₂: No. 22 ÷ 74
 24. 4.03 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
 25. 1.98 Gram weight CO₂: No. 20 x 44
 26. 2.40 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
 27. 82.50 %CO₂ gain: No. 25 ÷ No. 26

Conclusions:

28. 18.02 Gram weight of sample: No. 15 - No. 25
 29. 7.21 Fines parts/volume: No. 16 ÷ No. 28
 30. 45.50 Sand parts/volume: (No. 17 ÷ No. 28) x No. 18
 31. 27.60 Lime Parts/volume: (No. 24 ÷ No. 28) x 1.1

Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 ÷ No. 28) x 0.78
 33. _____ Natural cement parts/volume: (No. 16 ÷ No. 28) x 0.86
 34. _____ Lime with cement parts/volume: ((No. 16 x 0.2) ÷ No. 28) x 1.1

Test No. 2 - Sand Sieve Analysis

Seive	Seive w/ sand weight	Seive weight	Sand weight	Sand ratio
No. 10	<u>106.3</u>	<u>106.3</u>	<u>0</u>	<u>0</u>
No. 20	<u>109.5</u>	<u>105.5</u>	<u>4.0</u>	<u>1.39</u>
No. 30	<u>105.0</u>	<u>98.8</u>	<u>6.2</u>	<u>8.59</u>
No. 40	<u>122.3</u>	<u>100.0</u>	<u>22.3</u>	<u>30.89</u>
No. 50	<u>120.0</u>	<u>92.3</u>	<u>27.7</u>	<u>38.37</u>
Base	<u>85.8</u>	<u>76.8</u>	<u>15.0</u>	<u>20.75</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Building: ARNOLD HOUSE PL-2
 Location: LINCOLN HOME NHS SPRINGFIELD, ILLINOIS
 Sample Location: Room 102, SOUTH WALL
 Sample Description: tan, off, fast bubble reaction, rapid filtering

Test No. 1 - Soluble Fraction

Data:

- | | |
|--|---|
| 1. <u>188.4</u> Container A weight | 8. <u>yes</u> Hair or fiber <u>hair</u> type <u>wood +</u> |
| 2. <u>208.4</u> Container A and sample | 9. <u>3.1</u> Fines and paper weight |
| 3. <u>744.73</u> Barometric pressure | 10. <u>2.0</u> Filter paper weight |
| 4. <u>29.0</u> Temperature | 11. <u>202.4</u> Sand and Container A weight |
| 5. <u>84</u> Liters of water displaced | 12. <u>9.0</u> cc. of sand |
| 6. <u>yellow</u> Filtrate color | 13. <u>42.4</u> Weight of graduated cylinder & sand |
| 7. <u>tan</u> Fines color | 14. <u>28.4</u> Weight of graduated cylinder |

Computations:

15. 20.8 Starting weight of sample: No. 2 - No. 1
16. 1.1 Weight of fines: No. 9 - No. 10
17. 14.0 Weight of sand: No. 11 - No. 1
18. 4428.71 Sand density: No. 12 ÷ (No. 13 - No. 14)
19. 4.9 Weight of soluble content: No. 15 - (No. 16 + No. 17)
20. 0.33 Mols. of CO₂: No. 5 x No. 3 x 0.016 ÷ (No. 4 + 273.16 C.)
21. 3.3 Gram weight of CaCO₃: 100 x No. 20
22. 1.6 Gram weight of Ca(OH)₂: No. 19 - No. 21
23. 0.2145 Mols. of Ca(OH)₂: No. 22 ÷ 74
24. 4.05 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
25. 1.46 Gram weight CO₂: No. 20 x 44
26. 2.41 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
27. 60.58 %CO₂ gain: No. 25 ÷ No. 26

Conclusions:

28. 18.54 Gram weight of sample: No. 15 - No. 25
29. 5.93 Fines parts/volume: No. 16 ÷ No. 28
30. 48.54 Sand parts/volume: (No. 17 ÷ No. 28) x No. 18
31. 24.03 Lime Parts/volume: (No. 24 ÷ No. 28) x 1.1

Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 ÷ No. 28) x 0.78
33. _____ Natural cement parts/volume: (No. 16 ÷ No. 28) x 0.86
34. _____ Lime with cement parts/volume: ((No. 16 x 0.2) ÷ No. 28) x 1.1

Test No. 2 - Sand Sieve Analysis

Sieve	Sieve w/ sand weight	Sieve weight	Sand weight	Sand ratio
No. 10	<u>106.5</u>	<u>106.3</u>	<u>0.2</u>	<u>0.13</u>
No. 20	<u>111.3</u>	<u>105.5</u>	<u>5.8</u>	<u>3.85</u>
No. 30	<u>141.2</u>	<u>98.8</u>	<u>42.4</u>	<u>28.15</u>
No. 40	<u>146.6</u>	<u>100.0</u>	<u>66.6</u>	<u>44.27</u>
No. 50	<u>119.0</u>	<u>92.6</u>	<u>26.4</u>	<u>17.53</u>
Base	<u>80.0</u>	<u>70.8</u>	<u>9.2</u>	<u>6.12</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Building: FRANCO HOUSE PL-3
 Location: LINCOLN HOME NHS SPRINGFIELD, ILLINOIS
 Sample Location: Room 105 EAST WALL
 Sample Description: off-white, soft, fast bubbly reaction, rapid filtering

Test No. 1 - Soluble Fraction

Data:

- | | |
|---|---|
| 1. <u>189.7</u> Container A weight | 8. <u>yes</u> Hair or fiber <u>hair</u> type |
| 2. <u>204.7</u> Container A and sample | 9. <u>4.9</u> Fines and paper weight |
| 3. <u>744.73</u> Barometric pressure | 10. <u>2.0</u> Filter paper weight |
| 4. <u>29°</u> Temperature | 11. <u>199.1</u> Sand and Container A weight |
| 5. <u>.88</u> Liters of water displaced | 12. <u>8.6</u> cc. of sand |
| 6. <u>gel-gum</u> Filtrate color | 13. <u>42.8</u> Weight of graduated cylinder & sand |
| 7. <u>Brown</u> Fines color | 14. <u>28.4</u> Weight of graduated cylinder |

Computations:

15. 70.0 Starting weight of sample: No. 2 - No. 1
16. 0.9 Weight of fines: No. 9 - No. 10
17. 14.4 Weight of sand: No. 11 - No. 1
18. 897.222 Sand density: No. 12 ÷ (No. 13 - No. 14)
19. 4.7 Weight of soluble content: No. 15 - (No. 16 + No. 17)
20. 0.347 Mols. of CO₂: No. 5 x No. 3 x 0.016 ÷ (No. 4 + 273.16 C.)
21. 3.47 Gram weight of CaCO₃: 100 x No. 20
22. 1.73 Gram weight of Ca(OH)₂: No. 19 - No. 21
23. 0.1668 Mols. of Ca(OH)₂: No. 22 ÷ 74
24. 3.80 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
25. 6.53 Gram weight CO₂: No. 20 x 44
26. 2.26 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
27. 67.70 %CO₂ gain: No. 25 ÷ No. 26

Conclusions:

28. 18.47 Gram weight of sample: No. 15 - No. 25
29. 4.97 Fines parts/volume: No. 16 ÷ No. 28
30. 46.56 Sand parts/volume: (No. 17 ÷ No. 28) x No. 18
31. 22.63 Lime Parts/volume: (No. 24 ÷ No. 28) x 1.1

Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 ÷ No. 28) x 0.78
33. _____ Natural cement parts/volume: (No. 16 ÷ No. 28) x 0.86
34. _____ Lime with cement parts/volume: ((No. 16 x 0.2) ÷ No. 28) x 1.1

Test No. 2 - Sand Sieve Analysis

Seive	Seive w/ sand weight	Seive weight	Sand weight	Sand ratio
No. 10	<u>106.6</u>	<u>106.7</u>	<u>0.9</u>	<u>.35</u>
No. 20	<u>110.3</u>	<u>105.5</u>	<u>4.8</u>	<u>4.24</u>
No. 30	<u>108.4</u>	<u>98.8</u>	<u>9.6</u>	<u>8.48</u>
No. 40	<u>135.7</u>	<u>100.0</u>	<u>35.7</u>	<u>31.54</u>
No. 50	<u>139.6</u>	<u>92.6</u>	<u>46.0</u>	<u>40.64</u>
Base	<u>87.5</u>	<u>70.8</u>	<u>16.7</u>	<u>14.75</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Building: ARNOLD HOUSE DL-4
 Location: LINCOLN HOME NHS SPRINGFIELD, MASSACHUSETTS
 Sample Location: ROOM 101E, CEILING BELOW STAIR LANDING
 Sample Description: Tag soft, fast bubbly reaction, rapid filtering

Test No. 1 - Soluble Fraction

Data:

- | | |
|--|---|
| 1. <u>185.1</u> Container A weight | 8. <u>yes</u> Hair or fiber <u>hair</u> type |
| 2. <u>205.1</u> Container A and sample | 9. <u>2.9</u> Fines and paper weight |
| 3. <u>744.73</u> Barometric pressure | 10. <u>1.9</u> Filter paper weight |
| 4. <u>290</u> Temperature | 11. <u>197.9</u> Sand and Container A weight |
| 5. <u>1.30</u> Liters of water displaced | 12. <u>7.8</u> cc. of sand |
| 6. <u>yellow</u> Filtrate color | 13. <u>41.4</u> Weight of graduated cylinder & sand |
| 7. <u>tan</u> Fines color | 14. <u>28.6</u> Weight of graduated cylinder |

Computations:

15. 20.0 Starting weight of sample: No. 2 - No. 1
16. 1.0 Weight of fines: No. 9 - No. 10
17. 12.8 Weight of sand: No. 11 - No. 1
18. 609.375 Sand density: No. 12 ÷ (No. 13 - No. 14)
19. 6.2 Weight of soluble content: No. 15 - (No. 16 + No. 17)
20. 0.513 Mols. of CO₂: No. 5 x No. 3 x 0.016 ÷ (No. 4 + 273.16 C.)
21. 6.13 Gram weight of CaCO₃: 100 x No. 20
22. 1.07 Gram weight of Ca(OH)₂: No. 19 - No. 21
23. 0.145 Mols. of Ca(OH)₂: No. 22 ÷ 74
24. 4.87 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
25. 2.26 Gram weight CO₂: No. 20 x .44
26. 2.89 Gram weight total possible CO₂: .44 x (No. 20 + No. 23)
27. 78.20 %CO₂ gain: No. 25 ÷ No. 26

Conclusions:

28. 15.13 Gram weight of sample: No. 15 - No. 25
29. 6.61 Fines parts/volume: No. 16 ÷ No. 28
30. 51.55 Sand parts/volume: (No. 17 ÷ No. 28) x No. 18
31. 35.41 Lime Parts/volume: (No. 24 ÷ No. 28) x 1.1

Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 ÷ No. 28) x 0.78
33. _____ Natural cement parts/volume: (No. 16 ÷ No. 28) x 0.86
34. _____ Lime with cement parts/volume: ((No. 16 x 0.2) ÷ No. 28) x 1.1

Test No. 2 - Sand Sieve Analysis

Sieve	Sieve w/ sand weight	Sieve weight	Sand weight	Sand ratio
No. 10	<u>106.4</u>	<u>106.2</u>	<u>0.2</u>	<u>.53</u>
No. 20	<u>106.2</u>	<u>105.5</u>	<u>0.7</u>	<u>1.86</u>
No. 30	<u>101.4</u>	<u>98.8</u>	<u>2.6</u>	<u>6.90</u>
No. 40	<u>102.6</u>	<u>100.0</u>	<u>8.6</u>	<u>22.81</u>
No. 50	<u>109.6</u>	<u>92.6</u>	<u>12.0</u>	<u>31.83</u>
Base	<u>89.4</u>	<u>70.8</u>	<u>13.6</u>	<u>36.07</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Building: Arnold House PL-5
 Location: LINCOLN HOME NHS SPRINGFIELD, ILLINOIS
 Sample Location: Room 201, NORTHWEST CORNER BEHIND KNEE WALL
 Sample Description: Tan, soft, fast bubbly reaction, rapid filtering

Test No. 1 - Soluble Fraction

Data:

- | | |
|--|---|
| 1. <u>191.4</u> Container A weight | 8. <u>yes</u> Hair or fiber <u>hair</u> type |
| 2. <u>211.4</u> Container A and sample | 9. <u>2.8</u> Fines and paper weight |
| 3. <u>744.73</u> Barometric pressure | 10. <u>2.0</u> Filter paper weight |
| 4. <u>290</u> Temperature | 11. <u>206.6</u> Sand and Container A weight |
| 5. <u>1.72</u> Liters of water displaced | 12. <u>9.2</u> cc. of sand |
| 6. <u>yellow</u> Filtrate color | 13. <u>43.6</u> Weight of graduated cylinder & sand |
| 7. <u>tan</u> Fines color | 14. <u>18.4</u> Weight of graduated cylinder |

Computations:

15. 20.0 Starting weight of sample: No. 2 - No. 1
16. 0.8 Weight of fines: No. 9 - No. 10
17. 15.2 Weight of sand: No. 11 - No. 1
18. 1605.263 Sand density: No. 12 ÷ (No. 13 - No. 14)
19. 4.0 Weight of soluble content: No. 15 - (No. 16 + No. 17)
20. 0.284 Mols. of CO₂: No. 5 x No. 3 x 0.016 ÷ (No. 4 + 273.16 C.)
21. 2.84 Gram weight of CaCO₃: 100 x No. 20
22. 1.16 Gram weight of Ca(OH)₂: No. 19 - No. 21
23. 0.157 Mols. of Ca(OH)₂: No. 22 ÷ 74
24. 3.26 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
25. 1.25 Gram weight CO₂: No. 20 x 44
26. 1.94 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
27. 64.43 %CO₂ gain: No. 25 ÷ No. 26

Conclusions:

28. 18.75 Gram weight of sample: No. 15 - No. 25
29. 64.27 Fines parts/volume: No. 16 ÷ No. 28
30. 49.07 Sand parts/volume: (No. 17 ÷ No. 28) x No. 18
31. 19.13 Lime Parts/volume: (No. 24 ÷ No. 28) x 1.1

Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 ÷ No. 28) x 0.78
33. _____ Natural cement parts/volume: (No. 16 ÷ No. 28) x 0.86
34. _____ Lime with cement parts/volume: ((No. 16 x 0.2) ÷ No. 28) x 1.1

Test No. 2 - Sand Sieve Analysis

Seive	Seive w/ sand weight	Seive weight	Sand weight	Sand ratio
No. 10	<u>107.2</u>	<u>106.2</u>	<u>1.0</u>	<u>1.28</u>
No. 20	<u>108.0</u>	<u>105.5</u>	<u>2.5</u>	<u>3.21</u>
No. 30	<u>103.4</u>	<u>98.8</u>	<u>4.6</u>	<u>5.91</u>
No. 40	<u>116.3</u>	<u>100.0</u>	<u>16.3</u>	<u>20.92</u>
No. 50	<u>130.2</u>	<u>92.6</u>	<u>37.6</u>	<u>48.27</u>
Base	<u>86.7</u>	<u>70.8</u>	<u>15.9</u>	<u>20.91</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Building: ARNOLD HOUSE PL-6
 Location: LINCOLN HOME NHS SPRINGFIELD, ILLINOIS
 Sample Location: ROOM 201 MID-CEILING
 Sample Description: Tan, soft, fast bubbly reaction, rapid filtering

Test No. 1 - Soluble Fraction

Data:

- | | |
|---|---|
| 1. <u>189.6</u> Container A weight | 8. <u>yes</u> Hair or fiber <u>hair</u> type |
| 2. <u>259.6</u> Container A and sample | 9. <u>2.4</u> Fines and paper weight |
| 3. <u>744.73</u> Barometric pressure | 10. <u>1.9</u> Filter paper weight |
| 4. <u>290</u> Temperature | 11. <u>204.9</u> Sand and Container A weight |
| 5. <u>.77</u> Liters of water displaced | 12. <u>9.2</u> cc. of sand |
| 6. <u>yellow</u> Filtrate color | 13. <u>43.7</u> Weight of graduated cylinder & sand |
| 7. <u>Tan</u> Fines color | 14. <u>28.4</u> Weight of graduated cylinder |

Computations:

15. 20.0 Starting weight of sample: No. 2 - No. 1
 16. 0.7 Weight of fines: No. 9 - No. 10
 17. 15.3 Weight of sand: No. 11 - No. 1
 18. 6013.071 Sand density: No. 12 ÷ (No. 13 - No. 14)
 19. 4.0 Weight of soluble content: No. 15 - (No. 16 + No. 17)
 20. .0284 Mols. of CO₂: No. 5 x No. 3 x 0.016 ÷ (No. 4 + 273.16 C.)
 21. 2.84 Gram weight of CaCO₃: 100 x No. 20
 22. 1.16 Gram weight of Ca(OH)₂: No. 19 - No. 21
 23. .0157 Mols. of Ca(OH)₂: No. 22 ÷ 74
 24. 3.26 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
 25. 1.25 Gram weight CO₂: No. 20 x 44
 26. 1.94 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
 27. 44.43 %CO₂ gain: No. 25 ÷ No. 26

Conclusions:

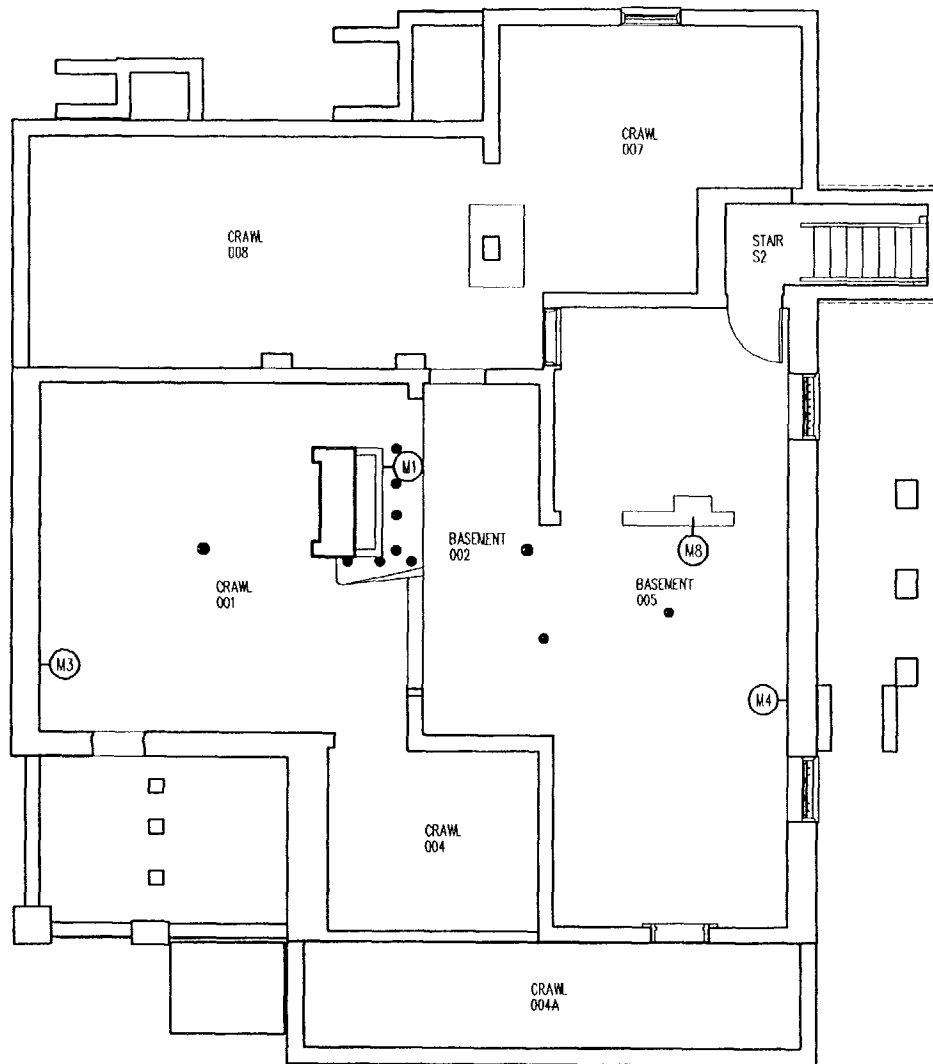
28. 18.75 Gram weight of sample: No. 15 - No. 25
 29. 3.73 Fines parts/volume: No. 16 ÷ No. 28
 30. 19.67 Sand parts/volume: (No. 17 ÷ No. 28) x No. 18
 31. 19.13 Lime Parts/volume: (No. 24 ÷ No. 28) x 1.1


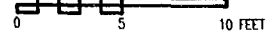
Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 ÷ No. 28) x 0.78
 33. _____ Natural cement parts/volume: (No. 16 ÷ No. 28) x 0.86
 34. _____ Lime with cement parts/volume: ((No. 16 x 0.2) ÷ No. 28) x 1.1

Test No. 2 - Sand Sieve Analysis

Seive	Seive w/ sand weight	Seive weight	Sand weight	Sand ratio
No. 10	<u>106.4</u>	<u>106.2</u>	<u>0.2</u>	<u>0.65</u>
No. 20	<u>106.5</u>	<u>105.5</u>	<u>1.0</u>	<u>3.25</u>
No. 30	<u>100.6</u>	<u>98.8</u>	<u>1.8</u>	<u>5.84</u>
No. 40	<u>105.6</u>	<u>100.0</u>	<u>5.6</u>	<u>18.18</u>
No. 50	<u>106.7</u>	<u>92.6</u>	<u>14.1</u>	<u>45.78</u>
Base	<u>78.9</u>	<u>70.8</u>	<u>8.1</u>	<u>26.30</u>




BASEMENT FLOOR PLAN


TITLE: BASEMENT FLOOR PLAN	PROJECT NO. 0208.00
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MORTAR ANALYSIS

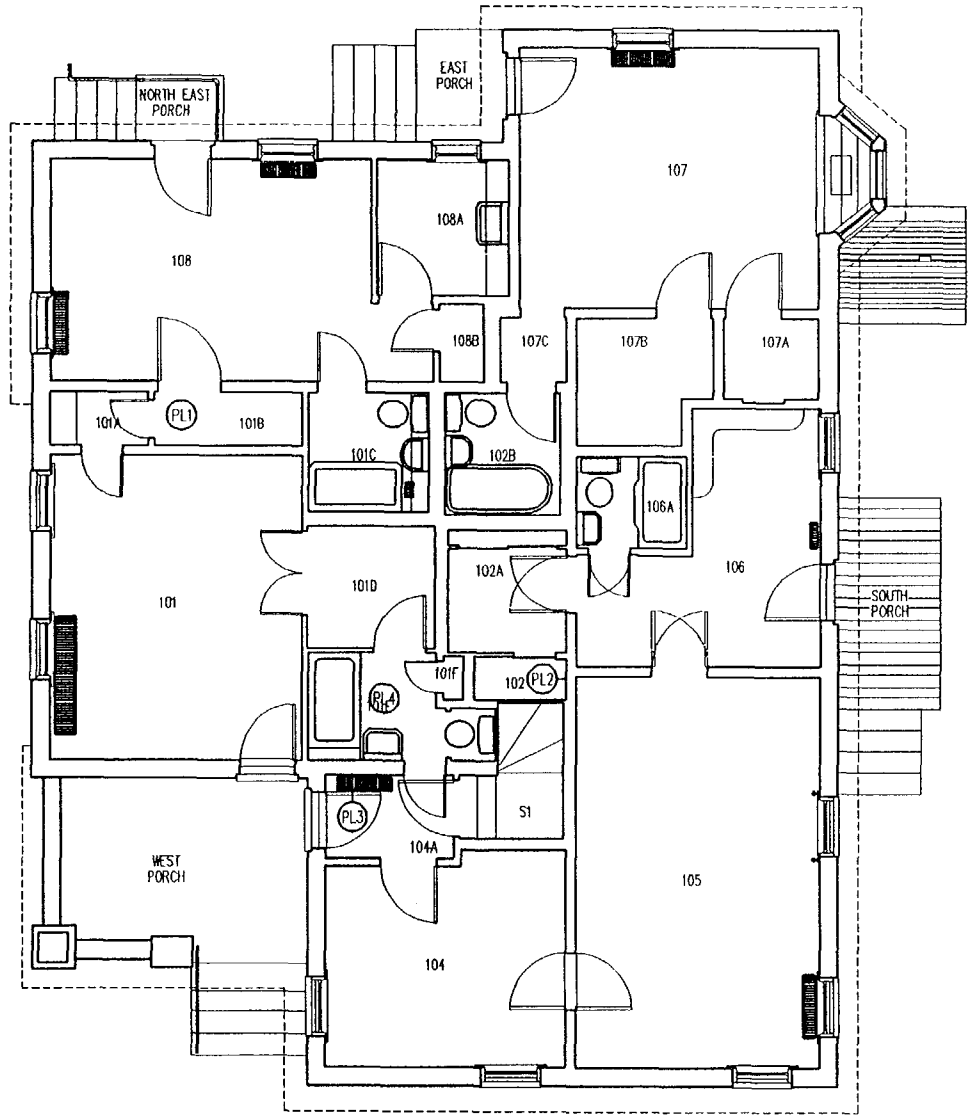
**ARNOLD HOUSE
(HS-20)**

LINCOLN HOME MUSEUM
SPRINGFIELD, ILLINOIS

FISCHER-WISNORSKY ARCHITECTS INC.

REVISED		FIELD MEASURED		DRAWING NO.
DATE	INITIAL			449
		DESIGNED		BOOKS
		DRAWN		
		CHECKED		SHEET 1
		DATE		1

FILE: ENR0200




FIRST FLOOR PLAN

 0 5 10 FEET

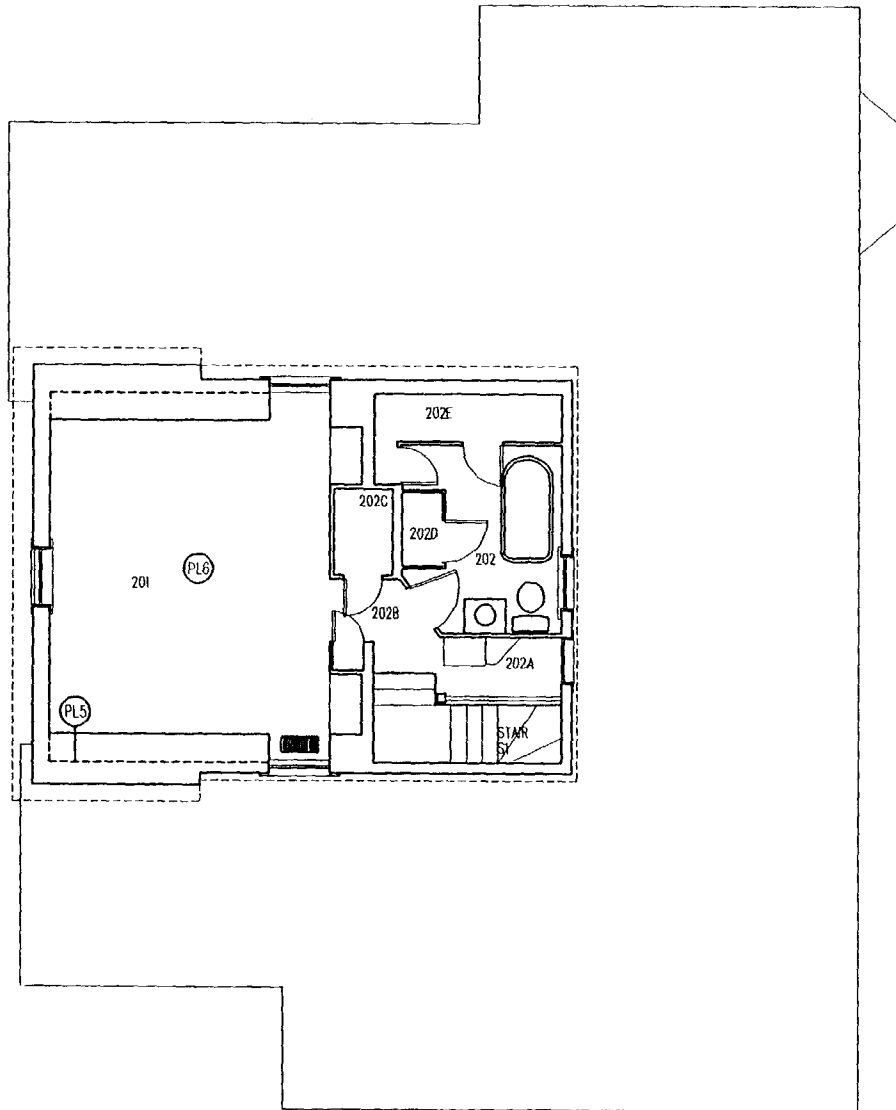
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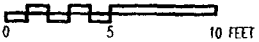
PLASTER ANALYSIS

ARNOLD HOUSE
 (HS-20)
 LINCOLN HOME NHS.
 SPRINGFIELD, ILLINOIS
 FISCHER-WISNORSKY ARCHITECTS INC.

REVISED	FIELD MEASURED	DRAWING NO.
DATE	INITIAL	449
	DESIGNED	BOOKS
	DRAWN	
	CHECKED	SHEET 1
DATE		OF 2

DATE: 01/20/2007




SECOND FLOOR PLAN


TITLE: SECOND FLOOR PLAN PROJECT NO. 9208.00

PLASTER ANALYSIS

ARNOLD HOUSE (HS-20)

LINCOLN HOME N.H.S.
SPRINGFIELD, ILLINOIS

FISCHER-WISNOSKY ARCHITECTS INC.

REVISED		FIELD MEASURED		DRAWING NO.
DATE	INITIAL	DESIGNED	BOOK	449
		DRAWN		BOOK
		CHECKED	SHEET	2
		DATE	OF	2

STRUCTURAL REPORT

APPENDIX C

STRUCTURAL ANALYSIS
CHARLES ARNOLD HOUSE
LINCOLN HOME NATIONAL HISTORIC SITE
SPRINGFIELD, ILLINOIS

Prepared For

Fischer-Wisnosky Architects, Inc.
1 Northwest Old Capitol Plaza
Springfield, Illinois 62701

Prepared By

Hanson Engineers Incorporated
1525 South Sixth Street
Springfield, Illinois 62703-2886

MAY 1993

EXISTING CONDITIONS

Structural Systems

The Charles Arnold House is a one and one-half story home constructed with structural wood framing members utilizing a combination of diagonal let-in braces and "balloon framing" supported by a two wythe solid brick masonry foundation. The structure has undergone many modifications during the course of its existence including additions, remodelling, and renovations. At some point in time, the house was reoriented on the site. These events likely contributed to the varied framing found in the structure, since the modifications did not all occur at the same time.

In the discussions that follow, actual dimensions of lumber are indicated in feet and inches, (i.e., 2 in. x 4 in.), while nominal dimensions are indicated by numbers without units, (i.e., 2 x 4), and denote members that conform to today's dimensional standards.

Originally, five wood samples from various framing members were sent to the United States Department of Agriculture Forest Products Laboratory in Madison, Wisconsin for species identification. (See attachment at the end of this Appendix.) The sample of first floor wood flooring was identified as Red Oak. The sample taken from a first floor joist at Room 101 and a roof rafter sample were identified as Sycamore (*Platanus Sp.*). The samples taken from a first floor joist in Room 105 and a second floor joist from Room 201 were identified as White Oak (*Quercus Sp.*).

Four additional wood samples, taken from a sill beam, original stair stringer, and two from the clapboard siding, were also recently sent to the Forest Products Laboratory. To date, the identifications have not been received, but the results will be incorporated in the final report.

Both the original framing and early additions used rough sawn lumber. Throughout the structure, framing member sizes and spacings are not uniform. Average size and

spacings are shown on the plans in each of the given areas. First floor joists vary in width from 1½ in. to 2½ in. Joist depth varies from 6¾ in. to 10 in. above the crawl space, and from 9⅞ in. to 11¾ in. at the portion over the basement. Second floor joists are approximately 2 in. wide and 9½ in. deep.

Because of restrictions in historic fabric removal, observation of joist support conditions at exterior walls was limited. There is some evidence that the second floor joists are nailed to the wall studs. A joist adjacent to a stud face is toe nailed along its top face. The joist has since pulled away and split along the plane of the nails. In addition, a wall stud at stair S1 had three nails in it at the floor level, and another stud was observed with two nail holes. The joists are also supported by 1 in. x 5 in. ledger boards, which are let-in to 3 in. by 4 in. wall studs spaced at 16 in. to 24 in. centers. Further observation is necessary to determine the support and fastening condition of floor joists. Typically, the wall studs in the corner are 3¾ by 7¾ in. posts.

The exterior walls consist of brick veneer on the first floor and wood siding on the half-story portion. The interior face of the exterior walls is typically 3/8 in. lath and 1/2 in. plaster. Interior wood stud partition walls are covered with 3/8 in. lath and 1/2 in. plaster on both faces.

There is evidence of diagonal let-in bracing located in corners of the 1840 cottage. These braces are either 2¾ in. by 4 in. or 2⅞ in. by 3⅝ inches. The braces are let-in to the wall studs. In several locations, these braces have been cut to permit installation of a door. These are located at doors 104D and 108B, and beneath stair S1.

FOUNDATIONS

The foundation supporting structural components is typically constructed of brick masonry laid two wythes thick resulting in an overall wall thickness of 8 in. to 9 in. A third wythe of brick veneer with a soldier course at the first floor elevation was apparently added at a date after the original construction. The individual bricks vary in size and color. There

is evidence of deteriorated mortar and loose bricks throughout the foundation.

A full basement with a concrete floor is located at Rooms 002 and 005. The remaining portions are built over a crawl space that has limited access. No excavations were performed to confirm the presence of a footing beneath the basement or crawl space walls.

A continuous timber sill beam is present at the top of basement and crawl space walls at Rooms 001, 002, and most of 005. This sill beam acts as a lintel at wall openings and varies in size from 8 in. by 8 in. to 9¼ in. by 10¼ in. There is evidence of bore beetle damage in several portions of the sill beam in Rooms 001 and 002. First floor joists are connected to the sill beam with mortise and tenon joints.

FIRST FLOOR FRAMING

The first floor framing consists of 1 in. tongue and groove red Oak flooring supported by either Sycamore (Room 101) or White Oak (Rooms 105 and 106) joists. The first floor joists in Rooms 101, 101D, and 102A are notched 1 in. deep by 12 in. long approximately 7 ft 11 in. from the west wall. The steel support beams spanning in a north-south direction are present directly to the east of the notch. Apparently, a previous timber center beam has been replaced by the steel beams. Round steel columns 4 in. diameter, support the steel beams upon which the two-span floor joists rest. These joists are mortised and tenoned into the sill beam with approximately half of the lower portion of the joist removed. Numerous 2¾ in. round steel posts are supporting truncated joists where a fireplace formerly existed.

The floor joists in Rooms 105 and 106 are supported by sill beams and a built-up wood beam at midspan. This built-up beam consists of two 1¾ in. by 11½ in. boards that span to the sill beams and is supported at midspan by a steel post. A 2 x 6 has been attached to this wood beam to support joists framing in from one side. Joists from the opposite side are notched and rest into the built-up wood beam. The ends of the floor joist, which are mortised and tenoned into the sill beam, are notched 3½ in. to as much as 5¾ in. A few of the joists were observed to have a horizontal split emanating from the notch.

These splits may have been caused by the stress riser condition created at the corner of the notch. This is a common phenomenon, and present day building codes severely reduce the capacity of a joist that is notched in such a manner. Reinforcement of the joist end, or a modified bearing condition at full joist depth are two options to improve the joist's capacity.

The remaining portions of framing on the first floor are not considered to be historically significant. Because of this, these portions are scheduled for demolition, and no further investigation was pursued in these areas.

The stairs leading to the second story have been modified and reconfigured. It is not possible to ascertain their framing configuration or load capacity without removing historic framing and plaster.

SECOND FLOOR FRAMING

The second floor framing consists of 7/8 in. tongue and groove hardwood floor supported by White Oak floor joists. These joists are 2 in. by 9½ in. deep at various spacings. The second floor joists also support the first floor lath and plaster ceiling. At some point in time, 2 x 10 floor joists were added between the original joists over a portion of the second floor. The original floor joists are balloon framed supported by 1 in. by 5 in. ledger board, which are let-in to the 3 in. by 4 in. wall studs. There is also evidence that the joists are nailed directly to the wall studs.

Inspection of the floor joists was limited because demolition and removal of the original lath and plaster is restricted. A portion of the framing is visible where a chimney originally passed through the floor. One of the floor joists adjacent to this area has been notched to such an extent that it is almost totally ineffective as a load carrying element.

ROOF FRAMING

The structural roof system consists of 3 in. by 3 $\frac{5}{8}$ in. rafters, which span from a 3 $\frac{3}{4}$ in. by 3 in. top plate at the eave to the center ridge. The roof rafters are birdsmouth notched at the top plate. In addition, 1 in. by 5 in. deep to 11 in. deep ceiling joists at approximately 17 in. centers are located approximately 4 ft above the eave line. The ceiling joists are also collar ties for the roof rafters. The ridge of the roof has deflected downward. Because of the plaster ceiling on the second floor, it was not possible to measure the deflection along the underside of the ridge. A series of measurements taken across the width of the room perpendicular to the ridge indicated that the exterior walls are displaced further at the middle of the wall than at the corners. It is our opinion that the walls are displacing outward at the eave line, thereby deflecting the roof ridge. This also indicates that the second floor joists are likely no longer fastened securely to the wall studs.

STRUCTURAL ANALYSIS

It is our understanding that the proposed use of the building will be as an exhibit area with small static displays on the first floor. The second floor will be considered non-habital space. The City of Springfield has adopted the 1990 BOCA Building Code, which prescribes a minimum live load for design of exhibit space at 100 pounds per square foot. The City of Springfield also requires a minimum roof live load of 30 pounds per square foot. It may be possible to get a variance of the code requirements per section 513 of BOCA. Discussions with the Building Officials for the City of Springfield are required.

The notched joist's ends at the first floor significantly reduce their capacity. Similarly, the notches in the roof rafters reduce their capacity. The table below lists the approximate allowable uniform live load for various structural elements assuming a 10 psf dead load.

<u>Structural Element</u>	<u>Existing Allowable Live Load (Pounds Per Square Foot)</u>
First Floor Joist Room 101	12
First Floor Joist Rooms 105 & 106	Less than 5
2nd Floor Joist Room 201	24
Roof Rafters	18
Ledger Board	8

RESTORATION RECOMMENDATIONS

For the structure to support code-prescribed loads for its intended use, several modifications to the existing structural systems are required. These recommendations have been developed to preserve the existing structural framing whenever possible.

1. **Foundation Walls:** The structure was originally oriented in a east-west direction. In order to align the structure as it was previously, the house will be moved to a new position on the site. It is therefore recommended that a new concrete foundation be built to support the house.
2. **Basement Floor:** A new concrete floor slab is recommended.
3. **First Floor:** The first floor structure will require reinforcement or supplementary framing to support the superimposed live loads. It is recommended that the new structure be placed below the existing framing at the joists ends in basement areas. The new supplementary framing would consist of structural steel components placed along perimeter locations to reduce joist span lengths, and permit bearing at full member depth. Any intermediate framing should be constructed at the same elevation as the top of the joists. Both options would increase the joist load carrying capacities.

4. Second Floor: The connection of second floor joists to adjacent wall studs should be improved with bolts, lag screws, or nails. In addition, tie rods or cables should be installed across the structure between the floor joists to straighten the exterior walls.
5. Roof: Because the timber rafters are not securely fastened at the ridge, it is recommended that a steel or timber plate be installed to connect them. The tie rods or cables recommended above will also serve to straighten the roof structure. In addition, new roof rafters should be placed in between existing roof rafters to increase existing roof live load capacity from 18 psf to 30 psf (reference table in structural analysis).
6. Stairs: Although the existing framing does not meet the code prescribed loading requirements, currently only the portion of the stairs which needs to be reconfigured and turned back into the 1840 Cottage (Room 102) will be modified. Existing framing which is to remain will not be changed except to connect the new portion of the stairs. This will need to be further investigated at the time of construction.
7. Lateral Stability: The original structure's lateral bracing has been altered in several locations, rendering it ineffective. Any one of the following options could be used to restore the structure's lateral bracing.
 - a. Place new plywood sheathing at buildings corners.
 - b. Install new timber cross-bracing.
 - c. Install light gage steel strap bracing.
 - d. Reinforce altered existing bracing.

United States
Department of
Agriculture

Forest
Service

Forest
Products
Laboratory

One Gifford Pinchot Dr.
Madison, WI 53705-2398

Reply to: 4710(I)

Date: June 24, 1992

Mr. David S. Bronars
1525 South 6th Street
Springfield, IL 62703-2886

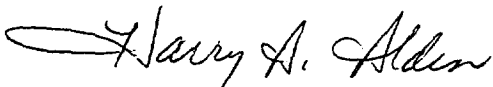
Dear Mr. Bronars:

Thank you for sending the five samples from the Charles Arnold House for ID.
They are as follows:

Roof Rafter	Sycamore (Platanus sp.)
1st Floor Joist, South	White Oak Group (Quercus sp.)
1st Floor Joist, North	Sycamore
1st Floor Wood Flooring	Red Oak Group
2nd Floor, Floor Joist	White Oak Group

As per your request, the samples are being returned.

Sincerely,



HARRY A. ALDEN, Botanist
Center for Wood Anatomy Research

Existing Usable Square Footage
Proposed Usable Square Footage

SQUARE FOOTAGE CALCULATIONS

APPENDIX D

EXISTING USABLE SQUARE FOOTAGE SUMMARY

Basement Room No.	Area (sf)	
002	325	
005	<u>94</u>	
Subtotal - Basement	419	419
First Floor Room No.		
101	174	
101C	33	
101D	36	
101E	37	
102A	33	
102B	33	
104	113	
104A	28	
105	222	
106	102	
106A	22	
107	175	
107A	18	
107B	36	
107C	9	
108	175	
108A	<u>39</u>	
Subtotal - First Floor	1,285	1,285
Second Floor Room No.		
201	214	
202	59	
202A	18	
202B	<u>18</u>	
Subtotal - Second Floor	309	<u>309</u>
TOTAL HOUSE		2,013

PROPOSED USABLE SQUARE FOOTAGE SUMMARY

Basement Room No.	Area (sf)	
001	386	
003	<u>353</u>	
Subtotal - Basement	739	739
First Floor Room No.		
101	267	
102	153	
103	<u>385</u>	
Subtotal - First Floor	805	805
Second Floor Room No.		
201	267	
202	<u>127</u>	
Subtotal - Second Floor	394	<u>394</u>
TOTAL HOUSE		1,938

NATIONAL PARK SERVICE WORK ON HOUSE

APPENDIX E

NATIONAL PARK SERVICE WORK ON THE HOUSE

The following is a chronological summary of work accomplished on the Charles E. Arnold House (HS20) according to the National Park Service Historic Structures Maintenance Log for the Arnold House since its purchase in 1978.

- | | |
|------|--|
| 1984 | Roofing stripped, roof sheathing repaired, re-roofed with mineral composition roll roofing. |
| 1986 | Exterior trim scraped and painted. |
| 1988 | Reconstruction of the deteriorated south porch. |
| 1992 | Removal of non-historic fabric for the purpose of studying the house for this Historic Structure Report. |

PRELIMINARY COST PROJECTION

APPENDIX F

ARNOLD HOUSE COST ESTIMATE SUMMARY

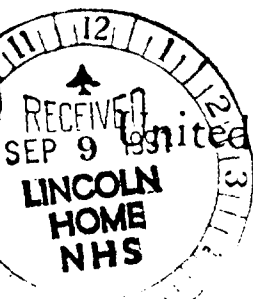
The following is a summary of the detailed estimated costs of the attached computer spreadsheet. Itemized cost estimate figures have been combined, in general, by specification division, exterior work and interior work.

<u>WORK DESCRIPTION</u>	<u>ESTIMATED COST</u>
Site Work: Remove non-original additions, move house, boardwalks and restore former house site, fences, handicapped access lift.	\$ 87,965
Barn and Privy: General work, plumbing/sprinkler, HVAC, electrical.	36,888
Exterior Work: Siding, roofing, masonry, basement hatch, guttering and downspouts, paint exterior.	\$ 24,345
Structure: Excavation, footings, foundation, wall, basement slab floor and roof framing, floor and roof modifications, basement waterproofing.	\$ 86,324
Woodwork: Wood stair, door and window trim, base, doors and windows.	\$ 23,930
Interior Finishes: Partitions, lath and plaster, insulation, hardware, wood flooring, paint and stain.	\$ 52,122
Mechanical: Plumbing, HVAC.	\$ 31,137
Electrical: New service, fixtures, fire protection, intrusion detection.	\$ 19,091
Fire Protection: Dry pipe sprinkler system.	\$ 18,909
General Conditions: Insurance, temporary utilities, mobilization, equipment.	\$ <u>34,733</u>
Subtotal	\$415,444
Contingency (15%)	\$ <u>50,551</u>
TOTAL	\$465,995

Trip Report, September 6, 1991
Trip Report, August 4, 1992

ARCHEOLOGICAL DATA

APPENDIX G



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
MIDWEST ARCHEOLOGICAL CENTER
FEDERAL BUILDING, ROOM 474
100 CENTENNIAL MALL NORTH
LINCOLN, NEBRASKA 68508-3873

Administrative routing table with columns for SUPERINTENDENT, SECRETARY, CHIEF, & S, CHIEF, MAIL ROOM, OFFICER, and FILES. Includes a 'TAKE PRIDE IN AMERICA' logo and a 'COPY' watermark.

September 6, 1991

A26 (MWAC)

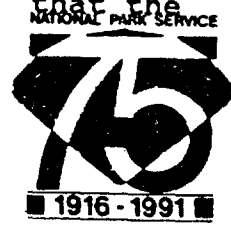
Memorandum

To: Chief, Midwest Archeological Center
From: Supervisory Archeologist, Midwest Archeological Center
Subject: Trip Report; July 8 - August 30, 1991

During the subject period, I was assigned to temporary duty at Lincoln Home National Historic Site (LIHO) in Springfield, Illinois. My field crew for the duration consisted of Todd Ahlman, Todd Butler, Dennis Naglich, and Harold Roeker. In addition, we were joined late in the season by Julie Schablitsky and Cheryl Busuttill (August 19-30) and Mike Higgins (August 19-23). Our purpose was to conduct archeological investigations about several historic structures within the LIHO boundaries. Those efforts are summarized below by house lot.

Arnold House: Investigations at this houselot were prompted by a proposed restoration of the house to its mid-19th-century appearance and location. The original 1839 siting of the house was closer to Eighth Street. Shortly after the turn of the century, by which time the original outbuildings had been removed, the Charles Arnold House was moved toward the rear alley and turned 90 degrees to face Jackson Street. A new house was then built on or near the former Arnold House site. The National Park Service ultimately razed that second structure soon after it was acquired in the mid-1970s. A major goal of this project, then, was to ascertain whether any evidence of the original house survived that would lend assistance to restoration planners.

Our excavations began in the large, vacant lawn that lies west of the present Arnold House location. Guided in part by two pre-Civil War plats of Springfield, a series of Sanborn Company fire insurance maps, and other documents, 1-m-wide exploratory trenches were placed at right angles to the presumed house location in an attempt to intersect foundations or other evidence that would indicate its original position. Unfortunately, it was not made known to us until the second week of our investigations that the



NPS demolition specifications for the later structure called for complete removal of its foundation. That condition potentially would have compounded the earlier effects of moving the Arnold House and building a second structure in the same general area. Accordingly, our initial low expectations of finding undisturbed antebellum remains in the yard were lowered even further by news of the recent NPS demolition activities.

Given these circumstances, it is not at all surprising that little evidence clearly pertaining to the original Arnold House was found in the west yard. Brick rubble and other construction debris suggesting mid-19th-century origins was found, to be sure, but not in a form sufficient to ascertain precise locational information for the structure. At least in those areas examined, it would appear that such evidence has been obliterated.

That is not to say, however, that the west yard exercise was entirely fruitless. Excavations did reveal the former locations of foundation walls presumed to be associated with the second structure on this lot. A large, filled basement cavity also was detected. Those deposits, and others of their period, conceivably could be determined to have archeological significance, though they probably date no earlier than 1903.

Of further importance is the presence of an unidentified deposit of yellow clay a few feet west of the present Arnold House. That deposit, which appears to be either square or rectangular in plan, was found to contain a relatively high proportion of antebellum artifacts. Further, it clearly pre-dates the construction of two rear porch piers exposed and recorded by our excavations. Whether the porch piers were associated with a late expansion (circa 1890s) of the original Arnold House or with the second structure, it seems likely that the clay deposit derives from sometime in the middle of the 19th century. Therefore, it is probable that the feature is associated with occupation of the original Arnold House.

One other feature in the west yard that merits mention is a cistern that lies near the boardwalk approaching the Arnold House front door. Owing to time constraints, its presence was not confirmed by exposing the feature to view. Rather, the cistern's presence is suggested by the paths of two separate drainage lines, one deriving from along the west yard's north property line and the other originating at the northeast and northwest corners of the present Arnold House. Furthermore, those lines appear to intersect near an intrusive fill deposit partially exposed in the yellow clay deposit previously noted. At the outset of this project, it was assumed that the preservation of archeological remains would be far more likely in the small east yard between the house and alley. Moreover, we were concerned that removal of modern additions to the Arnold House and relocation of the original structure might involve ground disturbance that would affect any cultural resources present. Therefore, additional excavations were carried out in

this area known to have harbored several outbuildings of various functions over the years.

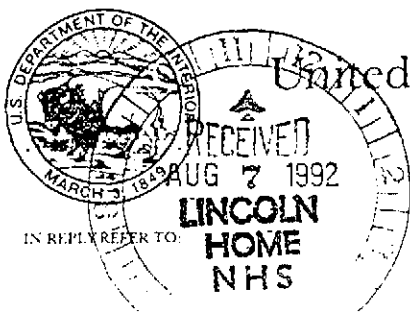
As it turned out, our assumptions proved true and our concerns well placed. Indeed, archeological site integrity appears to be quite remarkable in the east yard, with at least one feature located in close proximity to the standing structure. Four 1-m-x-1-m test units revealed evidence of two separate privy vaults and a brick pier and sill beams representing the wall of a third outbuilding, probably a barn. Further, it is evident from various cartographic sources that additional remains of outbuildings should be present in areas of the yard not investigated.

Dean House: Archeological testing about the Harriet Dean House was intended solely to provide guidance for planning its restoration. Accordingly, excavations sought to locate and identify any cultural features that might be present in areas where ground disturbances are likely to cause major impacts. Of particular interest were the brick foundations of the main house, which is to be replaced with poured concrete, and the rear portions of the property, which will provide construction staging and access. In addition, foundation sections were examined on a small, presumed wash house attached to the main house. An isolated test unit also was excavated between two hackberry trees immediately south of the south porch.

Although several outbuildings are known to have existed along the alley at the rear of the property, no intact archeological evidence of them could be confirmed. To be sure, artifacts representing a long time span were abundant in each of the three alley test units, but they seem to derive from mixed contexts. The integrity of those deposits, however, would appear moot, since they are covered by nearly a layer of disturbed earth or fill measuring nearly a foot thick. For our current planning needs, it is sufficient to know that this buffer zone would protect from harm any significant cultural resources that might lie deeper in the ground, provided that disturbances in this area are limited to the movement of machinery and supplies.

Excavations about the main house provided little new information. Sections of the foundation examined showed that no unknown features lay in close proximity to the main house. Evidence relating to the modification of a currently enclosed porch could be discerned in the north foundation masonry, but this discovery will not affect construction in that area.

Of particular interest, however, was a dense, and apparently continuous layer of brick rubble noted on either side of the southwest corner of the main house. The meaning of this deposit is not at all clear. The fact that few whole bricks occurred among the large number bats suggests that the materials derive from some demolished feature.



United States Department of the Interior

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NATIONAL PARK SERVICE
Midwest Archeological Center
Federal Building, Room 474
100 Centennial Mall North
Lincoln, Nebraska 68508-3873

LINCOLN	
SUPERINTENDENT	
SECRETARY	
CHIEF, I&VS	
CHIEF, M&M	
ADM. OFFICER	
FILES	

August 4, 1992

A2624 (MWAC)

Craig,

F.Y.I.

Norm Zimmerman

Memorandum

To: Chief, Midwest Archeological Center (MWAC)
Through: Regional Archeologist, Midwest Archeological Center *mt*
From: Supervisory Archeologist, Midwest Archeological Center
Subject: Trip Report - Lincoln Home, July 13-31, 1992

During the subject period, I traveled to Lincoln Home National Historic Site (LIHO) to direct archeological investigations at various locations within the park. Joined by three archeological technicians--Todd Butler, Dennis Naglich, and Susan Skaggs--I was able to accomplish all goals set forth in the approved Work Plan, as well as additional tasks requested by the park administration. That we were able to accomplish so much in the brief, three-week period is testimony to the research team's energy and diligence.

Sprigg House: Efforts at this location were intended to support the preparation of a Historic Structure Report (HSR); no specific architectural problems for investigation were defined, however. Accordingly, our excavations examined only parts of the rear of the house lot, where the remains of undocumented outbuildings and other features might be found (a modern storage structure stands at the alley, probably atop remains of a large shed or barn recorded on Sanborn Fire Insurance Company maps).

The team excavated several test units, totalling 7 m², near the modern storage building. Those units showed that approximately 45 cm (18 in) of fill covers that part of the back yard. Further, buried utility conduits criss-cross the area, though few are placed lower than the fill layer.

Among the more important discoveries at the Sprigg House was the delineation of an apparent privy vault. Centered about 1.4 m (4 ft 7 in) east of the storage building and 1 m (3 ft 4 in) south of the north property line fence, the filled pit was crossed at some later date by a line of clay tile. That

series of cylindrical conduits was rendered useless sometime after installation when it slumped with the loosely compacted privy fill. The fill was excavated only to a depth of 1 m below surface, covered with plastic sheeting, and backfilled. Numerous artifacts recovered from the partially excavated feature possibly will provide insights into its period of use.

In addition, another test unit revealed parts of two large trash pits close beside one another. Both contained numbers of bottle glass and ceramics, many of which bear identifiable makers' marks. Those artifacts will be helpful in fixing an approximate date of deposition. Excavators left probably half of the two trash pits in the ground, and other pit features are likely to be present, as well. For that reason, the rear of the Sprigg lot should be identified as being archeologically sensitive when restoration plans are made for the historic house.

Dean House: Excavations at this structure, soon to be restored, were limited to areas within the basement. During the 1991 Dean House investigations, work could not be carried out in the basement, owing to asbestos contamination. A thorough clean-up of the basement this spring, however, enabled safe examination of its floor.

The team excavated three 50 cm² test units in the basement floor. This required removal of brick pavers and, in some places, a layer of overlying concrete. It was found that the bricks were bedded in a gritty, organic soil. In one unit, the bedding contained a few non-diagnostic artifacts, but the others were devoid of cultural materials. Beneath the gritty soil, excavators encountered a dense, sterile clay undisturbed by excavation of the basement and subsequent activities. It would appear, then, that the Dean House had no basement floor in its history other than the present one.

Arnold House: In light of new information pertaining to placement of this historic structure and associated outbuilding, we agreed to examine certain areas not investigated in 1991. Architects involved with restoration planning now believe that one particular structure would have been located immediately west of the present Arnold House position. Excavation of a test unit at that location, however, failed to find any trace of that building.

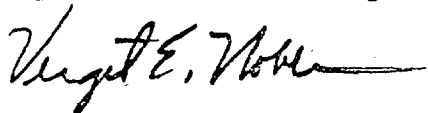
In the east yard, where the 1991 investigations revealed a brick pier and wooden sill beams, an additional test unit was placed adjacent the north fence line. It was confirmed in the course of preliminary examination that the fence line was approximately 3 ft north of the actual property line. Since the Arnold Barn is shown to be coincident with the property line on several historic maps, the difference in fence position places the presumed barn foundation at 20 ft from the north property line--approximately the dimension inferred from

historic maps. The single test unit in this yard, then, was meant to intersect the barn's corresponding north wall.

Excavation of a 1-m-x-1-m unit perpendicular with the north fence should have encountered evidence of the barn, but did not. An indistinct, organic stain may represent a square post mold, especially since it occurs 3 ft from the fence. It is not likely to have been part of the barn, however.

Although a great deal was accomplished in our brief stay at Lincoln Home, more research will be required in each of the house lots here described to assist final planning of the proposed restorations. Investigations at the Sprigg House, for example, were designed to assist preparation of the HSR and not to assess the impacts of any future construction activities. It is also probable that, as research on the house and grounds proceeds, new questions will be posed for possible resolution through archeology. In the case of the Dean, several areas of concern cannot be addressed until construction begins. Crawlspace beneath the house still need to be investigated, especially that containing the substantial remains of a well or cistern. Furthermore, there is some likelihood of a cistern near the historic outbuilding. Examination of the high probability area, however, must await demolition of a modern concrete ramp. Finally, the need of additional archeological work at the Arnold House is anticipated before and during the process of relocating the original structure.

In conclusion, I should acknowledge the LIHO staff's close cooperation in our undertaking. Superintendent Hellmers, his senior staff, and his administrative, interpretive, and maintenance personnel all deserve thanks for making our work easier and pleasurable. Without their assistance, it would have been impossible to accomplish as much as we did.



Vergil E. Noble

Cleared for distribution



Chief, Midwest Archeological Center

3/4/92
Date

cc:

Superintendent, LIHO

Regional Director, MWRO

Chief, Cultural Resources, MWRO

Historical Architect O'Bright, MWRO @ ULSG

SITE SURVEY

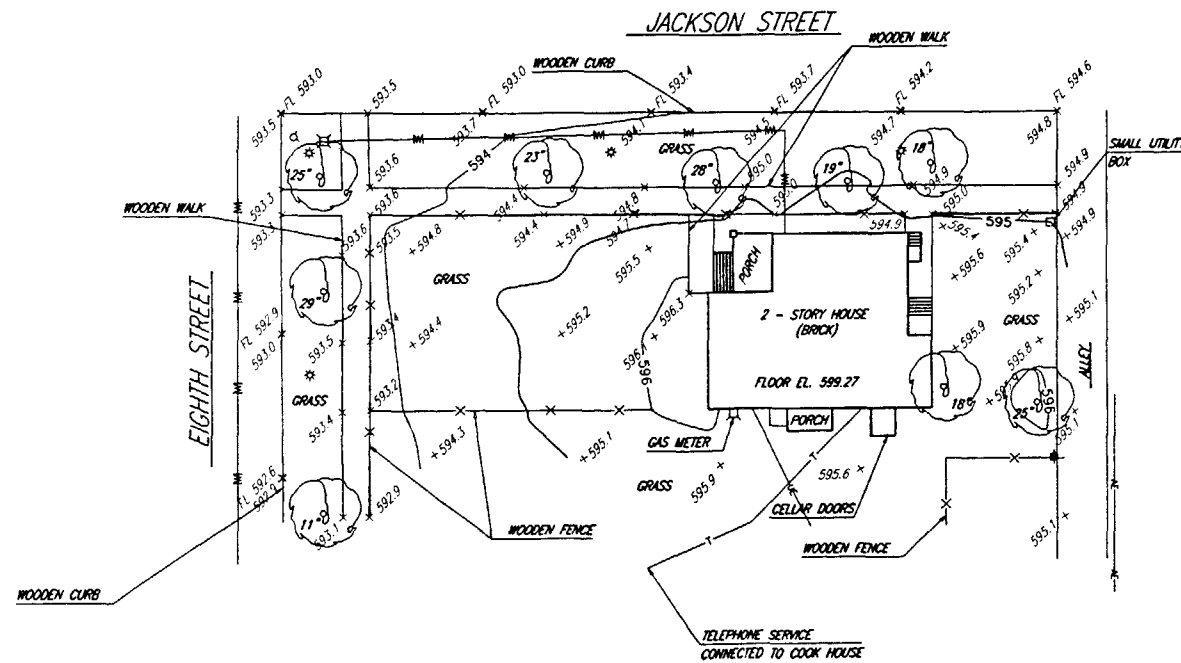
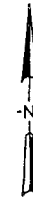
APPENDIX H

BENCHMARKS

B.M. #1 WEST NUT ON FIRE HYDRANT AT
SOUTHEAST CORNER OF NINTH AND
EDWARDS STREETS.
EL. 592.81

B.M. #2 NORTHWEST NUT ON FIRE HYDRANT
AT NORTHEAST CORNER OF EIGHTH AND
EDWARDS STREETS.
EL. 590.87

B.M. #3 NORTHWEST NUT ON FIRE HYDRANT AT
SOUTHEAST CORNER OF EIGHTH AND
JACKSON STREETS.
EL. 595.05




- LEGEND**
- * LIGHT POLE
 - POWER POLE
 - ⊙ MANHOLE
 - COMMUNICATION POLE
 - S— SANITARY SEWER
 - INLET
 - W— WATER MAIN
 - G— GAS MAIN
 - V— WATER VALVE
 - AE— AERIAL ELECTRIC LINE
 - *— FENCE LINE
 - T— UNDERGROUND TELEPHONE LINE
 - UE— UNDERGROUND ELECTRIC LINE

UTILITY NOTE

THE LOCATIONS OF THOSE BURIED AND ABOVEGROUND UTILITIES SHOWN ARE APPROXIMATE, ARE SHOWN FOR CONTRACTOR INFORMATIONAL USE ONLY, AND ARE NOT TO BE REFERENCED FOR CONSTRUCTION PURPOSES. THE IMPLIED PRESENCE OR ABSENCE OF UTILITIES IS NOT TO BE CONSTRUED BY THE OWNER, ENGINEER, CONTRACTOR, OR SUBCONTRACTORS TO BE AN ACCURATE AND COMPLETE REPRESENTATION OF UTILITIES THAT MAY OR MAY NOT EXIST ON THE CONSTRUCTION SITE. BURIED AND ABOVEGROUND UTILITY LOCATION, IDENTIFICATION, AND MARKING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REROUTING, DISCONNECTION, PROTECTION, ETC. OF ANY UTILITIES MUST BE COORDINATED BETWEEN THE CONTRACTOR, UTILITY COMPANY, AND OWNER. SITE SAFETY, INCLUDING THE AVOIDANCE OF HAZARDS ASSOCIATED WITH BURIED AND ABOVEGROUND UTILITIES, REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

**TOPOGRAPHIC SURVEY
OF
CHARLES ARNOLD HOME
SPRINGFIELD, ILLINOIS**

DESIGNED CHECKED DRAWN DATE	 HANSON ENGINEERS INCORPORATED SPRINGFIELD, PEORIA & ROCKFORD, ILLINOIS	FILE NO. 9151085 DATE 10-1-92
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